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Ukrainian and Foreign Science: Yesterday, Today, Tomorrow



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ENGINEERING SCIENCES



THE MANAGEMENT OF CYBER SECURITY IN HYBRID WORKING

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Although communication and collaboration technologies have long been reliable enough for teams to work effectively without needing to be in the same location, companies were generally hesitant to move away from the traditional, office-based working model until the COVID-19 pandemic forced their hand.

Hybrid working can be considered as a combination of on-site and remote working – is set to become standard practice for many organizations. Whether company staff work in the office, at home, in shared working spaces, or anywhere else, they face numerous additional risks to the confidentiality, integrity, and availability of your corporate information. Many companies that shifted to a remote working model in early 2020 found there was simply not enough time to carry out suitable risk assessments before making such sweeping changes to their working practices (McKinsey, 2021).

Modern life depends on online services that can be provided with the help of hybrid working, especially due to the pandemic times, so having a better understanding of cyber security and its threats is vital.

Implementing suitable technical and company security measures is especially important when it comes to maintaining compliance with data protection law. Among the most widespread threats to cyber security during hybrid working can be mentioned phishing, BYOD, and using public or home Wi-Fi.

The first one – *is phishing*, which is a type of social engineering attack in which cyber criminals trick victims into handing over sensitive information or installing malware, such as ransomware. Mostly, this occurs via emails that appear to be from trusted senders.

The second one takes place when remote staff uses their own computers, tablets, and smartphones for work purposes – known as *BYOD* (Bring your own device). In this case, the company will have less corporate control over how those devices are configured and used. The company will also have limited control over patch management and ensuring security vulnerabilities are fixed promptly, download apps that would normally blacklist, and their machines might become infected with malware that could put the company's network at risk the next time the device connects to it.

Implementing BYOD policies and procedures to limit those risks, for instance by requiring users to keep anti-malware software up to date and install patches on time, and enforcing the company's policy with technical controls is essential.

The third one occurs when staff uses *public Wi-Fi* or their *home networks* to connect to the Internet, security features that you would take for granted in the office, such as filtering, firewalls, and encryption, might not be available, and where they are available will be beyond your control.

If staff haven't changed the default passwords on their routers, or share a connection to a public network with other users, they leave themselves open to eavesdropping and man-in-the-middle attacks unless they use a virtual private network

(VPN). This will provide staff with secure remote access to corporate systems and enable them to use IT resources such as email and file services securely.

Internal network security is equally important: the company should ensure the VPN is kept up to date with the latest patches and that it has the bandwidth to cope with all users. Internet routers are designed to move data to their destination, which could also take the company's data through several routers across the world. This creates vulnerabilities that allow that data to be copied.

To sum up, whether the company's staff are working in the office, at home, in shared working spaces, or anywhere else, the company needs to manage their security risks, make staff more aware of security risks, check if the state possesses bad security habits and train staff to overcome such risks.

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INKS THAT CHANGE MODERN PRINTING INDUSTRY

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Over the last couple of years, the steady pace of technology development has changed many established ways of completing tasks and accomplishing projects.

In the 1450s Johann Gutenberg introduced the movable typewriter. This presentation launched the global printing revolution, which led to the widespread dissemination of new ideas and information through printed text. Various works spread quickly throughout Europe. The printing revolution is considered the most important event in the history of printing. The modern printing industry may not be able to make an invention which will surpass significance of the Gutenberg press. However, there are still some innovations worth mentioning over the last couple of decades: the use of metallic colors and biodegradable inks.

Metal FX technology is the printing of multiple metallic colors using only one extra ink. MetalFX is based on the transparency of the CMYK colors, which can produce many metallic colors when mixed with the metallic basic color (silver). Metal FX metal pigment color is purer than the silver. This allows printers to create bright colors (Lyhnia Digital, 2019).

Color-Logic company improved this innovation. To reproduce metallic color, the company offers to apply a special silver ink in the first section of the printing machine. Then a triad colors go on top. Process paints act as a protection for the silver layer below, while acquiring metallic luster (Color-Logic Inc, 2015). It is important

that you can combine as many metallic shades as you want in one layout. That reduces the cost of production and speeds up the printing process.

Flexography is the most advanced way of printing packaging due to the wide range of materials, printing speed, versatility and flexibility of technology. Frequently used paints are alcohol and water-soluble. But there arises a concept of ecological packaging, so developing paints capable of biodegradation is in progress right now.

Biodegradable printer inks usually contain non-edible vegetable oil, unlike petroleum-based oils, in conventional inks. This ink contains less potentially harmful chemicals (such as volatile organic compounds). Chemicals that have been shown to have long-term effects on human health (Global banking&finance review, 2021).

One of the problems of such paints is to ensure the stability of their qualities over time with high drying on the print. Biodegradable paints are still improving so that they become light-resistant, stable, environmentally friendly and affordable.

Thus, it is experimentally proven that film-forming substances based on corn starch paste give the best results. Water is used as a solvent. Triethanolamine is added for stability and stability of the paint.

The capability of biodegradation also has a significant impact on the environment-friendly printer inks. Biodegradable inks cause less contamination and can be quickly removed from the paper during the recycling process, because they are easier to decompose than conventional ones.

Therefore, publishing products are improved by the invention of new paints with metal coating, which opens fresh usage in the decoration; as well as biodegradable inks that have less impact on the environment. In the future, all inks will be plant-based, which means careful use of natural resources.

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BIG DATA

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With the development of digital technologies, it is necessary to work with more and more information. At first, it was gigabytes, later terabytes, then petabytes, and now we have exabytes. Manufacturing, marketing, and many other industries needed a way to process such vast amounts of information. This is how the "Big Data" technology was born, the task of which was data collection and analysis. This can be

achieved in many ways, starting with artificial intelligence and ending with cloud services.

The authorship of the “Big data” definition belongs to Clifford Lynch, who collected information about the rapid volume growth, and increasing data diversity and presented it in a special issue of the journal in September of 2008 (Lynch, 2008).

Big Data is characterized by the rule of three V:

1. Volume - you always need to know at least approximately, how much information will arrive, how much needs to be processed, etc. This is necessary to assess how powerful systems need to be used and how much time it will take them.

2. Variety - Big Data selects different types of data. There are a lot of sources of information, which can be databases, web servers, and various sensors. This includes structured, unstructured, and semi-structured data.

3. Velocity - Velocity is estimated by the sum of the speed for which add-on data and the speed of processing and analyzing this data (Jain, 2016).

Recently it has been added 3 more characteristics:

1. Veracity - Data comes from a lot of sources, and also a lot of inaccurate information. You need to take this into account every time you conduct analytics, as the final output may differ greatly from reality.

2. Value - This characteristic is similar in principle to the previous one. It is necessary to eliminate the superfluous from a huge amount of information and leave only the important.

3. Variability - characterizes all inaccuracies: possible different speed of data supply and processing, their amount or change in sources of information (Botelho, 2021).

The advantages of using Big data can be efficiency, fraud detection, customer analysis, and cost optimization. The efficiency of Big data can be proven by its specialists because only they can turn a huge amount of unstructured data into its classified consistency. This consistency lets you find any information you need and look for. Also, you can easily determine what is wrong, when-where it has started, and even how you should solve the problem before it gets worse. Then, customer satisfaction is the unique opportunity to create for people a comfortable and wishful algorithm to advertise or propose something to them, that they are probably looking up. It is very helpful for business, and even more – it became a part of the business. Costs minimization could be included in the paragraph on efficiency, but it has deserved to be mentioned as a detached value, because of particular algorithms used to make companies reduce their costs and at the same time compensate for the quality or quality of the product (Duggal, 2022).

In the list of disadvantages of Big Data, you can find “lack of professionalism”, insecurity, and government compliance. Firstly, the lack of data scientists and data analytics is a serious problem. Currently, the volume of data has increased to such high measurements that the complexity, organizing, and structuring of all of it demands talented people, who are mostly choosing easier ways to find themselves in IT. Security companies have their problems or don't have them at all, because it depends on whether the company has locked, private and sensitive information or not. And finally, government compliance is an irresistible problem, because if some program or

algorithm is using somebody's information – you have to be sure that this person has agreed to provide her data.

The conclusion is that Big data now is progressing and widening, it is becoming more complicated, and more independent in the matter of collecting data, but still not perfect enough, that every company will use it. However, depending on the situation it can be a powerful instrument in the “golden arms” or problematic barrier and chaos if your conditions and goals don't match with the Big data abilities.

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METALLURGY

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Nowadays, it is normal to look around and see high residential buildings, cars, super malls or other constructions. You might have a question - what does it all have in common. The answer is – metallurgy.

Metallurgy is too related to us that we have been dependent on it. And there is a main question: what caused those needs, and how did it begin?

In the distant past, when people had only a rock and a stick as technology, our population with each generation our species became more cohesive. In that period, there was a starting point of division of labor and effective execution work for shared survival. Tools have been devised for this effective performance. So it was started with an idea about tools (Britannica, 2022).

From that time until now, we use and improve it. It is a huge science which includes a lot of different ways of extraction and using metals. What about using it, are we really addicted to metals?

The answer is exactly yes. Almost everything that was produced used it. From casual smartphone to complex designs. Due to this, we have such a world around us. Improved construction makes our life more comfortable. But this sample pack is much bigger than only a few examples. It is about modern technology – they all need metallurgy production.

We can say that metallurgy is important. But what is it in more detail? It is also not a hard question. It happens in a few steps. Firstly, ore is mined and sent to the

pulverizer. After pulverizing we need to concentrate it for more rational using in future - it is quite a hard process which is carried out huge enrichment construction. And only after those steps we can remelt it in metal (Sciencedirect, 2022). It is an interesting way of producing this important resource.

Obtaining and using metals is a great idea for nowadays – it facilitates and improves condition of our lives.

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**WARFARE IN THE DIGITAL AGE:
TECHNOLOGICAL SUPERIORITY AS A KEY TO VICTORY**

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The Digital Age has been going on for more than half a century. The main concept of this period of human history reflects the ubiquitous nature of technology and its application in all spheres of human activity.

Technology has a substantial impact not only on aspects of peaceful life. The war paradigm, types and means of warfare, weapons, and strategies for their use — all of this changed under the influence of global technological progress.

The presence of engineering and technological solutions has always provided superiority on the world stage. For example, the industrial development of Great Britain made it a leader among the countries of Western Europe from the 18th to the 20th century. The superiority of France's and Britain's fleets became the reason for the victory of these countries in the Crimean War (1856).

In the most full-scale war of the 20th century, Great Britain still maintained superiority at sea, while at the same time developing new methods of dealing with the enemy, such as radar technology and computers. After the WW2 the United States directed all its forces to improve weapons, from tanks to the atomic bomb.

The Second World War showed the importance of technological innovations and their influence on the outcome of the war. The government of literally every country has chosen a strategy for the development of science, technology, and innovation (STI). With every decade, the role of information, automation, modern weapons, and defenses has become more important. This is why for many decades both the US and the Soviet Union invested in technology during the Cold War.

Since the start of the Cold War, US government-funded defense research had given rise to technologies such as the internet, virtual reality, jet travel, rocketry,

remote control, microwaves, radar, global positioning, networked computers, wireless communications, and satellite surveillance (Chin, 2019).

In the 21st century, technology determines the winner. Humanity has come to a new form of warfare in which machines replaced humans on the battlefield. A recent example of how technological superiority has become the key to victory is the war in Nagorno-Karabakh (2020).

In this conflict, Azerbaijani possessed more diverse and modern weapons than Armenia. For instance, the Azerbaijani army used the so-called "loitering munitions" from Israel's defense manufacturer. In contrast, Armenia's military arsenal was comprised entirely of "Iskander" missiles and reconnaissance drones.

It is abundantly clear that the only way to deal with autonomous weapons is to make an upgraded version of them. Hence, this version should be faster, smarter, and more efficient. Some countries, such as Israel, the United States, North Korea, etc., have succeeded in army modernization more than others. Specifically, they have created high-tech weapons systems, which can act independently without human intervention. To emphasize the autonomy of its loitering munition, IAI (Israel Aerospace Industries) called it Harpy - a "Fire and Forget" weapon system.

War, defense and military logistics are areas of active use of AI, machine learning, cyber technologies, and other latest developments. The process of transition to the information society has given rise to such concepts as "software as a weapon" and "cyberterrorism" and, in confrontation, "cybersecurity" and "anti-malware software".

In 2015 our country became a test site for cyber-weaponry. Russian advanced persistent threat group known as "Sandworm" made the cyber-physical attack on Ukraine's power grid (Kostyk & Zhukov, 2017). Hackers were able to successfully compromise the information systems of three energy distribution companies in Ukraine and temporarily disrupt the electricity supply to 230,000 end consumers for a period of one to six hours (Ryzhkov, 2020).

The cyberattack with the BlackEnergy virus has become another manifestation of a hybrid war in which Russia is the aggressor, and Ukraine is defending itself in all possible ways.

After discussing the general trends in the development of the military industry, I want to touch on the topic of today's Russia-Ukraine conflict. I want to summarize and analyze how modern weaponry, new ways of digital defense and confrontation, as well as assistance from countries with more advanced technologies, bring Ukraine closer to victory in this war.

The number of new equipment delivered to Ukraine since February 2022 includes Switchblade Tactical unmanned systems, Puma drones, Phoenix Ghost Drones, TB2 Bayraktar UAV System and so on. The role of drones in this war cannot be underestimated. This aircraft is indispensable for military Reconnaissance, Surveillance, and Target Acquisition (RSTA).

Since the start of Russia's full-scale invasion of Ukraine, 20,000 Starlink terminals have been delivered to ensure high quality and speed of communication. Starlink has many advantages over cable internet, such as weather resistance, high speed, and low latency signal transmission. This modern Internet service helps the

Ukrainian military, rescuers, hospitals, and other emergency services to always stay in touch.

After the cyber-attack that occurred in the winter of 2015, the Ukrainian government began to allocate more resources to implement systems to protect computer networks and data carriers from digital threats. In the last 10 years, such specialists as cybersecurity consultants, network engineers/architects, network vulnerability analysts, software developers and testers, and so forth, have become the most in-demand in the labor market of our country.

It is quite expected that Ukraine used its cyber capabilities not only for defense purposes but also for active resistance. An example of this is the activities of Ukrainian hackers and the Ukrainian Internet Army. During the first months of the war, the Anonymous hacker group attacked Russian TV news channels, websites, and social media profiles, blocking their activity.

In addition, advanced cybersecurity experts have created a simpler algorithm of actions for those users who want to join the information troops and prevent the spread of propaganda.

The last thing I want to focus on is the role of technology in post-war reconstruction. The area of using technological achievements, which is not related to the battlefield, is peacebuilding. Integration of artificial intelligence can make logistics and infrastructure rehabilitation easier, faster, and more efficient. An unmanned aircraft is a reliable tool for demining and autonomous detection of damage to communication networks.

Only with these technological solutions can we make Ukraine safe and ensure peace on its territory. The use of all the achievements of the Digital Age is a grand development strategy of every country in the 21st century, and Ukraine is no exception.

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HOW ARE VIDEO GAMES MADE?

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Video games are exciting and amusing entertainment. However, few people know how complicated and time-consuming the process of creating video games is.

There is a great team behind every big project, where every person has his own task. Therefore, we are going to introduce you to the 'conveyor' – the process of developing a video game from its concept to the end product.

The 3 stages of development:

1. Pre-production. At this stage, every project starts. In fact, at pre-production, the developers figure out the idea of the project, the estimated budget, deadlines, etc. The information collected during this stage is the base of the Game Design Document.

A Game Design Document (GDD) is an important part of production. GDD helps developers understand the structure of the project.

The GDD consists of:

- The main goal
- Gameplay
- Story
- Stylistic
- Environment design

2. Production. Production is the main part of the project and can last from 1 to 6 years. The scenario is being specified, levels are being developed, code is being written etc.

Main stages of production:

- **Prototype:** This is the primary test of the game that starts in pre-production.
- **First playable:** It gives developers a better understanding of what the gameplay and design is.
- **Vertical slice:** This is a 1 to 30-minute example of the game used to present your game to the public and investors.
- **Pre-alpha:** At this stage, the game is filled with content.
- **Alpha:** All major features have been implemented, so the game can be played completely. However, the product is still raw at this stage.
- **Beta:** Developers optimize gameplay.
- **Gold master:** This is a completely finished project.

As you know, large teams are often involved in the development of video games. Here are the main roles of developers and their functions in the project:

- **Project manager.** This person makes sure that the game development process goes according to plan, and that the team members do their job well.

- **Programmers.** Programmers are those people who put ideas into a code. They have both creativity and the skill of using engineering and mathematics for the implementation of various concepts. Here are some responsibilities of programmers: scripting events, formation of the physics of the environment, artificial intelligence programming etc.

- **Game designers.** This is the most creative part of the team. Level designers' job is to build interesting levels and missions. Game artists are responsible for the visuals of the game. They create props, environment, and the appearance of the characters, animations and spectacular effects.

- **Audio engineers.** These specialists select sound effects, write soundtracks, and record and implement dialogues of characters.
- **Testers.** The work of these people is very important in the development process. They test games, report bugs, and assess the difficulty and possibility of levels.

3. Postproduction. After the completion of production, part of the team continues to fix bugs and create patches, while another one starts developing downloadable content (DLC). Developers analyze the work done and summarize the results of their project.

To sum up, game development brings together talented people of different specialties to create an original and high-quality product, which will later be enjoyed by millions of players.

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THE IMPACT OF NEURAL NETWORKS ON THE ART OF THE FUTURE

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For over 200 years, little by little machines have been replacing people in the job market. First of all, back in the 19th century, steam engines began to replace and simplify the work of millions of workers all over the world. That's why people believed that the creative professions cannot be replaced by a machine because a computer is not capable of creating works of art.

However, due to the invention of neural networks, the rules of the game can change dramatically.

This is a picture of a student conference, created by a neural network called “MidJourney”. Just imagine how long an artist would take to create such a detailed image. Of course, the image is sometimes inaccurate and far from ideal, but the neural network spent only 10 seconds to create a unique image.



So, what makes a neural network such a powerful artist? After the user enters a text query - a brief description of the generated image (for example “student conference”), it looks through billions of pictures on the web, which is connected with studies, schools, universities, conferences, etc. Further, a neural network analyzes this entire sample to mathematically calculate which images are most suitable for the description. Then, a computer creates an image by merging

sorted images while giving higher priority to images with a higher complexity factor. This cycle continues until the algorithm goes through all the suitable images, merging and layering them, bringing the picture closer and closer to the ideal. (“But what is a neural network? | Chapter 1, Deep learning”, n.d.)

Therefore, it is extremely important for the user to enter his request as clearly as possible, as it directly affects the quality of the output image. For example, an image of a beautiful woman will be less accurate than a picture of a beautiful red-haired woman with long hair, green eyes, and freckles:



In conclusion, I guess that artists' profession will completely change in the near future, as most of the work for them will be done by computer. Artists will need programming and machine learning skills to manage the neural network and help it achieve the most accurate result. Maybe soon we will live in a world where neural networks themselves generate content for us, depending on our preferences, and artists and programmers will be at the head of this process?

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RANDOM FORESTS VS NEURAL NETWORKS

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Nowadays, there are a lot of machine learning algorithms, the scope of which overlaps. Thus, for example, we can use both neural networks and random forests in classification and regression problems. And then there is a rather important question. What is better? I will answer right away. It depends. Since no algorithm works better than others in all cases. That is why there are so many of them.

In a good way, before performing any task, you need to apply several algorithms, test them on your data, find the best option. But let's be honest, this is almost impossible due to limited time, finances and other resources. And neural networks have gained insane popularity and fame because of the media. Surely everyone has seen different deepfakes created using neural networks. Therefore, for most, the first choice is neural networks. But is it only one choice?

Let's start with the fact that neural networks and random forests are completely different algorithms. The main idea of neural networks is to combine simple elements to solve difficult problems. These elements are neurons. They are organized into layers that are capable of performing different roles. The input of each neuron is given input data and the so-called weights. Inside the neuron, some linear or non-linear transformations take place and at the output, we get the result. That is, in fact, to train the network is to choose the right weights. A random forest is an ensemble of trees, each of which, speaking in simple terms, works as follows: each tree node (leaf) receives an input value and compares it according to a predetermined function. Once a decision is made, the value will be passed to the next matching leaf, which will also make its decision. And this will repeat until the value hits the terminal leaf. It will have the corresponding output value. The forest makes decisions by joint voting of the trees. The tree itself is a weak classifier, showing poor reliability. That is why, to improve the result, they are combined into forests.

Both algorithms require training data.

Now I would like to discuss some criteria by which these algorithms should be compared. Let's start by processing the input data. For forests, we need to convert categorical data to numeric data. For neural networks, in addition, it is also necessary to fill in all the missing data (forests can work with missing values), and scale features into the similar range. From this it becomes clear that it is much more difficult to prepare data for neural networks, but, on the other hand, they can work with a much wider range of input data: images, text, speech, video, while forests are not capable of this.

Random forest training is quite easy and requires less time and resources than neural network training. Moreover, the forest is a fairly simple structure, while the process of creating a correct neural network architecture requires some magic and great skill from the developer. Therefore, at this point, the forest clearly wins (Ahmad, 2017).

In addition, perhaps, the most important thing is the clarity of the result or interpretability. Without using abstruse terms, this criterion is responsible for the properties and features that the algorithm used to make a particular decision. The interpretability of a random forest is extremely difficult due to the huge number of trees that take part in the voting. However, not so far ago, have been developed some methods for determining the most competent trees (Banerjee et al., 2012), therefore, it will not be difficult for a person to determine exactly which features the algorithm has chosen and how it makes a decision. Neural networks are just a black box. It is almost impossible to understand how the decisions were made, so we just accept the output. This is not suitable for all tasks.

In conclusion, I can say that indeed, random forests achieve the same results as neural networks, and in some specific cases even win them a little. They are especially advantageous from the point of view of interpretability. For example, if given a choice between a model with 90% accuracy that we understand and a black box with 93% results, we would choose an understandable model, especially if it is responsible for examining patients and other extremely important things. Therefore, before performing some new tasks, do not immediately run after neural networks, take a closer look at other algorithms and this can significantly improve your work.

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HYPERCOIL STATION AS A WIRELESS CHARGER

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More than a century, humankind fights against billions of wires. Radio, TV, and the Internet has finally given up. Only electricity, with its powerful meaning for all of us, still depends on obsolete wire-technologies. Even they seem harmless at first glance. They pick up to themselves tons of valuable resources. Moreover, the network frequency can be harmful to human health.

The main task is to conduct research for a new wireless charging product that isn't tethered to the device. There are two ways to charge wirelessly. Conductive charging is performed through a charging pad and a conductive panel in your device. It requires physical contact. The second method is called inductive, and it is more “magic” because it creates a magnetic field to charge appliances, but the range of charging is still not more than 20 mm. Both of them turn up to 50% of the power into heat. Furthermore, there isn't any true wireless charger in the market that lets you use the devices during charging. This is why studies show that only 29% of people use wireless chargers. And if you can still buy one of the wireless chargers for \$100, you can hardly use it. So, all modern wireless charging stations in the market have several drawbacks and can be changed by highly efficient, scalable and safe powering device.

We propose to transfer electricity using special hyperbolic antennas (Kriuk, 2008). Its name is the Hypercoil. It allows the charger to interact with the global electromagnetic field, increasing the distance and efficiency. The station works like a common Wi-Fi router. The frequency generator creates an alternating current that runs to the antenna, creating electromagnetic waves. These waves transfer electricity in space. To use this energy, a device must be equipped with a compact receiving antenna that converts waves back into electric current for your phones, tablets, and accessories. The amount of power that a device receives depends on how many devices are charging and how far away they are from the station. The station allows your devices to be constantly charged and ready for use. Concentration of radiation is less than 1 W/kg, which is allowed by the Federal Communications Commission (FCC).

The heart of the station is the inductor coils with different types of windings, which create an electromagnetic wave capable of wirelessly charging an unlimited number of devices with a coverage area of up to 7 meters.

The bundle of two installations was experimentally tested, proving the correctness of theoretical judgments. 10 W of energy has been transferred over a distance of 10 meters. The efficiency exceeded 184 per cent because 18.4 W of electricity came to the destination point. The electromagnetic field feeds the system; it is only necessary to convert its potential into electric current. In addition to this experiment, patents have shown many attempts to scientifically confirmed this process, which creates an opportunity for improving and bringing technology to the world (Kriuk, Yatsyshyn, Beldyi, n.d.).

To sum up, we hope that the full realization of the project will take seven years. The primary goal is to create a minimum viable product in the next three years. This period is necessary for the complete testing of the technology, patenting, the creation of project documentation and a research centre, where a prototype will be built.

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INTRODUCTION OF THE BITCOIN

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In recent years, Bitcoin is a modern electronic cryptocurrency that has attracted the interest of the general public, adventurers, risk-takers, scientists, and, of course, economists. Bitcoin appeared in 2009 and is based on even older technologies.

However, the prospects of this cryptocurrency can be outlined as follows: Given its growing importance, bitcoin users predict that by 2024 about 94% of the different variants of bitcoin will be traded. Renowned economists estimate that bitcoin will rise to a staggering \$500,000 mark by 2030. The popularity of this form of currency is expected to grow exponentially because it is decentralized and secure.

What problem does bitcoin solve?

Bitcoin was not invented to replace PayPal, Visa, or Mastercard with a faster and more anonymous system.

Bitcoin was created to provide a secure, free, unmanipulated, and uncensored alternative to the world's existing monetary systems. In a world that is becoming increasingly digitized and globalized, Bitcoin provides the infrastructure for a globally operating and secure monetary network.

Due to individual and environmental factors, approximately 38% of the world's adults do not have access to a banking or financial system (keyword: financial

inclusion). In some countries, people are denied access to it, for example, because of their social status.

The Bitcoin network offers a way out of this situation. It works all over the world and is freely accessible to everyone, and there is no need to ask permission from anyone.

The problem that the Bitcoin network primarily solves is the problem of digital technology deficit. Everyone knows this. Files on a computer can be copied very easily and with just a few mouse clicks. Therefore, digital money can in principle also be simply duplicated, which would also lead to an unintended expansion of the money supply and the credit balances of all other participants would become proportionally smaller. Bitcoin cannot be copied, nor is it possible to increase a fixed amount of money. How exactly these mechanisms work is not important now. The most important thing is that they work! Unfortunately, like any currency, bitcoin has disadvantages associated with its use.

First of all, bitcoins are not widely accepted.

Bitcoins are still only accepted by a very small group of online merchants. This leads to the fact that it is not possible to fully rely on bitcoins as a currency. In addition, there is a risk that governments will require merchants to stop using bitcoins so that user transactions can be tracked.

Secondly, if a hard drive crashes or a virus corrupts data and the wallet file is corrupted, the bitcoins are essentially "lost". This can bankrupt a wealthy bitcoin investor in seconds with no possibility of recovery.

Thirdly, cryptocurrency in the world has captured the attention of young and old investors with bright dreams of promising profits. Now many investors are conquering the wave of cryptocurrencies, but there are also people who have found that cryptocurrency prices are prone to volatility. This is due to the fact that cryptocurrency shows some deficit of its innate value because the digital currency is not connected to any tangible assets.

In conclusion, bitcoin is a good investment if you have a high-risk tolerance, are in a strong financial position, and want to increase the share of digital currency in your portfolio. However, it is not the right choice. Its above-listed disadvantages are red flags for some. While it allows people to make international transactions at a relatively low cost and protects user privacy, skeptics argue that it does so at a price that greatly inflates its true value. Others say it is worthless - a bubble that will burst one day.

But everything in this life is worth trying, so first of all it is worth thinking it over and taking risks, maybe something will come of it.

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These reviews could even be performed in conjunction with a financial statement audit, internal audit, or other kinds of attestation engagement (Techopedia, 2022).

Discrete mathematics could also be a branch of mathematics that studies the properties of any discrete structures. The term discrete analysis, which studies the properties of the skin structure, is typically used as a synonym. Such structures can include finite groups, finite graphs, also as mathematical models of data converters, and finite automata (Wikipedia, 2022).

An algorithm could also be a set of instructions that describe the order of actions of the performer to achieve the result of solving the problem in a finite number of actions; a system of rules for the execution of a discrete process that achieves the set goal in a finite time. Block diagrams are often used to visualize algorithms (Wikipedia, 2022).

Simulation software is based on the process of modeling a real phenomenon with a set of mathematical formulas. it's essentially a program that permits the user to observe an operation through simulation without actually operating. Simulation software is widely used to design equipment so that the end product is as close as possible to design specifications without expensive process modifications. Real-time simulation software is typically used in games, but it also has important industrial functions. When the worth of improper operation is enormous, an example, a pilot, nuclear power plant operators, or factory operator has the chance to gain valuable learning experience without fear of a catastrophic outcome (Vahrenhold, 2017).

Career opportunities for Information Sciences graduates cover an honest range of options: *Archivists; Systems developers; Programmers; System designers; Web designers; Web developers; Information architects; Business analysts; Database administrators; Product managers; Website managers.*

Therefore, information systems are very popular and important today. If a person wants to become successful, he chooses to study information systems and technologies.

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THE DEVELOPMENT OF WI-FI TECHNOLOGY AND HOW IT WILL HELP THE POWER GRID

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We all have WI-Fi, which has become an integral part of our life. But there is one problem as this technology is very necessary for everyone and surrounds us everywhere. Therefore the power grid is overloaded and work with the Internet is slowed down due to an excessive number of routers. How can this issue be resolved? We can use wireless networking protocols that are based on the IEEE 802.11ax network standard. This gives us better download speed and more bandwidth.

How fast is the WI-Fi? 9.6 Gbps is the maximum throughput of WI-Fi 6 through multiple channels. In comparison with WI-Fi 5 it is more by 6.1 Gbps. Previously, if many devices were connected to the router, each of them had to wait for its turn to exchange data with the router. It was not very convenient, because it could take a lot of time. Now it has become possible for the router to work with several devices at the same time.

So, what is the use of Wi-Fi 6? It promises lower power consumption and higher reliability. Also, the Wi-Fi 6 standard includes multi-user multiple access with orthogonal frequency division, multi-user multiple input and multiple output, new spatial reuse mechanisms, new storage power mechanisms, higher-order modulation, and additional minor improvements. New technology allows you to use Wi-Fi for the Internet of Things, it will also become possible to charge devices completely without wires, with the help of Wi-Fi. Engineers from Xiaomi are already working on this.

Wi-Fi 6 significantly increased the bandwidth of networks where there are many users. So in a network with 20 users, one 802.11ax access point provides the bandwidth which is four times more than 802.11ac. In fact, WI-FI 6 is built on the basis of the previous technology – standard 802.11ac. The main difference is the multi-station access with frequency division of OFDMA channels, 1024QAM modulation and reduction of intervals between frequencies.

Moreover WI-FI 6 has an ability to eliminate interference: interference from neighboring wireless networks can negatively affect the quality of the Wi-Fi signal. As an identifier, the Base Service Station Color marks each packet frame and tells the router/clients/points of access which frames are being transmitted from neighboring networks. At the same time, signals from third-party networks are ignored. This solution minimizes delays during data transmission and also reduces interference of neighboring wireless networks. And The new Target Wake Time feature allows devices to determine when and how often they should wake up to send or receive data. This will effectively increase their sleep time and significantly save the battery life of mobile and IoT gadgets.



Here you can see the difference between WI-FI 6 and past generation

In this photo you can see the principle of operation and the main feature



Taking everything into account, WI-FI 6 is a new revolutionary development of the “WI-FI Alliance”, which will give rise to new devices, artificial intelligence, autopilot for cars, it will also significantly reduce electricity consumption, which is very important in our time, and will create the ability to work in office corporations without any Internet connection problems.

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DEVELOPMENT TRENDS OF THE NFT MARKET

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NFT or non-fungible token is a certain asset created on the blockchain, which is distinguished by its novelty. It can be said that this is a kind of digital certificate, that is, a special type of cryptocurrency. One of the defining characteristics can be called non-interchangeability and uniqueness, because each token is defined in its way, and

has special and specific characteristics. Its use is based on confirming the ownership of a product on the Internet, for example, an image, song, or video (Dowling, 2021).

Analyzing the dynamics of the market, one can clearly state a significant growth, because in 2020 it is possible to state an increase to 250 million dollars, which is four times more compared to the previous year. The reason for this may be that artists from all over the world began to sell illustrations, videos, fragments of musical compositions, and gif images of their authorship on specialized platforms. These platforms are called marketplaces.

Non-fungible tokens or NFTs are the main trends of digitalization in 2021 because you can see an extraordinary increase in sales, which rose to \$2 billion in the first quarter alone. Of course, the pandemic and the limited offline activity that comes with it played a big role in this process. Thus, physical spaces such as museums, art galleries, and auctions have moved online, and as a result, young artists have seized one of the few opportunities to earn money from their artwork. In turn, collectors and crypto-investors also received a significant advantage, because a new niche in the market opened up for them (Baur, 2018)

Prospects of this trend in Ukraine

It can be said that in Ukraine there were attempts to develop this industry and develop new products. Of course, in Ukraine, the market does not have such rapid development as it can be observed abroad, but in general, some shifts regarding digital art can be noticed and recorded. Gradually, Ukrainian artists, entrepreneurs, and collectors began to delve into the topic, and some of them have already started to earn good money from it (Baur, 2018).

Indeed, there are different views on this issue. Some consider Ukraine to be insufficiently developed and unable to follow such trends in modern conditions, while others adhere to a different vision because they see new competitive opportunities in this. Here it is appropriate to mention the words of the press center of the Ministry of Digital Transformation of Ukraine, which believe that Ukraine is a leader in the use of virtual assets among the population. It should be noted that Ukraine has such high indicators in the market of virtual assets due to being one of the largest communities of blockchain developers in the world. In addition, in Ukraine, it is possible to follow and note a rather knowledgeable direction regarding digitization in cashless operations and a high-quality educational intellectual base. In this way, Ukrainians have developed the Proof-of-Love platform, which is at the same time a place for creating NFTs and a social network. Anyone can register on the site and post an item they want to sell.

If we talk about the expediency of this new technology for Ukrainian realities, then it will be important to point out the legal point of view related to the protection of intellectual property rights because most collectors are resellers: People think that a certain artist is a good one and that NFT will bring profit in the coming weeks or month. Therefore, they see in the purchase certain prospects and the possibility of quick profit, and that is why they buy (Bhattarai, 2020).

It is fair to say that at this stage, for the average person who does not understand digital technologies or modern art, the topic of NFT is of no practical use. After all, the very beginning of the development and popularization of this system is now taking

place. Therefore, it is too early to say that there is now a real opportunity to "invest" in art and wait for the benefits.

The next thing that is extremely important to consider is the present risks. To publish an NFT, you need to choose a suitable online wallet and link your e-wallet to it. This service is often paid and the amount depends on the platform and commission for publication. In theory, it is possible to make money on NFTs, but there are certain risks.

First of all, systems for publishing and selling work are poorly secured. There are some precedents when people lose money in their wallets due to the non-observance of banal cybersecurity rules (Morkunas, 2019).

In addition, there is the issue of protecting the right to property of an object that a person has acquired. It is important to understand that you do not receive copyright and cannot, for example, reproduce and distribute this NFT. Only the owner has the right to do so.

And the last, but no less important, are cases when people pretend to be the authors of this or that object, and this happens because "the market is only at the initial stages of development" (Moratis, 2021).

Therefore, summing up all of the above, it is believed that there are aspects of market development that are extremely important and should be taken into account. Of course, the market is still at the very beginning of its development, and the results will be seen in the future.

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SOLAR ENERGY

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In connection with the current environmental situation on the entire planet, the issue of clean energy is being discussed especially sharply today. Among all environmentally friendly methods of generating electricity, the most promising direction is the development of solar energy. There are several reasons for this, since the advantage of this method is not only the absence of a negative impact on the

environment, but also a number of technical advantages. Among the shortcomings, only a low efficiency can be distinguished in comparison with thermal and nuclear energy. But otherwise, solar panels win in many respects, since all that needs to be done to generate electricity is to put them into operation. The panels will work all year round without requiring maintenance and additional financial costs.

First of all, it should be noted that solar energy is a renewable source of electricity, which will last for several billion years. Solar panels are already being used to power a wide variety of equipment: from mobile gadgets to electric vehicles.

It so happened historically that solar panels are already the second attempt of mankind to curb the boundless energy of the Sun and make it work for its own benefit. Solar collectors (solar thermal power plants) were the first to appear, in which electricity is generated by water heated to the boiling point under concentrated sunlight. Solar panels produce electricity directly, which is much more efficient. With direct transformation, much less energy is lost than with multi-stage, like in collectors (concentration of sunlight, heating water and generating steam, rotating a steam turbine, and only at the end generating electricity by a generator).

Modern solar panels consist of a chain of photovoltaic cells - semiconductor devices that convert solar energy directly into electrical current. The process of converting solar energy into electrical current is called the photoelectric effect (Massachusetts Institute of Technology, 2015, p. 8).

This phenomenon was discovered by the French physicist Alexandre Edmond Becquerel in the middle of the 19th century. The first operating photocell half a century later was created by the Russian scientist Alexander Stoletov. And already in the twentieth century, the photoelectric effect was quantitatively described by Albert Einstein, who does not require any introduction (Wikipedia, 2022).

According to the principle of operation, a solar battery is a direct current photovoltaic generator that uses the effect of converting radiant energy into electrical energy.

Two decades ago, microcalculators with photocells seemed a curiosity, which made it possible not to change the “tablet battery” in them for years. Now mobile phones with a solar panel built into the back cover do not surprise anyone. But this is a trifle in comparison with cars and planes (albeit unmanned), which have learned to move with the help of solar energy alone.

The future of solar panels is seen as exactly as bright as the sun itself. I would like to believe that it is solar panels that will finally cure smartphones and tablets from “rosette addiction”.

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UNMANNED AERIAL VEHICLES IN MODERN WARFARE

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Unmanned aerial vehicle (UAV) – a type of aircraft, more generally known as a drone (Wikipedia contributors, 2022), that significantly differs from all other previously created airplanes. One and the single thing that makes it stand out is written in its name. That is right, the drone has no pilot, crew, or passengers on board. Moreover, there are types of UAVs that are completely autonomous without the need for human intervention.

One hundred years ago people would have wondered what is the use of such a device. But after wars, waged in the twentieth century, the need of something that can perform missions too dangerous or "dirty" for a regular human came up itself. Even though first UAVs were developed for military purposes, with technological growth their use expanded to a few different applications such as aerial photographing, science missions, drone races, drug smuggling etc. Furthermore, right now most people can acquire one for personal use.

Although there are a lot of things to say about drones, that is not the main topic. The thing that is discussed is how those aircrafts changed the way warfare is performed. To be concise, the types of UAVs called unmanned combat aerial vehicles (UCAVs) that are developed particularly for military purposes (Wikipedia contributors, 2022). Since their first introduction to the military complex, drones have managed to enormously improve the way defense operations are conducted due to minimizing the loss of life. What is more, the technology will continue to change how warfare is performed through following:

- Safety guarantee. There is no need for an operator to be on board of the aircraft to control it anymore. This ensures safety of valuable crew members during the operation and provides information for higher command about secure positions for troops to stay on.

- Reduced cost. Before introduction of UAVs performing a mission could lead to failing and therefore losing powerful aircraft with the crew on board. Although human cost is the main concern, let's not forget that the price of an aircraft is also a heavy weight on the shoulders of taxpayers. For example, American fighter jet F-16 can cost up to 35 million dollars (Lockheed Martin F-16 Fighting Falcon - Price, Specs, Photo Gallery, History, n.d.) plus expenses on training the crew. Whereas drones are controlled by only one person sheltered in a relatively safe place while costing tens of times less.

- Improved reconnaissance (Papachelas, 2021). Gaining information about enemy positions, moves and future plans has become way easier for both defending and attacking sides. Long range drones can fly more than 48 hours and with distances even longer than 650 kilometers, that makes it obviously impossible to beat by using a manned aircraft. Autopilot on some types of UCAVs allows to minimize interaction of

operators almost to a level, where a person needs to just watch that everything is going according to the plan.

In conclusion, I would like to express my concern, that due to the technology being relatively new and therefore constantly redeveloping, most likely not all information is yet open for public eye and drones' capabilities can be way wider than we think and know at the moment, but even judging by resources that are available right now it is completely possible that in ten years there will be full armies of drones in military possession of lots of countries.

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FUTURE OF ECONOMICS AND A CRITIQUE OF NFTS

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To some, Non-Fungible Tokens, commonly known as NFTs, are drawings of monkeys in funny costumes. To a more sophisticated audience, NFT are a way to make money, either by betting on potential price skyrocket of bought tokens or scamming others using well-known fraud schemes, like a rug pull (Guadamuz, 2021). What is universally agreed on is that NFTs are bad. But what are problems with NTFs specifically?

A token itself, to put it simply, is a 'box' in which a bit of data can be put into, whether it's a script that says "Hello world" on a web page, a picture of a cat, or a virus with a potential of destroying your operating system if you interact with it. The last one is useful to keep in mind. The uniqueness of the 'box' is verified by the program called smart contract. The most common case of usage of this technology is via connecting tokens to artworks, creating crypto-art. There's a substantial amount of claims about cryptocurrencies and financialization of the digital world being the future of economics - with big corporations and popular media creators praising those technologies. However, here are some examples of why those claims might be doubtful (Diehl, n.d.).

First of all, the fundamentals of cryptocurrency technology are flawed. For example, due to a feature built-in many cryptocurrencies, no more than a fixed amount of coins can be mined, which leads to deflation - phenomena, when the power of currency goes up, while it's quantity decreases, which, in the end, leads to abuse of the

system - ‘pump and dump’ scams (Folding Ideas, 2022). The same goes with every NFT, although the fixed amount is generally smaller.

Secondly, NFTs carbon footprint and cryptocurrency sphere as a whole is massive. A successful sell, production and receive process for an NFT creates 200-400 kg of carbon dioxide (Davis, 2021). In comparison, the banking sphere as *a whole* is producing 400 Mt of CO₂ annually, while *Bitcoin mining only* emits 70 Mt of CO₂ annually (McCook, 2021).

Thirdly, blockchain physically cannot perform well with a big user base. Bitcoin currently can do about 7 transactions a second, with Ethereum being a little far ahead, doing 20 transactions a second. In comparison, the VISA network can do up to 24000 transactions a second (“A Deep Dive Into Blockchain Scalability”, 2020). The scalability potential of cryptocurrency is ridiculously low.

In conclusion, cryptocurrencies and NFTs strive to become a solution to problems which are already solved by others. They would not stop a new centralized entity from emerging, and they would certainly not improve already existing economical mechanisms.

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MODERNIZE PUBLICATIONS WITH "INTERACTIVE" ILLUSTRATIONS

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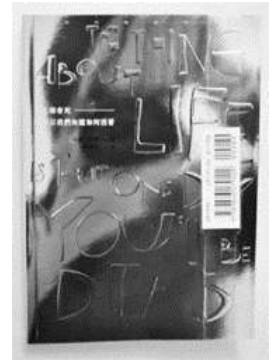
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Today, polygraphy has reached such a high level that we are not even surprised when we see products from an unusual material, "irregular" shapes, with rainbow colors. It’s almost impossible to surprise people with new things these days.

Almost every day we hear about innovation in one or another field. There are lots of incredible illustrations that we see through the screens of monitors, smartphones, newspapers, magazines, or books. We are well aware of this information, especially when it comes to the topic. We can't fully understand information if we can't sense it. Readers are always interested in what 'happens' on the back of the installation. How do we take the little detail we want to expand so we can understand it? An illustration that does not interact with the reader cannot convey the whole point. Even the most detailed text cannot replace the illustration. Moreover, the illustration is a great way to decorate the publication. The aesthetic product guarantees the success of the printing company. Look at the images below, they seem so simple and so special at the same time.



There are books in which there is nothing but illustration. But this does not prevent you from understanding the plot of the book. These are, for example, Rebecca Dudley's books "Hank Finds Egg" and "Hank Has a Dream" (Udud, 2015). The appearance of these books is really fascinating, the presence of illustrations makes them special. These two children's books once again demonstrate the importance of illustrations, especially for children's publications. It would also be useful to apply more interesting effects for post-printing. We have to keep experimenting with materials and constructions, looking for something new that hasn't been used before to convey new feelings to the reader.



We believe that with the help of modern technology and knowledge it is possible to create interactive illustrations that can be rotated 360°, the scale of which can be increased or decreased, to change tones and saturation, to make them sound and movement: and all this should be without an auxiliary device, that is, directly on paper or on an e-book screen.

The relevance of the "interactive" illustration is also explained by the fact that the popularity of e-books is growing as never before. Therefore, we should start upgrading the illustrations from electronic media. However, you should not stop there. If we can get these image characteristics, the percentage of new readers will increase significantly. "The first impression of a work of art is its otherness from reality". It's hard to argue with that because Susannah Langer is clearly saying the right thing.

An addition that will be able to transmit at least a little bit of the temperature of the depicted object will be unsurpassed. It sounds like a fantasy, but we're ready for it. With such new unlimited possibilities, illustrations could reproduce the most fantastic elements of the history of new book authors as much as possible. It will also affect the educational process: textbooks will be at least more interesting; pupils will be interested in reading literature. The same applies to students: the theoretical material

of professional literature will be easier to understand and will be presented in the most accessible form.



Moreover, technology capable of transmitting the scent of images has long existed. The essence of aromatic printing is the following: the product is applied transparent varnish with microcapsules of aromatic substance, which "smell" if the coat is slightly rubbed. Aromatic varnish can be applied to almost any printed product. Materials such as leaflets, representative products (business cards, booklets, etc.), magazine advertisements, and products for direct mailing can be distributed. Varnish does not only smell nice but also makes the products more aesthetic, increasing the durability of pages (Shulaev, 2019).

And creating an interactive illustration is a real art that requires both creativity and in-depth knowledge that affect various fields of science. We can say without a doubt that with modern technologies we can achieve anything.

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AIRPLANE 'MRIA' AN-225

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An-225 took off for the first time on December 21, 1988, from the factory airfield in Svyatoshino, the plane's crew was headed by O.V. Galunenko. The purpose of creating "Mria" was to transport the reusable Buran orbital ship and parts of the "Energy" launch vehicle. An-225 was also planned to be used as a flying spaceport in the reusable aviation and space transport system (MAKS). An-225 aircraft was built in two copies, but only one aircraft was fully completed. On March 22, 1989, "Mria" set 110 world records for speed, height, and carrying capacity, and the weight of the cargo was 156.3 tons (Antonov, 2020).

The AN-225 is equipped with a ramp that allows for quick and easy loading or unloading. The cargo securing system attaches cargoes of unique size to the upper part of the fuselage. The cockpit can accommodate six crew members and is equipped with automated navigation and flight control systems for quick analysis and maintenance. The length and width of the compartment are 43m and 6.4m respectively. Its height is 4.4 m. The area and volume are 280 m² and 1300 m³ respectively. The compartment

can carry 250 tons of cargo inside or 200 tons at a height of up to 70 m at the top of the fuselage. The aircraft can make a non-stop intracontinental flight, carrying 180 or 200 tons of payload. It can carry 50 passenger cars, turbines, generators, and dump trucks.

The AN-225 Mriya is equipped with six D-18T turbofan engines, each of which can produce a maximum thrust of 229.5 kN. The engine length and width are 5.4 m and 2.7 m respectively. The height is 2.9 m. The dry weight is 4100 kg. Service life is 24,000 hours. The aircraft is equipped with a 32-wheel landing gear system. The nose landing gear has four wheels in the front of the fuselage. The rear part of the fuselage consists of 16 airship wheels with 28 tires mounted on the main landing gear strut (Antonov Company, 2022).

AN-225 was used for large or very heavy loads. It is quite expensive, so its use is traditional when there is no alternative.

But this rule was changed by covid. A lot of medical cargo was constantly needed as soon as possible, so Mriya also helped fight the virus. The plane visited many countries and helped a large number of people (Zhukovska, 2022). On April 14, 2020, she flew from China to our Polish neighbors. The arrival was broadcast on the airport's Facebook page and watched by 80,000 people. After 9 days, AN-225 returned home, not empty, but with 103 tons of humanitarian cargo, which was also delivered from China (Onishchenko, 2022).

The world's first aerial art salon was raised precisely with the help of the "Mriya". "500 paintings, 120 artists in the air, at an altitude of 9 km is already an event, and Ukraine did it, Antonov did it," said the man (Ishchenko, 2012). The heaviest single cargo was delivered by this plane. The generator and a special frame for it with a total weight of 187.6 tons were flown from Germany (Frankfurt) to Armenia (Yerevan) (The Economic Truth, 2009).

On February 24, 2022, a full-scale war between Ukraine and Russia began, and the Gostomel airport was attacked. As a result, several aircraft were lost, one of which was "Mriya". At the moment, it is known that it will be rebuilt, so we are waiting for the return of our dream (Radiosvoboda, 2022).

In support of the reconstruction of this aircraft, on November 7, 2022, at the Leipzig/Halle Airport, Germany, the breakout MOMENTS company opened the exhibition "Ukraine: with a Dream in the Heart". The concept of shadow and light was chosen for the exhibition, which is shown through the history of the legendary aircraft AN-225 "Mriya".

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CYBERCRIMES

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Today, the Internet has made enormous progress and has become an indispensable part of human life with many new services, and programs, but at the same time, some people intend to commit crimes using the Net. These online crimes are called "cybercrimes" and they are more common and dangerous than real ones and have their tricks and consequences. So, everyone should be aware of each one and have skills to avoid being faced with them.

As the level of cyber security is low, cybercriminals have found new ways to fool people without being punished. There are even teams and corporations that are specialized in cybercrime and can easily hack any system without much trouble. Of course, the government cannot let it down and must do everything possible to prevent such activity through different punishments, but there are only a few methods and solutions, which do not always work. As for common users, the only reliable way to avoid getting involved in a nasty situation is to watch your back while you are on the Internet. Now, have a look at the most popular and dangerous cybercrimes you can easily face.

There are two main categories into which all cybercrimes can be divided: those that target harming computers, and those whose goals are to rob, fool or stalk other online users. Hacking, malware, and DDoS attacks are considered to be in the first category, while phishing, scams, identity theft, cyberbullying and stalking, piracy, plagiarism, and many others are in the second.

As we know, the situation when someone has stolen your personal information is not pleasant, which is called "phishing". In other words, phishing is described as a fraudulent activity that is done to steal data such as login credentials and passwords. Mostly, victims are tricked by criminals into giving their data by, for example, masquerading as bank employees or clicking on a fake link and entering personal information. This crime is very popular through the sending of emails that look like a common offer or request, which makes it hard to distinguish from a real message. The best ways to avoid such a situation are to not give your personal information without

confirming its safety, to not communicate with unknown persons, to not use unknown links or software, and, last but not least, to use a two-factor authenticator.

Computer systems have undergone development and have become more reliable over the past few decades. However, hacking has not stopped progressing and has become even more powerful, dangerous, and incredibly easy. Hackers try to identify weak spots in computer systems or databases to have unauthorized access to computers, and personal and protected data. For instance, many businesses and organizations have built their systems on computer systems, and hackers' attacks may lead to terrible consequences such as fraud, the theft or erasure of data, and the appearance of new breaches, which may cost millions of dollars. Nevertheless, organizations can take these steps to help prevent a breach: installing regular software updates, requiring multi-factor authentication, limiting access to data, minimizing password sharing, and hiring a managed service provider (Taylor, 2022).

Digital piracy has become the most common type of cybercrime, and it involves the illegal copying, distribution, or use of software, music, books, movies, etc. Nowadays, you have to pay for the quality of products you want to use because no one wants to do something for you and get nothing in return. Of course, there are many free sources from which you can get anything you want without paying, but it is considered stealing, and you may have to face punishment. Copyright violations should not be allowed anywhere: neither in scientific papers nor while watching a movie. Copyright is exactly what allows you to make a profit from your intellectual property. Therefore, the violation of these rights must be punished.

Spreading malicious and hacked software is part of piracy, but you became the source for others to download the software without the author's permission. Unfortunately, it is hard to control such illegal use, but there is a popular solution like buying a license key or subscription, without which you will not be able to use some features.

Another kind of theft on the Internet is plagiarism, the act of taking someone else's original work and presenting it as if it were their own. Plagiarism has become the habit of students to present essays, papers, research, theses, and dissertations that are copied from any of the various sources on the Internet. If you are trapped in plagiarism, then your work will not be accepted, and you may have some other punishments like failing the course, academic suspension, or even expulsion. Rephrasing and distorting the content are also considered forms of plagiarism. However, it does not mean that you cannot use any information you have found. You are allowed to have 10-20% of the information you want to use, but you are obliged to give credit to the author at the end of your work.

IP address spoofing refers to the creation of Internet Protocol (IP) packets with a false source IP address to impersonate another computer system. IP spoofing allows cybercriminals to carry out malicious actions, often without detection. As spoofing is so tricky to spot, and because the nature of the method is to hide an identity, there is little you can do to prevent it from happening. However, you can minimize the risk and negate the impact. There are a few ways to add roadblocks between a hacker and a potential target, such as using a more secure protocol (like IPv6), ensuring the user

base implements good individual security when using the site and network, and using network monitoring and packet filtering (Ravoof, 2022).

Cyberstalking is a crime in which someone harasses or stalks a victim using electronic or digital means, such as social media, email addresses, etc. Furthermore, cyberstalking is the act of persistent and unwanted contact with someone online. It may lead to threats, bullying, and harassment, so to avoid them, it is better to keep your social media accounts locked, hide your IP address, avoid disclosing sensitive information and don't chat with suspicious people.

Distributed Denial of Service (DDoS) attacks are malicious cyber-attacks that aim to shut down online databases and services, making them unavailable to access. It will cause the server to send multiple requests to the web resource to approach its capacity limit to handle all requests, which may disrupt functionality. However, the number of successful DDoS attacks has decreased in the past few decades because technologies and their capacities have become even more adapted and progressive. Unfortunately, if such an attack has been successful, then the victim web source will suffer consequences like lags or bags even years later, so it is necessary to have appropriate DDoS protection.

To conclude, cybercrimes are crimes caused on the Internet, like data or money theft, bullying, and piracy, which are the bad parts of the Internet. The most common crimes are scams, phishing, piracy, and plagiarism, which have bad consequences like losing data or money, paying fees for using something without permission, or even facing imprisonment. It is hard to avoid these crimes and ensure your cyber safety, but mostly it depends on what you are doing on the Internet. Therefore, the best way to feel safe online is to watch your back while surfing the net.

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DLSS 3 - A REVOLUTION IN NEURAL GRAPHICS

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Deep learning super sampling is a real-time machine learning technology developed by NVIDIA. Thanks to it, developers can improve the images in their projects by scaling from smaller to larger without losing quality (Wikipedia, 2022).

Such technologies are designed to reduce CPU involvement and allow the GPU to do most of the work in rendering graphics. The graphics processor works with a lower image resolution and thus withstands more load and uses less computer

resources. The result of the technology is a picture with a higher resolution than the original, but at the same time we have no loss in detail.

DLSS is a revolutionary technology for video cards. It works on the basis of artificial intelligence, and thanks to tensor cores and an optical accelerator, we have a super-powerful technology that is capable of creating a high-quality picture.

DLSS works according to a certain algorithm, the algorithm analyzes several consecutive frames and motion data is obtained from the image. Thus, from the processed information, the technology receives pixel movement data from previous frames to reproduce the next picture.

At the moment, NVIDIA is working on the third version of this technology and it will be available to consumers very soon. It will receive updates and new features, including DLSS Super Resolution, DLSS Frame Generation and NVIDIA Reflex. According to the developers, the new version of DLSS will increase performance up to 4 times compared to conventional rendering.

Updated DLSS Frame Generation has 4 types of input data, current and previous frames, optical flow field and game environment data (motion vectors and depth). Processing this data in this way, the program analyzes it and records the speed and direction of the pixels that move from one frame to another. This sub-function is able to recognize information at the pixel level and as a result has data about particles, reflections, shadows and lighting (Lin, Burnes, 2022).

DLSS Frame Generation then collects all the received information and decides how to use it to create intermediate frames that create a smooth effect. It can reconstruct not only images, but also geometry and effects.

In general, the new DLSS 3.0 reproduces almost 90 percent of the total number of pixels, thereby increasing performance many times.

DLSS also includes the NVIDIA Reflex function, which increases the responsiveness of games to user actions. It works on the basis of creating a direct connection between the GPU and the CPU. As a result, we have the lowest latency in games.

DLSS frame generation is done as a post-process on the GPU, so it doesn't matter if the game is CPU-limited. The NVIDIA supercomputer is constantly training and improving AI networks (NVIDIA Corporation, 2022).

This technology is already integrated in more than 35 games and programs. Over time, more and more programs will use DLSS, so people will not need to buy expensive processors to play demanding games, they will only need RTX series video cards.

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HOW THE ELECTRIC GUITAR PICKUP WORKS. THE LAW OF ELECTROMAGNETIC INDUCTION

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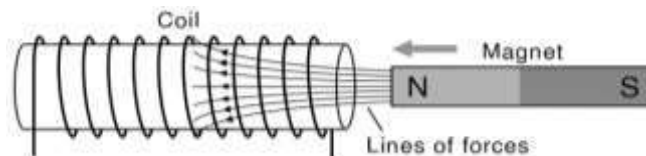
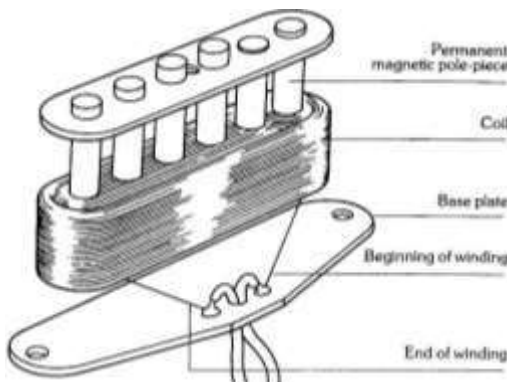
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One of the most popular musical instruments is the guitar. Acoustic and electric guitars are the two primary varieties. The sound that emanates from the sound hole is caused by the vibrating of the strings as they resonate in the air inside the hollow acoustic body. But the electric guitar's body is solid. How does it sound, then?

The mechanical vibrations of the strings are converted by an inductive sensor known as a pickup into an electrical signal that is transmitted to the amplifier and speaker system.

The pickup consists of a permanent bar magnet, the north pole of which is facing up, and a coil of wire is wound around it (Lawing, 2022).

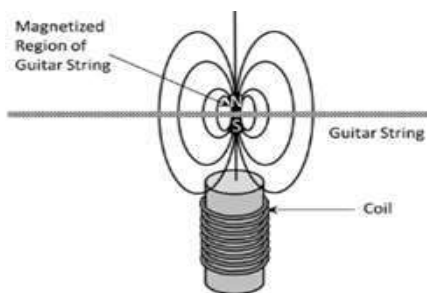
Faraday's law states that electromagnetic induction is the creation of an electromotive force in an electric conductor by way of a changing magnetic field (ElectronicsTutorial, 2022).



Ferromagnetic steel strings become magnetized by the magnetic field of a permanent magnet ("Guitar Pickup", 2020). The string becomes a source of magnetic flux when it vibrates. The pickup coil generates an electric current as a result of this changing magnetic field. The guitar strings and electric current vibrate in time.

The moving string (which acts as a magnet itself) produces a current in the coil just like the moving bar magnet does.

The guitar has a straightforward circuit that sends the pickup coil's electrical signal along to an amplifier and speaker system, where it may be heard as music.



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ARTIFICIAL NEURAL NETWORKS IN THE ART WORLD

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Artificial neural networks (ANNs), or neural networks (NNs) for short, is a computing system inspired by biological neural networks i.e. the brain. The idea for NNs has existed in minds of engineers and scientists since early 1940s, but has only seen significant advancements in the last two decades.

I'll give a simple example of an NN. Let's say that we want to create an AI that will be able to detect the amount of people in a given video. We'll first need to train an NN on a very large amount of videos of people in different conditions and we have to specify to the NN how many people are in each video ourselves. After the NN has trained on the data it has basically learned to determine how many people are in a video. If we feed the NN some video that it may have never seen before it will be able to count the amount of people in said video to an extremely high accuracy.

Now this NN just a simple example, but currently NNs are usually used in much more practically such as for: image recognition (determines what a photo contains), audio-to-text recognition (allows for highly accurate transcripts of audio from a video), image upscaling (increase the resolution of an image), self-driving cars, a very well-known example would be deepfakes (replace a person in an existing image or video with someone else's likeness) and many more. But for the last few months there has been an explosion in advancements of text to image generations.

The NNs for text to image generation have existed since mid-2010s but until recently the images that they would generate could be only really considered less than desirable in quality. But only a few months ago something happened that shook the entire art world. At the Colorado State Fair a digital art contest the winning piece was created primarily by an AI (the art piece was created using Mid Journey AI). Many were displeased by the fact that an AI has basically won a competition between humans for obvious reasons. But the fact that text to image NNs have advanced far enough to be mistaken by professional human artists as another person's artwork is astounding.

The main reason for this rapid advancement has been the release of Stable Diffusion by stability.ai, an open-source project for creation of AI art. The project being open-source allows for anyone to run the AI on their own machines and contribute code improvements to the project. Prior to Stable Diffusion, or SD for short, there were other text to image AIs such as OpenAI's DALL-E 2, Google Brain's Imagen and Midjourney there were others but these were the main three. The thing with them was that all of them are paid per image and due to the random nature of text to image

generation you had to get quite lucky or spend a lot of money to get a good image. SD being opensource finally broke the mold on text to image generation.

Another great quality of text to image AIs is that they are incredible in generating very realistic images of almost anything. Since it's so easy now to generate images ourselves these AI might soon make companies selling stock photos redundant as generating a stock photo easier and will be free. Some have brought up that the AIs might even replace human artists for the same reason. This sparked outrage in the artistic community as for the longest time it was assumed that artists would be one of the last jobs to be automated in some form or another, but current events have proven these assumptions wrong. Now I'd say that this isn't as true as people are making it out to be and AIs will become just another tool in an artist's toolbox. The thing is that these AIs are amazing at creating a random but quite pleasing art piece, but if you have a very specific artwork in mind that's where the AI brakes down. We "feed" these NNs text and they transform into an image and right now it's very difficult for them to create a very specific image. It might weirdly merge object's together or miss some of the details you have specified and so on.

A far bigger problem these AIs have caused for the artworld is the fact that they are way too good at replicating art styles. Meaning that someone could easily steal someone's art style. generate a bunch of images in said art style and try to sell them as original artist's artwork. For now the only thing protecting artists from this is the licenses these AIs are under, but it's probably a matter of time before someone takes this to the court and I feel like this first court will be a major deciding factor in the future of the artworld.

But for now everyone more or less has calmed down in the artistic community. And it remains to be seen how will artists and the world at large adapt to the AIs seeing as art is almost every facet of society. For as much we can try to predict what will happen reality is always quite different.

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**RESEARCH PERSPECTIVES AND PROBLEMS
FOR ARTIFICIAL INTELLIGENCE**

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Artificial intelligence (further in the text as AI) is intelligence modeled by machines, different from the natural intelligence exhibited by both animals and humans (Saleh, 2019, p. 2). In essence, the AI problem converges to finding the minimum of some function, most often multidimensional, which represents the level of imprecision to the task at hand AI research has been defined as the field of study of intelligent agents, which is defined as any system that takes in the environment and makes actions that maximize its probabilities of achieving its goals.

Nowadays, AI is used to solve a number of complex issues that would take several years to tens of millennia to solve directly, which categorically does not suit current trends and the increasing complexity of modern problems. We simply wouldn't have enough time to wait to address the issue directly.

There are a bunch of different examples of using AI for useful purposes, one example being calculating the best orbit for launching expensive equipment into space, which we wouldn't want to lose due to unforeseen circumstances. Essentially in this example we are calculating orbits many years in advance. By comparison, it's about the same as writing a robot that has to perform clearly defined tasks for 50 years without your help or calibration, constantly adapting to changes in the environment, if possible.

Also, an important example that it would be a big mistake not to discuss is the use of AI for medical purposes. For decades, this technology has been implemented in the software of medical devices to detect cancerous tumors, harmful diseases that are hard to notice in the small stages of their growth. Or to notice diseases by signs that seem to be unrelated in any way. So, to diagnose early signs of schizophrenia in a person, medics need only MRI scans of his or her brain. The scans are uploaded to a specially designed IBM system, where a neural network carefully examines blood flow within the brain. The research team trained artificial intelligence using MRI scans of 95 anonymous patients, some of whom were healthy and some of whom had schizophrenia. Based on this data, the neural network generated a prognostic model that can detect symptoms of schizophrenia in the study patient. During testing the system on a specially selected test group, the neural network was able to detect schizophrenia in patients in 74% of cases, which is an excellent result, because even professional doctors can only determine in a small proportion of patients at such stages of disease development whether they have it or not (Gheiratmand et al., 2017, p. 1).

Thus, we can say that AI is one of the most promising areas of life, not only for individual groups of people, but for humanity as a whole. A thousand pages would not be enough to describe all its usefulness and significance for the modern way of life. From the cameras in your smartphone, to medicine, national defense and space. And it

has no end in sight, AI is in its early stages of development now, it's going to get even more complicated and confusing next. But even now, to understand the logic of its work, it is not enough to know the basics of mathematical analysis and probability theory, you also need a good understanding of the logic of sequences, graphs, programming and so on, not to mention creating your own AI from scratch, which will make a technical revolution in the world and make you famous in this field.

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SOFT ROBOTS. A FUTURE THAT IS TOO LITTLE TALKED ABOUT

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In modern times, the existence of robots has long become something commonplace and self-evident. We somewhat accustomed to the fact that modern robots are made of steel, aluminum and plastic and are driven directly by electric motors, as in the latest model of the famous robotic-dog, or by means of pumps that change the pressure in flexible pipes. filled with liquid, as in earlier models of the same robotic-dog. For this kind of robots, let's take the well-known walking humanoid "Atlas" as an example - hydraulics is an indispensable part, since this approach provides the machine with great physical strength, speed and at the same time allows it to move its limbs. and very accurately position your body in space. Therefore, robots arranged according to a similar principle, or their most useful parts, are increasingly used in high-tech industries from the automotive industry to microelectronics. But as soon as such a machine is outside the correct, standardized environment, problems begin. Bots do not adapt well to non-standard, hard-to-predict realities. Each new environment of such robots requires long and tedious preparation, and even without guarantees, and then it is better for a person to stay away, because there is a high probability that the machine will be able to harm him due to instability.

So the idea appeared: "What if we make machines from materials that can adapt to a changing environment and external influences, like living organisms: stretch, bend, shrink, or even change their size and shape?" And they came up with! Their common

name is "Soft Robots". This name can often be deceiving, because they are not always soft at all.

Soft robots are a separate area in modern robotics and there is undeservedly little talk about it. These robots are always designed and work in a fundamentally different way, not like the metal and plastic robots we are used to, so they get abilities that are basically impossible for older brothers, so they can solve problems that are unsolvable for classical robots. After all, we often underestimate how difficult it is from the point of view of mechanics, physics and technology that it is so easy for us, living organisms. Move in the crowd, climb the stairs, at the end - move fragile objects and the like. It is still difficult even for the most advanced classical robots. Partly because they calculate their further actions within very narrow limits. The creators limit their creations in such a way for security reasons that the machine does not harm itself or, worse, those around it. But we all know that the real world is not so simple and straightforward.

The more elements and their connections the robot has, the higher the degree of freedom of movement, the more difficult it is to maintain their accuracy, so the machine needs to calculate more, which means more energy and batteries. If the mouse-sized robot isn't all that complex, it doesn't have a lot of room, but there's still room for battery-powered electronics. What if you want a bot the size of a grain of sand, or at least a grain of rice? Where will all the necessary components fit in this case? And the tasks of such microrobots are simply impossible for full-size machines. For example, through such unstable, soft, mobile tissues in the human body, it is necessary to achieve the chosen goal of the most varied scale, from a tumor in the brain to a focus of deadly pneumonia in the lungs.

It is in such cases that soft robots come to the rescue. Like a "corkscrew-bot". The screw part of the bot works like a propeller, so it can move with the flow of blood, even against it, and get into places where even the best surgeon cannot reach. Inspired by the tails of bacteria such as *E. coli*, this robot's design has proven remarkably effective and will soon begin clinical trials to save lives in the future.

An amazing feature of soft robots is that the body of the future machine itself can be designed in such a way that it acquires new capabilities not due to ingenious mechanics or electronics, but due to the very design or materials that make up this body. Thus, scientists and engineers have realized that robots do not need to keep score in order to successfully navigate and interact with the outside world, or even can do without a battery on board and remain wireless.

In one experiment, scientists infected laboratory mice with a bacterium that causes deadly pneumonia, and some of the rodents were not treated, and after three days they all died. And others were injected with a whole swarm of microbots into the lungs, and the mice from the second group recovered, every single one. It would be possible to attribute everything to the antibiotic, which, in fact, treated mice, but the fact is that they were given a dose three thousand times less than necessary to destroy the infection, but it worked. This is due to the fact that this meager dose of the drug was delivered by microbots without loss directly to the foci of infection. It is no coincidence that a fundamentally new approach to the creation of soft robots was mentioned above. These microbots are made of algae cells that serve as an engine, the

cells are covered with polymer particles, nano-sized balls, inside which antibiotic molecules are a homing projectile, and the surface of the balls consists of a neutrophil membrane, blood cells that destroy pathogens in our body, that is, on balls with medicine, it is like a natural homing system of bacteria. The machine itself is built in such a way that the desired algorithm becomes the only way it can behave, simply by virtue of its design and materials.

Judging by the frequency of publication of new works in the field of soft robotics, even in recent months, weeks, it is rapidly developing. Immediately, a whole team of several teams of scientists went further - they made the DNA of the robot. assembling for himself, like origami, a machine from DNA molecules. Such a machine can dock with the right cells in our body and apply a force to them a trillion times weaker than the force of pressing a finger on the button of an automatic pen.

And in this case, all the most complex engineering is carried out due to the natural mechanisms that we have studied well. Some force a part of the molecule with genetic information to assemble in the right way, into the right design, while others receive the necessary properties and behavior algorithm from the bot, without chips and coding. And now we have a robotic probe that puts pressure on the cells we need and reveals the secrets of one of the most important mechanisms hidden deep in our body - mechanosensitive. Indeed, in our cells, it is at the molecular level that there are receptors responsible for recognizing pressure, touch, i.e. mechanical impact. And now, with the help of DNA bots, we can penetrate these hitherto hidden processes at the molecular level and study them in amazing detail.

So far, such self-sufficient soft robots, which must surf the expanses of our inner world, are still a rarity. Most of all, at the moment, researchers are experimenting with the possibility of more rigid control of machines. Now there are two main approaches to creating robots to send inside the body: control of light (lasers) and the use of a magnetic field.

An example of the application of the second method is the “liquid bot”. It is to the external magnets that it owes its mobility. In fact, a “liquid bot” is a ferromagnetic liquid, in this case, oil with iron microparticles. The scientists outside use a smart array of magnets to manipulate the bot's particles. In the new work, the authors show how it is possible to divide the body of the future car into parts of different sizes, control them separately, and then connect them, thereby doing what no one else has managed to do before - changing the scale. management and control on the go. It is worth working on the ferrofluid, and now we have already got the "robo-mucus". It doesn't just change shape, it can grab objects and move them, which means it can already perform tasks in the human body without causing harm, including delivering drug to the right places.

This type of robot already knows how to evolve, they are implanted with human skin and heart cells to give them new abilities. They are given spider bodies instead of artificial ones, they are forced to work on sugar and algae, they are embedded with chips that mimic the structure of the human brain, they have already been taught to change their bodies and they learn in the real world without neural networks and big data. These are all different robots, of different types, but developments are just emerging, so their combination of different approaches and technologies and the

creation of hybrids is only a matter of time. Undoubtedly, the most intensive and productive period in the development of soft robot technology will begin when all these different and far from each other ideas begin to intertwine, merge, and synthesize something fundamentally new with each other. This will be followed by entering a new, completely “adult” stage in the development of soft robots. Welcome to the future!

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WEB APPLICATION DEVELOPMENT WITH JAVA

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Java is a programming language that is highly valued for developing modern web applications.

A web application is an application that runs on remote server and provides access to users from any part of the world.

Before running a web application, we need a Web Server and a Client. A Web Server is a computer system that can handle client requests and respond to them using HTTP (Hypertext Transfer Protocol). HTTP is a set of communication rules between a Web Server and a client. Browsers, such as Google Chrome, Opera, Safari, Mozilla Firefox, can *act as a client*.

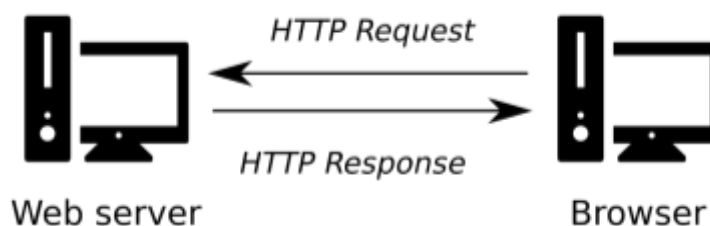


Figure 1. Client-server communication through HTTP (Dorman, 2022)

For creating web pages we can use HTML, which stands for Hyper Text Markup Language. It is perfect for static web pages. However, we cannot create dynamic content with it. Also, with static web pages we cannot interact with users and save their

data into a database. Additional usage of technologies, e.g. Jakarta Servlets and JSP, can solve this issue.

Jakarta Servlet (the new name for Java Servlet) is a program that is used to process the request retrieved from a web server and produce a *response*. It runs on a Java-enabled web server.

JSP, which stands for Jakarta Server Pages, is a server-side technology for creating dynamic pages. It includes HTML and Java code.

JDBC (Java Database Connectivity) is used to store information permanently. JDBC allows Java programs to interact with relational databases and understand SQL queries.

Thanks to these technologies, Java capabilities are expanded.

The minimum for creating web applications requires installing Java, IDE (Integrated Development Environment), e.g. IntelliJ Idea, Eclipse or NetBeans, a server and a database. A lot of developers use Apache Tomcat server. It is a web container that can hold Java applications. As a database, we have a wide range of choices. It can be PostgreSQL, which is most common, MongoDB, MySQL or OracleSQL.

There are technologies such as Spring Framework and Spring Boot that are based on Jakarta Servlets and JSP behind the scenes. They are at a higher level of abstraction. Thus, it is more effortless and convenient to develop up-to-date web applications with them.

Spring Framework is a lightweight application framework for developing enterprise Java applications. Developers can write effective and reusable code with it.

Spring Boot is based on Spring Framework. With Spring Boot we can create web applications and microservices quickly and simply. Microservices are a modern approach to software whereby application code is delivered in small, manageable pieces, independent of others (VMware, 2022). So, it is easier for beginners to get started with Spring Framework.

According to Google Trends, Spring is more widespread than Java Servlet and JSP at the present time.

Figure 2. Spring, Java Servlet, JSP popularity comparison



Moreover, Spring ecosystem provides frameworks and tools such as Spring Security, for adding authentication and authorization to a web application, and Spring Data, for interacting databases.

To sum up, Java is definitely a powerful language for creating web applications. The Java community grows every day, so we have such great tools as Jakarta Servlets, JSP and Spring that simplify developer efforts.

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FREE LOSSLESS AUDIO CODEC – SAME QUALITY, SMALLER SIZE

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FLAC which stands for Free Lossless Audio Codec is one of the most popular audio coding formats that is used to compress audio files without losses. Its main advantage is the ability to shrink the file’s size and to remain the quality of the sound at the same level as in the original record simultaneously.

Science 2001 FLAC has become an alternative for such lossless formats as ALAC, WMA Lossless and Microsoft’s WAV. Due to finding the solution for the drawbacks of other formats, FLAC’s popularity has increased. For instance, in contradistinction to ALAC, FLAC is commonly used for a wide range of music players and unlike WAV format supports tag data such as album name, artist, lyrics.

Such advantages of FLAC come out of its encoding capabilities and the format structure. In order to do this, it is essential to consider the process of transforming the original input and all the components that FLAC file consists of.

Firstly, Algorithms that have been created to compress data cannot work with any information and usually are designed for a specific domain. Although FLAC encoder can receive and code any type of information it shrinks in size to only a certain type of data. This type is audio input and the main reason why it is suitable is availability of a great amount of sample-to-sample correlation. Being known as encoder for audio domain FLAC encoder does not target any subdomain such as multi-channel music, high-bitrate or low bitrate speech.

In comparison to other audio encoders, FLAC encoder has similar stages. There are such stages as blocking, interchannel decorrelation, prediction and residual coding.

During the blocking stage, the audio record is divided into adjacent blocks. In general, one block can have one or more number of audio samples, but for FLAC format block size can vary between 16 and 65535 samples. A block consists of subblocks each of which are for one channel. After coding, these subblocks became subframes and all the subframes together become a single frame.

Interchannel decorrelation implies choosing the best way to code channels. There are 4 possible options: independent, mid-side, left-side and right-side.

Prediction is used to calculate a mathematical description of the signal, which has much smaller size than its signal has. FLAC has four different methods to transform the signal. There are verbatim, constant, fixed linear predictor and FIR linear predictions that are used to model the input. To decode the description the predictor parameters should be added to the compressed stream.

Residual coding is a method for encoding error signals formed during the prediction. These signals that also are called residual signals represent the difference between the signal and its mathematical description.

Moreover, the approach of encoding the audio information is tightly connected with the way the encoded data is stored. Actually, FLAC does not only give the ability to save transformed audio input but also specifies a metadata system, which allows arbitrary information about the stream to be included at the beginning of the stream (Xiph.Org Foundation, 2022).

The structure of FLAC bitstream starts with the “fLaC” marker and a mandatory block of metadata. After this FLAC can contain any number of optional metadata blocks and the encoded audio blocks, known as frames. The frames also have the structure and their main elements are a header and a part with information about the frame.

Finally, due to FLAC effective encoding results and convenient structure, it makes it possible to make a file smaller and remains its quality. Because of this FLAC has become an alternative for a wide variety of both lossy and lossless formats. Furthermore, the advantages of FLAC enable it to compete with them nowadays and also are the reason why it is considered as the best option for many people.

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GLOBAL CHIP SHORTAGE. REASONS, CONSEQUENCES, AND PERSPECTIVES FOR LOCAL DEVELOPMENT

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Global Chip Shortage is a problem not only for engineers and manufacturers but also for users. What is the connection between the number of integrated circuits and the well-being of common citizens all over the world? The answer is obvious: a lack of something on the market leads to the development of manufacturing, but when workers cannot satisfy customers` needs, the marketplace itself can become extremely

unstable and loss making. As a result, there are no further improvements in the quality of products, scientific progress (in case we are talking about creating something new), and, sadly for buyers, the affordability of goods.

Needless to say that this crisis is not, actually, a technical problem. The biggest issue in the development of factories is creating political instability in the world. Here is the list of the most important of them:

- Covid2019;
- American- Chinese trade war;
- The Russian invasion of Ukraine;

Instability in the world, caused by the Covid pandemic, started the series of events that brought to existence Global Chip Shortage. However, generally, it appears that the nature of Covid influence is very simple. Factories are closed because of the lockdown, workers go home, and they need more devices to work at home, which creates a need for more integrated circuits, but workers cannot work full speed, so we have a lack of chips and devices. That is the simplest explanation (Shein, 2021; Scott, 2022).

Understanding the problem of relationships between China and the USA is needed for us to get the point of the whole nature of the problem because this problem is the most important one for now. The USA has a big amount of both qualified engineers and projects. On the other hand, China has enormous industrial power, so this country can supply the world with the most needed, in our case, integrated circuits in a short period of time. Logically, it would be a great idea for these countries to work together. However, this idea sounds more like a fairy-tale, than a reality, simply because of the difference between Chinese and American policies (Panzeri, 2022).

Last but not the least, the recent escalation in the Russo-Ukrainian war made a lot of Ukrainian chemical factories stop. As a result, vital IC (integrated circuits) gases, such as Krypton and Neon, were not produced. Moreover, all logistical chains are disrupted by Russians' will to spread its influence, so the chip industry has to find companies, which can export all these raw materials to them. (Tong, 2022; Scott, n.d).

Every crisis can lead to some progress. The chip shortage is not an exclusion. For example, a lack of goods from Asia and the USA made the European Union build its production. Such as "the Chips Act" a plan for European IC industries development. For everyone in Europe that is a great opportunity to have their part of the market (Scott, 2022).

Is it going to last forever? Of course, the answer is no, it is not. How long is the world enterprise going to stay in "stress"? Some recent articles say that the influence of shortage is decreasing in the smartphone industry. That's not enough, but that's a good start to the end. To include, the biggest IC manufacturers promised to increase the number of factories all over the world. The world awaits the end of the crisis in 2023 (Shein, 2021).

To conclude, Global Chip Shortage is a worldwide lack of specified IC and chips that are created by the world's recent events: Covid2019, the trade war between the USA and China, and the Russian invasion of Ukraine. The crisis dramatically increased new device prices and decreased the growth of the industry, as well as scientific progress. As a European, I can see one advantage for us: having a big influence on

not-so-progressive countries, chip shortage made these countries develop their industries.

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THE USAGE OF QUANTUM TECHNOLOGIES IN SATELLITE COMMUNICATION

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There are a lot of different fields where quantum technologies can benefit us. And what is more interesting, there are some areas of the appliance of it, which can improve other quantum technologies. An example is satellite communication.

An obvious fact is that quantum computers process information very quickly. But the information in these computers is stored in qubits. And here Quantum Technologies in Satellite Communication can help us. It can transfer the information directly into qubits with no need to translate it to the regular bits. So by using quantum technology we can increase the speed of transmission of information that is received from quantum computers.

The satellite quantum technology also could help us to establish a secure connection that wouldn't be hacked. For example, a group of scientists from China and Austria created a satellite using which they established a connection between their countries that was protected by quantum encryption. So all the messages that were transmitted by this satellite were highly protected. Scientists believe they can create an encryption algorithm that couldn't be hacked at all, by using quantum technologies (Karen, K. 2020).

Needless to say that while the connection itself is highly secure, it still could be hacked because of the satellite. If the system of the satellite is not secure enough, it becomes possible to take control of the information.

But there are also downsides to the usage of this technology: it involves information lost because of interference. Also nowadays scientists couldn't reach the

same speed of transmission which could be reached by using a fiber connection. On the other hand, it could help to save a lot of resources because everything we need for this type of communication is satellites and ground stations. This means that we don't have to spend a lot of money and resources to create large cables with advanced isolation so that they could be placed under the water or on the ground.

The importance of this technology is proved by the fact that some countries already have plans on building their networks. For example, the United Kingdom plans to establish its network by 2023 (Will, F, 2021).

Overall, Satellite Communication could shortly become an essential part of our life by securing our information. Also, it can speed up communication by transmitting qubits directly between quantum computers.

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RESEARCH EVOLUTION OF JAVASCRIPT PROGRAMING LANGUAGE

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JavaScript (JS) is a dynamic, object-oriented prototype programming language. It is an implementation of ECMAScript standard. Most frequently it is used to build web page scripts that interact with users on the client side (user device), control the browser, exchange data asynchronously with the server, and alter the layout and appearance of the web page. JavaScript is a dynamic scripting language that facilitates the creation of prototype objects. To reduce the amount of new language structures needed to learn the language, the basic grammar of JavaScript is similar to both Java and C++. Many linguistic devices, including “try” and “switch” statements, “if” statements, “for” and “while” loops, “catch” blocks function in the aforementioned languages.

1993 saw the creation of the first web browser. The issue was that it could only be static after the page had loaded because it was unable to function dynamically. In 1995, Netscape made the decision to incorporate a scripting language into Navigator in response to the burgeoning web development community's desire to do away with this restriction. In order to do this, they pursued two different strategies: working with Sun Microsystems to integrate Java and hiring Brendan Eich to integrate Scheme.

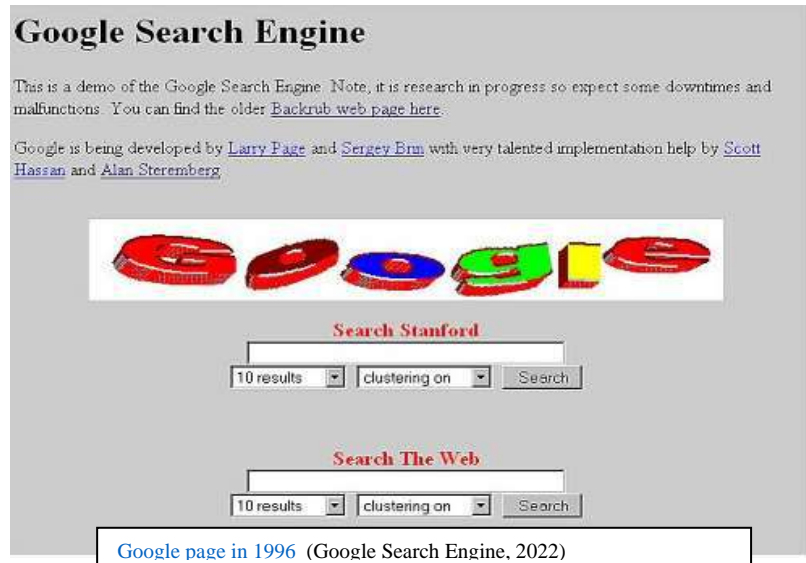
JS was invented by an American computer programmer and technology executive Brendan Eich in September 1995 and released in December 1995. (W3Schools.com (2018) JavaScript history). After that 28 industry-leading companies approved JavaScript as an open standard object scripting language and intended to provide it in their future products. (Mountain View, Calif., 1995)

Netscape submitted JavaScript to Ecma International in November 1996 in an effort to establish a baseline specification that all

web browser makers could follow. As a result, the first ECMAScript language specification was formally released in June 1997. After a while, the standards-setting process was completed with the publication of ECMAScript 2 in June 1998 and ECMAScript 3 in December 1999. ECMAScript 4 development started in 2000. Microsoft grew more and more dominant in the browser market during this time. Internet Explorer had a 95% market share by the early 2000s. JScript consequently became the accepted practice for client-side scripting on the Web.

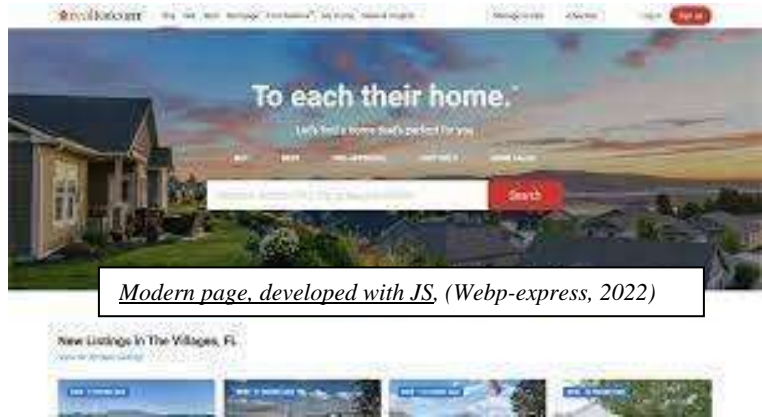
Client-side scripting was inactive during the early 2000s, when Internet Explorer predominated. In 2004, when Netscape's successor, Mozilla, released the Firefox browser, things started to change. Many people liked Firefox, which significantly reduced Internet Explorer's market share. As soon as Mozilla became a member of ECMA International, work on the ECMAScript for XML (E4X) standard began. As a result, Macromedia, which was later acquired by Adobe Systems, and Mozilla collaborated to implement E4X in ActionScript 3, which was based on an ECMAScript 4 draft. Standardizing ActionScript 3 as the replacement for ECMAScript 4 became the objective. Adobe Systems made the Tamarin implementation available as an open source project to obtain the desired result. However, Tamarin and ActionScript 3 diverged too much from conventional client-side scripting, and without Microsoft's support, ECMAScript 4 was never completed.

Important developments were also taking place in open-source communities that were unrelated to the ECMA work. Jesse James Garrett published a white paper in 2005 in which he introduced the term "Ajax" and discussed a group of technologies, with JavaScript serving as the foundation, for building web applications that allow data to be loaded in the background rather than having to reload the entire page. JavaScript



experienced a renaissance as a result, led by open-source libraries and the communities that grew up around them. Numerous new libraries were made, such as MooTools, Prototype, Dojo Toolkit, and jQuery. In 2008, Google released the V8 JavaScript engine that powered its Chrome browser, which was quicker than its rivals.

Currently, editions of the ECMAScript draft specification are being created through recurring annual snapshots and are publicly maintained on GitHub. Potential language changes are examined through a thorough proposal process. Developers now look up the status of upcoming features individually rather than by edition numbers. ("TraceMonkey: JavaScript Lightspeed, Brendan Eich's Blog", 2015) The current JavaScript



ecosystem includes a wide variety of libraries and frameworks, well-known programming conventions, and extensive JavaScript usage outside of web browsers (Brown, Paul 13 January 2017). Additionally, a number of transpilers have been developed to help with development of single-page applications and other JavaScript-heavy websites have become more popular.

Nowadays, "JavaScript" is an Oracle Corporation trademark. It was originally issued to Sun Microsystems on 6 May 1997, and was transferred to Oracle when they acquired Sun in 2010.

In conclusion, JavaScript was invented to add the possibility of developing dynamic web-pages, but nowadays its abilities go beyond that limit, so it can be used not only in the front-end, but also in the back-end development for database processing and server maintenance. It has become so popular because of its frequent updates, that makes the language more relevant and reduces the amount of mistakes or inaccuracies. In addition, JavaScript works with the document object model (DOM), for user interaction, that makes the development much more understandable and flexible.

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ENERGY SAVING AS AN IMPROVEMENT FACTOR OF THE ENVIRONMENTAL SITUATION

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Due to the aggravation of the environmental situation in the world, the failure to solve local environmental problems, the demand to preserve the natural environment in optimal condition or at least the demand to reduce interference with it is becoming more and more frequent. The largest share in Ukraine falls on the energy sector due to emissions of harmful substances, which is as much as 25%. Due to the negative impact of energy production, a dangerous ecological situation has already been created in many regions, one of the main signs of which is the pollution of the air basin by gas and aerosol emissions. All this leads to very serious consequences, such as: the ozone layer is destroyed, the greenhouse effect occurs, and the "ice" effect also occurs...

If we are closer to the essence, then energy saving is an economical use of energy resources, and not a complete rejection of them. Of course, the word "saving" has a lot of meanings, because you need to save rationally, profitably and conveniently for yourself, you also need to think about economic benefit.

In economically developed countries, energy saving is usually a very important and urgent task in connection with the need to solve global issues, namely the damage caused to the environment. These questions, obviously, in one way or another concern all people on Earth, affect the interests of all countries of the world.

The more we save energy, the less we pollute the atmosphere, water and soil, and also make savings, because energy supply is very expensive.

The main impact of energy saving on the improvement of the ecological situation is manifested in the mechanism of its influence: the lower the total energy consumption, the smaller the amount of emissions of pollutants into the surrounding

natural environment, the cleaner it is. Therefore, the lower the level of specific energy consumption for the production of a unit of products, the better the ecological situation is created; and vice versa (Toimentsova, 2014).

In conclusion, we would like to say that in order to improve the ecological situation and to reduce the consumption of energy resources, it is necessary for each branch of the economy to solve its set of energy-saving measures. Issues of a complex of energy-saving measures in the form of matrices for typical enterprises; environmental and economic assessment of energy saving measures may have the prospect of further development in this direction. Ecological and economic assessment of energy saving measures may have the prospect of further development in this direction.

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PHOTONICS IN MODERN TECHNOLOGY

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We all understand that electronics has now become such a huge part of our lives that we can't do without it. Electronics, moving along wires give light in our house including all household appliances, they give the opportunity to work with a computer also for all our gadgets and the Internet. Well, what if instead of electrons we use light particles, photons that move at the speed of light are not subject to external electromagnetic fields, it has a much greater transmission range and a greater signal bandwidth. Photonics – it is the physical science and implementation of light (photon) generation, detection, and manipulation through emission, transmission, modulation, signal processing, switching, amplification, and sensing. Though covering all light's technical equipment over the whole spectrum, most photonic applications are in the range of visible and near-infrared light. The term photonics developed as an outgrowth of the first practical semiconductor light emitters invented in the early 1960s and optical fibers developed in the 1970s. Photons are the most common particles in the Universe in terms of their number, unlike electrons, they have no mass and charge. That is why photonic systems are not subject to an external electromagnetic field and have a much greater transmission range and signal bandwidth. As the field of science photonics began in 1960 with the invention of the first important technical device using a photon – it is laser. The term “photonics” began to be widely used in the 1980s. When the inventions began to widely use fiber-optic data transmission lines, we can say that these developments made a whole revolution in the field of telecommunications at the end of the last century. And they just became the basis for the development of the Internet, in fact, we are now only at the beginning of a revolution in the photonics, and

then the device has already become ubiquitous, not in the modern world, but often goes unnoticed.

If Electronics is engaged in the generation of movement and control of electrons, then photonics is essentially an analogue of electronics, only using a quantum of an electromagnetic field instead of electrons. That is, photonics studies just the generation of control and detection of photons of the visible and near to it in the spectrum of the ultraviolet and infrared and even the super-infrared spectrum. Lower energy losses and a greater ability to change the implementation of components.

Light sources such as LEDs video laser diodes have found their application in countless devices Where it is necessary to create light by the way what is the difference between LEDs laser diodes. You can see these devices are relatively cheap very light and compact, they are also quite durable have a long service life and such solid-state light sources generate less heat and require less energy compared to traditional light sources. The same can be said about fiber optic communication lines combine in the light source and detector of light with other means of light control. Engineers change our digital world, fiber optics work faster and with more bandwidth. Which is just very important in the realities of our life, when information becomes more and more weight and ordinary traditional cables can no longer cope with it. But photonics is not only fiber optics and lasers. What if I say that later they can replace electronic boards and computer processors? Because the he improvement of semiconductor technology cannot last indefinitely. The electrons in the conductor are satisfied impractical at least a significant part of their energy is lost, is released in the form of heat and electromagnetic radiation with light, everything else is information in the form of a light beam can be transmitted at a gigantic speed and over no less gigantic distances. Losses in this case will be minimal and, moreover, the processing of such information can be carried out directly during its transmission and almost without energy consumption.

Less energy use complete indifference to electric juxtaposition and difficulty in intercepting data since nothing happens in the surrounding space, this is all the advantage of photons. But, for some reason, if everything is so good, why we still don't sit at photons computers? Making optical analogues of basic semiconductor elements is not a problem, but it's much more difficult to work all this, because we will have to abandon the classical Von-Neumann architecture to build an optical computer. And also, we will throw back system of "0" and "1". It will be much more efficient to work with two-dimensional images, all this will increase the parallelism of calculations by ordering of magnitude and will make it possible to process even the larger amounts of data in 10 or even 20 times.

Now "Intel" already produces Silicone-optical products, which is used to deploy a 5G network with more compact factors and increased speeds, as they say, from 100 Gigabits per second today to 400 GB and more tomorrow in mass sales, for example, there are already such optical transceivers with which help you can deploy stages of credit transmission lines, the next step will be the creation of the so-called integrated photonics, which will allow the introduction of optical components directly into the Chip, and for this, a complex for optical reception of data transmission must have several key elements - this is a light source, detector is a signal carrier, amplifier. All

this, of course, has long been implemented for fiber-optic networks and now you need to integrate optics in the silicon, that is, use optical communication lines already directly inside the server, but reducing to such a scale, raises a lot of problems with the compactness of power consumption and its own integration with other semiconductor components, so far, their goal is to achieve a throughput of 1TB per second in integrated photonics.

But the difficulty is that this is already a completely different structure of information, it will not be so easy to translate the data of the usual modern form into the format necessary for an optical computer. Therefore, for now, it is better that it shines with photons in the near future, this is a symbiosis of two eras. That is, the usual semiconductor electronics that will complement photonics. And that means significantly limiting all its advantages. You can expect tens and hundreds of rates per second per socket. Of course, at first these technologies will be used in servers and in large industry, but someday it will come to a photonic computer in every home. So, as you can see, photonics is not somewhere far away in the future, but already real which is gradually introduced into our lives.

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INFORMATICS AND INFORMATION TECHNOLOGIES

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People live in the world of information and information technologies, starting to receive it even before their birth. Life would be much more difficult if information technologies had not developed to the level it is now.

My definition of informatics is the discipline focused on the acquisition, storage, and use of information in a specific setting or domain. To me, what distinguishes informatics from information science and computer science is its rooting in a domain. I also assert that informatics is more about information than technology, with the latter being a tool, albeit an important one, to make best use of information...

The information age is bringing about a change in the world division of labor. Information technology and the changing nature of business and government offer new opportunities and threats to these and other cities as they strive to acquire or retain treasured economic activity...

Information technology reflects the modern idea of data transformation processes in the information society. It is a set of clear purposeful actions regarding data processing.

Informatics has pronounced applied aspects related to the functioning of very specific information technologies and systems, oriented to meeting the applied information needs of man and society. In this sense, informatics formulates very specific methods and rules for designing and creating information processing systems, technologies for using these systems to solve applied tasks of automating routine computational and logical procedures.

Information technology is quite important in various areas of our life. For example, in the area of medicine, in the area of law and law enforcement, in military affairs, etc.

Modern information technologies are becoming one of the most profitable and rapidly growing sectors of the economy. Information has become an important production and commercial resource.

Modern society is simply overflowing with streams of information that undoubtedly need processing. Because of this, without information technologies, as well as without energy, transport and chemical technologies, our society cannot and will not function normally.

It can be said that information technologies have deeply penetrated our lives and modern society, which can not exist without them in its current form.

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COMPARISON OF MICROSERVICE AND MONOLITHIC ARCHITECTURES

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Application architecture is a collection of a number of decisions and actions that allow you to organize the correct operation of the program. It includes all software modules and components, internal and external systems, and the interactions between them that make up an application. It can also be imagined as a format that consistently characterizes the association between the server and the client to connect better to the Internet (Blockhuys, 2019). There are numerous sorts of architectures with their strengths and weaknesses. But the most pressing question remains what is better: a monolith or microservices?

Traditionally, applications are programmed as individual units of code, with the components consuming the same resources and disk space. This style of architecture is called a monolithic system. As new features and changes are included to the same code base, it will expand over time. Therefore this approach is well-suited for small development teams and comes with corresponding benefits. A monolith usually has a server application, a user interface, and a single database. All functions are managed and maintained in one place, which is an advantage in some cases.

The benefits of a monolithic architecture include simple deployment because of a single executable file or directory. It's easier to develop an application when it is built using a single code base. Furthermore, a monolithic application is a centralized unit, so end-to-end testing can be done faster than with a distributed application. And last but not the least, all code is in one place, making it easier to run queries and find issues.

Monolithic applications work quite well as long as they don't get too big and cause scaling issues. To make a small change in one function, you need to compile and test the entire platform, which is contrary to the agile approach favored by modern developers (Kharenko, 2015). In a nutshell, a large monolithic application complicates and slows down development, a bug in one module or any changes in the infrastructure can affect the availability of the entire application and often resulting in an increase in cost and time and the capabilities of monolithic applications are limited by the technologies used.

The microservices approach turns each business opportunity into a separate service. The main difference between a microservice architecture and a monolithic architecture is that each application process functions as a separate, loosely coupled service with its own logic and database. Updating, deploying, testing and scaling takes place within a single module.

Microservices are not a magic wand, but they solve a number of problems that growing companies face when developing software (Gnatyk, 2018). Since the microservices architecture consists of independently operating modules, each service can be developed, updated, deployed and scaled separately from the rest. Updates can be made more frequently, improving software reliability, uptime, and performance.

Naturally, there are a number of drawbacks, such as microservices can make the development process more complex and lead to rapid and unmanageable growth. It can sometimes be difficult to determine how different components relate to each other, who owns a particular software component, or how to avoid interfering with dependent components.

Summing up, it is worth noting that there is no universal and single answer to which type of architecture is still better. The choice depends on many factors. Many projects start out as monoliths and then move towards microservices architecture as they grow. As new features are added to a monolithic project, sooner or later, difficulties arise when several developers work with a single code base. Conflicts in code become more frequent and the risk that when one feature is updated, bugs will appear in another, unrelated feature. If these undesirable situations arise, it may be time to move to microservices. For a lightweight application, a monolithic system is often better suited. For a complex, evolving application with defined domains, a microservices architecture would be the best choice.

The main conclusion is that the focus should not be on the architectural approach, but on the specific needs of the organization. This will help avoid unnecessary complexity in the development of applications.

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HISTORY OF LENOVO GROUP LIMITED

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Lenovo Group Limited, or simply Lenovo, is a Chinese technology company, which specialises in designing, manufacturing, and marketing consumer electronics, personal computers, software, business solutions, and related services (Wikipedia, 2022). It is one of the most successful and well-known companies in these fields. But do many people know the history of this world-famous company?

The history of Lenovo started on November 1, 1984, when the group of scientists from the Institute of Computing Technology of the Chinese Academy of Sciences headed by Liu Chuanzhi founded a company called New Technology Developer Incorporated. The project was sponsored by the Chinese Academy of Sciences, which allocated about 200,000 yuan for it. The first name of the company did not last long, after a few years it was changed to Legend Group.

The company's first major success came in 1990, when Legend Group began selling its first computers called Legend Q286. Thanks to these PCs the company became one of the leaders in sales of personal computers in China, and later in whole Asia. By 1998 Legend Group had sold more than a million computers and finally became the market leader.

During the following years Legend Group continued to successfully sell its computers, produced new models and improved its production. However, this was all happening in Asia, and the company's managers wanted to go to another level — to sell their products all over the world. The first step was to change the name of the company. The old name, Legend Group, was replaced by the new one — Lenovo, which remained to this day. But in order to successfully sell their products, the company needed good advertising. This problem was solved in 2004, when Lenovo signed an agreement with the International Olympic Committee and became the sponsor and supplier of equipment for the Olympics.

One of the most important events of the company on the international field was the agreement with IBM, signed in 2005. By its results, Lenovo managed to successfully enter the international market. Later the company even became the third largest computer manufacturer in the world. In 2006, Lenovo signed an agreement with Microsoft. In this way, they were able to install Windows operating systems on their computers (Svitlyk, 2021).

If you think that Lenovo was only successful in selling personal computers, then you are wrong. The smartphones of this company are also quite famous. The company had a division for the smartphone production, but sold it in 2008 for 100 million dollars in order to focus on personal computers. However, in 2009, they understood that it was a huge mistake and bought it back for 200 million. Lenovo smartphones were quite popular in China, the company even ranked third in terms of unit share in China's mobile handset market. An important event for the company in this field was the purchase of Motorola Mobility in 2014.

Despite the fact that a significant part of Lenovo is based on the manufacturing of personal computers and laptops, today the company offers a much larger selection of electronics, from smartphones to different consumer electronics and is one of the most successful companies on the modern market.

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WILL AI PUT DESIGNERS OUT OF WORK?

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The question of computational creativity has been raised for a very long time. Can a product created by a machine using an algorithm be creative? Is a computer a tool, like a pencil or a brush, or can it be a full-fledged partner to a person, or even an independent creative unit?

Computational creativity is a field of Artificial Intelligence (AI) where it is assumed that a program can reproduce artistic behaviour. People tend to evaluate art not only by the result, but also by the process, its complexity and duration, so many of them do not appreciate the result obtained in seconds. So can the result obtained by the program be creative? Any ideas do not arise from the void, they are based on our culture, on the experience of our predecessors. Artists have been using references for inspiration and realism for a long time – now these are not only objects of the real world and other people's paintings, but also stock photos, videos. If we consider a good idea to be one that is a rethinking and improvement of already known ones, then it is quite possible to obtain it using a computer.

Therefore, it is not surprising that with the development of technology it has become difficult to determine at a glance who was the creator – a man or a machine. AI has learned to use a variety of drawing techniques, creating drawings with vivid images and unusual ideas. More and more people in creative professions are thinking that they can be replaced by a program.

Moreover, many well-known companies have already used the neural network to generate images. British weekly newspaper The Economist used a bot called Midjourney to create the cover of an issue about the state of AI technology. International women's magazine Cosmopolitan used a similar DALL-E 2 generator to create its own cover this June. The DALL-E 2, Stable Diffusion and Midjourney neural networks are designed to generate images based on a user description and are available to users. Now they are very popular and anyone can try to create an abstract, hyper-realistic or other image to their liking.

However, the technology is still far from perfect. A neural network can help at the initial stage and suggest an unusual association, but in order to get something acceptable, you need to constantly adjust the direction of the idea and the results of the work. At first sight, you are astonished by the colours, the details. However, when you zoom in, problems with forms, proportions, especially with the anatomy of a human figure, become clear. It is still difficult to say unequivocally whether neural networks will replace visual artists. Most experts believe that now, as well as in the foreseeable future, although these fears are not entirely empty, technology will open up new horizons for creativity for designers or artists. There is also a possibility that new forms of art will soon appear, professions at the intersection of design and AI, which we cannot even imagine now.

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WEB CONSTRUCTORS

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What is a modern website? It's nearly impossible to say which is best or worst, but one thing is obvious: they all seem to be impossible to create. On the Internet, you can meet a great number of different types of designs and interactions with websites.

A lot of beginning developers give up on the idea of starting to learn the Frontend because they see how much time and practice are needed to catch up with those technologies.

What if you can create your web application with no code? It may sound like nonsense to some people. If you are one of them then there is a lot of exciting information for you here.

Let's begin with some basics. As we know to create a website we first need the HTML file. If we want our web to look better we add a CSS file, and finally to make it interactive we add a JavaScript file. To learn how to use those technologies a person needs to spend months and years before becoming a guru in those fields. On this point, It would be great to present the main topic of the thesis - web constructors.

They were designed for people who wanted fast no-code solutions for creating websites. With their help, you can focus on the design and functionality of your web. The most popular web builders are FlutterFlow and WebFlow.

Both of them have great interfaces that let you build apps in a browser incredibly fastly. You can simply use your mouse to create a modern website. All types of animations and database integration are available as well. Plenty of templates are available in each constructor so that you can tune and deploy your website even faster. One more important feature is that your application will be working great on all operational systems. Linux, Windows, Android, IOS for constructor it doesn't matter. Let's describe each builder a little bit more.

FlutterFlow is mostly designed for android and IOS. It has a lot of prebuild widgets which are orientated to working with mobile phones for example PageViewer, SwipeableStack, etc (FlutterFlow Docs, 2022).

WebFlow better suits e-commerce websites as it provides an integrated payment system. So you don't have to control transactions at all. You only have to put your company, payment and shipping details (Webflow University, 2022).

These constructors open doors for lots of people who want to create relevant modern websites without spending months learning to code.

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APPLE M1 AND MICROARCHITECTURE OF PROCESSORS

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Most laptops and home computers now run on a processor based on the x86 architecture. For a long time, Intel has been a monopoly in this market, but not so long ago, AMD began to create serious competition.

And this happened due to the fact that Intel had serious problems with the transition to new technical processes. If you ask what is it? Physically, all processes are always the same size, but at the same time, the smaller the physical size of the transistors inside the processor, the more of them fit on this plate and the more productive your processor will work.

For example, today the most modern technical processor in the world is considered to be 5nm. TSMC learned how to produce processors with such standards back in the summer of 2020. Korean Samsung also developed the production of microcircuits at its own factories to the same level.

But still, why is Apple's transition to its own M1 processors so remarkable? The thing is that these processors will work on the ARM architecture, which is fundamentally different from the x86 we are used to, and was previously used only in mobile devices.

Speaking directly, this means that in the near future, all new processors will be based on the ARM architecture, abandoning the old x86.

And what is most interesting, now Apple's main competitor may be Qualcomm, which has long been producing mobile processors Snapdragon on the ARM architecture, and in the future may begin to produce desktop solutions.

Also, it would be very interesting to see a discrete graphics card released by Apple and compare it with solutions from Nvidia, since tests show that even now the integrated graphics card in the M1 processor, which scored more than 19000 points in the benchmark, outperforms the discrete graphics card Nvidia 1050.

In conclusion, the transition to new technologies for manufacturing processors, the development of new algorithms for their work is a promising advancement in this industry. According to scientists, the speed of processors in 10 years can reach a 20-fold increase compared to modern processors.

I want to add that I am very glad that I live in such a time of rapid development of technologies and their introduction into our lives.

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**AN ELECTRIC CAR IS A TECHNICAL BREAKTHROUGH AND
ECOLOGY FRIENDLY TRANSPORT OF THE FUTURE**

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Every year, the electric vehicle market is developing faster and electric cars are gaining more and more popularity. Electric cars occupied approximately 10% of the global car market as early as 2020. Already today they have become favorites compared to their diesel and gasoline counterparts. All this is due to their environmental friendliness and cheapness in use.

The future of these cars is obvious. The variety of models will increase, driving will become even more comfortable for drivers, as well as safe for the environment. With the growth of sales and the improvement of models, they will get rid of all shortcomings and become flawless in terms of dynamic, speed properties, and other important characteristics.

The environmental friendliness of electric cars has an undeniable advantage over their fuel counterparts due to the practical absence of emissions of greenhouse gasses and other pollutants during driving. However, most of the electricity they use comes from non-renewable sources. We can talk about complete environmental friendliness if we consider, for example, charging at home from solar panels. But if we consider nuclear energy, it is a very dangerous source of energy for the environment where it is extracted. Therefore, electric cars will become more and more ecological transport as the share of energy from renewable sources in the world increases.

Manufacturing companies are constantly working on modern technologies that will help increase the functionality of this vehicle. The greatest attention is paid to the development of solutions and innovations in the field of batteries. The battery is located under the floor of the vehicle and serves as a tank for storing electricity. The power reserve depends on the direction from its weight and capacity. Charging speed also plays an important role, because in this criterion electric cars are far behind traditional fuel vehicles. The range of electric cars varies in the range of 150-600 km.

Due to their principle of operation, electric motors have a much longer service life and require less maintenance compared to internal combustion engines. And while driving, there is complete silence in the cabin and outside, because the electric motor works silently. The torque of such an engine makes the electric car extremely dynamic, it makes driving lively and pleasant. The only significant drawback is the need to change the battery, because its capacity decreases over time.

A huge advantage of electric cars is also the cheapness of driving. Since electricity costs significantly less than other types of fuel. 1 kilometer of electric driving costs about 5-10 times cheaper. Over the years of operation with regular driving, such a car will save more money than it costs. The governments of Great Britain, the United States, Japan and European countries, in turn, are fighting the environmental disaster by providing benefits and tax discounts for the purchase of

electric vehicles. For example, in the USA, the tax discount for the purchase of a "green" car can reach \$8,700. Cheap driving allows people to profitably use these cars, for example, for taxi or delivery.

The above advantages help electric cars to quickly conquer the modern car market, increasing the pace and volume of production every year. Silent and dynamic driving, ease of handling make "green" transport ideal for life in the city. Despite its relatively recent appearance on the market, it has confidently won the trust of buyers around the world. In the near future, thanks to new technologies and tests, they will reach such a level that traditional cars will no longer be able to compete with them in most of the characteristics.

If we look at the environmental disaster in the world, this type of car is capable of, if not solving, at least significantly improving the environmental situation. Thanks to this, "green" transport will sooner or later completely fill the world.

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CLOUD STORAGE

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Each of us uses devices with memory. Also, it is clear that on gadgets it is represented by the RAM and the actual memory of the device. However, what should be done if it is necessary to expand the actual memory? The way out is cloud storage.

What is it? Cloud storage is a model of computer data storage in which the digital data is stored in logical pools, said to be on "the cloud" (Jones, 2019). You can store photos, videos, documents, etc. there. This will save the actual memory of your device. The basis of cloud storage is cloud computing.

Cloud computing is believed to have been invented by Joseph Carl Robnett Licklider when he was working on ARPANET (Advanced Research Projects Agency Network) in the 1960s to connect people and data from anywhere at any time (Arif, 2018).

In 1983, CompuServe offered its customers a small amount of disk space that they could use to store any files they needed to download.

In 1994, AT&T launched PersonaLink Services, an online platform for personal and business communication and entrepreneurship. It was one of the first to be based

entirely on the Internet. Their advertising campaign at the time mentioned, "You can think of our electronic meeting place as a cloud." Amazon Web Services launched its AWS S3 cloud storage service in 2006 and has gained widespread recognition and adoption as a storage provider for popular services such as SmugMug, Dropbox, and Pinterest. In 2005, Box also announced an online file-sharing and personal cloud content management service for businesses (Arif, 2018).

Cloud computing has a specific architecture. These are the so-called layers, each of which performs separate important functions. For the full operation of the cloud storage, you need the following (Vengurlekar, 2013):

- Software as a service (SaaS) provides an opportunity to work with applications remotely from the cloud
- Infrastructure as a service (IaaS) works with machine resources as services.
- Platform as a service (PaaS) is similar to IaaS, but also works with operating systems and additional services for the chosen application.
- Virtualization creates a software simulation of the necessary hardware.
- Data Storage as a Service (dSaaS) offers storage for use with the necessary bandwidth requirements.

There are several types of cloud storage: private, public, hybrid, and community cloud. Each of them differs in accessibility to one or another storage, which helps to save data in the kind of access you need. Such distribution ensures privacy or publicity as needed.

As mentioned earlier, cloud storage has gained popularity relatively recently, but what exactly caused such rapid growth in demand for this service? What advantages does such virtual memory have over conventional data storage?

Whenever your computer runs out of physical memory, it writes what it needs to remember to the hard disk in a page file as virtual memory. If a computer running Windows needs more memory/RAM than installed in the system, it uses a small portion of the hard drive to do so.

On the other hand, we have cloud storage that allows

- gain speed when only a certain segment of the program is required for its execution;
- run more programs and applications at the same time;
- fit many large programs into smaller schedules;
- write large programs because the available virtual address space is more significant than physical memory;
- keep each page on disk until needed; after that, it will be deleted;
- maintain in the main memory, which increases the effective use of the central processor;
- common data or code to share memory;

Also, an interesting fact: a process can become even larger than all of the actual memory. Using virtual memory, code can be placed anywhere in physical memory without requiring relocation. There is no specific limit to the degree of multiprogramming.

But in contrast to the advantages, it should be noted that any technology has certain disadvantages. Let's talk about them too. The main problem with cloud storage

is time. Applications may run slower if the system uses virtual memory. It may take longer to switch between programs. Also, virtual memory does not offer the same performance as RAM. This, in turn, reduces the stability of the system.

In addition to the negative impact on overall productivity, we should note the following gaps in working with cloud storage:

it offers less hard disk space for your use;

will take up storage space that could otherwise be used for long-term data storage.

The most common cloud storages are DropBox, Google Drive, Mega, Box, Degoo, OneDrive, iCloud, pCloud, iDrive, and SpiderOak. Each of them has its advantages and disadvantages, like everything that exists in our world. Everyone who has a mail like gmail.com uses Google Drive, even if they did not suspect it. Cloud environments are generally paid, however, some have several GB of memory that you can use for free.

To sum up, cloud storage is an achievement of modern science that allows every user to increase the memory limit of their computer or phone. Cloud storage will help you open more apps simultaneously if you don't have enough RAM. Moreover, you can always expand your memory even if you can't build it. Cloud storage will protect your data reliably enough. Even if your computer or phone crashes, you won't lose your data, but it will be stored somewhere else where you can download it again.

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VIRTUAL REALITY

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The development and implementation of modern virtual reality systems have become a real breakthrough in the world of technology, although it would seem that it is almost impossible to surprise a modern person. Nevertheless, full immersion in the world of fictional reality is an amazing opportunity that is used not only for entertainment purposes but also for scientific ones: in medical developments, cultural programs, investment projects, and business. If we talk about games with full immersion, then these are much more colorful and enjoyable than regular games on a large monitor, because the artificial world gives a lot of impressions and sensations.

Although smart glasses have flooded the market, their purposes and how they work remain a mystery to many. So what is behind the name "VR"?

Virtual reality, referred to as VR, is understood as a world that is artificially created and designed to distract a person from the real world. Therefore, the more vivid sensations the person experiences in this reality, the more they forget about their everyday lives. Already the first immersive VR tools could affect almost all the senses but they were bulky and expensive. Over time, they have given way to more compact and affordable glasses and helmets which are still heavy, compared to augmented reality glasses, and are commonly used for computer games, thus they need to be equipped with powerful electronics.

Virtual glasses consist of two pairs of lenses to which an image is fed from a broadcasting device. Generally, a computer, smartphone, or game console acts as a translator, which prepares and transmits an image separately for each eye. When we look at these separated images with both eyes at the same time, we get the feeling of three-dimensional space. And if the glasses are made in the form of a mask that fits snugly to the face, then we see only the broadcast picture or video and become more immersed in digital reality.

However, one three-dimensional picture is not enough for realistic sensations, because in reality we move, take various objects and throw them. Therefore, the next step was to add a variety of sensors to the virtual glasses. The more of them are added, the more expensive the gadget costs and the better the immersion in virtual reality will be. Considering this, the accelerometer and gyroscope will track your movements in glasses. For example, if you lean to the right or left, the gyroscope immediately reads this information and transmits it to the computer, while the accelerometer transmits information about any of your movements around the room. Some manufacturers have already managed to influence the sense of smell and touch through glasses. And for this reason, for some games, there is even a minimum area of the room in which you can play without bumping into walls.

What are virtual reality glasses used for?

- Game area. Sophisticated game systems allow you to immerse yourself in the virtual world so deeply that the player experiences different emotions which can come in handy for game-developers.
- Education. In this area, virtual reality is unrivaled because it allows pilots to practice landing planes in difficult conditions and surgeons to perform procedures on virtual bodies.
- Virtual walks. Many places in the world, museums, and works of art can be viewed with the help of panoramic films.
- Visual representation. With the help of smart glasses, it is possible to create, for example, a virtual interior of the room and walk around it.
- Effective sales. Visual representation is used not only in art or design but also in marketing. Some stores have already introduced virtual glasses that help the customer remotely view the shelves with goods in their stores or apartments for rent and order from home.
- Watching conventional and 3D movies. Many owners of high-quality virtual glasses prefer to watch movies while wearing them since glasses can provide a much sharper picture, and the viewer feels more immersed in the story.

Taking everything into account, the VR industry is developing by leaps and bounds, every day there is a new range of tasks that they can handle and make the digital world much more multifunctional.

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PHENOMENA OF ONE LONE CODER AND HIS COMMUNITY

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On the internet, inspiring people change the lives of many with their work. Some of the mentors are not doing it for commercial reasons. They are doing it for pleasure. One of these people is One Lone Coder (OLC short) with his YouTube channel “Javid9x”.

David Barr is a professional programmer and a hardware engineer that has been in the industry for 16 years. He has programmed in the fields of robotics, neuromorphic engineering, computer games, image processing, and physics simulations.

OLC’s first activity on YouTube began in 2017 when he posted videos on creating different DIY projects. Some of these projects were indeed remarkable because he coded them on a console without using any third-party libraries. For instance, he made a 1-st person shooter with ASCII symbols (Code-It-Yourself! First Person Shooter (Quick and Simple C++), 8 march 2017) and a 3d graphic engine on a console (Code-It-Yourself! 3D Graphics Engine Part #1, 14 July 2018). Both of those videos gained more than a million views because implementing everything from scratch is engaging for an audience. There were also multiple videos on Ray Casting (Super Fast Ray Casting in Tiled Worlds using DDA, 28 February 2021) and game engines (Command Prompt Console Game Engine, 30 June 2017). He is doing it without any external libraries to teach and deliver algorithms and concepts to a viewer without anything interfering.

Everything changed when he created a console and a pixel game engine and posted it on GitHub for his viewers to use and build their projects. So many people used his game engines that OLC made a new video category – Community Showcase, where he showed his viewers’ projects on his YouTube channel. Those projects include ocean simulation, node-based circuit simulations, various video games, artworks and visualization, space simulation, and many more.

Annually he announces a coding one-week event – Code Jam. For each event, he chooses a theme and participants program a project. It can be an application, a demonstration, or a game.

Thus, “Javid9x” formed a wonderful community where people share their experiences, and projects and enjoy developing their games or software. He created a place for his viewers to improve their programming skills and communicate, and he has done it to popularize coding with no commercial benefit. The community is very active on both YouTube and Discord. Daily, enthusiastic coders show their progress, curious concepts, and experiments.

In conclusion, it is a fascinating community where you can obtain loads of experience by interacting with other members, showing your projects, spending time coding and improving your programming skills. It is a perfect place for everyone who has a passion for creating new ideas and implementing old ones.

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FM RADIO TRANSMITTER BASED ON MAX2606

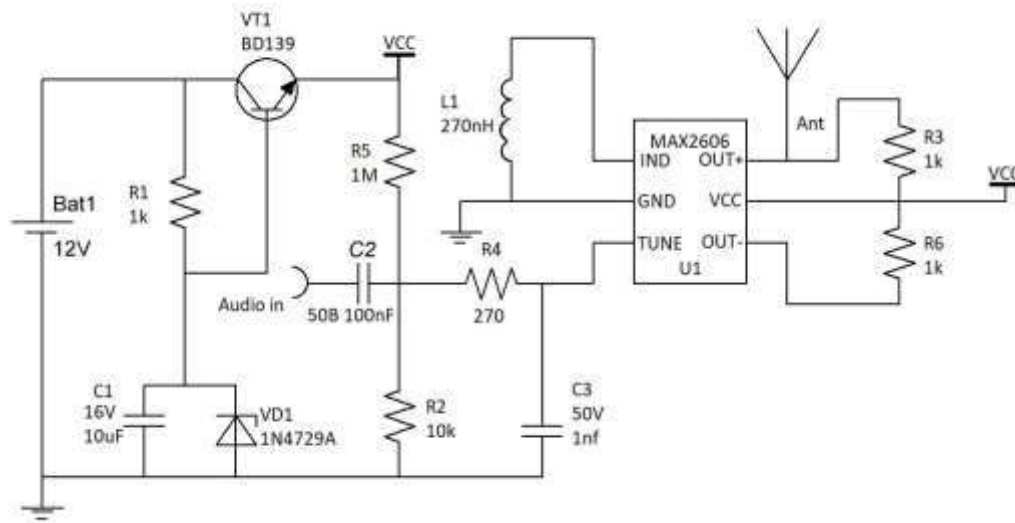
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Ultrashort-wave radio communication is and remains the best method of wireless transmission of information, which makes it possible to use this technology everywhere. Starting from home baby monitors, and ending with the study of space bodies. This research has the task of designing such a transmitter

that could be used to transmit information over short distances (up to 15-30 meters with a distortion of signal no more than 10%).



The circuit was based on the MAX2606 chip. Its main advantage is the low noise pollution of the useful signal: with a carrier frequency width of 100 kHz, the noise figure is -112dBc / Hz (Analog Devices, 2002). This microcircuit is relatively not of high power, which allows it to be used not only as a modulator but also as a transmitter. (Transmission of a radio signal at a frequency of 87.5 - 108 MHz is not subject to licensing with an output signal power of not more than 50nW according to "List of radio-electronic equipment and radiating devices, the operation of which requires a permit for the operation of a radio electronic equipment or radiating device") (Verkhovna Rada of Ukraine 2014).

The circuit's operation principle: the voltage is supplied from the Bat1 source to a stabilizer built on the elements of R1 C1 VD1 VT1. This stabilizer operates in a linear mode, but due to the meager power consumption, a heat sink for the transistor is not required. The stabilization voltage is determined by the following formula: the stabilized voltage equals the stabilization voltage of the Zener diode minus the voltage drop across the transistor. Next, the stabilized voltage is supplied to the U1 microcircuit and resistive divider R5 R2, which sets the offset for the U1 microcircuit. The signal comes from the audio in the connector, through the separating capacitor C2 and the resistor R4 enters the microcircuit. The inductance between the IND and GND pins was selected according to the datasheet (for a frequency of 70 to 150 MHz, the inductance should be from 150 to 820nH). Capacitor C3(bypass) was also selected according to the datasheet (> 680pF). Resistors R3 and R6 are required to provide DC bias for the correct operation of the output amplifier. The antenna can be matched, but the terms of use of such devices state that it must be omnidirectional, either integrated or constructive following the law.

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WILL WEB APPLICATIONS BE ABLE TO REPLACE NATIVE ONES?

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In today's world, it is impossible to imagine a person without a smartphone, social media, networks, messengers. Nowadays, everyone uses various online services: from listening to music to online conferences. If a few years ago we needed to download a text editor (for example, Word) to print a document, now it is enough to go to the Internet, go to the offline version and use a full-fledged editor that does not need to be downloaded. And there are many such applications, but will they be able to replace full-fledged native programs that need to be installed on your gadget?

The first thing you immediately notice when using such web applications is that they do not work as quickly and smoothly as full-fledged applications. First of all, this is due to the fact that they are launched in the browser, and not directly "in the operating system". In addition, this is due to the relatively slow JavaScript programming language in which these online programs are written (MDN Plus, 2022). And also that they need high-speed Internet, because they constantly exchange data with the server. And usually this is not just some information, but whole pages, while when downloading, for example, a mobile application, we only need to exchange information with the server, and not "parts" of this application.

But are there any disadvantages in addition to the smoothness and speed of work? As it was written above, these web applications are written in a not very fast programming language, so when using them, the load on your gadget will be more, but for a modern high-performance gadget, this is not a problem.

So what are the benefits? The main advantage is the ability to get the full version of the program in a few seconds in a browser on a phone, computer and even on a TV (if necessary) without having to download hundreds of megabytes of data.

In addition, cross-platform compatibility is a plus in favour of a web application. Because maybe this or that native app is only available on one platform, and the web app can be opened anywhere (after all, you can type in Word on TV).

Also, a plus will be that the use of such applications is usually free, that is, to use the same Word on a computer, you need to buy it (well, or download it from torrents), but by visiting the page of this web application, you can use all its features for free.

So, to summarise: if you do not need the smoothness of work and productivity, you have access to the Internet, then you can use web applications, personally I use the online version of Word, but if you need to do something that requires more power from the gadget than typing text, or, don't have constant internet access and need to do something offline, like writing code, I'll use the native app.

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INNOVATIVE ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN MEDICINE

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With the development of technology, artificial intelligence is gaining momentum in the healthcare industry. Hospitals in economically developed countries use it to improve the quality of service provision and the efficiency of using medical and human resources.

Artificial intelligence technologies are trained by processing a large volume of medical research. Thus, the diagnosis can be processed faster and more efficiently because it is based on the analysis of a large amount of data and medical records of patients. Current research indicates that AI can perform healthcare tasks better than leading specialists in the medical field. This view is supported by Andre Esteva et al. (2017) who claim that AI technology can diagnose skin cancer more accurately than a professional dermatologist.

Artificial intelligence includes a set of technologies that are suitable for different purposes. Machine learning is used to prescribe treatment protocols to a patient based on various patient characteristics and the context of the treatment (Lee et al., 2018). A neural network is designed to perform more sophisticated tasks, it can determine whether a patient will get a certain disease (Sordo, 2002). Deep learning is the most complicated technology applied to recognize potentially cancerous lesions.

Watson for Oncology is the world's first AI being used to help doctors develop treatments for cancer patients (Ross et al., 2017). However, the accuracy of diagnostic results varies depending on the characteristics of the patient and the type of cancer. In this regard, the developers state that inaccuracies may occur due to differences in patient ethnicity, country-specific disease patterns, medical systems, and culture. This means that AI-enabled technologies cannot completely replace the doctor's work. Surgery is another example of a real application of artificial intelligence. Surgeons

prefer robotic technology for its high precision and controllability. AI helps surgeons perform previously impossible and highly complex operations (Shi et al., 2019). Moreover, the latest developments allow doctors to view important information about the patient in real-time, even during surgery.

As AI-based technologies learn from large amounts of information, patient data privacy concerns may become common. This problem can occur due to cyberattacks or operational errors in healthcare facilities. Therefore, it is necessary to develop an effective system of data protection. Ensuring data privacy will promote people's trust in AI, and thus ensure the future development of innovative technologies.

In summary, artificial intelligence not only helps doctors in their work but also significantly speeds up the recovery of patients. Today, the main drawback of this technology is the problem of its widespread implementation in the medical field, which is caused by the need for data confidentiality and financing. By solving these issues, the world will improve public trust in AI and move to a new stage of technological development.

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INCREASING THE LEVEL OF ENERGY SAVING COMPETENCE OF THE POPULATION IN UKRAINE

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Electricity is a leading branch of the Ukrainian economy, which consists of various means and methods of electricity production, has a complex system of energy supply to various types of human activity and requires reasonable management by the state.

In the late XIX century, a part of Ukrainians felt what it was like to have electricity at home. And since then this industry has started its long way of ups and downs.

There is a sufficient amount of hydrocarbons in the bowels of Ukraine, but its own production of energy resources is limited. The reason for this was the conflict with Russia, which began in 2014, but, in fact, control over the energy sector of independent Ukraine was exercised almost from the day of its independence. Due to the use of Soviet structures of electricity production, which at that time did not have modern energy-saving technologies, and a clear lag behind European standards, it limits the competitiveness of production. Therefore, the issue of improving the state of Ukraine's energy sector arises.

Choosing the European path of development in 2014, the Ukrainian government began to implement energy saving programs and reforms. One of the first programs is the state program "Warm Home". It aims to help with the insulation of the home, which leads to a reduction in payment costs and the appropriate use of energy resources. The state compensates 35% of the total costs for each person.

International cooperation contributes to the fact that, following the example of other countries, Ukraine begins to use and produce more energy from alternative sources. Heat pumps, wind turbines, solar collectors and solar panels are only a part of the energy-saving technologies that can already be found in certain areas of Ukraine. In recent years, our state has been closely cooperating with the World Energy Saving Organizations, which help to implement and monitor the implementation of energy saving programs and reforms.

People have also started to save. More and more often you can see solar panels driving through the village, which use the free energy of the sun and convert it into electricity, making savings more practical.

Energy saving competence of the Ukrainian population, compared to Europeans, is at an average level. The issue of energy education should be raised in secondary education institutions. This is due to the fact that it is in this period of life that the formation of the foundations of the personality is built. Early awareness of the problem will give impetus to the younger generation to improve the energy situation not only in Ukraine but also in the world. After all, this problem affects many countries. The adult population of the country should pay more attention to the acute problem of energy saving and join the programs and reforms implemented by the government and international organizations (Boichuk & Ostrianko, 2017).

Summing up, despite the fact that certain innovations are being introduced in the field of energy saving, and despite the large number of international organizations that are ready to share their experience, Ukraine still faces the problem of implementing energy saving policies. It is important to form the energy saving competence of the population to ensure the prosperity of this sector of the economy.

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APPLICATION TEXT-TO-IMAGE AI TECHNOLOGY FOR MEDICINE

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Artificial intelligence (AI) is developing quite quickly. Many people already use it in everyday life thanks to Siri, Alexa. It is known that AI is being implemented in many spheres of life. Recently, there was a confidence that art made by humans is unique and machines (computers) can't draw a masterpiece. Seldom artists became world-known genius painters. But this year some computer people won prizes in a famous competition in modern art (Harwell, 2022; Leach, 2022) It was possible due to the development of creative technologies by AI scientists. In 2022, David Holtz launched a very promising MidJourney project that converts text description into images. It is based on open-source Stable Diffusion technology and incorporates millions of pairs of “text description – image” from available databases. To create a digital art image, you can describe the plot and send it to the neural network. As a result, you receive several images that match the description. After that, it is possible to improve the pictures, add some details and features, increase their quality and download. Such digital tools/instruments in the future will greatly simplify the work of designers, solving the problem of the lack of content in stocks, the long search for the necessary materials. But now this system has been created exclusively for artistic purposes.

Recently, a lot of new innovative projects and technologies are being used in medicine: telemedicine, robotization, prosthetics, etc. Also, AI technologies are very promising for medical science. It is proposed to expand the MidJourney project for medical purposes, for example, to determine diagnoses or pathologies. It will provide information about the appearance of possible insurance, and show it on the human body in a convenient way.

Now there are many resources for studying the anatomy of the human body: atlases, textbooks, films, pictures from the morgue, hospitals with detailed textual description. This information should be used as input data to train a neural network which is based on open-source Stable Diffusion and MidJourney (GitHub, 2022). Stable Diffusion claims no rights to the generated images and grants users the right to use any generated images from the model free of charge, provided that the content of the image is not illegal or harmful to individuals.

Let's consider heart pathology. It is known that there are many different diseases of the heart, and there are different options where the heart itself is located (left or right side). In this case, when the generation of a heart with pathology is required, several different options will be shown: heart defects, damage to the valvular apparatus of the heart, and so on. All of them have some differences in appearance. When a user of software is going to see how the heart with one of these pathologies looks from all sides. After that, an additional textual (or voice) request to the neutral network will generate a picture in accordance with the desired data. Also, the program will be able

to show intermediate options between a healthy heart and a heart with a defect, as well as under the influence of other diseases such as oncology, etc.

At the moment there are several problems that prevent the development of such useful and important software. One of them is the ethical and copyright issues. The software can be used for disinformation and/or create harmful images like images of nudity (people) without their consent. Another issue is that the technology can generate realistic but incorrect images, so the software should be improved.

It is quite possible that in the coming years text-to-image AI technology will be improved with the option "medicine" and the MidJourney project is a prospective starting point.

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PYTHON. MODULE RE IN PYTHON

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Text analysis is becoming more and more popular nowadays. Today nearly all important information like scientific research, people's documents, medical cards, etc. is stored in an electronic format. Every year the number of stored information increases more than twice, and that is only the beginning of the information era. To find needed data among exabytes of others and process it, we should use modern tools. This article aims to show one of these tools - python's module re. Despite its simplicity, this module processes text successfully. Let's start by getting familiar with its main functions. You can see a list of them on the right (Goodcn, 2021):

Signature	Description
<code>match(pattern, string)</code>	It searches for coincidences in a string. It starts from the right side. It takes all the coincidences. It returns a re.Match object
<code>search(pattern, string)</code>	It searches for the first coincidence. It starts from the right side. It only takes the first coincidence. It returns a re.Match object
<code>findall(pattern, string)</code>	It searches for coincidences in string. It starts from the right side. It takes all coincidence It returns a list of coincidences
<code>split(pattern, string, [maxsplit=0])</code>	It splits a string. It starts from the right side. It returns a list of strings after splitting
<code>sub(pattern, repl, string)</code>	It replaces parts of a string. It returns a string after replacement

Example 1. Here you can see a string that contains currency and its course. Imagine the situation when you have to parse this string and take only the currency name and its value. Also, take into account that every pair is separated with ‘;’. A good idea, in this case, is to split the string using the split() function and ‘;’ as a delimiter. Below you can see a possible solution (Komissarenko, 2020).

```

Python code
import re
exchange_rate = 'USD:36.52;EUR:36.00;' \
                'GBP:41.28;CAD:26.77;' \
                'PLN:7.54;CZK:1.47;BTC:699956.08'
result = re.split(r';', exchange_rate)
print(result)

Output
['USD:36.52', 'EUR:36.00', 'GBP:41.28', 'CAD:26.77',
'PLN:7.54', 'CZK:1.47', 'BTC:699956.08']
    
```

The next step is getting familiar with RegEx. Here you can see a list of the most popular special symbols for creating patterns. They allow you to rich more flexibility and make your code simple and easy to understand:

Special symbol	Meaning
\w	Any letter/word or ‘_’ sign
\d	Any digit
\s	Any space symbol
\b	Word bound
a b	Subpattern a or b
\t	Tab
\n	New line
+	1 or more pattern occurrences on the left
*	0 or more pattern occurrences on the left
?	0 or 1 pattern occurrences on the left

Example 2. Let’s make our task more difficult. Imagine you have to parse only values. Pay attention that it contains dote. In this case, it is better to use findall() function instead of split(). Below you can see a possible solution.

```
Python code
import re
exchange_rate = 'USD:36.52;EUR:36.00;' \
                'GBP:41.28;CAD:26.77;' \
                'PLN:7.54;CZK:1.47;BTC:699956.08'
result = re.findall(r'\d+\.\d+', exchange_rate)
print(result)

Output
['36.52', '36.00', '41.28', '26.77', '7.54', '1.47',
'699956.08']
```

Sometimes you need to check whether there is another pattern, before or after yours, but do not gather it. For this purpose, we have the so-called look-around expressions. Let's have a look at their syntax (Anonym, 2021):

- (?=...) - look ahead
- (?!...) - look ahead to negation
- (?<=...) - look back
- (?<!...) - look back on negation

In this article the use of one of the tools for analyzing and processing text - re was shown. Using simple functions and syntax constructions you can solve a lot of problems just with the help of a few lines of code.

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IMPLEMENTATION OF BLENDED LEARNING USING GOOGLE APPS

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The 2022-2023 academic year is training in a mixed format, during which the electronic method of providing educational services is combined with the educational and cognitive activities of the participants of the educational process in the premises of the educational institution. The organization of blended learning is affected by the development of information, communication and digital technologies, accordingly, it is necessary to have skills in working with modern tools, based on an understanding of their functions, purpose and other features.

The most popular technologies used by teachers to organize and implement blended learning are Google applications. First of all, you need to pay attention to Google Apps for Education, which is a free collection of cloud tools created by Google

for versatile use in the educational process. The most popular Google services used by both teachers and students are: Gmail, Google Drive, Google Calendar, Google Slides, Google Forms, Blogger, YouTube. The aforementioned Google applications are described as activity tools.

A real-time conference is called a video conference. This is one of the modern methods of communication, which allows classes to be held in "remote classes" when the participants of the educational process are at a distance. Video conference allows, firstly, the processes of discussion and decision-making, discussions, protection of projects to be carried out in real time; secondly, the participants of the educational process can see each other, accompany oral messages with visual materials (presentations, drawings, etc.). We consider video conferences as the main component of blended learning. Google Meet is a web resource for conducting video conferences integrated into the "cloud" platform of Google. In general, its functionality is similar to ZOOM and JitSiMeet web resources.

Another means of communication of the participants of the educational process in real time via the Internet is chat - communication between network users. There are several types of chats, including: text, voice, audio. As practice shows, the main form of online communication of blended learning is video chat, and the most common is text chat. It is fair to note that students prefer voice chat. Google Chat with the function of chat groups establishes effective interaction between the participants of the educational process in different places of their stay. The Chat service is available both in Gmail and in a separate application. Thanks to the integrated tools, its users can monitor all their communications, determine the way of communication.

Thus, blended learning motivates participants in the educational process to develop skills for working with modern digital technologies. The most popular tools used in the process of blended learning by both teachers and students are Google applications.

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THE PROBLEMS OF QUANTUM COMPUTING

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In 1981 famous physicist Richard Feynman gave a talk at the First Conference on the Physics of Computation at MIT. He proved his theory that quantum systems cannot be probabilistically simulated by a classical computer. Furthermore, he described the first model of a quantum computer (Feynman, 1981). Why does humanity need such kind of machines? What are the main problems of quantum computing and how it will influence the development of science and technology?

Before I can answer these questions, I would like to describe the way quantum machines work. Classical computers (Turing machines) operate by using the combinations of 0 and 1. Quantum ones are not limited to that. Information is encoded in so-called qubits, which can exist in three different states: 0, 1 and superposition. The latter state enables a quantum computer to be million times faster: instead of running all the possible combinations of 1 and 0 one by one to find the solution, like a supercomputer, a quantum one does the calculations at once.

Scientists use quantum gates in order to change the qubit state in a matter they choose, thus extracting necessary information. Obviously, like any operation with continuous parameters (qubits), this never can be done exactly, but only with some limited precision. To achieve the ultimate goal of building a universal quantum computer one must learn to implement reliable and very precise two-qubit quantum gates (Dyakonov, 2020).

Qubits are extremely fragile and prone to numerous errors. Being continuous objects, they will spontaneously change their state (i.e. the values of the quantum amplitudes) because of all sorts of interactions with the external environment. It makes the quantum computer rather delicate to maintain. For example, it has to be stored in a special environment with a temperature close to absolute zero (even colder than in space). Physicists Peter Shor (Shor, 1995) and Andrew Steane (Steane, 1996) proposed a method of quantum error correction — a set of methods to protect quantum information (quantum states) from unwanted environmental interactions (decoherence) and other forms of noise. It is widely recognized that quantum computing without efficient error correction is impossible. 25 years later, since the concept was adopted, there is still no working quantum device on which the error correction system would work perfectly, even on a very small scale.

Due to these issues, decades will pass until we see the first working model of a quantum computer that would overcome a present supercomputer with its abilities. Note, that we will not have a portable quantum computer. Instead, we might have some special-task (and outrageously expensive) quantum devices operating at millikelvin temperatures. For example, no quantum device exists today, capable of doing elementary arithmetic, like 3×5 or $3 + 5$.

But when we do have a quantum computer, its potential is truly impressive. It will be used at modeling multidimensional processes, such as the interaction of protein structures or the properties of complex substances etc., that could lead to breakthroughs in medicine, chemistry and other sciences. The abilities of a quantum computer will bring cybersecurity, Artificial Intelligence, financial services, and complex manufacturing to a whole new level of development. This machine will be able to make calculations in milliseconds that no classical computer will be able to do in 100 years.

In conclusion, the future of quantum computers is uncertain. It is hard or technically impossible to implement such a sophisticated quantum device into our lives. Nevertheless, scientists are working hard on solving the issues of quantum gates and quantum error correction systems to create the perfect quantum machine in the nearest decades.

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CONCERNS ABOUT BITCOIN ELECTRICITY CONSUMPTION

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There are many expectations that bitcoin can replace traditional finance and banks. The memory of transactions in the Bitcoin network is saved digitally in “blocks” that are connected as a chain and kept by a network of peers. The peers in the Bitcoin network constantly agree on the sequence of newly added chains and thus keep the data safe in a decentralized way (Köhler & Pizzol, 2019).

Proof-of-work (PoW) resistance scheme is used to protect the Bitcoin Network. It is also used in most early cryptocurrencies. PoW uses cryptographic puzzles of configurable difficulty with efficient verification such that it becomes computationally expensive for attackers to interfere with consensus (Platt et al., 2021).

However, by this design, the electricity consumption of the cryptocurrency correlates with its market capitalization and thus leading to extreme energy demand. The electricity consumption of the Bitcoin network outranges entire industrialized nations, for instance, Argentina (Platt et al., 2021). As of 2018, the energy consumption was 45.8 TWh and carbon emissions ranged from 22.0 to 22.9 MtCO₂. The emissions produced by the Bitcoin network lie between those of Jordan and Sri Lanka, comparable to Kansas City (Stoll, Klaaßen, & Gällersdörfer, 2019).

Against this effect, many alternatives have been proposed that do not demand vast computing power. Among them is proof-of-stake (PoS) in which participants with more holding of a cryptocurrency have a larger impact on transaction validation. Cryptocurrencies that use the PoS resistance scheme include Ethereum 2.0, Algorand, Cardano, Polkadot, and Tezos. It is proved that the energy consumption of PoS-based systems is at least two to three orders of magnitude lower than that of Bitcoin (Platt et al., 2021).

In conclusion, the Bitcoin blockchain validation process needs specialized hardware and much electricity. Energy consumption can be compared to those of industrialized countries. One of the alternatives is the usage of different resistance schemes such as proof-of-stake.

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COMPARISON OF X86 AND ARM ARCHITECTURES

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The two most popular processor architectures in the world are ARM and x86. Priority of x86 processors — maximum performance and ARM — high-energy efficiency. There is no architecture that combines these two advantages, so x86 is used in stationary computers and ARM — mostly in mobile devices and supercomputers.

x86 is a family of CISC architectures developed by Intel in 1978. This architecture assumes the presence of separate processor instructions for executing tasks. Also, this family of processors has software backward compatibility, and this compatibility itself, combined with a long history of use, has led to the fact that processors that implement x86 are very complex and large, but instead make them very advanced and allow you to perform complex calculations very quickly (Allied, 2020). Also, these processors better support mechanisms such as virtualization and have better protection mechanisms.

ARM is a family of reduced instruction set computer architectures (RISC) introduced in 1985 by ARM Ltd for computer processors configured for various environments. Based on the name, it can be understood that this architecture takes a different approach, ARM processors contain the minimum number of necessary instructions for the processor to work, because of this, the instructions in these processors are simpler and lighter (Triggs R., 2022). The ARM developers have made an efficient and inexpensive architecture free from the shortcomings of x86. So, in addition to being compact and energy efficient, they have the following advantages: they are cheaper to manufacture and deploy. The ARM architecture allows large vendors to create their own solutions on the ARM architecture for different niches, flexible customization options. All these advantages also make it possible to use these

processors for server tasks and highly loaded data storage systems, so now a fairly large part of supercomputers work on the ARM architecture (Mike W., 2020).

If we talk about the disadvantages, then ARM processors, due to the smaller number of instructions, process data more slowly and less efficiently. Also, since most desktop applications are written for the x86 architecture, the owners of ARM processors do not have access to all this software, or they have to use interpreters, which greatly degrade performance (Gabeci K., 2020).

So looking at the strengths and weaknesses of the architectures, we can say that these two architectures have their own areas of application and none of the architectures will go anywhere in the coming years.

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BIG DATA ANALYTICS IN HEALTHCARE

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Nowadays, doctors are facing new challenges providing treatment for a rapidly growing number of diseases that occur for various reasons, such as poor food quality, alcohol misuse, a sedentary lifestyle, etc. Healthcare organizations are making an extra effort to raise public awareness of these diseases. Moreover, obtaining and arranging a huge amount of data is one of the key problems. All things considered, big data analytics is expected to help overcome these challenges and improve the healthcare system.

It should be noted that doctors have some difficulties in predicting new symptoms due to a lack of experience and the low accuracy of medical tests. However, this problem can be solved by using the Random Forest technique. It can be applied where each part of a tree constitutes a point where a decision must be taken based on input from the previous node, and it moves to the next stage, which keeps repeating until it reaches the end of the tree, which depicts the predicted output (Raghupathi et al., 2014). When the leaf node is reached, unknown symptoms are identified based on the information gathered in the previous step. This technique is effective for searching for new symptoms of an illness, which are unknown. With the use of this method, the

treatment of the patient can be provided more affordably and efficiently. The accuracy of this technique can be improved by increasing the number of its use.

The number of patients is steadily rising now, which causes management issues in hospitals. Estimating the number of beds that will be occupied the following day is one of the major problems. In calculating the number of beds, some factors are taken into account:

- the average length of stay for patients;
- the bed occupancy rate.

The overestimation of the number of beds will lead to delays in the admission of emergency cases. The "SPRIMA" model can be used to determine the day of the week in order to estimate the daily number of discharged patients, and the ARIMA model is equipped with the regression surplus (Zhu et al., 2017).

It can be concluded that the use of big data analytics in healthcare organizations and the healthcare industry is constantly increasing. It has the potential to transform the whole healthcare industry. Despite the challenges highlighted above, the implementation of big data analytics will be rapid and widespread because it aims to improve the quality of healthcare services and draw society's attention to the danger of various diseases.

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THE IMPORTANCE OF ENERGY SAVING

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Energy saving – measures aimed at saving thermal and electrical energy, as well as using alternative energy sources.

The problem of energy saving at the turn of the millennium has become one of the most important universal problems. Rational and economical use of natural resources, reduction of harmful emissions into the atmosphere and efficient use of electric and thermal energy are becoming extremely important in modern society.

Ukraine meets its needs for natural energy resources at the expense of its own production by about 45%. In most countries of the world, the level of energy self-sufficiency is the same or lower. Rising gas and electricity prices are forcing Ukrainians to look closely at "green" housing. As a rule, we are talking about saving heat and electric energy in existing houses and apartments. But what about cases when the construction of a private house is just planned? After all, in our country before there

was no tradition to worry about energy saving. Now, families have to look differently at the seemingly banal question of what their own housing should be like.

We know that energy does not arise out of nothing and does not disappear anywhere, and the energy used cannot be returned. Therefore, you should try not to waste energy in vain. A large amount of energy is spent on meeting people's household needs (lighting, heating, water supply, operation of household appliances, etc.). If you think carefully, you can find a lot of ways to save energy, which depend solely on our behaviour.

A house is a battery of solar energy. The presence of a heat storage container (solar energy accumulator) plays an important role in a system that uses solar energy for heating. A building, which is a solar collector, needs a means of heat storage in order to prevent possible overheating of the premises in sunny weather and save a certain amount of heat for further use during the absence of the sun.

The most effective storage container is building walls, ceilings, roof, and partitions. As you know, all materials, absorbing heat, retain it as the heating of them. If the ambient temperature decreases, the accumulated heat is released into the environment, and the materials are cooled. This has a special meaning for buildings. The thermal energy of solar radiation constantly penetrates through the walls, roof and windows of the house during the day. Heated materials will lose their stored heat and transfer it to the indoor air as it cools down. Thus, buildings can maintain comfortable conditions for a long time, and possibly even days without spending additional heat from other sources.

Different materials have different thermal conductivity. Air is a poor conductor and can be used as an insulator between glass or in walls. Heat loss through the walls accounts for 10-30% of all heat consumption in the apartment, and 30-50% of all costs of the house. Often, "cold bridges" are formed in the walls of houses - poorly insulated places through which heat escapes. Glass with heat-proof coating or second window with single-layer glass reduces heat loss by 20-30%; double-glazed window – by 40%; window with double glass and heat-proof coating – by 40-50%; window with triple glass and heat-proof coating – by 65%.

Increasing the room temperature by 1° C increases the cost of thermal energy by 6%. Painting radiators with oil paints reduces heat transfer by 8-13%, and zinc whitewash increases it by 2.5%.

There are many ways to prevent heat loss in living quarters. In new buildings, you can significantly reduce your heating needs by using heat supply regulators. For windows and doors, you need to apply insulation, which makes it difficult for heat to penetrate through the cracks. In addition, it is necessary to avoid drafts. The ventilation system should be designed in such a way that the fresh air entering the ventilation system is heated by the air coming out of the house. It is desirable that heat losses do not exceed heat receipts from various processes in the house.

In some countries of the world, a large number of new apartments and houses have already been built without any heating system at all. A well-insulated house combines a pleasant indoor microclimate and low energy consumption. To heat the house during the winter, there is enough heat that is released by the inhabitants of the house, lighting devices and other equipment. There are no drafts in the house, and in

the ventilation system, warm air from the house heats up fresh air before it enters the house. A solar collector on the roof meets half the need for hot water. The cost of additional equipment is offset by a reduction in energy bills.

So, energy saving in everyday life has great prospects: replacing ordinary incandescent light bulbs with fluorescent ones, using Class A household appliances, improving plumbing equipment, installing water and heat metres, warming windows and doors, building energy-efficient houses.

This issue is particularly relevant during martial law, due to planned and emergency blackouts. For example, citizens of Kiev can stay for 8-12 hours without electricity, which prevents them from comfortable living, studying, which is now mainly remote, or working. And so it is in many other cities and villages. But we must not forget that we are sacrificing little compared to what our fighters give for us. Therefore, we must all unite and go this way shoulder to shoulder, and continue to help the army and go to victory.

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ENERGY SAVING

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A year ago, the topic of energy saving was mostly spoken during eco-debates, presentations and discussions. Meanwhile now, energy saving is a definition of the word 'surviving' for Ukraine. Due to the energy deficit, the vast majority of Ukrainians are now familiar with all the importance of energy as a heart of civilization.

To begin with, what is energy itself? According to Wikipedia, the most popular information source nowadays, "energy is the quantitative property that is transferred to a body or to a physical system, recognizable in the performance of work and in the form of heat and life". In the general sense while saying 'energy' we usually mean 'electricity'. To be short, electricity is the required element of modern life, as it has been told a while ago. We strongly depend on energy. It is our food supplies, safety, convenience, the ability to stay in touch with any person all around the world, the possibility of life-saving vehicles to be applied and so forth. So, it is reasonable to admit that such a valuable resource should be used wisely.

Then, another question is the origin of energy. There are multiple ways to create energy in the form of electricity. They are nuclear power plants, thermal power plants, hydroelectric power stations, windmills and solar panels. Talking about Ukraine, the most popular way of energy production is the usage of nuclear power plants. This method is eco-destructive as pounds of toxic substances are emitted in the air and soil. And that's where the need for energy saving appears. On the one hand, it is an ecology-based reason for energy saving.

On the other hand, energy saving allows us to preserve funds. Moreover, it reduces the deterioration of power stations. There are key reasons to employ energy saving in your everyday life.

Next rational move is the selection of the main issues of energy saving. First and foremost, people usually experience difficulties saving electricity on account of their psychological boundaries. This factor, indeed, is hard to overcome as it means that we should go against our habituation. The thing is we have grown up in an environment where we have always had access to electricity and other benefits of civilization. This played its role in the process of our comfort zone formation. So, it feels normal to switch on the lighting of the whole house, a television, a computer, an electric kettle and a washing machine at the same time. This is because some of us have never faced the electricity deficit, although it is quite real. It is obligatory to start changing our electricity habits now for the purpose of avoiding the electricity deficit in the future.

What can we do to improve the energy situation? Well, to start with, humanity should switch on the alternative sources of energy such as windmills and solar panels. Such an approach would be beneficial as it is eco-friendly and does not use any of the non-renewable resources. Then, we should purchase and establish LED-lamps all over our homes. Also, we should switch off all the lightning when it is unnecessary. Last but not least, pay attention to the energy efficiency class of the electrical appliances.

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NEURO LINGUISTIC PROGRAMMING

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Each of us has some degree of perfectionism. This striving for perfection is activated at a certain stage of life. NLP teaches us to be excellent in everything, to be able to get ahead of rivals, subtly analyzing the motives of their actions. NLP aims for a person to achieve perfection. Neuro-Linguistic Programming (NLP) is a model of communicative interaction between people based on modelling their experiences. By exploring the relationship between neurological processes, language, and experiential behaviour, science provides clear guidelines for action.

In a literal translation, the abbreviation NLP includes several concepts. Among them:

- Neuro - refers to brain processes, contains the principles of collecting information from the outside world using 5 main channels associated with the senses.
- Linguistics - the study of language features. This is the transformation of information received from the outside, passed through the filter of internal understanding of events and phenomena, expressed in the structure of the language.
- Programming is a way of controlling everyday actions, interpreting behavioral features, choosing ways to transform reality (O'Connor, 2019).

NLP is a set of tools for personal change and development. Science offers ways to understand the world, the people around us, effective methods of transforming the environment for faster and easier achievement of goals. This is the removal of non-working patterns of behavior, techniques for overcoming problems, difficulties, and ways to reduce stress (Dilts, 2021).

What to expect from NLP?

1. Anxiety and Stress - Coaching is effective in dealing with feelings of stress and anxiety as it identifies the mindset that is putting pressure on the psyche. Once these unconscious images are recognized, they can be challenged.
2. Health and Wellness - One of the most important ideas behind NLP is that the mind and body are intimately connected. When performing certain exercises, a person experiences positive mental and physical energy. By improving our understanding of the world, we thereby improve our health and well-being.
3. Fears and Phobias - NLP is well known as a way to help people deal with fears, phobias, and fears. As in the case of anxiety, the technique helps to uncover the thought process in the formation of irrational fear. Technology is changing the way of thinking in such a way that yesterday's horror ceases to be such, changing into things that are ridiculous to be afraid of.
4. Relationships are based on communication. Problems arise when people do not express their emotions, do not communicate their discomfort or happiness. NLP helps a person to better know how to communicate with a high degree of efficiency. Understanding the feelings of another person allows you to understand that people can have different views on life. No opinion is right or wrong. Through Neuro Linguistic Programming, trainers develop empathy skills in people that help them build strong, lasting relationships.
5. Confidence - It is not uncommon for people to take NLP courses to alleviate their own fears and limitations. The methods used help a person to break old stereotypes and habits in order to open up new opportunities. NLP increases a person's confidence by teaching them to make decisions based on their dreams rather than their limiting fears.
6. Business technology is an excellent tool in understanding people, ways of communicating and methods of interaction. Learning these basics helps a person improve his basic skills, empathy needs, which makes it effective to negotiate with colleagues, employees, partners, and company managers.

Nlp example. An anchor creation

We all have moments in life when we observe absolute self-satisfaction, at the pinnacle of bliss. It seems to us that we can do everything, everything is available to

us. And, indeed, everything turns out - as they say, "everything goes like clockwork." So why don't we remember this state and mentally return to it?

We recall our wonderful state (it is called "resource"), and imagine our whole range of feelings, very vividly (this is a must!). We rise still, even higher - and when emotions have reached almost the maximum, we put the so-called "anchor". For example, we click our eyes, or pinch our earlobe a little - any gesture. But only one that you can use in almost any situation. Happened?

We repeat several times. Your goal is a conditioned reflex. When it is formed, with the help of your anchor, you will acquire the whole gamut of positive feelings and emotions. Now, when you are very worried, or when you feel bad, sad, you can quickly improve your psychological state.

You can also use an object as an anchor. Only when you need transfers is it constantly with you and in no case is it lost or lost.

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PROSTHETICS OF THE HUMAN LOWER LIMB

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Designing new solutions to ensure a comfortable life for people with disabilities is extremely important in our difficult time. Global innovations have joined forces to produce comfortable, real-life products for those who need it. Today this question is open in Ukraine.

The complexity of creating a technical tool to solve the problems of people with disabilities lies in the fact that the prosthesis will not be able to replace a completely lost limb in the required amount. The creation of a prosthesis consist of many stages of preparation, analysis of human requirements and numerous studies. Everything is extremely difficult the first time, because it will actually be an element of the human body that must satisfy it in technical and cosmetic terms.

Restoring the functions of a leg is a major thing for a person who has lost it for some reason, and a difficult task for bioengineers. Based on the source, it is known that prosthetic of the lower limb enables people with leg amputations get around more easily. It replaces functions, but not all, and even the appearance of a real-life leg. In the 21st century, people with prostheses should have the full range of functions of the lost limb.

As far as is known, prostheses are made in two ways: by hand and with help computer-aided design (CAD). This is software that comes in handy for engineers in order to analyze the designed product in 2D and 3D graphics.

Thanks to innovation and research of the human body, there is already progress in the creation of lower limbs today. Newest plates and materials (for example carbon fiber) became much more convenient easier, as well as stronger in operation. This is relevant for people with transfemoral amputation. Thanks to high-tech materials, prostheses have a more realistic appearance, which is important for individuals with transhumeral and transradial amputations. Due to the fact that the prostheses will be exposed.

Protheses for everyday use are made of strong and reliable materials such as metal alloy, rubber, plastic, glass, ceramics. In addition, recycled materials are used to create the future replacement of the limb, which is very relevant in our time.

The use of electronics, which provides many of the functions of a real limb and even more, has become common in lower limb prostheses. Made it possible to create myoelectric prostheses, which convert muscle movements into electrical signals, which in turn control the movement of the limb. They have become more popular than cable-operated prostheses.

Modern innovations are capable of reproducing a lost limb in functional and cosmetic terms. But even now they are not able to replace a real limb with all its functionality.

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3D PRINTERS IN THE MODERN WORLD

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Our modern world has entered a new stage of life and various technologies occupy an important place. Not long ago, the idea that anything could be printed on a home printer was from the realm of fiction. Today, the dreams of science fiction are increasingly becoming a reality, and the 3D printer was invented.

The history of 3D printing began in 1981 in Japan. Inventor Hideo Kodama created such a device, which used a liquid photopolymer that hardened under the influence of ultraviolet light. This was the beginning for the creation of a full-fledged 3D printer.

Today, a 3D printer is a device that prints objects using a layer-by-layer build-up of a three-dimensional form from plastic, wax, and even metal.

There are several technologies used in the work of a 3D printer, which differ in the principles of forming a three-dimensional product. The main ones are:

- Laser stereolithography. In this technology, the model is made of a liquid photopolymer that hardens under the influence of a laser. To form the model, after each layer has dried, the figure is re-immersed in the polymer and dried again with a laser.
- Lamination. A strand of molten plastic, wax or metal is deposited layer by layer through the extrusion head. Before each layer, the platform is lowered strictly to its thickness. Lamination (LOM). The pattern is created by sequentially gluing thin films of layers of material that are cut with a special tool. Bonding is done under pressure or by heating.
- Electron beam melting. It is carried out using technology similar to the previous one. But the material is not melted with a laser, but with an electron beam. At the same time, a vacuum is maintained in the chamber.
- Selective laser sintering (DMLS or SLS). Figures are made of powdered metal or plastic. The powder is applied to a special platform and melted under the influence of a laser. After each new layer, the platform descends exactly to its thickness. The process takes place in a special chamber in the absence of oxygen, which has an internal temperature just below the melting point.

A 3D printer is a very useful device because it creates incredible things. For example, rapid prototyping is the initial goal of 3D printing development. This allows you to clearly assess the disadvantages at the beginning of the design stage. Also, this device is used for repair and restoration of defective parts. 3D scanning can be used to simplify design. You can create models of cars, planes, ships and other vehicles, forms for cooking, hangers for clothes, interior items, various decorations and many other interesting things.

Furthermore, an engineer named Jim Kor has already printed two models of a car called the Urbee on a 3D printer over the past three years. Of course, only the body of the car was created in such an unusual way - the suspension and the motor were made separately in the traditional way from metal. The Urbee 2 electric car can travel at a speed of up to 65 kilometers per hour and has a 10 horsepower motor.

It is interesting that the injured skull of a patient from the USA was restored by more than 75% thanks to this technology. 3D printing is developing rapidly and very soon it will be used in all spheres of human life. It makes any job in our modern world much easier. This is really a very cool development because everyone will be able to implement their incredible ideas without a large capital investment, which is very important.

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COMPARISON OF IPHONE 14 AND IPHONE 13

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This article is a small comparison between iPhone 14 and iPhone 13. This information will be useful for those who want or plan to buy a new gadget, but don't yet know which one to choose.

First, let's talk about the design of these phones. Externally, the iPhone 14 and iPhone 13 are very similar (almost identical dimensions and weight). Both gadgets are made of aluminum and glass, with a glossy back panel. The cameras are also placed diagonally. One of the main features of the flagships 14 Pro and 14 Pro Max is Dynamic Island - a rethought cutout on the front panel that can change shape and size, as well as show different information, depending on the current notifications and actions performed with the smartphone. The second feature is that Apple has completely abandoned the slots for physical SIM cards on all American iPhone 14 models, preferring the eSIM format. European versions still have SIM slots, but we hope that they will appear in the near future (Kuznetsov, 2022).

Apple iPhone 14 and iPhone 13 have identical 6.1-inch HDR OLED displays with 800 nits of brightness and 1200 nits of peak brightness when playing HDR content.

With the chip, the cornerstone on which all the functionality of the gadget rests, it turns out a similar story - where the Pro line received a new, breakthrough A16 Bionic chipset, and the iPhone 14 is content with an improved version of last year's A15. Apple also promises an 18% power increase for the new A15 in any comparison between the iPhone 14 and iPhone 13, but everyone is used to the fact that a new iPhone means a new chip.

The iPhone 14 models, like its predecessors, are equipped with a pair of 12-megapixel cameras - one main and the other ultra-wide. But the iPhone 14's main lens is now much larger, with more pixels (1.9 microns), and a faster $f/1.5$ aperture, as well as sensor-shift image stabilization. The front-facing TrueDepth camera on the iPhone 14 has also been updated. It now has an improved $f/1.9$ aperture (Jabko, 2022).

The recommendation is that it's better to buy the iPhone 13 at the moment, because, so far, there are no significant differences from the iPhone 14. If you are still willing to overpay for a "slightly improved stuffing" and design, or just want to upgrade an old gadget (iPhone 13) to a new one, then you can safely buy it.

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WHAT IS THE DIFFERENCE BETWEEN QA, QC AND SOFTWARE TESTING?

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Specialists of these three fields play essential role in software development. These professions are more suitable for those who like to "break" rather than develop.

Many people confuse these concepts, which, in fact, is not surprising, taking in account that in our country they can often be used to describe the same processes. But from the formal point of view these three concepts have different meanings.

Before we will go to the difference of these concepts, let's understand the meanings of validation and verification. Verification is the static review of product that don't need executing of the code. Verification should be done before validation. It always answers the next question: "Are we doing the product right". Validation is the dynamical review with executing the code. It always answers the question: "Are we doing the right product". For example, when our product is car, verification checks availability of the accurate engine, the diameter of wheels etc. Validation checks is the car can drive at all.

Quality assurance stands for QA. It is more verification process. QA is preventive process, one of the aims of it is prevention of the future mistakes. It is the project-oriented concept. QA specialists do reviews in all stages of the software lifecycle: in planning, designing, documentation, releasing etc. QA specialist is not only interested in how the program works but also in how code of the program corresponds the rules of clean code and design pattern (Testbytes Software Testing and QACompany, 2019).

Quality control stands for QC. It is narrower concept. QC is product-oriented concept. Unlike QA, QC specialist work with product but not with planning and documentation. Also, it is not preventive process. The goal of it is to find mistakes and bugs in the product and do the analysis of the current correspondence of developed project quality to initial requirements (TestMatick, 2020). Specialists of this field do validation work more. QC can be considered as the part of QA.

Let's look on the example that show the difference of these two terms well. Let's return to the car. QA specialist prevent the mistakes and ensures that all design stages meet quality standards even before the car is created. QC specialist work with car that is already exists but need some corrections.

Testers is the narrowest concept. Their function is to find mistakes and do the reports. Usually, junior specialists are testers even if in the title of the vacancy is QA or QC.

Moreover, QA, QC and testers can be manual and automation. Automation specialist write programs that automatically check whether the main program corresponds the expected result of the tests that were written before by manual ones. There a lot of vacancies of these professions. The average salary of Manual QA is

2050\$, and 3000\$ is for automation. The highest salaries are 4000-5000\$ that have specialist of level Senior and Lead. But for juniors that have low experience the salary is 400-600\$ (Ippolitova & Yanovskyi, 2022).

In the end, I want to remind that in our country these three concepts are usually have the same meaning.

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HISTORY OF VIRTUAL REALITY HEADSET

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One of the most interesting computer parts today are VR headsets. They heavily changed the way of playing games. They are allowing developers to quickly achieve one of the most important things in games – player’s immersion into the game world. But they weren’t occupying such a place all the time—the technology passed through the long story.

All it started way back in 1838 when Charles Wheatstone published his research about Stereopsis – how people have the prescription of depth by combining visual information from both eyes (In Wikipedia, 2022). Based on this research he created the first stereoscope. It has mirrors which reflect two slightly different images for each eye. It gave the user immersion in the pictured place.

It is not rare when science fiction novels predict the future. The short story *Pygmalion's Spectacles* was no exception. Written in 1935 by Stanley Weinbaum it tells about the mystery pair of goggles. They let the viewer move into another world. The viewer can contact other characters, taste, touch, or smell something while wearing the glasses.

The first VR headset named “Telesphere mask” was patented in 1960 by cinematographer Morton Heilig. He developed the first head-mounted display (HMD) with stereo sound and stereoscopic 3D (Virtual Reality Society, 2019). A year later the first HMD with a motion tracking system was created by two Philco Corporation engineers. It has a video screen for each eye and a magnetic motion head-tracker, which is linked to a remote camera. This camera moves the same way as the head moves

which allows the user to look around in dangerous situations from a remote place. But it still has no computer-generated images.

It changed in 1968 when Ivan Sutherland with Bob Sproull created the first VR HMD which was connected to the computer. It was a big and heavy thing that was mounted on the ceiling. But it can show the user simple virtual wire-shaped shapes that changed perspective when the user moved their head.

The beginning of gesture recognition was in 1982 when the creation of Sayer gloves happened. This glove was created by Daniel Sandin and Tomas Defanti. When Sayer gloves were connected to the computer, they provided finger movement detection by a system of light emitters and photocells. The first company which was selling VR HMD and gloves - VPL Research was founded three years later by Jaron Lanier and Thomas Zimmerman. At that time many flight simulators for VR goggles were created which the military was very interested in. Therefore, they provided a lot of funding for upgrading flying simulators and VR HMD technologies.

Four years later, in 1989 Scott Foster received a contract for NASA. He founded the company that for the first time integrated the real-time binaural 3D audio system for the VR training simulator for astronauts. Still, to that year there hadn't been a mass-production VR system yet. It was changed in 1991 when an arcade machine "Virtuality" was released by the virtuality group. It was a pod with a VR headset that provided the real-time immersive stereoscopic 3D image (Dom B., 2019). Many famous games had a VR version, and sometimes these Virtuality pods were connected which allowed them to play multiplayer.

Nintendo saw that hype about Virtuality pods and wanted to repeat it. So, in 1995 they released Nintendo Virtual Boy – the first portable console that could reproduce true 3D graphics. In the beginning, it was very famous, everybody wanted one for themselves. But then problems started to emerge. It has a lack of colors in graphics (only red and black), bad software support, to play it you should take an uncomfortable position, and many people complained about health problems. It was a commercial failure, and one year later Nintendo stopped production. But it showed the big companies that people wanted to buy such technology.

One of the most famous VR headsets today, the Oculus Rift was firstly prototyped in 2010 by Palmer Luckey. It was capable of head-rotation tracking and had been unseen before with a 90-degree field of vision (In Wikipedia, 2022). Palmer launched the Kickstarter campaign in 2012. But in 2014 Facebook bought the Oculus Rift company for 3 billion dollars. It showed a new niche in the market for big tech companies. Sony, Apple, Amazon, Microsoft, Valve, and HTC started to work on their VR project.

Most people had a smartphone in 2014 so Google came up with an idea of how to use them like VR goggles. The Google Cardboard was released. It was a do-it-yourself VR – helmet's shell with lenses made from cardboard. When it is constructed, you can put your phone in it and play 3d games or watch videos. Later Samsung released their VR helmet which also had a phone as a screen.

In 2016 HTC revealed its VR headset – HTC Vive. It implements a sensor-based tracking system, which allows users to move the character in games manually. Also,

new haptic controllers were presented. In 2018 headsets with a 140-degree field of vision started to be released.

In 2019 Facebook showed the first standalone VR headset that is more comfortable for an ordinary user. Many games were made for VR headsets. Valve released Valve Index which has off-ears headphones, new open-handed controllers that were tracking individual fingers, and front-facing cameras on the headset. Valve index still is one of the best and the most selling VR headsets to this day.

VR headsets have been through a lot in the last 60 years in order to give users unbelievable experiences today. But it is still developing and getting better. A lot of clever people devoted themselves to it and I think it was worth it. I think the future is about new VR technologies.

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PROGRAMMING LANGUAGE PYTHON

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The programming language Python is high-level, object-oriented, all-purpose, interactive, and interpreted. It is described as an object-oriented scripting language with broad emphasis on scripting roles and support for OOPs.

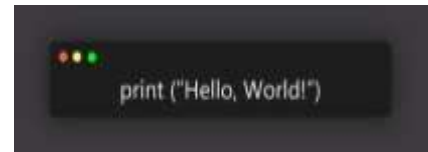


A programming language created for integrating and interacting with other programming languages is known as a scripting language. The programming languages JavaScript, VBScript, PHP, Perl, Python, Ruby, ASP, and Tcl are some of the most popular. Typically, scripting languages are used with other computer languages like HTML, Java, or C++.

Code readability is a key component of the general-purpose, high-level programming language Python's design philosophy. Although not entirely, Python supports a number of different programming paradigms, principally object-oriented, imperative, and, to a lesser extent, functional programming paradigms. Python's standard library is extensive and complete, and it strives to combine "amazing power with very plain syntax." Unlike other widely used programming languages, it uses indentation for block delimiters.

Python was created in the late 1980s, and Guido van Rossum began implementing it at the Netherlands-based CWI (Centrum Wiskunde & Informatica) in December 1989. The 16 October 2000 release of Python 2.0 included a number of noteworthy new features, including a thorough garbage collector and support for Unicode. After extensive testing, Python 3.0, a significant, backwards-incompatible update with Python 2.x, was made public on December 3, 2008. Many of its most important features have been backported to Python 2.7, which is backwards-compatible.

“Python” or “CPython” is written in C/C++- Version 2.7 came out in mid-2010- Version came out in early 2010“Jython” is written in Java for the JVM“IronPython” is written in C# for the .Net environment. It's Object-Oriented: Python was designed from the ground up to be an object-oriented language. Advanced concepts like polymorphism, operator overloading, and multiple inheritance are supported by its class paradigm. It's Free: Python is freeware, often known as open source software, which is something that has recently gained popularity. Because Python is written in portable ANSI C, it can be compiled and run on almost all of the current main platforms. It Has Power: Programming-in-the-large support, dynamic typing, automatic memory management, built-in object types. Built-in tools, Library utilities.



It's Mixable: Python programs can be "glued" to other linguistic components with ease. It's Simple to Use: Like other interpreted languages, Python runs programs instantly, allowing for interactive programming and quick adaptation to changes in programs.

Almost everything can be done using Python, from building websites and playing games to controlling spacecraft and robotics. GUIs for system programming, Database programming and Internet scripting, Prototyping quickly, Scientific and numerical programming, Games in Natural Language, Graphics, AI, XML, and More.

Python is presently used in Internet services like Google and Yahoo. Python is used by Intel, Cisco, HP, Seagate, Qualcomm, and IBM to test hardware. Python is used by Industrial Light & Magic to create animated films. The majority of the Python code used to power YouTube is used there. Python is used by the NSA for intelligence analysis and cryptography. Interfaces to the Google API and the Google PageRank algorithm.

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SOCIAL SCIENCES



THE IMPACT OF CLIMATE CHANGE ON SOCIETY AND ECONOMIES

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Climate change is deeply intertwined with global patterns of inequality. The poorest and most vulnerable people bear the brunt of climate change impacts yet contribute the least to the crisis. As the impacts of climate change mount, millions of vulnerable people face disproportionate challenges in terms of extreme events, health effects, food, water, and livelihood security, migration and forced displacement, loss of cultural identity, and other related risks.

Nowadays climate change is more than an environmental crisis. It is a social and economic crisis and compels people to address issues of inequality on many levels: between wealthy and poor countries; between rich and poor within countries; between men and women, and between generations. Certain social groups are particularly vulnerable to crises, for example, female-headed households, children, persons with disabilities, indigenous peoples and ethnic minorities, landless tenants, migrant workers, displaced persons, sexual and gender minorities, older people, and other socially marginalized groups. The root causes of their vulnerability lie in a combination of their geographical locations; their financial, socioeconomic, cultural, and gender status; and their access to resources, services, decision-making power, and justice (Anger, 2003).

The most vulnerable are often also disproportionately impacted by measures to address climate change. Climate change mitigation measures can place a higher financial burden on poor households due to the absence of well-designed and inclusive policies.

For example, policies that expand public transport or carbon pricing may lead to higher public transport fares which can disproportionately impact poorer households. Similarly, if not designed in collaboration with beneficiaries and affected communities, approaches such as limiting forestry activities to certain times of the year could adversely impact indigenous communities that depend on forests year-round for their livelihoods. In addition to addressing the distributional impacts of decarbonizing economies, there is also a need to understand and address the social inclusion, cultural and political economy aspects – including agreeing on the types of transitions needed (economic, social, etc.) and identifying opportunities to address social inequality in these processes.

To sum up, innovations in the architecture of climate finance can connect communities and marginalized groups to the policy, technical and financial assistance that are needed for locally relevant and effective development impacts.

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**THE HEALTHCARE SYSTEM OF UKRAINE
AT FULL-SCALE RUSSIAN INVASION TIME**

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The full-scale war unleashed by the Russian Federation has caused significant damage to the health care system of Ukraine. This is about the destruction of the medical infrastructure, the impossibility of complying with the norms of prevention and treatment, the lack of medical personnel in some regions, and the disruption of logistical connections, which prevents the timely and complete supply of the population with medical supplies.

Due to the fact that the demand for medical services has changed significantly in various regions due to the movement of a large part of citizens within the country and beyond its borders, disparities in the resource provision of the health care sector have worsened. Thus, according to the UN, as of August 24, 2022, there were 473 confirmed attacks on healthcare facilities, as a result of which at least 98 people died and 134 were injured. More than 927 medical institutions were damaged, more than 400 were located in the territories temporarily occupied by the Russians, and 123 health care facilities were destroyed. At the same time, at the end of 2021, there were about 3,000 medical institutions in Ukraine. As of the beginning of October 2022, 85 health care facilities were restored and another 209 were under reconstruction. The priority of the Ministry of Health is the restoration of services for the population, in particular for internally displaced persons, and jobs for medical workers. In order to strengthen the capacity of health care centers, the deployment of a network of mobile clinics continues, although there is still a significant need for them in Vinnytsia and Khmelnytskyi regions, which are among the leaders in terms of the number of IDPs. Currently, almost 30% of IDPs have problems accessing medical care.

According to the Ministry of Health, the issue of a critical shortage of doctors is not relevant for Ukraine, as there is a potential opportunity to attract foreign medical workers who are ready to work in Ukraine on a volunteer basis. This opportunity is provided in accordance with the Law of Ukraine dated 07/29/2022 No. 2494-IX "On Amendments to Certain Laws of Ukraine Regarding Increasing the Availability of Medical and Rehabilitation Assistance During Martial Law". At the same time, such a step should be considered as exclusively auxiliary, since the state policy should be directed not only to the resource provision of the industry, but primarily to the stabilization of the sectoral labor market in a way of providing comprehensive support to the employment of IDPs, in particular medical workers. In addition, it is assumed that foreign specialists will provide medical services only on a temporary basis, which in the near future will force a return to solve the personnel issue of the healthcare industry.

At the same time, difficulties with employment for medical workers with IDP status are reported. This forces them to either accept other, less qualified professions,

or leave Ukraine, which worsens the personnel potential of the industry. The situation is complicated by the lack of up-to-date information on the exact number of available medical workers, since such accounting is not carried out centrally and systematically in wartime conditions (ZN.UA, 2022). The importance of personnel resources is also noted by the WHO, which recommends already now to build a personnel policy in view of the return of medical personnel, as well as to develop a digital register of medical workers (World Health Organization, 2022).

Since the beginning of 2022, SE "Medical Procurement of Ukraine" has purchased medicines and equipment in the amount of 53% of the need. For security reasons, centralized medical procurement in 2022 will be conducted outside the Prozorro system, in accordance with Cabinet Resolution No. 169 dated 28.02.2022 "Some issues of defense and public procurement of goods, works and services under martial law". Due to periodic complications of cargo flow at checkpoints, the cargo of a number of pharmaceutical companies is delayed when crossing the border. In addition, the transportation of certain medicinal products, raw materials for their manufacture and medical products require compliance with temperature regimes. Solving this problem requires simplifying the border crossing for pharmaceutical goods, in particular giving them the right to priority border crossing.

The treatment of injuries caused to the mental health of Ukrainians is gaining relevance. According to the Minister of Health, after the end of the war, at least 15 million people will need psychological help (Lyashko, 2022). Despite the fact that the state emphasizes the importance of rehabilitation, particularly psychological, its availability is currently low. The Ministry of Health provides information on the success of certain rehabilitation programs of the Ministry of Defense and the Ministry of Veterans, while a national rehabilitation policy has not yet been developed. Currently, there is a gradual improvement of the functionality of the health care system in the conditions of the risks of war, due to the provision of medical services in full in some regions of Ukraine and the restoration of the medical infrastructure.

The next steps in the proper functioning of the CHP will be to identify current and projected needs for health services, with appropriate reallocation of resources. Thus, the problems of a low level of vaccination against a number of infectious diseases, in particular measles, poliomyelitis (Reuters, 2022), as well as an increase in the seasonal incidence of infectious diseases, including COVID-19, remain relevant. At the same time, there are growing needs for the organization of medical services for the treatment of injuries caused by hostilities.

An important aspect of recovery is the proper accounting of resources in order to form an objective picture of the state of the health care system. In particular, this concerns the establishment of digitalization of data and medical statistics. State policy requires a review of the functioning of medical registers and the formation of a model of their mutual integration. However, it is not clear how long it will take to develop such a model and its practical implementation, while currently registries remain limited in functionality (or do not function at all). In addition, there is a risk of losing part of the data if it is not compatible with the specified model, and this will affect the quality and speed of management decisions.

Finally, it should be noted that civil society cohesion and volunteer activity can become a powerful tool for resource provision of the healthcare system. At the same time, there is a lack of coordination of this resource due to the lack of reliable information about the needs of the healthcare system, which makes it difficult to direct aid to the regions where it is most needed. In particular, this is due to the fact that the Cabinet of Ministers of Ukraine allowed health care institutions not to keep records of humanitarian aid. It is necessary to revise the tariffs for the provision of services in the healthcare system. For example, according to the budget request, the tariff for the "rehabilitation" package from January 1, 2023 is set to be 2.5 times lower than the current one, while there is no reason to expect a decrease in its cost components. The search for alternative sources of attracting financial resources and models for encouraging private business in medicine after the end of the war, particularly in the de-occupied territories, remains relevant.

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DISTANCE LEARNING

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According to britannica.com, "distance learning traditionally has focused on non-traditional students, such as full-time workers, military personnel, and non-residents or individuals in remote regions who are unable to attend classroom lectures" (Britannica, 2022). In recent years, students and workers in educational institutions have been forced to switch to distance learning. Let's talk about the negative effects of distance learning.

During in-school education, students communicate with each other, discuss various topics and tasks, while distance learning leads to a lack of communication. Communication is especially important for schoolchildren, as at this age they learn to express their opinions and share their knowledge. Lack of communication leads to various psychological problems such as depression, isolation, and stress. All this

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negatively affects the student's academic performance, the focus on explaining the topic, the desire to work in the classroom.

Distance learning has a negative impact on the quality of learning, as not all teachers are able to work well with platforms and programs that support classroom work and this affects the productivity of pupils. Furthermore, there are not many e-learning platforms that have the opportunity to increase engagement and motivation. Special EdApps such as IXL, My English Lab and others, which use achievements, awards and ratings to combat the lack of motivation associated with distance learning, are aimed at foreign listeners, but not at Ukrainians.

There are many learning styles, including verbal, visual, social and many others (Darcy, 2022). It is much easier to adapt to the different learning styles of your students when you are in the physical class. Distance learning can be very lonely if you are not with other students.

Poor quality of teaching does not have good consequences, but rather poor perception of information for students in the classroom. In this way, students do not understand the topic and have problems completing tasks. As well, feedback is not always instantaneous in remote learning.

However, there is a technical side of the issue of distance learning. Some people are not comfortable with technology, so they use hardware and software in an inefficient way. Some learning software forces users to have specific computing skills, which they do not have. The lack of technological know-how affects the way distance education is provided and received. There are even more difficulties in Ukraine. These days, even if a teacher or a student has a proper gadget, there is no possibility of working or studying. Recently everyone has touched the problem of power outage, so everyone has lost the opportunity to provide themselves with the Internet. The Internet allows you to connect to the lesson, do homework, work on projects or develop your skills.

Distance learning also has a negative impact on the adaptation of students to the new learning environment, which leads to low motivation to learn, to work, or to give feedback to a teacher. It's difficult to participate in lessons when an instructor is not available to physically facilitate the requested training and monitor the progress of real-time learning. Thus, the teacher cannot know whether the student has understood the subject or not. For some children, it may also be hard to understand how to learn at home. Personal spaces such as bedrooms, living rooms, kitchens or dining rooms are for rest and relaxation. It is this initial disorientation in learning environments that can affect the thinking of the young learner.

To conclude, distance learning for schoolchildren is a big problem in the modern world, which will affect the further development of their education.

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ALTERNATIVE ENERGY SOURCES

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Energy crises are an integral part of the large-scale problems of the modern world economy. Wind, solar and geothermal energy, biomass energy and other non-traditional power plants have recently attracted some interest in many countries. Today such technologies are considered as promising. They provide an opportunity to reduce dependence on mineral energy resources. This energy sources act as an alternative to the use of traditional fuels: oil, natural gas, coal.

Energy is a basic need. Energy makes everything work in the world. You can't argue with that. There is no doubt. Without energy, everything will stop. During recent decades, many countries, as well as groups of countries with developing economies, have been trying to move at the national level to the use of renewable energy. For these purposes, various political and economic programs are being developed. The reasons led to this trend are quite common. Today we care about ecology, inexhaustibility of resources, infrastructural proximity of these resources to the consumer. We definitely need renewable energy sources that are inexhaustible, available worldwide, and have the ability to bring off-grid energy solutions to hard-to-reach areas. Also, such sources should not pollute the environment, they are required to help reduce greenhouse gas emissions into the atmosphere and, as a result, reduce the effects of a climate change. And here we go back to the fact that the most popular alternative is the energy obtained from wind, solar and geothermal sources. Let's review the most common types of alternative energy.

Wind, sun, water. The wind is used to generate energy using wind turbines. This type of alternative source is promising where the wind is present almost constantly. From this source of energy pollution of the atmosphere does not occur. But there are downsides. Such a phenomenon as wind is notable for its inconsistency, and for a stable production of electricity, entire fields of wind turbines will be required. It should also be noted that wind turbines create a huge amount of noise. Because of this, they are placed away from settlements. As for solar energy. It can be used for both electricity generation and heat supply. Solar energy is renewable, therefore it does not produce harmful emissions into the atmosphere and, when compared with wind turbines, does not produce noise. But there are downsides too. Solar energy, which is quite natural, depends on the daily and seasonal cycle, and on the need for large areas for solar power plants. As an example, consider our country. In Ukraine, given its geographical position, all regions are in good enough conditions for efficient electricity generation and, accordingly, a quick return on investment. "Green" tariff - a special preferential tariff, has been adopted in Ukraine since 2009 to stimulate the production of electricity from alternative sources. And I found my answer. The state guaranteed the operation of the "green tariff" for generating facilities put into operation until 12.31.2029. Installing solar panels has acquired the status of a rational financial investment. There was an opportunity to make a profit in different ways: saving money

on the consumption of electricity by a house or enterprise at constantly growing tariffs for the population and industry; earnings on the sale of excess electricity to the energy system at the "green" tariff; ensuring autonomy and uninterrupted power supply at home in the absence or unreliable centralized power grid. The main advantages of the station are relatively fast payback and low operating costs. The average payback period is from 3 to 4 years, and the life of a solar power plant is 25 years or more. After the payback, the opportunity to receive a net profit, as we see, is many years. It should be noted that the whole world, including us, is moving towards a rational and careful attitude to the planet's resources, reducing the dangerous impact on nature and reducing the carbon footprint. Given the well-known advantages of solar energy, it can be argued that the installation of solar panels is an economically viable investment both today and in the future. You should also pay attention to volcanic areas and hot springs, which are an excellent source of energy. Geothermal sources, like solar energy, can produce electricity and provide heat. We note the advantages of this energy source - it is inexhaustibility and independence from seasonal factors. Cons, they can be found everywhere. Thermal waters are quite strongly mineralized, so they can be saturated with toxic compounds. Due to such factors, waste water must be pumped back underground and not discharged into surface water bodies. A certain number of seismologists oppose such interventions, explaining this by the possibility of provoking an earthquake.

In conclusion, I want to draw your attention to the fact that difficulties are the engine of everything. That's how it happened historically. In order to make a leap in the development of mankind, it is necessary to create problems. A possible energy crisis should be the cause of such a jump. I believe that humanity will cope with this problem.

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DEFORMATION OF THE LAWYER'S PROFESSIONAL LEGAL CONSCIOUSNESS

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The foundation, the organic and functional component of the legal life of the society united in the state, is precisely legal consciousness, which sometimes has a tendency to deform. In various forms and spheres of social life, it manifests itself more

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and more brightly, thereby standing in the way of the establishment of an effective and progressive legal state. From the point of view of the theory of law, the deformation of legal consciousness is extremely important, because it has many negative consequences for the individual, society and the state.

Lawyers form one of the professional groups of modern Ukrainian society. Profession, work, in one way or another, leaves an imprint on a person as an individual, on its consciousness, way of thinking and on the possibility of a healthy assessment of what is happening. Jurisprudence, with its unique set of characteristics, is not an exception. This is due to the fact that lawyers begin to perceive everything through the prism of law, legal awareness and, accordingly, evaluate everything that happens around with the help of this set of tools.

From the point of view of the sociology of professionalism, professional deformation is a process and result of external influence determined by the nature, which manifests itself in a change in the characteristics of the object of influence and, as a result, causes changes in the mechanisms of implementation of its functions. For social objects, deformation is a qualitative deviation from a social reference point, the norm (i.e., deviation), which leads to changes in behavior and activity and is determined by social and psychophysiological determinants.

Deformation of legal awareness does not arise at one moment, it emerges and develops during the learning process, when the future lawyer is just starting to get to know how things work. As a rule, at the initial stage, a number of questions also arise, to which later, with increasing experience, you answer yourself, for example - why legality and justice are not the same thing, why it is not possible to solve the case fairly, but necessarily by law. Answering these questions, the lawyer forms certain neural connections, behavioral stereotypes, relevant answers to them and adapts his consciousness to this scheme.

Another feature of the legal profession is a keen sense of justice, which manifests itself, on the one hand, in a principled and critical assessment of the behavior of other people in accordance with the highest criteria of their social significance and under the condition of exceptional benevolence towards them, and on the other hand, in a critical assessment of one's own actions, towards all those dependent on him.

However, the most significant is the emotional and evaluative attitude of lawyers to legal norms, phenomena and legal values in general. Complex psychological components of professional legal awareness — value relations, legal beliefs, intuition play a special role in the implementation of legal norms by lawyers.

During their practical activity, lawyers directly come into contact with mental and psychological experiences, which then find their reflection in judgments and thoughts, which can directly have a colossal impact on future decisions and conclusions.

This is an eternal difficult problem in the practical activity of every lawyer. And the more clearly you think about it, understand and realize its presence in your life, the easier it will be. The worst thing you can do is to deny the existence of such a serious problem – denial here is as evidence that you are already deep "inside".

The problem of building a civil society, a democratic legal state, is directly related to the development of legal consciousness of Ukrainian citizens, in particular,
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to overcoming such a negative phenomenon as its deformation. Consequences of deformations of legal consciousness – violations of human rights, corruption, imperfection and ineffectiveness of current legislation, "wars" of laws and powers – inhibit further democratic transformations and reforms in our country (Pogribna, 2008, p. 292-293).

That is why the issue of deformations of the legal consciousness of Ukrainian society, their impact on the problem of violation of human rights and freedoms and, in general, on the entire state-building process in our country and, most importantly, ways to overcome these negative phenomena, are extremely relevant nowadays and require further scientific research.

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UNCONSCIOUS SUPPORT OF THE ENEMY

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After the full-scale invasion of Ukraine on February 24, Ukrainians and all conscious people began to refuse russian goods and services, the governments of the leading countries began to impose numerous sanctions against the aggressor country, more and more people began to be interested in Ukraine and condemn russia.

During the war, our information space is confidently freed from russian content. Music platforms reject the songs of the occupier, YouTube is gradually getting rid of russian shows, and the number of quality content in the native language is growing in Ukraine. Books, music, humor and educational channels - more and more people on the Internet prefer their own - Ukrainian. However, unfortunately, many Ukrainians do not understand the importance of giving up everything russian and continue to actively use the products of the occupier. You can often find discussions about the art of music on the Internet.

According to recent studies, 33% of Ukrainians stopped listening to russian music since the beginning of the invasion, 18% did not listen before and do not listen now, and 51% (i.e. half) continue to listen to it. People do not want to give up russian music, because they grew up listening to neighboring artists, it is difficult for them to leave their comfort zone, so they ask not to tie politics to art. These thoughts are the result of many years of propaganda. In fact, listening to the creativity of our enemies, a collection of nesting dolls, a portrait of putin in front of the desk are all part of russian culture that we should abandon. If we want to live on our land according to our own rules, we need to completely sever all ties with russia.

Let's count money. As of the 8th month of russia's full-scale invasion of Ukraine, the songs of russian artists remain in the top of YouTube music platforms Music, Apple Music, Spotify , Deezer , Shazam . It is obvious that russian artists pay taxes to the

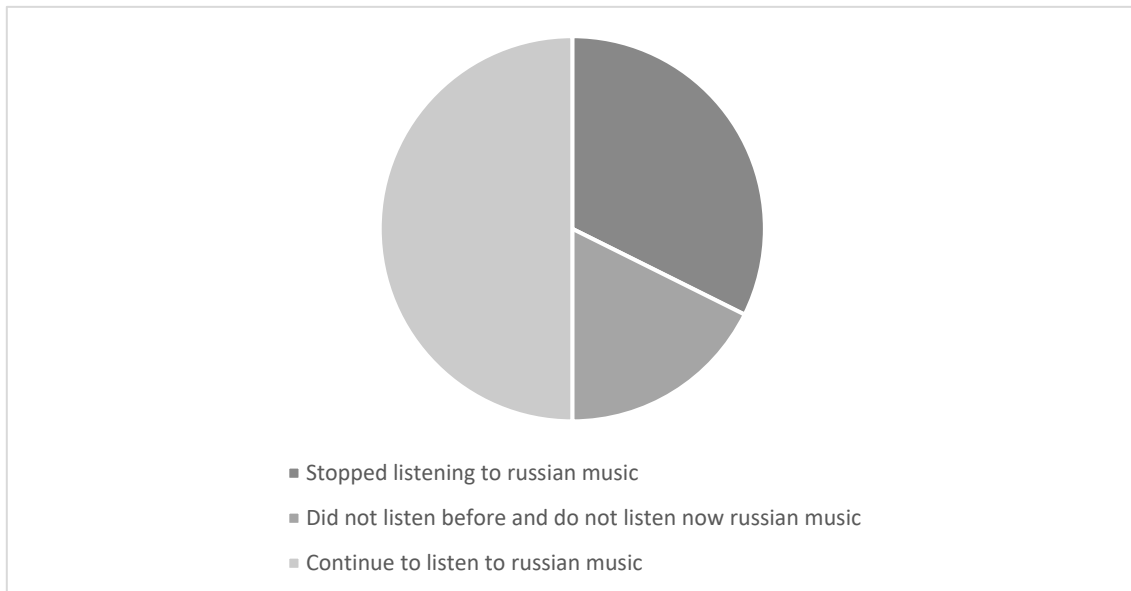
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coffers of the terrorist state, which directs these funds, including to the weapons that Russia uses for the genocide of the Ukrainian people.

For example, for 1000 listens of a song, on the platforms indicated below, the enemy receives:

- Spotify - 0.9 €
- Apple Music - 3,7 €
- Deezer – 1.69 €
- YouTube Music – 1,9 €

According to statistics, one listener listens to one song 12-13 times. A total of songs in the playlist of one user is at least 50. That is, only 2500 people get 1.63 million listens, and this is only on one platform. Each listening to the song of the enemy not only sponsors terrorism, but also popularizes the culture of the enemy, which Russia has been instilling in us for decades. Each listening to a song by a Russian artist reduces the chances of Ukrainian artists to be heard, and new talents to be born.



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UKRAINIAN AND FOREIGN SCIENCE: YESTERDAY, TODAY, TOMORROW
FEATURES, ADVANTAGES AND PROBLEMS OF USING
INFORMATION AND COMMUNICATION TECHNOLOGIES
IN THE EDUCATIONAL PROCESS

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Information and communication technologies are very promising in terms of increasing the activity of students. The student ceases to be an object of learning, that is, the recipient of ready-made, analyzed information, and becomes an active subject of this process, he can independently find the necessary sources of information. But the negative aspects of these technologies include the fact that they are under development in the humanities.

Among the advantages of ICT is the fact that usually multimedia programs are designed for independent perception and assimilation of material, knowledge and skills by the student. The very construction and solution of a scientific problem requires considerable mental activity. Pupils can choose the optimal pace of work with the multimedia program according to their own mental, physical abilities and interests, use the necessary visual, auditory and textual information in the learning process.

Among the reasons that hinder the reorientation of the educational presentation of the material are organizational and technical aspects - lack of free access to computer equipment, constant difficulties with its timely maintenance, problems with a large number of people in the classroom, which makes it impossible to use modern technologies, some schools do not have so many computer devices to ensure proper learning process.

However, the main problem still remains the problem of psychological and pedagogical nature. It consists in the low qualification of the staff of the educational institution in the field of information and communication technologies, the elementary lack of teaching methods using technical innovations in conducting classes in academic disciplines, insufficient provision of educational institutions both quantitatively and qualitatively with pedagogical software. These are the aspects without which it is impossible to positively resolve the issue as a whole.

Let's consider possible ways to ensure the implementation of ICT readiness components by school leaders. In most cases, school principals in the past are ordinary subject teachers. And a small number of them are retrained in the specialty "Management of educational institution". What knowledge about computer technology did they get in their universities?

In higher education institutions, teachers were provided with the course "New Information Technologies", which allowed students to master the basic skills of working with the operating system and general purpose applications. Taking into account that these user skills of working with computer innovations in the future

were not very much fixed in practice and did not develop in any way (for example, most teachers did not even have a computer at home a few years ago), it is obvious that the position of the head of the institution was occupied by a person not technically prepared to use ICT in the educational process.

In my opinion, we should introduce annual certification of teachers on the implementation of the latest digital methods of education. Technologies are improving very quickly, so we must keep up with them (Lavrentieva, 2012).

We can discuss the effectiveness of information and communication technologies in education for a long time, but we have no right not to use them, because they have rapidly entered various spheres of our life. They simplify our communication and cooperation, become decisive in the economy and production, occupy a central place in the process of intellectualization of society, development of its education and culture.

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DIRECTIONS OF INTENSIFYING REPRODUCTION AND WAYS OF BETTER USE OF THE ENTERPRISE'S FIXED ASSETS

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Ensuring certain rates of development and increasing production efficiency is possible under the condition of intensification of reproduction and better use of existing fixed assets and production capacities of enterprises.

Restoration of fixed assets is a continuous process of their reproduction through the acquisition of new ones, reconstruction, technical rearmament, modernization and overhaul of existing ones. The main goals of this process are to compensate worn-out fixed assets, increase the mass of fixed assets, provide enterprises with them in accordance with the production program and maintain them in working condition.

The main problem faced by enterprises during the restoration of fixed assets is the lack of material resources for its financing. So, today, the question of finding sources of enhanced reproduction is quite urgent.

The first step in the process of restoring the main production assets is to determine the need for their restoration. At this stage, the reasons for the inefficient functioning of non-current means of production are identified and possible ways of eliminating factors that reduce the efficiency of their use are considered, without applying the mechanism of updating fixed assets (Sazonov, 2014, p.2).

During the analysis of fixed assets regarding the need for their restoration, the enterprise may discover labor tools that have not been used for a long time, or were generally unsuitable for use in production activities. The presence of such fixed assets on the company's balance sheet not only does not bring benefits, but also sometimes negatively affects the indicators of its activity, or generally requires additional funds for their maintenance (Dmytrenko, Zavirukha, 2011, p.6). Fixed assets of the enterprise, and sometimes a whole group of them, which for various reasons are unsuitable for use, are subject to liquidation.

Fixed assets of the enterprise, which are not used, can be sold or leased to other enterprises. This, in any case, will bring the company additional funds, which it can then direct to the restoration and improvement of the condition of its fixed assets. It is also important to correctly determine the direction of these funds: by investing them in new, more technically advanced elements of production, the enterprise will be able to bring its production to a qualitatively new level. Thus, the liquidation will not only bring additional monetary resources to the enterprise, but will also affect the indicators of the state of the main production assets in the direction of their improvement (Sazonov, 2014, p.2).

The main sources of own funds for financing capital investments are retained earnings and depreciation deductions. If the production process needs to be maintained at the previous level, then each enterprise makes depreciation deductions to compensate for the cost of the worn-out part of fixed assets.

Another source of recovery of fixed assets is the profit that remains at the disposal of the enterprise. The profit can be used both for simple replacement of production facilities and for their elaboration and improvement.

There are other sources of financial resources that can be directed to the extended recovery of the main production assets of the enterprise. These include attracted and borrowed funds. However, their drawback is that they have such features as returnability and payment (Dmytrenko, Zavirukha, 2011, p.6).

Thus, at the current stage, the issue of using one's own sources of financing fixed assets for their expanded reproduction is becoming a priority for enterprises. The use of the above sources of self-financing when applying a reasonable strategy will allow to form an effective system of updating the fixed assets of the enterprise, to improve its financial and economic situation while avoiding an increase in the risk of activity.

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HOW ART THERAPY AFFECT A PERSON

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Imagine such a picture: a small child sits and draws his family, a large house and carefully draws every detail. You have managed to observe the rare time that this child spends without pain. The pain fills every second of his short life, because this little man has cancer. There are many little and adult people in the world who need to fight deadly diseases. But there is something that helps them to escape from endless suffering for a short time. And this is art therapy.

This treatment can be interpreted as creative therapy (Kiseleva, 2006, p.15). It can be any activity you like: music, drawing, writing and more. The main thing is that it brings joy and comfort. To engage in such activities, age is not at all important. The therapy can help both adult people and children.

This therapy is used for more than a distraction from physical pain. It is also common in the field of psychology. Sometimes children are so closed in on themselves that they do not speak a word. Then psychologists use the following tactics. For example, you need to draw your family. After you complete the task, they analyze the finished drawing. The color used to represent each family member, the location relative to the child and the shape of the figure itself are taken into account. There are the following types of colors:

- “Positive” colors – yellow, orange, red. They create a cheerful mood, a desire to create.
- “Negative” colors – black, blue, purple. They create sadness.
- The “neutral” color is green.

Thus, objects that are depicted intuitively can tell much more about us and our condition than we ourselves (AATA, 1983-1996, p.21).

There is also color therapy. The essence of this therapy is to paint in different colors. Then your brain starts various physiological processes.

In this therapy, each color has a different meaning. For example, red refers to a warm palette and has a stimulating effect. It promotes a sense of optimism and security, can also instill confidence and develop leadership qualities. This color can help with depression, fear and apathy. On a physiological level, color is associated with the circulatory system.

Orange is the color of creativity and cheerfulness. It activates movement, determines the rhythm and speed. This color is responsible for the emotional state. Improves digestion and assists in the absorption of nutrients.

Yellow is responsible for sociability. It gives confidence and relieves worries. It helps to focus and concentrate. It awakens interest in the assimilation of new information. This color affects the intestines, digestive system organs, liver.

Green is a harmonious and balanced color. It has a calming effect because it belongs to neutral colors. In the body, it is responsible for the heart. It helps with unbalance, aggression, rudeness, inability to express emotions. It helps with diseases

of the cardiovascular system, relieves bronchitis and asthma and relieves claustrophobia attacks.

The blue color puts your thoughts in order. It helps introverted people express themselves, promotes the development of oratorical skills. It helps to cope with insomnia, relieves inflammation.

Purple is the color of healers and creative's, a mystical and noble shade. A symbol of law, power and inspiration. It restores self-confidence and self-respect, deprive neurotic disorder and despair. It improves concussion and neuralgia. This color helps epileptics and people with multiple sclerosis. To begin with, psychologists find out experimentally what worries a person. Then they try to cure the patient with this therapy. Another direction of art therapy can be the composition of fairy tales. Some children express their thoughts better in words. Through mystical images and various characters, they project their experiences into the story. This method also helps psychologists to treat children.

Overall, it may be said that there are so many areas of art therapy, but the most important thing is that thanks to them you can save a life or help relieve suffering.

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**INTERNATIONAL INVESTMENT ATTRACTIVENESS
OF THE REGIONS OF UKRAINE**

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Today, Ukraine is on the path to comprehensive economic transformation. Under such conditions, improving the investment climate and increasing the efficiency of investment processes are some of the main directions of state policy at the current stage. The Ukrainian economic environment attracts and repels at the same time. Although Ukraine occupies a strategic geographical position, has rich natural resources and a highly educated workforce, which makes it an attractive investment environment, it has not yet reached its expected potential due to the fact that it has not been able to minimize state interference in the functioning of markets, eliminate administrative obstacles that prevent business, to fulfill the planned privatization indicators and to become attractive for foreign and domestic investors.

Potentially, Ukraine can be one of the leading countries in Europe for foreign direct investment. This is facilitated by its large domestic market, significant industrial and agricultural potential, as well as the advantage of Ukraine's geopolitical location at the crossroads of European and Asian trade routes.

At present, Ukraine has created a legislative framework in the field of regulation of investment activities, which is gradually being improved in order to achieve a greater inflow of investments and increase the efficiency of their use. The development of legal regulations is one of the fundamental factors for attracting foreign investment.

It is important to note that in this case, the rule-making work is a guarantee of establishing trust between foreign investors and the authorities of Ukraine. Only in this way, the state can ensure the protection of rights, the provision of guarantees, and stability for investors. Accordingly, Ukraine as a jurisdiction with the image of a rule of law provides a legal field for foreign capital investments.

The industries that have shown the fastest growth in recent years, and therefore are the most interesting to investors, include the information technology (IT) industry, agriculture, automobile industry, manufacturing, and renewable energy. Therefore, it is worth getting to know each industry in more detail and considering the reasons why it is advisable to invest in each of them.

Over the past 10 years, the Ukrainian IT industry has led the growth rate and has become the center of attraction for most investments. At the same time, the Ukrainian industry of outsourcing and software development occupies a leading position in Central and Eastern Europe. Improvements in economic conditions and financial incentives encourage local and foreign investors to increasingly invest in Ukrainian IT companies. In total, over the past five years, local startups have raised \$1 billion, making Ukraine one of the most important locations for investment in Central and Eastern Europe. About 90% of the funding comes from foreign investors, with the largest share coming from American companies (Finevolution, 2021).

Ukraine has historically been called the feeder of Europe, as it contains about 25% of the world's black earth soils, known for their high level of fertility. The country is also the world's largest exporter of sunflower oil and one of the largest exporters of grain. The main agricultural crops to make Ukraine one of the leaders in the world are grains and fodder crops, including wheat, corn, barley, dormouse, beetroot, legumes, fruits, and vegetables.

Despite the fact that foreign investors are well aware of the competitive advantages of agricultural land, Ukraine is also known for its quality and innovation in the agricultural sector. Ukrainian agrotechnical companies develop modern solutions aimed at improving traditional methods of farming. Due to its huge potential, agriculture continues to be a key sector for investment.

Considering the country's geographical location, highly qualified workforce, scientific and industrial potential, and developed infrastructure, the Ukrainian automobile industry offers ample opportunities for foreign investment. Over the years, Ukraine has established itself as a reliable supplier of components for the German automotive industry. Most international companies have their production facilities in the western regions of Ukraine and are mainly export-oriented. Automobile factories operating here belong to German, Japanese, Austrian and French manufacturers, and some other companies. Also, Ukraine announced its intention to invite electric vehicle manufacturers to the country. According to officials, potential investors are already ready to work and are waiting for some legislative changes.

Due to the favorable logistics connection with the world market, Ukraine has huge potential in the processing industry. In particular, it should be noted the inexpensive skilled workforce, favorable geographical location on the border with the European Union, favorable provisions of Ukrainian customs legislation, and steady improvement of the business climate. This is exactly what makes Ukraine attractive for transactions with raw materials.

The green tariff in Ukraine is one of the highest in the world, which makes investments in this industry very profitable. In recent years, the green tariff has attracted more and more international investors to Ukraine and has had a positive effect on the development of the energy industry. Intense solar radiation, sufficient wind speed, and an investor-friendly legislative framework allow the development of large-scale projects in the field of "green" energy in Ukraine, which makes renewable energy sources one of the most attractive areas for investment. In addition, the country also has a huge potential in the production of electricity from biogas. Renewable energy projects in Ukraine will be implemented by Finnish, Danish, and German companies soon (DLF, 2020).

In general, the predictions for the Ukrainian economy remain positive because of the growth in the volume of direct investments and exports, as well as the improvement of the business climate. It is expected that this pace of development will continue in the future. Having everything necessary for business development, Ukraine is becoming more and more attractive to international investors.

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CAN MASS MEDIA BE CONSIDERED THE «FOURTH ESTATE» OR THE «FOURTH POWER» OF THE COUNTRY GOVERNING?

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The term «fourth estate» or «fourth power» refers to the press and news media both in capacity of advocacy and ability to frame political issues (Dictionary.com, 2017).

Nowadays, it is difficult to underestimate the influence of mass media on how all processes in society proceed. They are everywhere in the easy access, and this allows them to have a strong impact on every person. With the help of mass media, it is possible to strengthen people's confidence in one popular opinion and, at the same time, greatly underestimate the popularity of another. TV programs broadcasting public

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speeches can raise a wave of indignation or enthusiasm in society, scare people or call them to revolution.

Many researchers, and later many ordinary people, realized that having such great power in their hands, person can greatly change the attitude of society in the direction they need. It is enough to study the art of presenting information — and you are ready to manipulate public opinion. That is why many politicians today are turning to this power.

The political and cultural elites are simply forced to use the opportunities of the media. After all, political programs, statements, projects, works of art can then be noticed, exist publicly, and have a real communicative effect. Politicians and artists, as senders of their messages to citizens, compete with each other for access to the media.

Nowadays, the term («fourth estate») is usually applied to the press and mass media. The first use of the term in this sense was made by Thomas Carlyle. He has used it in his book «On Heroes and Hero Worship»: «Burke said there were Three Estates in Parliament; but, in the Reporters' Gallery yonder, there sat a Fourth Estate more important far than they all» (Carlyle, Thomas (19 May 1840). "Lecture V: The Hero as Man of Letters. Johnson, Rousseau, Burns". On Heroes, Hero-Worship, & the Heroic in History. Six Lectures. Reported with emendations and additions (Dent, 1908 ed.). London: James Fraser. p. 392).

Ukrainian realities testify to the government's use of mass media for political purposes and for ideological pressure on society. Of course, this does not mean that public opinion is completely compliant to such influences. Since public opinion functions not only based on information transmitted through mass media, but is autonomous, it filters this information. Therefore, not everything that circulates through media channels effectively affects society.

But still, the influence of the mass media on the modern world in the era of mediocracy is simply invaluable.

So, the media is understood as a kind of special power mechanism on guard of democratic values and norms. They cannot be perceived as neutral observers. On the contrary, modern media act as active mass communication actors deeply rooted in the democratic process.

Based on what has been written, the mass media can indeed be called the fourth power, although metaphorically. After all, their influence on the modern world in the era of mediocracy is simply invaluable.

Mass media, spreading information and influencing mass consciousness and behavior with it, represent informational power, although this power is also symbolic - it is based on the ability to influence the mentality and behavior of people.

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JIRAI KEI. JAPANESE FASHION

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Jirai Kei translates as "landmine-type" and comes from "jirai onna", which means an emotionally unstable woman. (Jirai Kei, 2022). Japanese style, but mainly consists of new major fashion trends.

The style can be described as neat, feminine, dark, but cute, preppy. The style has almost no differences from "ryosangata", which in itself identifies the same choice of clothes among young Japanese women as ordinary, the same, regular, not special (I'm starting Youtube, so I'll introduce myself, 2022).

Emerged as a way of life for kabukicho girls, they are young, attractive, create a feminine image that attracts attention, it helps them in life, this style is not usually lewd, because young girls want to be cute more than sexy. Also the restraint of this style and slightly depressed colors, accents indicate their desire to show their trauma, it is literally a mixture of cute and girlish with dark and depressed. It became popular in recent years, it was popularized by Japanese influencers on YouTube, as well as on Instagram and other social networks, who made makeup lessons and other videos about their style, inspiring others, teenagers find themselves in the images of cute and traumatized influencers who lead an adult nightlife. although usually it is limited to the style of clothing or photos, music, because outside of Japan the social feature of fusion does not make such sense.

Jirai started in Kabukicho -the red light district or party city. It's about bars, good restaurants, cafes, host clubs, game centers . That's pretty safe during the day. But that stay danger at night because of yakuza, crimes illegal sex industry.

Before the Olympics, the government of Japan began to hide the obvious danger of Kabukicho, to make this place safer, including for tourists, and began to open cinemas and family establishments.

Children range from 9 to 24 years old, who have problems in the family or other reasons for running away fled to Kabukicho, because it is an interesting place where they recently started spending time with friends, but they could not be found because of the criminality of the area, the children began to live alone in the night city life.

Such children are involved in the sex industry (the age of consent in Japan is 13 years old), earned money in the yakuza business, offered the services of rented dates in host clubs, had problems with alcohol, drugs, other types of addictions, many spent crazy money on host clubs to feel attention

A special peak of Jirai's popularity occurred at the beginning of the pandemic, when everyone had to stay at home. In Japan it was not mandatory to close your establishment, but there were certain restrictions. It was more profitable for legal

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businesses not to work at this time, but in kabukicho the money is completely different, so they worked all the time. Many young Japanese also began to visit this area, because they saw in social networks a normal life that they could not afford due to the pandemic.

Obviously, under such conditions, people have a problem. Jirai Kei, like Yami Kawaii, is associated with mental themes. In this case, Jiraiya Kei may be associated with alcoholism, partying, self-harm, suicide, prostitution, and other illegal activities. He is also associated with gangs such as the Tokyo Kids, reinforcing the negative attitudes of society. Unlike other alternative fashion styles, Jirai is united with problems because they are common both on the Internet and on the streets of Japan (The Dark Side of Jirai Kei 地雷系, 2022).

Visually, the style combines features of girlish style, dark girlish style, yami kawaii, lolita style, ryoangata. (Jirai Kei and the History of Girly Kei Fashion Stereotypes, 2022).

It is usually expressed in a combination of pink, muted pink, grey, black colors. A large number of ruffles, bows, cute accessories, lace, preference is given to short skirts and dresses, blouses, oversized things that show elegance.

Makeup is a more dramatic version of the regular makeup of Japanese women, which creates a sad, slightly sick and tearful look.

Hairstyles are also completely ordinary, twin ponytails and curls are quite popular. Japanese women do not like to stand out, so their hair color often remains black, but sometimes it is lightened to natural brown or blonde, sometimes pink.

Sometimes we don't know what is behind the fashion and we have no idea how it appeared. Like all popular things, fashion has a social background and fashion trends can be studied by sociologists as the consequences of events happening in the world.

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CLASSIFICATION OF FORMS OF CIVIL LEGISLATION OF UKRAINE

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Forms of civil law are external forms of expression of the rules of conduct of participants in civil legal relations, which certify their obligation for a certain circle of persons.

Article 8 of the Basic Law of our state stipulates that the Constitution of Ukraine has the highest legal force. Laws and other normative legal acts are adopted on the basis of the Constitution of Ukraine and must comply with it. Thus, the basis of civil legislation is the Constitution of Ukraine, and all its forms are formed and applied on the basis of constitutional norms, namely on the provisions of natural law.

According to the content of Chapter 1 of the Civil Code, the civil legislation of Ukraine can be in the following forms:

- 1) acts of civil legislation of Ukraine;
- 2) contracts of civil law subjects;
- 3) custom;
- 4) international agreements;
- 5) other forms of civil legislation (analogy of law and analogy of law, judicial practice).

It is worth noting that this list of forms of civil legislation, which results from the analysis of the provisions of the Civil Code, does not make it possible to clearly classify them according to certain criteria. However, if we take into account the peculiarities of the above-mentioned forms of civil legislation, it is possible to single out some grounds for their classification.

For example, depending on the entity that created the norm of civil legislation, the following are distinguished:

- 1) acts of subjects of public law (acts of civil legislation);
- 2) actions of subjects of private law (contracts, corporate norms);
- 3) mixed forms (international treaties, customs).

Taking into account the legal force of the act of legislation, it is possible to build such a hierarchy:

- 1) Constitution of Ukraine;
- 2) contracts of subjects of civil law concluded on the basis and for the development of the provisions of the Constitution;
- 3) laws of Ukraine and ratified international treaties in the field of civil law;
- 4) subordinate regulatory acts;
- 5) customs;
- 6) established judicial practice.

Also, according to the origin, the forms of civil legislation can be divided into the following groups: official (acts of the civil legislation of Ukraine) and unofficial (judicial practice, decisions of the European Court of Human Rights and others) (Kharytonov & Startsev, 2011).

The given classifications of forms of civil legislation provide an opportunity to better understand their essence and characteristic features.

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**PROCRASTINATION: AN EXCUSE FOR LAZINESS OR A MENTAL
HEALTH DEFENSE PROCESS**

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The phenomenon of procrastination started to be constantly discovered in the second half of the 20th century, and nowadays, it has become typical for many people all over the world and drew the attention of millions of scientists. The most common definition of procrastination is the following: it is a psychological term that means a person's tendency to postpone unpleasant tasks for later. There are a lot of discussions about the reasons that trigger procrastination and still there is no exact answer why some people face it and others do not. It is considered that everyone has a unique nervous system and it reacts to various stimuli in different ways. For some people many tasks are many tasks acting as stimulants to work, while for others they cause fears of failure and feelings of inadequacy. Some psychologists connect procrastination with the absence of discipline over yourself or self control and compare it to overeating, but there are some who deny that it's connected with the laziness or ability for time management.

Anna Shyichuk, a Ukrainian psychologist, points out: "Procrastination is our screen in front of certain feelings". She explains that, in fact, some feelings can be hidden beyond the procrastination, such as: fear (a person is afraid of the suspense that comes after completing the task), sadness (a person has something from the past that does not let concentrate on work), happiness (a person may stay in the state of euphoria before completing the task), anger (a person feels aversion to the task, that is why has no desire to work on it), fault or shame (even though these feelings are the aftermath of postponement, but because of them we continue to procrastinate)("I will do this later". Why people procrastinate and how to avoid it.", 2020). All the mentioned above are ways how our nervous system can react to challenges and how it protects itself from emotional overload.

To my mind, procrastination is similar to laziness only because of negative consequences this phenomenon brings, such as bad marks at school, issues at work etc., but still it is not the same thing. The major difference between these two concepts is that if a person has a specific goal, but there is not enough resources to reach it at this point or there's something that prevents from doing it right now, then a person procrastinates; however, if having a specific goal, a person is not sure whether he needs to reach it, it is more similar to laziness that might be caused by indeterminacy or mental disorders, like depression.

To sum up, I find procrastination is not the thing that can be identified as laziness, but still it brings more disadvantages and it should continue to be constantly discovered to find effective ways of getting out of this process and decrease the progression of this phenomenon.

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PARTICIPATING IN INTERNATIONAL PROJECT AS FAVORING IMPROVEMENT OF CULTURAL AND EDUCATIONAL LEVEL OF STUDENTS

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Student life is diverse and full of various opportunities of improving your skills and gaining new ones. It is that time when a person becomes more independent and in her personal growth there is a new round of the lifeline. This article is aimed to prove the fact of direct correlation between the quality of educational process and stable participation in a range of international projects.

Human's capacity of using a native language depends on the left hemisphere of the brain among over 90% of the normal population. The left frontal lobe is responsible for being able to say words clearly and the left temporal lobe is associated with comprehension and language development. These two main parts of the brain are engaged in language processes.

Language learning is a complex, unlimited process that cannot be explained with the usage of terminology, connected just with one hemisphere of the brain. That is because of involvement of both left and right parts of the brain in the process of gaining the skill of speaking, understanding, listening, and writing in another language.

The Professor of Psychology and Linguistics at Pennsylvania State University Dr. Ping Li describes the full language proficiency includes memorizing the words, which is called lexicon, learning how each sound is pronounced, which is called phonology, getting known with the writing system, that sounds like orthography in academic language, learning the syntax and being able to express your opinion in an appropriate way, that is called pragmatics. Professor emphasized that all these elements require activating different parts of the brain (Unbabel Inc., 2019).

The complexity is hidden not in one place. With the help of 12 bilingual volunteers, it was declared that learning a second language at different ages affects the place where this knowledge is stored. It varies, depending on the age of a learner.

Learning a new language can be equivalent to exercising in the gym. As muscles under the pressure of workload are becoming larger in size and stronger, a similar

process is going on in the brain, but as a result we don't have geometrical enlargement, but improvement of some functions and restructure.

The nature of the brain is plastic. It means that it changes during the lifeline, so it can gain new features. It is called neuroplasticity. It was noticed that it decreases in the process of aging (Unbabel Inc., 2019).

The executive control center of the brain is responsible for using the right language at the appropriate time. This stronger function helps bilingual and multilingual individuals show outstanding capabilities of analyzing people and everyone around, doing a lot of things at the same time, and finding the solving of the problems.

Knowing English helps people take part in diverse initiatives and become a part of the international community. Participating in an international project showed me how useful knowledge of English is. From the point of science, it can be said that learning a new language, including English, opens a lot of doors in front of you with pleasant improvement of neuroplasticity and evolution of the brain throughout life.

Participation in international projects also affects cultural perception. Seeing the diversity of opinions and mentalities gives the advantage of tolerance to this diversity and being ready for difference in points of view. It develops cultural and educational skills by putting into these contradictions and giving a clear establishment of world's not being unambiguous.

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POLITICAL SYSTEM OF UKRAINE

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Today, the political system of Ukraine is developing and improving, the functions are acquiring a new meaning for the status that corresponds to an independent state. But sometimes the development process can slow down for certain reasons.

Firstly, the formation of the political system falls in the period of transition from a totalitarian to a democratic society, secondly, political values that were used in the past can be used, without taking into account the specifics of the political development of Ukraine at the current stage.

With the adoption of the Constitution of Ukraine on June 28, 1996. the political system began to function actively, the basic law of the state defined the principles of its formation. Today in our country we can see a new type of system, which is reflected in the activities of political power, the formation of local self-government, as well as in normative legal acts.

The state is a central element that plays an important role in society, and is also the basis of the political system. It has control over a certain territory, solves internal

and external issues and ensures the vital activities of society. And it is the most important tool in realizing the interests of the population. The state is capable of rationally distributing values and encouraging the population to comply with their decisions. By concentrating power in their hands as much as possible, state bodies ensure the stability of society, establish normative and legal norms, which are enshrined in the Constitution of Ukraine and contribute to the improvement of social life.

Everyone knows that the only legislative body of Ukraine is the Parliament - Verkhovna Rada of Ukraine. According to the Constitution, the head of state with the right to speak on its behalf is the President. He is the guarantor of state sovereignty, territorial integrity, observance of the rights and freedoms of every citizen.

Also, political parties as voluntary associations of citizens play a particularly important role in the formation of power structures. They participate in the processes of maintaining state power and try to influence it, parties express the interests of certain social groups and strata (Blikhar, 2018, p.114-118).

Summarizing, we can say that the political system of Ukraine is centralized, with elements of regionalization and decentralization; a relatively stable system that is able to resolve conflicts both between the main political blocs and within the state mechanism. And the most important thing is that society is interested in the development of the state and its individual structural elements.

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POLITICAL AND CULTURAL FACTORS OF SOCIAL AND POLITICAL PARTICIPATION OF THE POPULATION OF UKRAINE

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The process of democratization of Ukrainian society requires greater participation of the population in social and political life. Active citizen participation in politics can better represent the interests of different social groups and help build constructive cooperation between citizens and authorities.

The main problems hindering the development of democracy are the inadequacy of the legal and administrative environment in which civil society institutions operate, and the inadequate enforcement of conditions for women's empowerment by administrative and local self-government bodies (E.I. Golovaky, 2011, p.22). It should be noted that the democratic process also depends on the popular uptake of the value of civic participation and the establishment of democratic norms and positive attitudes in popular political consciousness.

The analysis showed a marked decline in interest in politics. 20% fewer people are interested in politics than in 2005 (68.7% in 2011 vs 88.8% in 2005). This is due to distrust of public and state institutions and fellow citizens: more than 80% of people do not trust others. This distrust hinders the formation of group solidarity among Ukrainians and does not allow the growth of indicators of the level of self-organization activity of the population (Golovaky, 2011).

The general orientation of the mass consciousness to materialist values was preserved. For most Ukrainians, the most important values are "stability", "order" and "material well-being" (Zotkin, 2011).

In the past two years, the carrier in civic activities has shifted from the political field to addressing non-political issues, which is a clear trend. As a result, against the backdrop of a general decline in popular political activism, citizen participation in protest actions against local issues has increased (Analytical report, 2011).

Conclusion: The current state of Ukrainian socio-political culture does not meet the criteria of a participatory democracy, which is characteristic of a culture of activism. But there have also been positive changes: an increase in intergroup self-organization, and an increase in the subjective importance of some democratic values.

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EMOTIONS OF UKRAINIANS DURING THE WAR

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No one expected that in the 21st century Ukrainians would be at the center of historical events. Since February 24, the emotional state of every person has shaken, it was difficult for everyone, especially the first months of the war. Now we are recovering little by little, the emotional state is stabilizing, Ukrainians are getting used to the war. But it is impossible and completely unnecessary to get used to sirens and explosions.

The range of emotions of the citizens of our country can change hourly, depending on the news, the number of air alarms or explosions nearby. It is important to experience emotions, not to "get lost" in stress, to be strong and stable, maintaining external and internal peace.

Scientists have determined that the reaction to war is different. Most of the people still adapt to the new reality, and for some, in response to stressful circumstances, a second wind opens up, thus the war gives an impetus to new

discoveries and achievements. Also, life itself, its value, is felt differently. In order to make it easier to adapt or survive the war, military psychologists advise moving to a safer place and starting to do everyday things: making the bed, walking in the fresh air, cooking. Such simple actions will make it easier for us to feel life and its value.

There are also different stages of acceptance of the fact that is happening in the country:

- misunderstanding of what is happening, even certain non-acceptance, thoughts that everything will be delayed. This stage can last several months;

- people begin to physically group together, there is a desire to help everyone, a thirst for victory;

- then comes apathy, a stage when you don't want anything, except to lie under a warm blanket;

- after apathy, the stage when positivity appears, because a healthy person cannot but have it.

Humor, positivity are very important components in order to feel better emotionally. With the help of humor, it is better for us to survive this or that event. So, for example, at the beginning of the war, everyone laughed at the fact that a grandmother knocked down a drone with a can, or a joke about the fact that people "Google" only how to lower the temperature or how to shoot down a drone at home. It is such little things that help us to hold on, to be strong, to win (Sviezhentseva, 2022).

It is necessary to remember now that we all need time, that we are all different and perceive everything differently, everyone has a different reaction to stress. More than ever, we should support each other, not criticize. Take care of yourself, distract yourself, start doing what you wanted to do for a long time, read interesting books, meet friends, don't put things off for later, because you don't know what will happen tomorrow, that is, try to enjoy life and live as before.

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HIGH INFLATION ENVIRONMENT: WAYS OF DEALING WITH INFLATION RISE IN EUROPE

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With the latest research of Eurostat, level of annual inflation rate in Euro Area reached 9,9% in September 2022 ("Annual inflation up to 9.9% in the euro area", 2022), even though there are plenty of reasons behind such dramatic indicator, main two of them are: recovery of economics while COVID-19 pandemics and Russia's invasion of Ukraine, which escalated supply chain crisis.

Factor of COVID pandemic influence can be explained by sharp price growth after softening of lockdown restrictions. At the beginning of the Pandemic's overall demand collapsed dramatically which led to prices decreasing - people, business and economies faced difficulties in solvency, therefore overall price level dropped. After weakening of lockdown restrictions businesses and economies turned out to be not ready for rapid demand growth, which led to basic contribution to supply chain crisis.

Also, to combat the fall in economic activity due to the Pandemic, central banks eased monetary policy. This made it easier for consumers and businesses to borrow and stimulated economic activity, leading to a situation of “too much money chasing too few goods”.

But probably the main problem for the significant surge in inflation is the cost growth factor, which arose for two reasons:

- disruptions in supply chains that have led to increased costs for international trade in goods,
- Russia's war with Ukraine, which significantly increased the prices of oil, gas, and unprocessed food.

The European Commission predicts that inflation in the Euro area will moderate significantly in 2023, but food and energy price inflation is largely dependent on geopolitical developments, which are notoriously difficult to predict. Such uncertainty, mainly due to the war in Ukraine, provokes pessimistic prospects for the Eurozone economy, overshadowed by the fear of facing an energy crisis in the winter. Gas restrictions in Europe will mean higher costs for consumers and producers, which will have a negative impact on production and consumption volumes and therefore weaken economic activity. According to expert forecasts, Europe's advanced economies will grow by just 0,6% next year, while emerging economies (excluding Turkey and conflict countries, Belarus, Russia and Ukraine) will grow by 1,7%. This is 0,7 percentage points and 1,1 percentage points, respectively, below the July forecasts (Economic Outlook, 2022).

This winter, more than half of the eurozone countries will experience a technical recession, with production falling for at least two consecutive quarters. Next year, Europe's output and incomes will be almost half a trillion euros lower than pre-war IMF forecasts — a bright illustration of the continent's severe economic losses from the war (Kammer, 2022).

After decades of low inflation and falling interest rates and cheap credit, inflation has become a major concern as it eats away at consumers' purchasing power. Major economies are therefore undergoing significant shifts in monetary policy as central banks seek to raise interest rates and tighten lending. The consequences of the new monetary policy for the market will be significant. Government bond yields around the world are higher, making the return on savings more attractive than investing in risky projects. This means that saving is more interesting than investing in projects or investing in companies (stocks), which explains why the stock market has been largely underperforming lately.

However, it is impossible to create economic growth in the future without restoring price stability. Central banks must ensure that they will "hold the course" and maintain tight policy as long as inflation remains high. And if inflation turns out to be

unexpectedly persistent, they should emphasize their determination to tighten more aggressively, even though the side effects could be a cooling economy and rising unemployment. At the same time, fiscal policy should help strengthen the effect of monetary policy and should be aimed at targeted assistance to low-income entities and avoid providing macro-stimuli. In addition, countries need to stay on course for a global economy that encourages the expansion of world trade and reduces the risks of fragmentation, reducing the risks of volatile drops in supply and helping to increase potential output around the world.

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ECONOMY OF WARTIME IN UKRAINE

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After the beginning of the full-scale invasion of Russia, the Ukrainian economy suffered significant losses. Over the course of eight months, it became clear that the "neighbor" was trying to wear down Ukraine by blocking seaports, destroying infrastructure, and destroying residential buildings. Currently, 45% of enterprises have reduced their production, and 35% have stopped their activities altogether; imports (in March 2022 compared to February 2022) decreased by 65%, and exports by 54% (Babka, 2022). Despite this, the war also affected the entire world, since before the signing of the "Grain Agreement" the destroyed logistics made it impossible to export agricultural products (one of the key sectors of domestic exports), and the threat of famine was formed for a number of countries in Africa and Asia. Therefore, in order to resist the enemy's aggression as long as possible, our country needs to turn to the wartime economy.

The wartime economy consists in the expanded production of military products and the distribution of resources in favor of military needs, but in Ukraine it has acquired some peculiarities.

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First, there is a large differentiation between economic damages. So, for example, the economy of Eastern Ukraine was almost completely destroyed, while the economy of Western Ukraine was almost unaffected. The production sectors are also uneven at the moment, because all the big factories are destroyed, while the IT sector confidently holds its position.

Secondly, despite the "economic shock", banks and the payment system reacted quite promptly. Thanks to the introduction of restrictive measures by the National Bank of Ukraine, the hryvnia exchange rate was fixed and sufficient liquidity of the system was ensured. However, experts believe that such changes are not sustainable enough to overcome problems, because, according to forecasts, inflation may exceed 30% by the end of the year (Gorodnichenko, 2022). Despite this, the central bank had to burn its gold and currency reserves to protect the hryvnia.

Thirdly, the Ukrainian government has realized that massive government interventions can have a counterproductive effect. This trend can be seen very well at the beginning of hostilities, when an attempt to regulate the price of gasoline led to severe shortages.

Also, the Ukrainian application "Diya" helps to allocate resources and mobilize savings to pay for the war (for example, citizens can buy military bonds through the application). There was even an idea to use the app to match internally displaced people with the empty homes of those who fled the war, thereby providing shelter to the displaced and income to the homeowners.

The biggest problem of the Ukrainian wartime economy is the impossibility of the total transfer of its capacities to military production (like the belligerent countries during the Second World War), since a significant part of the economy is occupied by the service sector, not industrial production, as well as not using the full capacity of production or resuming work at stopped plants.

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ENGLISH IN THE FIELD OF MANAGEMENT AND ITS INFLUENCE ON BUSINESS PROCESSES MANAGEMENT IN UKRAINE

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Management is not just a sales manager or HR manager, but also an organization management to achieve increased productivity of all factories and organizations. It is

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very important to control their work, so it's still affecting the economy and development of the country.

First, why should every manager, despite his/her place of work, have the skills of English? Because it's not only to follow the work of a company, but you should also cooperate with foreign partners. Each organization in Ukraine wants to conclude a cooperation agreement, for example, with an English company. This will improve the business and increase the opportunities for the organization's development. Therefore, each manager should achieve fluent English if he/she has to go to a foreign conference or enter into a contract.

Imagine you are a manager at one of the largest Ukrainian companies and come to an important meeting. To pass successfully, you need to understand our partners, so you need to know the languages here. As a result of successful conversation, it's possible to promote business and attract foreign assistance. For the country, this will mean improvement of the economy, development of important organizations and work with foreign companies. Employees also receive career development and skill improvement.

Second, Ukraine is now in a volatile situation with its economy and profits, because there is a war here. Therefore, it is difficult for each company to stimulate the work of its business, which was earlier. We have countries that help us get out of the crisis. Managers from different companies can contact them for help, conclude an agreement and improve the situation with the economy and business in our country. English helps to cross language barriers in business, share ideas, and take advantage of others to learn to improve their own company and the economy at the same time. "The proficiency of the language has also made it a vital part of success in the highly competitive corporate world" – say TV English.

For example, the company suffered from a war and has lost its capital. To restore what is lost, they need money and help. Therefore, they can apply to foreign partners to agree on cooperation. Thus, due to the English language, communication is between people. That is, we understand each other and we can help restore what was lost during war. English creates diplomatic relations.

What are the advantages of English? Therefore, companies have access to business literature and negotiations become more effective. Also, if the company employs workers who are fluent in English, then there is a great chance for them to become competitive in the labor market. English is said to be the key to production and productivity. Imagine that companies need to recover their capital losses through war. To be helped by foreign partners, we need to show and tell how important it is to you and how it will affect the economy of your country.

For this purpose, it is possible to reverse the project, which will show all problems, and you can communicate with others without translators. English will also learn strategies to achieve increased financial, to adapt to modern technologies in business. That is, English will help to increase business faster and more effectively. However, to do this, we must be clear in communicating with other countries. Therefore, English was able to overcome the language barrier, because it is better than many languages and nobody understands anything. For each company, the alternative

is to adopt a common broadcasting mode. In this way, they will be able to participate in the international business and economic community.

In conclusion, English is not just the most common language in the world. It is considered the language of international business because it unites companies and develops their cooperation. Since communication is an integral part of business, English will provide opportunities to talk to businessmen from other countries, help each other, and communicate. Thus, we increase the company's development in production and in the labor market. Moreover, some people say: "Business opportunities are like buses, there's always another one coming".

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BASICS OF ENTERPRISE MANAGEMENT DEVELOPMENT

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Let's start with what development is. Development often means growing political, spiritual and social ambitions. That is, it is the continuous development of human society, which is aimed at the expansion of socio-economic society and the development of productivity, discoveries, new knowledge and ambition, in order to achieve economic freedom. Having studied the labor market of enterprises, based on their experience, basic principles were developed to support the effective management of the development of a business enterprise: **the very process of development for employees is self-development**, that is, a person develops not thanks to someone, but thanks to himself. This principle of development shows how important internal motivation and confidence in one's actions and skills as an individual candidate are, so

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that in the future for the development of the company, the employee will make a significant contribution to the benefit of the business. **Development is about knowledge** and acquiring new and targeted skills, it is like an education that also needs to be acquired. By understanding the importance of learning and training, you can make significant progress as an individual to achieve your desired goal.

Taking individual characteristics into account is one of the most important rules for the effective development of a corporation. It is necessary to create all the comfortable working conditions, to help each other with the planning of the program of the most effective development methods for the company. Give the employee freedom of speech, choice and decision-making. Having adjusted all the organizational and individual differences of each of the employees, you yourself create an environment in which self-development is stimulated and facilitated, positively influencing the development of the company.

A long process. It will not be possible to immediately reach a new level of development, it will not be enough to get a job, read a book and do something on the computer. This is a long-term process that requires constant growth, professional development, various courses and webinars, such a development program lasts throughout life, because self-development is an integral part of it. Each work is special in its own way, and that any work **process should be paid**. It is a productive motivational system that stimulates the working force to work, which relies not only on material and immaterial systems. People who are really interested in their development and the development of the company should receive decent rewards to increase their motivation and to understand that everything they do is not in vain. **An influential and intelligent manager**, he understands what is needed in order to improve the quality of work, because having significant experience in work, he knows what to do and how to maintain business and friendly relations at the same time, which will directly lead the company to success. Summarizing the above, we can assure that the modern model of management in Ukraine is formed on the basis of the study of the evolution of management science, the generalization of the experience of developed countries of the world, deep traditions of management activity in Ukrainian organizations. The development of Ukrainian management takes place in the course of transformational processes that have a positive effect on the current stage of the labor market of the socio-economic status in Ukraine.

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UKRAINIAN SOCIETY DURING THE WAR

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Introduction

War has become a real challenge for Ukrainian society. Terrible events are commonplace for hardened people. Air alarms, massive bombings, and terrorism against civilians came out of the movies about the World War II and became our reality. We are forced to live in a new world that has little space for everyday things. Therefore I want to summarize my own observations, sociological surveys, and the memories of eyewitnesses about the change in the consciousness of the Ukrainian people during the 9 months of the full-scale invasion.

We became stronger and united.

«A consistently high percentage of Ukrainians are optimistic about the future – 64% believe that Ukraine will be able to build a strong economy and 65% - that Ukraine will become a member of the European Union by 2030 (both indicators increased significantly in the eleventh wave and are on the highest level since the beginning of the study). 60% of respondents are sure that the state will rebuild everything after the war - or compensate for the costs of reconstruction,» - writes Gradus Research (Migration and socio-political attitudes during full-scale war Russia against Ukraine - the eleventh wave of research, 2022, p. 5).* From this study, it can be seen that Ukrainians do not lose optimism despite the difficult situation and strive to plan a bright future, including in the European family. February 24 changed our whole life. There is no longer a division between Ukrainians from Western and Eastern Ukraine there are no rich and poor there is only a common enemy that wants to destroy our country. Therefore, each Ukrainian does what he can. Someone goes to the Armed Forces, someone becomes a military medic, and someone is engaged in volunteering. War spares no one. For example, one of my groupmates had the opportunity to be in the Territorial Defense,



Fig. 1.; Ukrainian military helps to evacuate civilian

which took an active part in hostilities. Or my friend, who lived under occupation for 3 months, until she left for the territories controlled by Ukraine. Also, many parents from our group are fighting in the Armed Forces of Ukraine. Common grief brought Ukrainians closer together. Therefore, despite the danger of Russian terrorism, each of us can count on help, because everyone knows that if he does not help you, he will be in trouble tomorrow. [Fig. 1; p. 1] This shows the unity and strength of the Ukrainian people.

Our mental health has change



Fig. 2; The mother took care of her child's safety

When people were asked after February 24 if they felt anxiety, sleep disturbances, and apathy, 64% of respondents (this also includes Ukrainians who went abroad) said yes. That is, 2/3 of Ukrainians experience symptoms of PTSD, even if they have not seen hostilities. There is a scary statistic because there will be a whole generation of people in Ukraine who have had a traumatic experience and it's not known how it will affect the next generations. If we

look at this situation from the other side, we will see that we have developed immunity to extreme situations. If in the first week of the full-scale invasion, people were confused and panicked at every explosion, now everyone knows what to do in critical situations: go to the shelter, take care of loved ones, and keep calm. [Fig. 2 p.2] War hardens us.

The people began to respect the military

The War started in 2014 with the annexation of Crimea and the anti-terrorist operation in Donbas. There was no seriousness for people because it was so far. Also, Ukrainians didn't understand who is the true enemy because Russian Federation constantly spread its narratives among Ukrainians. As a result, Ukrainian was often skeptical of the military that fought there. Society didn't understand why there was the war and what our men were fighting. Now everything fell into place. The enemy has shown his face and no one doubts his guilt. Now, for Ukrainians, the Armed Forces

have become real heroes who are doing everything to ensure that Ukraine survives in an unequal battle. The level of trust in the military has grown significantly [Fig. 3 p. 2]. This is also shown by the Gradus Research sociological survey: "The largest shares of respondents continue to trust the Armed Forces (64%) and the President of Ukraine (44%). The level of trust in the



Fig. 3; Civilian and military connection

Armed Forces increased this time (especially among all migration groups, as well as some age and regional groups), and the percentage of distrust in all institutions from the list fell to the level of the ninth wave." (Migration and socio-political attitudes during full-scale war Russia against Ukraine - the eleventh wave of research, 2022, p.5)

We are proud to be Ukrainian

Until February 24, Ukrainians were ashamed to talk about their origin and greatly underestimated their beautiful history. For example, the famous actress of Ukrainian origin, Mila Kunis, said that she fled Ukraine because she was humiliated there. Now she thinks differently and is proud that she has Ukrainian roots (Vogue, October 2022). Or I would like to mention the state of business in our country. Most of the performers worked in Russian or English because they believed that it was more promising. In my opinion, such an inferiority complex developed due to constant



Fig. 4; "Kalush Orchestra" group won Eurovision 2022 with the song "Stefaina"

oppression by Russia. This country constantly insists that there are no such people as Ukrainians, that our country is only a region of the Russian Federation, and that we have no right to exist as a sovereign state. With the full-scale invasion, we realized that we were unique and on par with other nations. Speaking and creating in Ukrainian is fashionable. And vice versa: if you have not yet switched to the Russian language, you are considered strange. For example, 57% of Ukrainians began to communicate more or

completely switched to the Ukrainian language since the beginning of the full-scale war. 42% of Ukrainians began to communicate in Ukrainian more, and 14% completely switched to the state language (Suspilne, October 20, 2022). Also, the percentage of Ukrainian songs has grown significantly, and a new generation of artists and singers has begun to create. [Fig. 4 p.3]

Conclusion

Ukrainians will no longer be like they used to be. This war changed us both for the better and the worse. We unite, we work together, and we help, but we also suffer and experience. We realized the value of independence and Ukrainian identity. In my opinion, the level of our self-awareness will grow, and the country will move in the European direction. The war accelerated the process of alienation from everything Russian and the creation of a Ukrainian product. These movements in the social life of Ukraine will significantly influence the formation of a modern and democratic state.

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THE GLOBAL CRISIS AND LIGHT HUNGER THROUGH WAR IN UKRAINE:

WHAT IS THE “HOT” PATH OF EVOLUTION TO PROSPERITY?

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"To some speeches, shock goes to melancholy; the stench rises and develops, sticking out of it. ... Anti-krykhkist is not the same as the squeal of chi mity.

Nasim Taleb

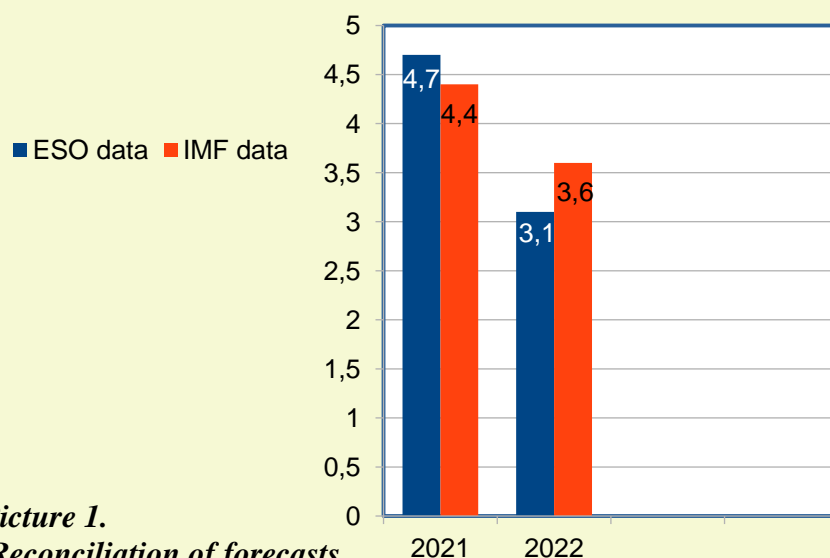
The war that the Russian Federation unleashed on the territory of our country has a significant impact not only on the Ukrainian economic system, but also on the world in general, in particular the countries of the European Union and the USA.

Firstly, the cause of a possible global light crisis is the energy reserve of the country of the EU from the aggressor power. The situation with the stocks of “black” fuel and naphtha has worsened in 2021, if the planned transition of the country to “green” electricity failed miserably through the change in climate. In the same time, in the minds of the promotion of electricity to the powers of the European Union, it happened to increase the purchase of natural gas, the main supplier of which is Russia. Use with the cunning EU regulations, Moscow “cut” the supply of gas, and the European regulators decided to license the Northern potik-2 gas pipeline and shut down the borders before laying down the new gas pipeline. Through the recent change in prices for “blue” it is pale, the economy of the country of the European Union in 2021 will function in the minds of high prices for electronic carriers, which was indicated on the varsity of goods and services (Miroshnichenko, 2021). The revival of business activity is also caused by the fact that it surged after two years of quarantine, causing, for example, 2021 to a shortage of energy, food and transport. This caused interruptions

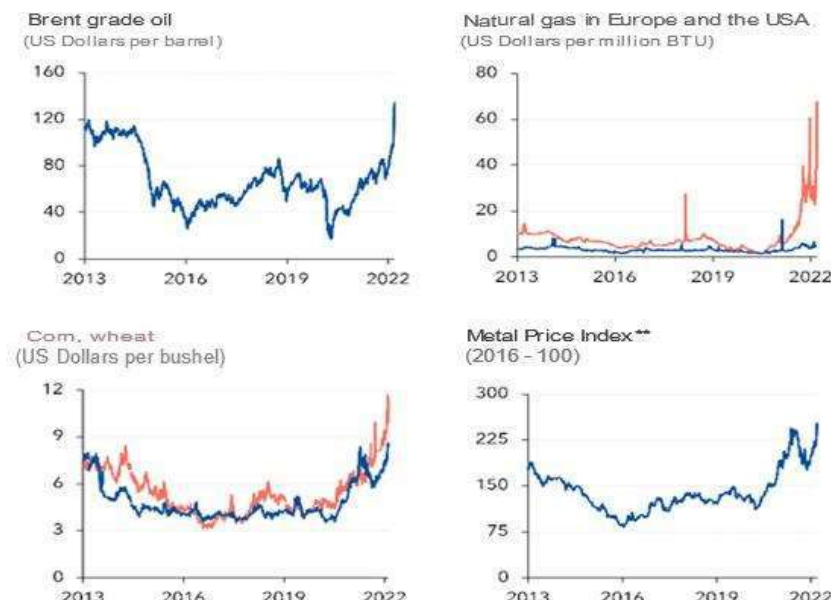
in light trade and caused inflation. Calm down, to that life is more expensive and people save, and investments are short, shards for prices increase credit rates. In Siberian-Birch, the growth of the European economy decreased by 0.1 percentage points to 0.5% in 27 countries of the European Union and up to 0.2% - in 19 countries with the single currency euro. In the United States, the first quarter was marked by a 0.4% drop in GDP (BBC NEWS, 2022).

As a matter of fact, the global gross domestic product (GDP) in 2022 will increase by less than 3.1 - 3.7 percent. Last year in October ESO predicted an increase in light trade by 4.7 percent. According to new calculations, this indicator can now be doubled (Lambreht, 2022). As a result, according to the estimates of the International Monetary Fund, the growth of the light economy in the current rotation will not exceed 3.6%, the same as in 2021, the IMF predicted 4.4% (BBC NEWS, 2022).

Reconciliation of forecasts in the International Monetary Fund Organization International Monetary Fund for the share of growth in the world economy's GDP (2021 and 2022).



Picture 1.
Reconciliation of forecasts



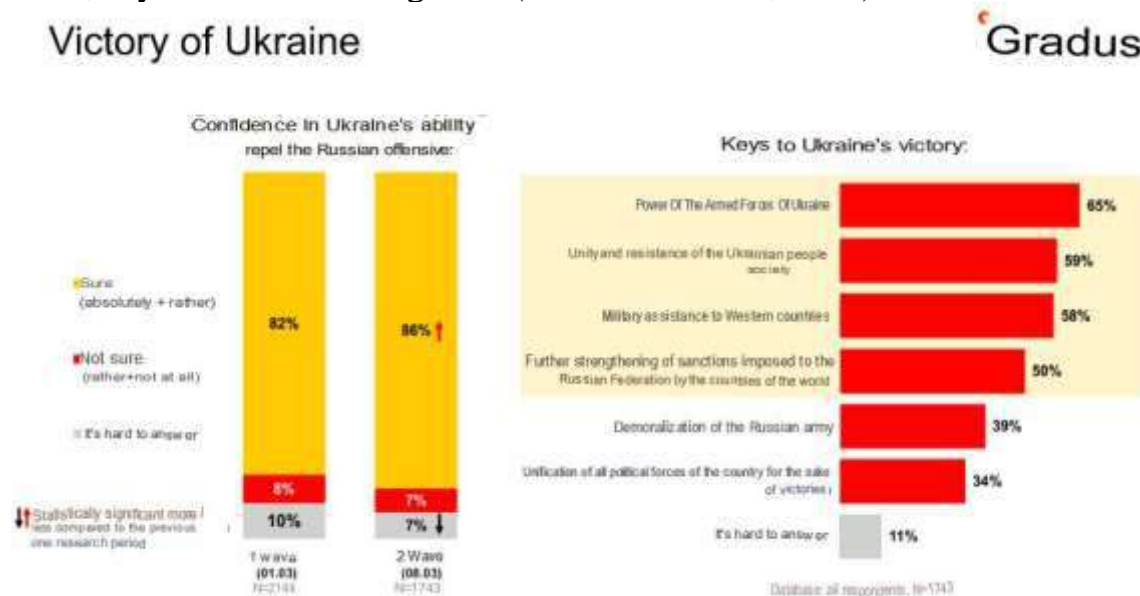
Picture 2. USA and EU countries.

*With the help of graphs, the level of rapid price increase after the start of the war in Ukraine for electronics, grains and metals is presented. As a result - an increase in the level of inflation in the USA and EU countries. (Kammer et al., 2022)

Secondly, the world is expecting a food crisis. Because

already in 2021, prices for food needs of the population were at the highest level since the oil crisis of 1974-1975. Thus, in comparison with 2020, in 2021 the food price index increased by 32.2%. This was influenced by several factors, in particular: the increase in the price of gas — a record increase in the cost of fertilizers, the

unpredictability of climate change, and epidemiological restrictions. Thus, expensive fertilizers will cause a sharp increase in the price of grain. Poor countries are in the zone of special risk. According to the UN, in 2022, 45 million people in 43 countries will suffer from hunger. Over the past two years, the number of people at risk of hunger has increased by 60%. The situation will be especially difficult in Yemen, North Sudan, Afghanistan, Myanmar and Madagascar (Miroshnichenko, 2022).



Picture 3. Victory of Ukraine

Before the war, Russia and Ukraine were major sellers of food and held leading positions in the grain and oil markets. Since Ukraine itself lacks food, and its state grain ports are blocked by the remnants of the Russian fleet, exporting products to other countries is practically impossible. In addition, what the harvest will be in 2022 and whether it will be at all is a big question, due to hostilities and constant threat in almost every region of the state (Kalmykov, 2022).

Despite the genocide of Ukrainians, the complete destruction of the city, the difficult economic situation and the unknown future of the country, many sociological studies testify to the increase in the level of cohesion of the Ukrainian people. At the same time, a convincing majority believes in the victory of Ukraine. And already 90% stated that their attitude towards the Russian Federation had worsened after the start of the war. Moreover, this trend is characteristic of all regions, although it is the fastest in the eastern region, in second place is the northern region. The population of Ukraine became more actively involved in public life: moral and material support of the Armed Forces, faith and approval of the president's actions (almost 85% of Ukrainians support), volunteering, struggle on the information front and/or self-organization in other ways. In addition, a large level of "denazification" is observed: an increase in the share of the Ukrainian-speaking population, an increase in the popularity of exclusively "Ukrainian-produced" music, films, etc., rejection of goods of Russian origin and/or goods of companies that did not leave the market of the occupier (Bliznjuk, 2022).

While some of the effects may not be fully apparent for many years, there are already clear signs that this war and the resulting surge in commodity prices will make it difficult for policymakers in some countries to strike a delicate balance between containing inflation and supporting post-pandemic economic recovery (Kammer et al.,

2022). However, "even under the worst schedule in the world, there will be enough food to feed the entire population of the planet," experts at the Bruegel Research Center are confident. Famine threatens only the poorest and most conflict-ridden countries, such as Somalia, Afghanistan, or Yemen, while EU and US countries will experience only minor restrictions on the food market (Kalmykov, 2022). After the experienced stress, chaos, state of large-scale mobility and uncertainty, Ukrainian society will definitely become different. Because for antifragile systems, the pressure of change is the path of evolution: "The wind extinguishes the candle and kindles the fire" (Bliznjuk, 2022).

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FRUSTRATION IN GAME DESIGN

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Games often frustrate us. And here the paradox appears, which is that people turn to games in order to avoid the negative feelings and emotions that they have enough of in ordinary life. It is in the game's magical framework that all life constructs

(social position, wealth, etc.). Is it bad? Everything is not so clear here. Frustration in video games can be intentional or unintentional, positive or negative.

World scientists offer to highlight the main considerations that can be useful when designing games and analyzing player behavior and preferences.

It is worth starting with the fact that aggression requires the right approach, because it makes no sense to simply anger a player: in the best case, he will play because of strength, and in the worst case, he will quit the game. In order to understand whether it is possible to annoy the player for his own good, researchers from one of the universities of Umeå, Adam Nilund and Oskar Landfors, conducted interviews with several game developers. In their work, they discovered two types of frustration - positive and negative. The positive comes when the player recognizes their mistakes during the game and wants to fix them, instead of blaming them on the game software. The negative is caused by things beyond the player's control. For example, inconvenient management, unfinished mechanics and other technical features. In order for the player not to leave the game and get a unique experience, you need to avoid negative frustration and use positive frustration correctly.

Anger is one of the best motivators. This can be easily seen in modern From Software games. Many players turn off these games forever after the first failure and even break gamepads and keyboards from aggression. But the main feature of the game design of these games is to develop your skills and overcome the obstacles through failures. Here is an example of when games frustrate us. Each defeat motivates me to try again and again - this is the philosophy that game designer Hidetak Miyazaki laid in them.

Many developers try to make sure that the player overcomes difficulties in the game not the first time and not even the second time, because psychologically much more positive emotions are brought by a victory that is hard to come by. And for some players, the very fact of it is more important than the award. As a result, it turns out that with the help of irritation, you can guide the player along the path from inept novice to master. You can motivate him with an award or victory itself and put in front of him an at first glance insurmountable obstacle. Every time he loses, he will suffer, but over time, it can bring him a little closer to victory and improve all the acquired skills.

If the game throws up a challenge that is too difficult and the player does not have enough skills to overcome it, they feel frustrated. Therefore, developers usually strive to increase the difficulty of the game in direct proportion to the skill of the player.

So, frustration in games is far from always negative and can be used to awaken an emotional response in the player and increase the vividness of the gaming experience. It is frustration that motivates the player to improve his skills. At the same time, if the frustration turns out to be too strong and the player cannot cope with the challenge, he will most likely leave the game with negative impressions. It is important to avoid external frustration, when the user blames a faulty game system or the developer instead of himself when he loses. In this case, frustration is more likely to give rise to anger. For this reason, people should either minimize the number of elements that depend on unfair randomness, or balance them correctly. But it is worth

remembering that even if people use positive frustration in games, they need to be quite careful, because it can play against the developer.

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HYPOTHESES OF THE ORIGIN OF THE LANGUAGE

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Language is a system of communication units and the rules of their functioning. In other words, language is inventory and grammar that exist in potentiality, in possibility. The problem of language origin is very complex. Assumptions about the origin of the language are made speculatively by reasoning because the original language has no records. When and how language appeared, as it was at the first stages of human development, has been of interest to people since ancient times, but to this day there is no generally accepted answer to them.

Sound imitation hypothesis is based on the fact that language arose through human imitation of the sounds of nature. The reproduction of the roar of animals, the cry of birds, the sound of water, and the wind caused the appearance of the first words. It is impossible to accept a hypothesis because, according to it, language arose by chance and not by necessity (Kochergan, 2003).

Sound-symbolic hypothesis is close to onomatopoeia. Some scientists even identify them. According to it, there is a direct connection between human feelings, emotions, and sounds. The ancient thinker Aurelius Augustine (354-430) said that the word "honey" is pleasant to the ear, and Acer "sharp" is unpleasant. A lot of linguists supported this theory (Susov, 2003, p.10).

Essence of the exclamatory hypothesis is that the objects of the surrounding world evoked certain feelings in a person, and he involuntarily uttered sounds that became the first words. And therefore, the word became a mirror of a person's state of mind. Let's suggest a primitive man came across a stream in the heat and exclaimed "ah!" with joy. Derivatives were formed from this exclamation - sign, groan, gasp, and thus the language was formed (Zubkova, 2002).

The hypothesis of the social contract is related to the above-mentioned words about how things got their names. That is, it is a development of Democritus' and Aristotle's teaching about the convention and arbitrariness of names (names by agreement). The hypothesis of a social contract can be denied at least by this fact: to agree, it was necessary to already have a language (Kochergan, 2001).

When and how language appeared and what it was like at the first stages of human development, have been of interest to people from ancient times. Each of the hypotheses is interesting in a way, but none of them is perfect.

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BREACH OF CONTRACT DUE TO FORCE MAJEURE

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In connection with the pandemic around the world, as well as the war in Ukraine, the most discussed topic has become the possibility of exemption from responsibility for non-fulfillment of the contract due to force majeure. Therefore, the study of this issue in the field of civil law remains relevant at the present time.

In Art. 617 of the Civil Code of Ukraine specifies the grounds that exempt a person from liability due to failure to fulfill an obligation (Civil Code, 2003). This article provides a list of reasons such as force majeure and accident, however, in order to be released from liability, a person must prove that the non-fulfillment of the contract was caused by the above-mentioned events.

The concept of "irresistible force" is contained in the Central Committee of Ukraine, but its explanation is not provided, therefore, for a more precise understanding of this norm, one should turn to explanatory dictionaries. In the academic explanatory dictionary of the Ukrainian language, this concept is understood as an unavoidable and insurmountable event that makes it impossible to avoid the negative consequences of this impact (Bilodid, 1974). Irresistible force is an objective phenomenon that does not depend on the will, desire and consciousness of any person.

The concept of "force majeure" should include such events as spontaneous natural phenomena. These include earthquake, storm and flood.

However, with the latest events in Ukraine related to COVID-19, the Cabinet of Ministers of Ukraine made changes to the list of circumstances of force majeure, thereby defining quarantine in connection with the pandemic as force majeure.

However, a distinction should be made between unwillingness to fulfill obligations under circumstances of force majeure and impossibility due to its influence. Since in civil law, force majeure can affect the activity of a person in different ways.

In one case, force majeure may prevent a person from performing certain actions, as a result of which he will violate an obligation. And in another example, a person may perform some actions not of his own free will, but as a result of the urge of an irresistible force to such actions, which will lead to a person's breach of obligation (Reznichenko, Tserkovna, 2009).

However, some people of their own free will do not want to fulfill their obligations, citing the fact that there is a force majeure at the moment. However, in this case, force majeure does not affect the non-fulfillment of the obligation and therefore will not act as a basis for releasing the person from responsibility for non-fulfillment of the obligation. One of the main criteria is the presence of a cause-and-effect relationship between the action of an irresistible force and the consequences of its occurrence.

One of the main characteristics of irresistible force is its inevitability. This sign does not mean the complete impossibility of averting negative consequences by a person's actions. However, this does not confirm the fact that a person should not fight for its aversion and put up with the onset of negative consequences.

The next sign of irresistible force is its extraordinary character, which is understood as an extraordinary and atypical phenomenon. In general, it can occur unexpectedly, but it has great destructive power.

And also an extraordinary phenomenon is characterized by rarity occurrence and scale. The extraordinary nature of the event does not allow a person to avert the onset of negative consequences, and acts as an objectively unavoidable phenomenon.

Also, the concept of force majeure has a relative character. This is followed in the case when one and the same event will act as an irresistible force in some circumstances, but not in others. Due to this feature, it is very difficult to give an exact list of phenomena related to force majeure. Due to the rapid development of technologies, what was extraordinary until recently can become everyday after some time. When considering certain situations, in order to understand whether this phenomenon is an irresistible force, it is necessary to find out all the circumstances, such as place and time.

Summing up, it should be noted that the concept of irresistible force is specified in Article 617 of the Civil Code, but the legislator does not provide a complete its interpretation, but only indicates as a circumstance of exemption from responsibility for non-fulfillment of an obligation. However, in order for this phenomenon to become the basis for a person's failure to fulfill an obligation, the person needs to prove the fact that it was due to force majeure that he could not perform certain actions that led to the violation of the obligation.

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IMPORTANCE OF SOFT SKILLS AND HARD SKILLS

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Since programming was created in the middle of the 20th century there always was, is and will be a need for specialists in this area. But as the time flows the demanded set of skills transforms relentlessly through the evolution of this science or just specialization evolves and becomes wider. And the further we go into the 21st century the bigger importance of soft skills is noticed and hard skills are getting “power creeped”.

To start with, it is important to make clear what are soft and hard skills and to separate them properly in case of getting a job. Hard skills are persons skills in a certain profession (not exactly programming but we will overview it as an example), it is also basic knowledge in the area of a job, and experience of working in some programs or other equipment of the profession. In the past it was extremely important to find a person for a vacation who has the professional skills within hard restricted conditions because programming languages weren't evolving fast, and these skills could be used for decades (MasterClass, 2021).

Meanwhile, soft skills are the skills that make you a competitive workplace contest. They include your personality, worldview, habits, flexibility, aim, and manners. These are not just characteristics of a person but also abilities and potential in communication, fast learning, critical thinking, teamwork and so on(Doyle, 2022).Soft skills are so important that they are often the reason for employers to decide which employees to get, who will get promotions further or will be fired.

So nowadays skill priorities have a bit changed and now soft skills are known to be more necessary. More than a half employers now focus on soft skills of potential employees rather than on hard. And the main reason for this is the fact that now there are countless languages and so much equipment to use them and if a person learns fast enough it is much better to have it in a team because it is more versatile to knowledge. (Khlystov, 2022). Also the fact that he or she is more friendly, open-minded means that they will cause less conflicts inside the group that in turn leads to bigger productivity. Also as the number of people who look for a group in IT rises tremendously because of the quarantine, personal features of employees now are more important than hard skills as again they are easily obtained.

But after all hard skills remain a must-have because even if a person is interested in work, is determined to be the best and is communicating easily he or she still needs the essential background in the profession, good understanding of it and technical skills.

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TARGETING. TYPES OF TARGETING

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Currently, targeting is the main way to increase the effectiveness of an advertising campaign, the use of which is an indispensable element. This is one of the marketing mechanisms that allows you to select the target audience from all users on the Internet according to certain criteria and advertise your product to achieve the best effect from advertising (What is targeting, 2022). Targeted advertising - is a method of online advertising that uses methods and settings for finding a target audience in accordance with the specified parameters of people who may be interested in the advertised product or service. Such advertising is only for the selected audience, which allows more effective use of the company's advertising budget.

Why is targeting needed?

1. To reduce advertising costs due to the fact that this advertisement will be shown only to those users who may be interested in the product.
2. Increasing site conversion. When switching from an advertising message to a site, a person who belongs to the target audience group will most likely purchase the product.

How does targeting work?

The targeting technology consists of a sequence of 4 stages:

1. Information about the user is collected using cookies, which is stored in the profile. Based on this information, the tastes, needs, interests and capabilities of the user can be studied.
2. Data analysis is carried out and a target audience that may be interested in certain products is selected.

3. All data about the target audience are automatically recorded and issued in the form of charts and graphs for the convenience of information monitoring.

4. Advertisements are created and placed taking into account the characteristics of the target audience and the frequency of visits to specific sites.

The following settings parameters are highlighted: demographic (based on nationality, economic status, gender, age, level of education, level of income and employment); psychographic (based on the consumer's values, personality, relationships, opinion, lifestyle and interests); focused on behavioral characteristics (browser history, purchase history and other recent user actions on the site are indicated); temporary (corresponding to the hours or weeks in which the sale of goods or services is possible, for example, relevant for public catering); geographic (applies to people staying in a certain area for a certain period of time or living in a specific area).

However, insufficient sampling or relatively broad settings may capture a portion of users with similar characteristics but not interested in the product or service being advertised. In this regard, this type of advertising requires a test period for setting up the campaign, in-depth analysis of the results obtained, and further work with the settings.

According to the Internet publication Web marketing, today the number of unique users of mobile devices is 5.19 billion, Internet users - 4.54 billion, active users of social networks 3.8 billion, and users of social networks on mobile devices 3.463 billion. persons, respectively (Context versus targeting, 2022). The most popular e-commerce platforms for 2021: Olx.ua 9% Rozetka.com.ua 8% AliExpress.com 8% Prom.ua 4% Makeup.com.ua 4% Eva.ua 3%. As of 2021, 22.96 million Ukrainians used the Internet, which is 58% of the country's population.

So, the advertising mechanism that allows you to select the target audience that meets the specified criteria from the general audience is called targeting. There are various types of targeting that allow you to select a target audience from the total number of advertising users. Each type of targeted advertising is a process that develops and is constantly refined. They differ from each other in the principles of audience division, but are complementary.

Thematic targeting is the display of advertising on sites of a certain topic, which coincides with the advertised product or at least indirectly resonates with it. Geographic targeting is the display of advertisements for visitors who live in a certain region, country, or city chosen by the advertiser. Contextual targeting is the practice of serving ads based on the content of a website. The demonstration of the message is carried out in accordance with the interests of the visitors of the advertising platform. Targeting by time of display - display of advertising only at a certain time of the day. Targeting by display frequency allows you to limit the number of contacts of an advertising message with a user for a certain period. Socio-demographic targeting allows you to select users based on such criteria as gender, age, income level, social status, position, field of activity, etc. In behavioral targeting, the main interests, preferences, and tastes of users are used for segmentation, which are tracked using cookies -files. Language marketing - limiting the display of advertising messages by sites in certain languages (What is geographic targeting, 2022).

Social Sciences

Targeting in social networks has its own characteristics. It is divided into types depending on how the content is displayed:

- Image. In a post, an attractive photo, picture or collage is published that calls the customer to take a certain action.
- Multiple images. If several pictures are posted on the website, it is most often done in order to advertise your product or service in more detail.
- Video. A video clip is a very good way to connect the target audience, as the musical accompaniment and meaningful text engage potential customers.
- Slide show. An alternative to video, suitable for advertising on mobile devices, as it does not require many resources. An acceptable option if the targeted targeting is intended for users of portable devices.
- Selection of goods. In such posts, several goods or services offered by the entrepreneur are advertised at once (Targeting in social networks: the price of advertising and its effectiveness, 2022).

Different social networks were initially intended simply for communication of people with similar interests. However, with the passage of time and with the growing popularity of such sites, large and small businesses paid attention to them. Today, thanks to such resources, manufacturers find their buyers, and customers learn about new products, favorable offers and discounts. It is primarily about Instagram and Facebook. This model of cooperation is mutually beneficial - people get information and the opportunity to buy at a lower price, and sellers look for new sales markets in social networks (Business promotion on Facebook and Instagram, 2022). Conducted studies show that about 40% of people who buy goods and services are present in social networks in one way or another.

The following indicators primarily influence the choice of users: publications of friends and acquaintances (20%), recommendations (21%), number of likes and shares (31%), good photos (12%), low prices (7%), discounts (9%). The fact that social networks today are the undisputed leader among platforms for interaction with potential and existing customers is told by many stories, starting from market monsters and ending with small businesses. The most important indicator of the site's performance is its profitability. So, on Facebook, this indicator is about 95%, on Instagram - about 85%. Studies by the Pew Research Center have shown that about 20% of all social network users log into their Instagram account every day. Women predominate here, and they are active buyers who not only post their photos, but also look for goods and services. Instagram is currently owned by Facebook. It is there that you can find many convenient tools for conducting business and advertising your products. More than 130,000 new photos are added to Facebook every minute and 500 posts are written. And the number of likes that appear in 30 seconds exceeds 2,000,000 (Placement targeting, 2022).

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THE ROLE OF MOTIVATION FOR STUDENTS

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In our world, the word “motivation” began to sound more often. Some believe that students do not achieve their goals due to lack of motivation. So, is the role of motivation so important in the process of becoming better? The main goal of this research is to prove or disprove the importance of motivation in becoming a better student.

A mood that animates, guides, and sustains behavior is referred to as calling motivation. Goals and action are both necessary for motivation. Goals give action direction and motivation, but action also requires effort: tenacity to carry out a task for an extended length of time.

Students’ learning and conduct are impacted in a number of ways by motivation. Motivation guides behavior toward certain objectives. Students’ decisions are influenced by motivation since it establishes the exact goals that people work for. For instance, choosing between taking physics or art, going to a football game during the week, or doing a task that is due the next day (Melissa Hurst, 2021).

Motivation results in more work and energy. Depending on their motivation, students may approach a task (even a difficult one) with excitement or a blah attitude. Motivation has a significant impact on what and how information is processed because motivated students are more likely to pay attention and try to understand the material rather than simply going through the motions of learning superficially. The motivation of learning activities aids in the student's ability to focus and find satisfaction in his work. To keep students focused on the lessons to be learned, constant motivation is required. It is clear that the better a student processes certain information, the better he becomes in that direction. Finally, the level of achievement is affected by motivation, effort and persistence. The higher these indices, the more likely task achievement will occur (Puja Mondal, n.d).

As a result, motivation is one of the important things in making a student better in a certain direction. Motivation, as well as self-discipline and most useful traits, can help with becoming a better student not only in university or school, but also a better person in personal life.

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THE PSYCHOLOGICAL PROBLEM OF STUDENTS' SELF DETERMINATION

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Psychology was formed over the centuries and is rapidly developing in modern conditions of scientific and technical progress in an inextricable relationship with other branches of scientific knowledge and social practice.

Among the general problems of psychology, it is possible to define: conditioning of the human psyche by biological and socio-historical factors; the structure of the human psyche; the regulatory essence of cognitive, volitional and emotional processes; individual psychological features of the personality and others. The formation of a person's self-esteem is one of the urgent problems of research in the field of psychology and pedagogy, because the self-confidence of each person plays a colossal role in the success of the entire country.

In numerous psychological studies devoted to youth, emphasis is often placed on the development of adequate self-esteem, because this age is the central period of formation of the worldview system, some character traits, and social intelligence. These questions are of great importance when it comes to students.

Student age is characterized by the fact that during this period the development of intellectual and physical forces takes place, but mental abilities, knowledge, abilities and skills come first.

Therefore, it is necessary that university education is aimed at personality development and prepares students to solve problems of self-determination. It is necessary to try to raise the level of self-esteem of students (Kyrychenko, 2016, p. 113).

It is on how adequately a person perceives himself in society, whether he does not underestimate his self-esteem, whether he feels like one of its links, that his further existence depends.

Based on O. Kyrychenko's research, we can talk about low, high and adequate self-esteem. We present a brief overview of these types of self-esteem.

Low self-esteem and increased critical attitude towards oneself are negatively associated with such personal characteristics as suspiciousness, dubious attitude to new things, secretiveness, restraint, depression in interpersonal conflicts, timidity, indecisiveness, softness, docility.

Overestimated self-esteem and self-overestimation are associated with such qualities as self-control, self-confidence, risk-taking, impulsiveness, independence, lack of need for support from others, persistence, business orientation, emotional stability, decisiveness, cunning, ambition, aggressiveness, courage, irritability.

Adequate self-esteem is associated with the following personal characteristics with an average degree of severity: conservatism, timidity, dominance (medium severity of dominance), insecurity, self-control, high superego (strong character, persistence), self-sufficiency (independence from the group, independence), diplomacy (clairvoyance, cunning, prudence) (Kyrychenko, 2016, p. 114).

All in all, thanks to this analysis, personal characteristics associated with low, high and adequate self-esteem were revealed. The study of self-esteem is indeed very important, because self-esteem affects the success of university studies. Adequate or high self-esteem of personal characteristics contributes to the success of educational activities.

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ATTRACTION AND CLOSE RELATIONSHIPS IN SOCIAL PSYCHOLOGY

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In this article, I will describe two types of relationships and the importance of support, as well as other points that affect this and attractiveness.

The process leading to an affinity with a stranger is an interpersonal attraction and its development requires many aspects: similarity, understanding, appearance, behavior, situation, environment, environment, goals, interests, hobbies. There are two levels of attraction:

- Cognitive level (perception of the world and processing of environmental information)
- Affective level (emotional response to some impact).

Social Sciences

Scientists say that healthy relationships and socialization reduce the risk of death, but social rejection and toxic relationships make you feel worse.

We must separate personal attraction and social attraction. Let's touch upon the second. (Myers, 2022).

It is based just on the characteristics of a certain group of people, their interests, behavior, and common occupation.

And in conclusion, let's talk about support, an integral action for each of us.

It comes from three aspects:

1. Perceived social support.

A person feels calmer, less anxious, better if he knows that he has individuals who will help him in any situation, even in a state of overexertion

2. Received social support

Just like the previous one, this type of support helps us.

But, others may not want your support or think they don't need it at all. A friend's support when you can't complete a difficult level in a game is more appropriate than a mom telling you not to worry. This can piss me off even more. Therefore, despite the desire of the rescuer, support may not help if it was unsolicited.

3. Social Networks

This is no secret that now we have many acquaintances and even strangers who keep in touch with us on the Internet. It helps us feel needed, not so lonely, find joy or new interests, maybe even find a mate for life. For these reasons, social networks help our, mainly mental, health (Myers & Lamarche, 1992).

Also, communicating with many people can be burdensome, especially if they are not very interesting to you or you do not like the topic. However, we all need variety in our lives, especially in relationships with other people. Trying different hobbies, discussing different topics, changing circles as needed when it becomes clear that you have outgrown the people you used to be with will help you achieve self-understanding and save you from unnecessary stress.

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EDUCATION: IMPACT OF THE WAR IN UKRAINE

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Due to the war in the country, not only different enterprises and organizations suffered, but education as well. All educational institutions in Ukraine had to take

certain measures to continue the effective education of young people in the conditions of martial law.

One advantage of Ukrainian 2022's education is that most of the teenagers got the opportunity to study at university for free, despite the challenging times in the country. In 2022, the total volume of the state order is 188,938 budget places, of which (Ric News, 2022):

- 37,466 junior bachelor;
- 87,739 bachelors;
- 59,986 masters.

Another positive aspect is that studying takes place completely remotely, which, at first, allows you not to spend extra time on the road, and, second, makes it possible to study from anywhere in the world and wherever you are.

Safety first! During an air raid, everyone, without exception, must take shelter, due to which the class is interrupted. Lecturers understand the situation. They make concessions and allow assignments to be completed later.

On the other hand, air alarms became a big obstacle, and over time, the constant power outages in houses and complete disconnection from the network. Because of this, studying is almost impossible. Not everyone has the necessary conditions for online learning. For example, not everyone can freely attend classes via Zoom, or Google Meet or view files and study materials, access to which is provided only on the Internet. The schedule of power outages in Kyiv (Lipych, 2022):

ГРАФІК ПОТЕНЦІЙНИЙ ВІДКЛЮЧЕНЬ ЕЛЕКТРОЕНЕРГІЇ

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ДТЕК | ДТЕК Київські Електромережі

	ПН	ВТ	СР	ЧТ	ПТ	СБ	НД
Група 1	08:00 – 12:00 20:00 – 00:00	16:00 – 20:00	12:00 – 16:00	08:00 – 12:00 20:00 – 00:00	16:00 – 20:00	12:00 – 16:00	08:00 – 12:00 20:00 – 00:00
Група 2	12:00 – 16:00	08:00 – 12:00 20:00 – 00:00	16:00 – 20:00	12:00 – 16:00	08:00 – 12:00 20:00 – 00:00	16:00 – 20:00	12:00 – 16:00
Група 3	16:00 – 20:00	12:00 – 16:00	08:00 – 12:00 20:00 – 00:00	16:00 – 20:00	12:00 – 16:00	08:00 – 12:00 20:00 – 00:00	16:00 – 20:00

* Зверніть увагу: можлива невелика похибка у часі в межах 30-60 хв для перепідключення електропостачання між групами.

In addition to this, since learning takes place remotely, students are forced to stay at home around the clock, so most of them do not even know who they are studying with in real life.

To summarize, studying in Ukraine in 2022 is quite different from previous years. The new conditions forced everyone to adjust to various circumstances without exception. They have both advantages and disadvantages. But despite this, education in Ukraine continues, and everyone does what they do best: lecturers continue to teach, and students continue to study.

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ASIA’S ROLE IN THE GLOBAL ECONOMY

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Throughout last decades we can witness the dawn of the region of Asia. With this new era, more and more countries that used to be poor and low-developed becoming giants of the world economy. China, who once was most powerful country in the world, has lost its positions after the Industrial Revolution, and soon after that entered so-called “Century of humiliation”. But not so long ago China has started their way to conquering the highest mountain in the world – mountain of an economy.

Since 1978, when under the leadership of Deng Xiaoping country began economic reforms, PRC* shows incredible rates of growth. Information provided in Table 1

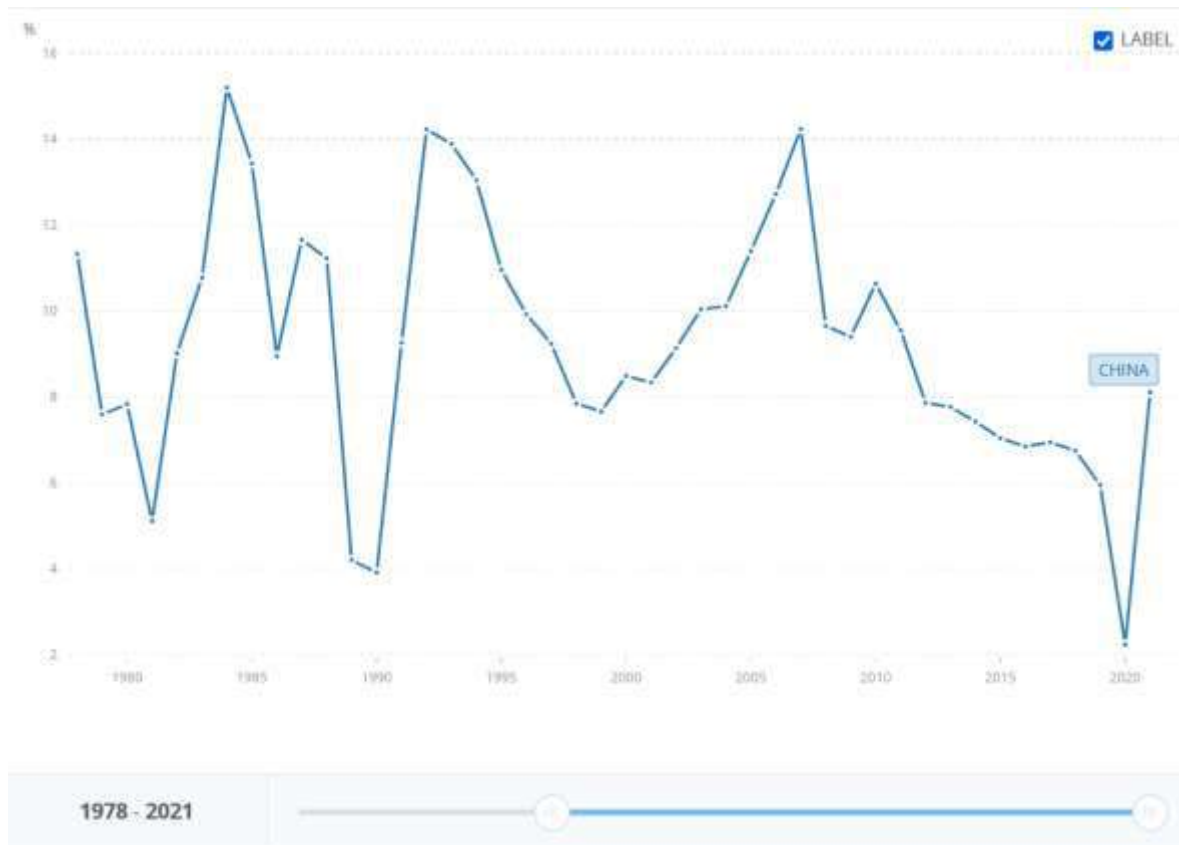


Table 1

As we can see, China has shown growth with 9.72% percent annum over the past 36 year, that is very impressive. Talking about incredible growth I must mention Japan, which in last few years didn't show high rates of economic growth (in past decade Japanese GDP growth rate (%) was only about 1,6-2% [Table 2]), but in after-war period and until the 90s Japan could compete with all other top-countries of the world, such as USA, Germany, France etc.

In period from 1946 and until early 90s Japan has experienced so-called "miracle". Experts also call this phenomenon as "Japanese economic miracle" During this period, economy of Japan has shown to the world, that even country with scarcity of minerals and resources can become one of the most powerful countries.

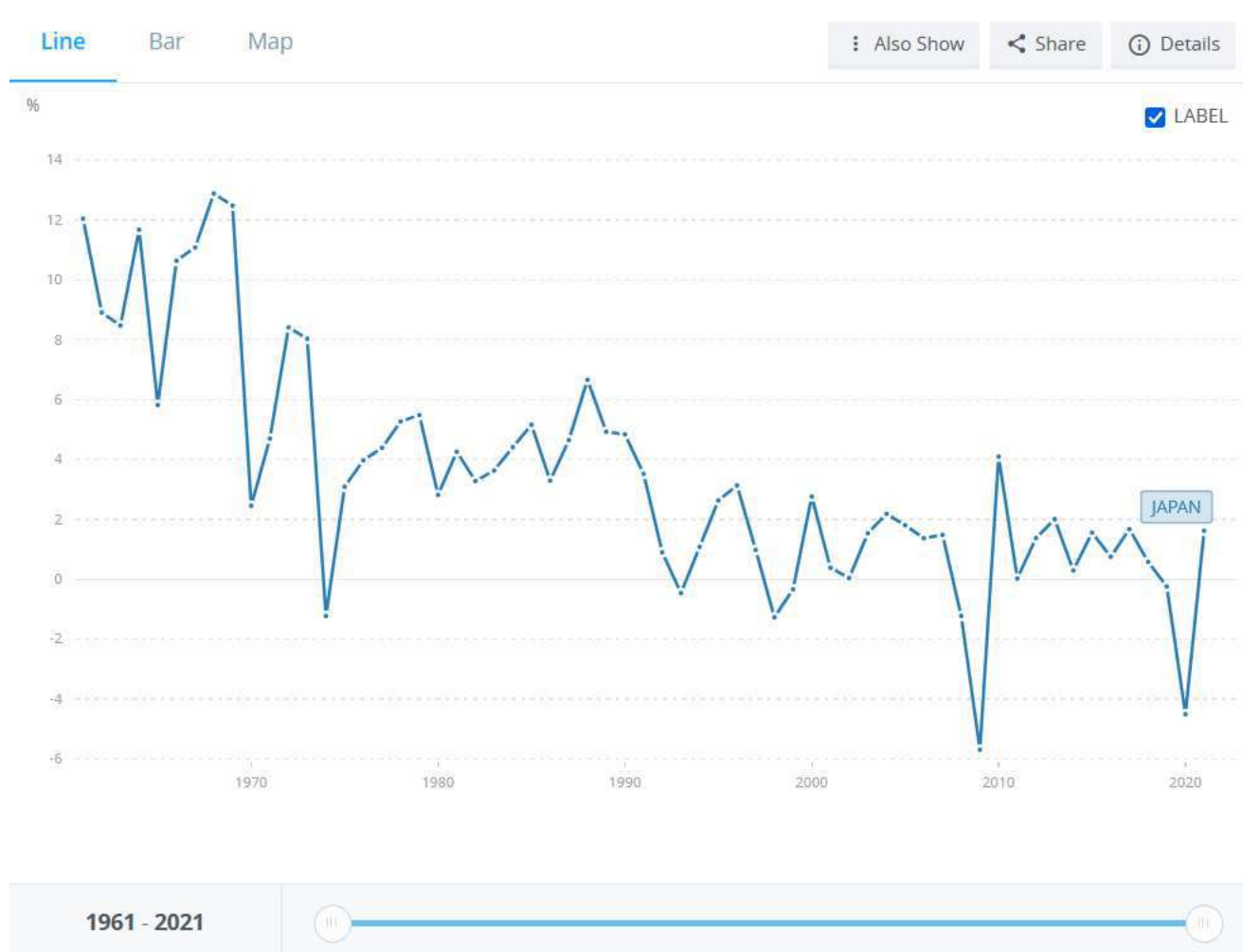


Table 2

According to this Table we can notice, that in year 1968 GDP growth rate was the highest compared to other years (12,9%), and we can also see that starting year 1974(-1,2%) GDP growth rate slowly starting to decreasing to its modern state.

And last, but not the least country I would like to mention in my work is India.

This country known for its powerful software base and outsourcing. Historically, India has tracked its economy in 3 sectors: Industry, agricultural and services (Information in diagram)



Agriculture sector – 20.19%, Industry sector - 25.92%, Services – 53.89%
 India has entered in top 5 world countries by GDP by hard work of all its nation.
 And for past 50 years India has shown stable rates of GDP growth (Table 3)

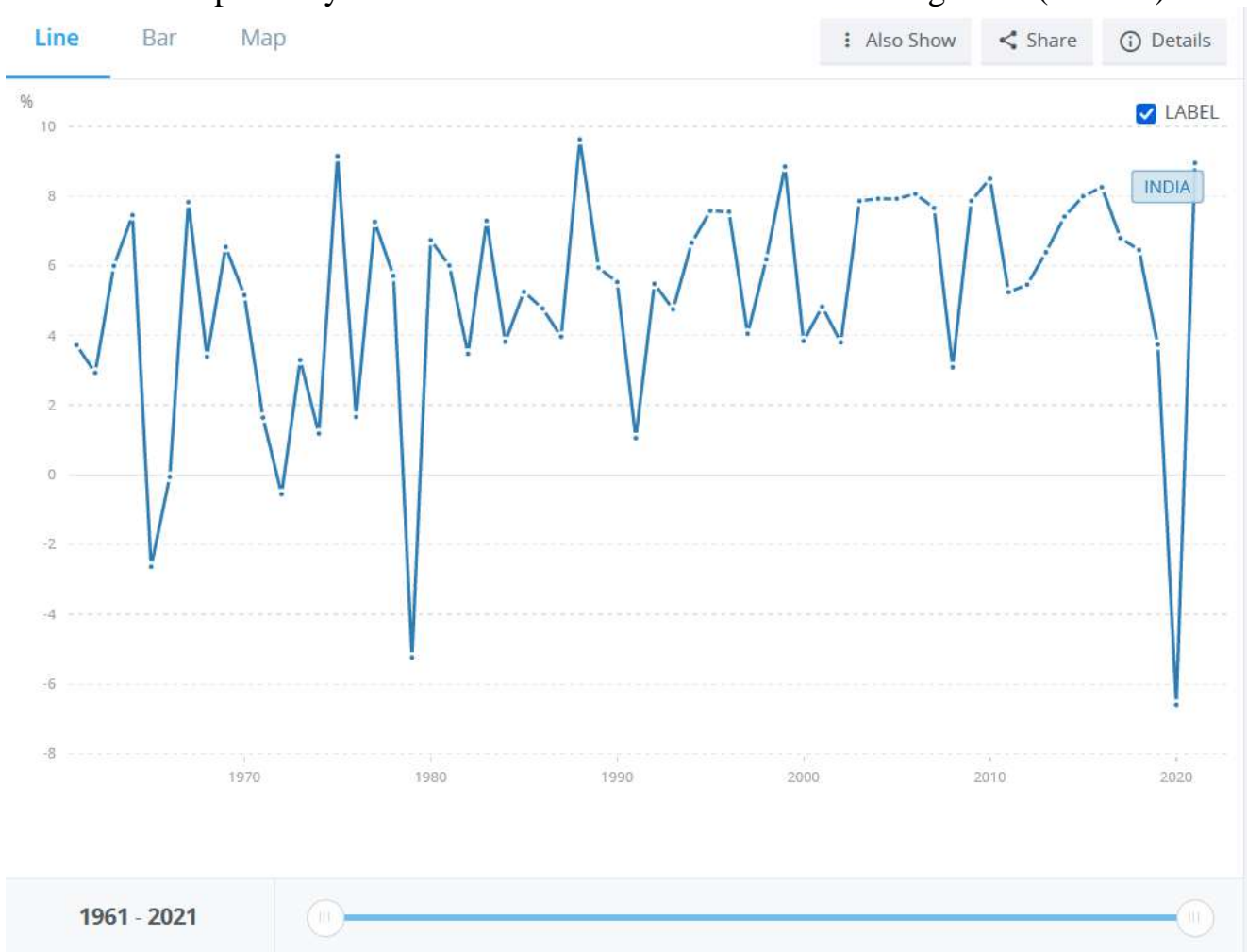


Table 3

Region of Asia plays very important role in world economy. Only these 3 countries that I've mentioned before stand for almost 25% of all world economy (24.42). That
Social Sciences

fact raises more challenges for other countries. For Ukraine it may be signal to start paying attention to Eastern region. Our country can prepare more specialist for those countries, which can in near future bring success to Ukraine.

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SOCIAL NETWORKS

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Today it is impossible to imagine a modern person without social networks. Millions, billions of people from different parts of the world actively use them in their everyday life. We don't notice how social media is taking over our lives.

According to «BBC Future» three billion people around the world, about 40% of the world's population use social networks, on which they spend an average of two hours every day, publishing posts, sharing photos, responding to posts of friends. With the help of social networks, we stay up to date with all the events. With their help, we learn. With their help we communicate. We communicate even if we are in different cities or countries. Virtual communication, the ability to find any information, friends, news exchange, the ability to listen to music, watch videos and photos - all this is attractive. Along with all these advantages there are also disadvantages. The downside of social networks is a departure from real life.

Many people become addicted to them when, as soon as they wake up, the first thing they do is to check what happened during the night on Instagram, Facebook, etc. Under the influence of social networks, the lifestyle is changing, there is an intensive

development of new models of interaction with the environment. All human emotions in social networks are replaced by emojis.

There is a kind of dependence on social networks, which greatly affects a person, his communication, behavior. As a result of Internet addiction, various complexes may appear.

British scientists created a group of more than 12,000 schoolchildren and interviewed them for three years. The 9th graders were asked how often they check their social media pages, “Instagram”, “Facebook”, “Whatsapp” and “Twitter”, but did not specify how many hours they spend there. 51% of girls and 43% of boys access social networks more than three times a day. Among eleventh-graders, this indicator increased - 69% of boys and 75% of girls (BBC News, 2022). During the year when the children were already studying in the 11th grade, they were asked about their level of happiness and how worried and satisfied they were with life. Boys and girls who accessed social networks more than three times a day were prone to psychological disorders. Girls felt less happy and suffered from anxiety attacks. Whereas the boys had no such problems. The researchers said there is evidence of a strong link between social media and mental health. In girls, negative effects were associated with sleep disturbance, cyberbullying and, to a lesser extent, lack of physical activity.

However, these factors had a much smaller impact on boys.

Social networks bring a lot of benefits, but you need to remember that you should not abuse them and not try to spend all your time on them. Because in the modern world it is normal when posts, comments, photos, videos and games are an addition to a busy life. It is bad when they replace it.

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EDUCATION IN UKRAINE DURING THE WAR

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Two years of pandemic and war certainly affected education in Ukraine. Education needed changes even before that, but after the victory, the educational process should have a completely different level. The questions about education content, training skilled teachers, establishment of the educational infrastructure and financial independence of educational institutions now rise existentially, because education and culture is the foundation that makes us all a nation, and today, more than ever, we are conscious of our unity, but also of all the problems that were inside us for a long time (Gorbachev, 2022).

The right of every person is the right to quality education in safe conditions. Now the country is in a difficult situation. Children living in occupied territories or in places where hostilities are taking place are at risk and usually do not receive an adequate

level of education. Many children and students are now forced to receive their education online.

There are no student registers in Ukraine, it is impossible to organise reliable communication with students abroad. There is also no information about the educational results of students at different stages of education, for example, what they know in the 4th or 9th grade. Many thousands of children and teachers left the country. Will they come back? We need to make all the conditions for this.

Distance education, the opportunity to study online will in any case be part of the educational process. Even when we return to normal life, thanks to the online system, it is possible to make interesting digital educational content available in every school in Ukraine.

But distance education cannot be the only form of education, because many important functions are lost - first of all, individual feedback, communication, socialisation, teamwork, formation of social relations, education, empathy. There are many educational outcomes that we cannot achieve through distance learning alone. So, the future is blended learning, although real education is education that is formed through relationships between people. It is very important.

It is very difficult to organise high-quality and effective distance learning for children of primary school age. These children do not yet know how to concentrate, they need a relationship with the teacher. Distance learning also affects middle school children, where there are also gaps. Distance learning shows its effectiveness only in high schools and universities - where there is better self-discipline and motivation (Hrynevych, 2022).

Children who survived shelling, ran away, hid in bomb shelters or were simply forced to move somewhere from home - far from friends, to a new language environment - experienced serious stressful situations. Therefore, we need to understand how to overcome the gaps in education, as well as how to heal the psychological injuries that will affect their lives in one way or another in the future, in particular the ability to learn.

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ROCOCO - AS THE MAIN STYLE OF THE 18TH CENTURY

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Rococo is a gallant, reversed style, in contrast to Baroque, which in the second half of the 18th century came (from France and Austria) to Ukraine — to Kyiv, Lviv

in the 1760s — 1770s. Almost the main word of the Rococo era was the word "whim". In art defined by light, nervous, delicate and whimsical forms ("playful" Rococo).

It manifested itself first of all in the layout and decorations of the interior (palaces, churches, churches). Rococo art (with its frivolity, cult of pleasure, flirtation) exists, as it were, to please the aristocracy and to easily educate and amuse them at their leisure. The nobles of the Rococo era aimed at daily pleasures. It was a feast in the midst of plague — with artificially canceled problems, tuberculosis, syphilis, poverty, death.

Rococo painting was dominated by depictions of holidays and theatrical performances, couples of mythological creatures in love. In the portraits, people were depicted as smiling, kind, and graceful, but it was a mask that hid numerous shortcomings and extremely complex problems of that time.

Rococo painting is diverse in terms of genres, themes and means expressiveness.

Subjects of painting: pastoral, bucolic, mythology, shepherds motifs on the background, wonderful landscapes, human feelings.

Genres painting: portrait, landscape, still life.

Colors painting: light pastel tones, pink, blue, lilac.

It owes its emergence to the transformation of Baroque, which was losing some of its characteristic features at the time, as well as the spread of skepticism and free-thinking trends among the creative intelligentsia. Rococo, in contrast from baroque, gravitated towards miniature, unpretentious forms, avoided contrasts, striving harmonious coloristic and elegiac tonality. Art this style is defined by light, delicate and whimsical forms.

During the Rococo era, they were widely developed decorative crafts. In addition to painting, Rococo art was divided into decorative art (carving, decor, weaving, jewelry, porcelain, furniture, tapestries), architecture (figurative decoration, lack of orders, flirtatious capitals, high pilasters, decoration with sculpture, sculpting) and sculpture (reliefs, small statues for gardens, parks and premises, fountain sculptures).

In the 18th century exquisite porcelain dishes were used not only for table setting, but also for interior decoration. In addition to traditional sets of tableware, vases, glasses, wine glasses, as well as figurines and story miniatures were made from high-quality porcelain. The porcelain products depicted pictures of everyday life, hunting scenes, and rural landscapes. The art of making porcelain and silverware was greatly developed in the Rococo era. Meissen and Sevres porcelain are truly priceless masterpieces, their unparalleled beauty is famous throughout the world even today. Rococo style architecture represents lightness and playfulness, the embodiment of whims in the interior and decorative arts (Monique Wagne, 2019).

Most Rococo buildings are private houses of the aristocracy: rich city estates and country palaces with strong walls. Estates were decorated with sculpture, sculpting, curvilinear outlines, asymmetric compositions. In the center of the building there was an obligatory ceremonial hall - a salon. The rooms were small with very large windows with sculptural and carved decorations, mirrors.

In the creation of this architecture, straight lines and flat surfaces almost disappear or, at least, are masked by figured decoration; high pilasters, caryatids and telamones support ledges, pediments, often "torn", crowned with vases, pyramids,

sculptural figures, trophies. Everywhere, in the framing of windows, doors, wall spaces inside the building, in ceilings and desudeports, there is intricate stucco ornamentation, consisting of curls, mascarons, flower garlands and festoons.

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DEPERSONALIZATION – PROTECTION OR SLOW SELF-DESTRUCTION

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Since the beginning of quarantine many people have faced depersonalization - derealization disorder (DPDR, DPD). Depersonalization is, like fear, an almost universal response to life-threatening danger (Simeon & Abugel, 2008, p.68).

As a defense mechanism, depersonalization serves a purpose - to mentally distance an individual from horrific or overwhelming circumstances. But this mechanism can go awry and exhibit a darker side, which manifests itself as depersonalization disorder (Simeon & Abugel, 2008, p.3).

The main symptoms of DPDR include: the memories that are transmitted simply as a fact of the event that took place in your life, without any emotions and any sensations; the disappearance of empathy, a person with depersonalization is able to understand the emotions of others, but is unable to sympathize. This disorder may be prolonged, during the whole period it can be observed as a temporary disappearance of symptoms for a certain time. Dissociation is a facilitator of suicide risk by increasing suicidal ideas and attempt behaviors.

The beginning of a full-scale war in Ukraine became another terrible situation that affected the psyche of people. Various studies on the impact of war on civilians and the military come to terrible conclusions. Children suffer mostly in war. As a result, they become more susceptible to disorders in the future.

Swank and Marchand's much-cited World War II study determined that after sixty days 98 percent of all surviving soldiers will have become psychiatric casualties of one kind or another (Grossman, 2014, p. 43).

Unfortunately, there are still difficulties in establishing this diagnosis because for a long time due to bias which is now called depersonalization it was considered as a mixture of anxiety and depression. The century of research and scientific review of certain aspects of depersonalization, such as: the obsessional, compulsive states and character disorders allowed us to expand the spectrum of symptoms, determine their impact on life and establish a separate approach to each person.

We can draw a conclusion that depersonalization is a way to save a person, as well as a way to destroy, if the protective reaction becomes a syndrome. It is extremely difficult for people with depersonalization to explain their feelings and sensations, a lack of support only exacerbates the disease and increase a sense of alienation. Mental

illnesses are very damaging to people's lives, so it is important to attract people's attention to this problem.

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FEATURES AND MAIN DIRECTIONS OF MONETARY AND CREDIT POLICY IN UKRAINE

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Effective monetary policy is an extremely important and urgent issue, since it affects the financial state of the state, as well as the development of the economy as a whole. If the state does not implement a competitive monetary and credit system, the country's economy will not be able to adequately overcome such crisis phenomena as the growth of inflation, the devaluation of the hryvnia, that is, the national currency, the growth of the budget deficit, and the reduction of the gold and foreign exchange reserve.

Monetary and credit policy is a set of measures in the sphere of monetary circulation and credit aimed at ensuring price stability through the use of monetary policy instruments. In Ukraine, such a policy is implemented by state authorities – the Cabinet of Ministers of Ukraine, the Central Bank of Ukraine and the Ministry of Finance of Ukraine. Such authorities must have a clear understanding of economic processes, as well as specialized competence, have the right to manage the system and use the tools of influence. One of the tools is the mechanism of indirect regulation of the economy and money circulation – changing the supply (mass) of money and its price (interest) on the money market. Using the method of regulating the economy improperly, for example, due to too fast rates of supply reduction, can lead to consequences that should be foreseen. There are two types of such consequences: expansionary monetary policy, i.e. rapid «depreciation» of money, or restrictive policy («rising» of money). An integral component of preventing these consequences is financial monitoring – a set of measures taken by the central bank to maintain price stability.

Experts in the economic field also highlight other tools needed to implement a competent monetary policy. Each of these tools has its own goal to achieve. The reserve requirement policy does not affect the dynamics of the money supply, the refinancing policy consists of much larger lending scales. The most important thing is that the implementation of any reforms should be real specialists with systemic

experience in financial institutions such as a bank. During its own independence, Ukraine went through three major stages, starting with the creation of its own banking system with taxes and its own head unit, ending with the reformation of the system during the world crises. The National Bank of Ukraine has the leverage, since this state institution sets the discount rate for commercial banks and state entities, the value of funds raised and placed for a certain period. Ukraine has its own gold and currency reserves, i.e. the volume of securities and official reserve assets or bonds, which are supervised by the state.

The monetary and credit policy is carried out in order to stimulate the business activity of domestic businesses and to encourage Western investors to Ukraine. Such a policy is a sign of the stability of the national currency, as well as the basis of the economic development of the population. It is the basis of social and economic relations and the reason for the need for a competent state policy of monitoring and regulation of the national unit (Petik & Pilat, 2022).

It is impossible to imagine a successful state without the implementation of a correct and successful monetary policy. Thus, the implementation of such a system should be handled by real and experienced specialists who know how to implement reforms, as well as how to use tools for regulating monetary policy.

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INDUSTRY TYPIZATION IN LEGAL ADJUSTMENT OF SUSPENSION LINES

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Modern democracies are based on the principle of the rule of law, which, in particular, is a component of the principle of legal certainty. The principle of legal certainty is one of the general principles of law. It is reflected in the sources of EU law and is applied in the practice of the European Court of justice, and is common to the legal order of the EU member states and Ukraine. One of the means of legal technology that strengthens the certainty of legal regulation of Public Relations is industry typing. In the academic Explanatory Dictionary of the Ukrainian language, the word typification is associated with the following meanings: A) the embodiment by means of art, literature of the general, typical in partial, individual in specific artistic images; B) the construction of a large number of samples of machines, parts, buildings, unification; C) the assignment to a certain classification type.

A large number of legal norms, concepts, constructions, and legal relations are eventually generalized, typed, and we get a certain limited number of types: public and

private law; substantive and procedural law; regulatory and protective law. An important manifestation of typification in law is industry typification, as a means of legal technology. It is inextricably linked with the systemic properties of law and legislation as a form of its expression and existence. In order to ensure their organic inclusion in certain institutions and branches of law during the formal legal consolidation of legal norms, it is necessary to proceed from the following provisions and rules. As a rule, horizontal content and functional links of normative legal prescriptions are not directly indicated in the text of normative legal acts. They follow organically from the content of regulatory requirements.

When developing a draft regulatory legal act, it is advisable to draw up a scheme of sectoral and institutional relations of its provisions. The purpose of such a scheme is to determine the place of a normative legal act in the horizontal system of legislation and the correlation of its provisions with the system of law, to clarify the initial provisions of legal regulation that apply to the new act, to distinguish and adequately justify general and special regulation.

The next necessary prerequisite for sectoral typification within the framework of rule-making is the codification and consolidation of legislation, which is manifested in two main provisions. First, the expression of legal norms in the form of a codified or consolidated normative legal Act allows achieving maximum sectoral purity (uniformity) of the normative legal content of the act as a whole. Secondly, it is in codified, consolidated, and other basic normative legal acts that norms are formulated-principles, normative generalizations, industry terminology, initial legal concepts and constructions are fixed, which are further used, specified, and developed in other normative legal acts 6.

Industry typing in the framework of legal interpretation activities is important primarily in the case of a systematic method of interpretation. It is based on an analysis of the direct context of the provisions to be interpreted, or an analysis of their role within the microsystem that is formed by a particular institution, or within the framework of the macro-system, the legal system to which they belong. Industry typing as a complex means of legal technology involves the use of the following means of the latter: - legal terminology that reflects the specifics of the relevant industry, the institution of law; - branch legal structures and structures of individual institutions; - structural distribution of a normative legal act;-headings of structural parts of normative legal acts and the name of the normative legal act.

In rule-making activities, the use of references is important in the context of industry typing. It is rightly noted that references in normative legal acts are aimed not only at saving the legal form, but also act as an important way to connect and coordinate the normative legal requirements of various normative legal acts regulating homogeneous relations (Bohachova, 2013).

As conclusion, an important manifestation of typification in law is industry typification, as a means of legal technology. Industry typification in rule-making activities acts as a means of rule-making technology, with the help of which normative legal prescriptions are included in the relevant branch (institution) of law. Industry typing in the framework of legal interpretation activities is important primarily for a

systematic method of interpretation and is based on an analysis of the direct context of the provisions to be interpreted.

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TRENDS OF DIGITALIZATION DEVELOPMENT IN UKRAINE

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Nowadays, digitalization is the cause of large-scale and fundamental transformations that, in one way or another, affect all aspects of our lives. The changes created provide us with a lot of opportunities to improve and facilitate the future, and the question is how effectively we will use them. Digitalization is no longer an option. It is a necessity," said economist Mariana Mazzucato, Director of the Institute for Innovation and Public Purpose at University College, London ("The future of the world will depend on digitalization", 2020). The digital era gives us access to any information due to the centralization and availability of data. It changes existing and not so efficient ways of working and affects its effectiveness. The digital future also enables us to provide secure workplaces for a large number of employees. It will open up new opportunities. The combination of people and technology is the driver and the key to a happy and progressive future. Our country is considered a powerful IT hub in Europe. We have something to offer other countries - digital services, innovative projects and a developed IT industry. The best example is the "Diia" app. In early September 2019, the Ministry of Digital Transformation was launched in Ukraine. In just three years, significant progress has been made in the desire to turn Ukraine into one of the few countries in the world with a growing global reputation for digital innovation. Thanks to this app, Ukraine is the first country in the world, which launched digital passports and legally equates them to official documents (the law on digital passports in "Diia" came into force on August 23, 2021). Ukraine also became one of four European countries with fully digital driving licenses. From the above, it follows that Ukraine is now in a process that aims to create a special regime in Ukraine, the so-called "paperless" regime. "Ukraine is the first country in the world to launch digital passports and legislatively equate them to ordinary documents. Diia users will no longer face situations when digital passports are not accepted. This is not just an important event in the history of modern Ukraine and a big step towards the implementation of the "paperless" regime. This is a unique world case that we can and

should be proud of." Vice Prime Minister - Minister of Digital Transformation Mykhailo Fedorov (Ukraine is the first country in the world where digital passports on smartphones have become full legal analogues of ordinary documents, 2021). Currently, by visiting the official website of "Diia", you can find a fairly long list of available services that can be used. For example: driver's license verification, single taxpayer declaration, subsidy application, student card, COVID vaccination certificate, signing of documents, etc. (Diia Services, 2021). In addition, currently (as of early November 2022), 152 thousand users have subscribed to the official Diia page (@diia.gov.ua) on the social network. Again, given the fact that the application was launched only two years ago, the figure is large and impressive. Also, it should be noted that more than 12 million users downloaded "Diya" in the Play Store application. An important point is security. On the Internet, you can find a lot of fake information about "Diia", but representatives of the Ministry of Digital Transformation assure that "the application "Diia" does not store personal data, but only at the request of an identified citizen shows information from the registers"; through "Diia" it is impossible to digitize documents, download them. On Android smartphones, it is even impossible to make a screenshot from the application; "Diia" is a reflection of existing documents", that is, all the data in the application is information that is already available in other registers; secondly, information from "Diia" is not transferred to international partners of Ukraine or private foundations ("How safe is "Diia" and can your personal data be stolen?", 2021). To conclude, the essence of the above is that in our country there are talented innovators who create advanced ideas, which will turn Ukraine into a digital state without bureaucracy, corruption and queues. We hope that the result will not be long in coming.

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HOW THE WAR CHANGED THE VIEWS OF UKRAINIANS

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February 24, 2022 divided the lives of Ukrainians into before and after. These changes appear in everything, in work, in relations, in political views, in everyday life.

First of all, I would like to tell about changes in self – identification. According to a poll conducted in August 2022, more than 84% of respondents primarily identify themselves as a citizen of Ukraine, until February 24, this figure was around 62%, and since independence it has doubled. Besides this, the main emotion which Ukrainians feel when they think about Ukraine is pride (75% in August 2022, compared to 34% in 2021). So, we can see that Ukrainians become prouder of their country, and really it is. When our people come to any place abroad, they are met with love and respect.

Pride for the country is also manifested in love for everything Ukrainian. Until February 24, Ukrainians were in the invisible cocoon of Russian culture. Top positions in Ukrainian music charts were always full of Russian music, on TV there were a lot of Russian series, in social media the most popular bloggers and influencers in Ukraine were Russians. Nowadays a lot of things have changed. On TV there is no Russian content and moreover, the Ukrainian content which was produced in Russian language, now has been translated into Ukrainian. In such social media as Instagram, all the most popular Russian bloggers, who supported war are blocked on Ukrainian territory. Also, there are no Russian videos in the top Ukrainian trends on YouTube video hosting. Ukrainians started to watch and appreciate Ukrainian content, listen to Ukrainian bands and artists more than ever before. Since 24th of February, more than 50% of Ukrainian people have never consumed Russian content. What is more, the number of Ukrainians who always talk Ukrainian language has increased from 54% to 64%. In all from the beginning of full-scale war, 41% of those who spoke Russian or was bilingual started to speak Ukrainian more often than before.

In addition to this, the attitude towards neighboring countries also changed. This way, 81% of Ukrainians treat Russians coldly, more than 52% of Ukrainians have a cold attitude towards the residents of Belarus. At the same time, 73% of Ukrainians have changed their opinion of citizens of Poland for the better. We have lost old friends, but founded new – better ones.

To sum up, it is clear that after beginning of full-scale war, Ukrainians become more united, they started to value their own more strongly than ever before. Also, all nation made a reassessment of views and finally decided who is the enemy and who is the friend.

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THE IMPORTANCE OF USING RIGHT FONT

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Each of us knows the meaning of the word "font". However, it is very important to know in which situation it is best to use a certain font, where to highlight the main topic, and where to make a long text as pleasant as possible for reading.

In general, there are 4 types of fonts: 1. grotesque - ordinary letters, without serifs; 2. antique - with serifs on the tips; 3. handwritten - words imitate letters written by hand; 4. accidental - a decorated and complicated variant of printed letters. Grotesque in an enlarged size is the best for highlighting titles, for large and voluminous text, antique is the best (this type of font is best perceived during reading), and handwritten and accidental fonts are already a certain "icing on the cake" (they are intended for to make the product more presentable in appearance).

If we have a text that people want to read, it is very important to make it as attractive as possible. Also, when designing the text with the title and subtitle, it is better to use no more than two fonts, otherwise visually the text will look more like a graphic image than a readable text. If we talk about the font itself, then it should be simple. Minimalism is fashionable now. It is also important to make the right indentation between the lines: it should be slightly larger than the length of the letter, or equal to this length; too much indentation will be taken lightly, and if the indentation is too small, it will be difficult to move the eye to the next line.

This knowledge is very important for those who regularly work with any commercial products, because the font must be correctly selected. We will not use grotesque on a perfume bottle, and we will not use handwritten letters in children's books. And every self-respecting company knows that the font, its correct use and harmonious selection of colors is of fundamental importance, because it is these elements that people's attention is directed to in the first place, and the text is read later. It also speaks about the seriousness of the organization.

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**WHY WE SHOULD STOP READING SELF-HELP BOOKS AND
EVERYTHING ABOUT A DARK SIDE OF SELF-HELPING**

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Probably all of us at least once in our life suffered from analysis paralysis. It does not matter if you know this term or not. It does not make you free from being sick of it. But do not worry, mentioned disease makes no direct threat to your life (Chen, 2022).

We live in the information age with limitless information readily available right at our fingertips. But the problem with this information overload is that it can easily lead us to be overwhelmed and so procrastination takes over.

So let us take a scale, on which whether it is a gear or self-help literature. And if this “gear” is abused and pulls down our scales, it leads to a loss of balance. These are just devices to distract you or prevent you from moving forward. We can easily point out some coincidences between this and previous examples. That is why the crucial problem of motivation and other books of the same genre is closely related to analysis paralysis.

Nothing against self-help literature will be written, it helps lots of people. It is good that it exists in the world. Much attention has earned these numerous motivational books. And every author wants to come on a podcast and show his piece of work. So, after seeing almost 50 of them in one year we can be wondering: “How much self-help literature do we need? There cannot be that many secrets to getting better”. At these moments David Goggins comes to our mind. This prominent endurance athlete read no self-help books in his life. He got out of his comfort zone and just did his work. Therefore, self-help is fine if you need some guidance, or if you have lacked mentorship or education in your life, these books are helpful to you – it is appreciated. But more often immature minds start to use them as a shield to insulate them from taking any actions. Books are becoming an impediment, they are the very thing that is preventing you from helping yourself (Nienan, 2020).

This is a significant bad effect of self-helping. One of the biggest reasons why people start reading this kind of book is dissatisfaction with where they are and the people that surround them. And this is nothing wrong with our sentiment because being unhappy with it is a powerful motivation to do something. And you are starting to read in the hope to get out of the dark place you are in, to be a better version of yourself, not like others. You have trusted a new voice in your head. And that is where you become blind to the trap that lies in wait.

There is an amazing feeling of satisfaction that you get after finishing the last page of each self-help book that you read. You feel like you completed a level of a game and your character just leveled up. And you buy the books one by one, and a rush of dopamine gets you hooked (a similar situation with drugs). So, you make yourself a victim of a great illusion – the illusion of progress. One of the authors M. J. DeMarco

has a concept in his book about action faking: doing things that make you think you're making progress when you are not.

Nowadays neuroscience has become so popularized and it made us attuned to optimization in this tech world, where everything is supposed to be optimized (making studying more efficient, scheduling following the work week, etc.). There is a whole segment of the population that is interested in how to be optimal. But when you look at the most optimal people in the world, they are not the people that are focused on optimization necessarily.

If you can get clear on what your values are, establish something that you want to manifest in your life, so let's begin this process. The analysis paralysis comes from the plotting and the map-making. And there is so much mental pressure that goes into that instead of taking that first step. It is about simplifying this process, we want to be over complicated and think we have to lay on top of our goals, thinking through all of them. And these books can become obstacles as much as tools.

When you are consuming a self-help book that is not an accomplishment. The accomplishment is in applying that wisdom to your life. The important thing is understanding that just because you simply read a book does not mean anything to you, you are not growing in your life by reading. The hardest part of it is the realization of what is read in reality. So as said in the 12-step program: "Half measures availed us nothing" (Alcoholics Anonymous, 2022).

And reading a self-help book has two consequences. First of all, you disabuse yourself of the notion you have done something just because you have read a book, with outside assistance. Second of all, it is reconfiguring your perspective to focus more on actions.

That is a problem of our optimization-obsessed culture. It says that "we need to figure out everything before we begin". But from my own experience, it is in doing the past reveals. We do not know what the end product is going to be. And we do not know what optimal is while predicting and experiencing it. Just afterward we started to analyze the situation. And it is a wrong assumption that we can drill everything down to ones and zeros, and create an equation for success.

To sum up, no good or bad book can substitute the experience, which you get by doing something.

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THE WAYS TO INFLUENCE OUR MENTAL HEALTH

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Your mental health is your most significant friend and the worst enemy simultaneously. Our mind's condition might be affected by various issues that appear during our lifetime. Thus, the main point is to spread the most surprising ones and find the solution for overcoming mental diseases. Unfortunately, the modern world dictates to us dozens of rules and restrictions that we should deal with. Despite the parting COVID-19 anxiety, we currently have a much worse and much more frightening issue named WAR. We wish we could leave this word forever in the old but essential dictionaries. However, the only thing we are allowed to do is to get used to it and try to befriend our mental health and help it to survive.

Our unique abilities to be conscious, think, dream, and react are making us stronger and weaker every time. The same ability was given to the ancient people, but the biggest difference is that humanity has developed from the cave age and has all the instruments to do our best based on our mind's horizons. The citizens of ancient Greece, Rome, and even India were some kind of schizophrenics. They were hearing and obeying voices that they perceived as coming from the Gods, or muses, that today might be called hallucinations, and only then, as time went on, they began to recognize that they were the creators, the owners of these inner voices. And with this, they gained introspection: the ability to think about their thoughts.

Thus, the consciousness we perceive today is a recent cultural development.

As we mentioned before, human beings of the digital age are able to work on the condition of their minds and mental health. A few points of this huge working area are self-estimating, stress resistance (or the art of avoiding and softening stresses), and the art of dealing with our emotions. Having a strong chain of values, a positive mindset, and the ability to soberly evaluate our actions might help us to create an incredible appearance and cure the most under or overrated self-esteem.

Despite the absence of a resilient attitude and approach to life, all of the stress-reducing methods below amount to rearranging the deck chairs on the Titanic.

Stress is one of the leading factors that might affect both your body and mind by causing issues from diarrhea and constipation to sick headaches and hair condition problems. Hence, dealing with stress requires a double-pronged approach. The first step is preventing stress factors from occurring and as the second step, you should learn how to relieve these factors when the first step is impossible. One of the helpful things to do is to develop resiliency, although it is the easiest to say and the hardest to do. The way you react to the world – the ability to bounce back from challenging tasks, situations, and trials, the way you face the world, showing self-confidence and calmness, is comprehended as being resilient (Brett & Kate McKay, 2019).

Moreover, one of the most obvious things - sleep, is closely connected with stress. The mixing of sleep with stress occurs somewhat of a Catch-22 problem. While

our bodies and minds are sleeping in order to help us to manage stress, stress often prevents us from getting the sleep we need.

As eating is our vital need, it has a huge impact on our mental health too. Nutritional parts of our brain such as glucose, proteins, micronutrients, amino acids, and fats do affect mood, energy, general functioning, and development. As an example, it is known that our mood, sleep, and attentiveness could be affected by amino acids, which contain precursors to neurotransmitters. It is obvious that our diet should be balanced in order to supply our brain with the essential elements, vitamins, etc. As an example, in the case of the lack of B6, B12 and folic acid the brain becomes more receptive to brain diseases and mental issues. Consequently, alertness at night and post-lunch apathy that a person can feel might be an effect of the food we eat. An unbalanced diet leads to problems in the functioning of the brain, and as a result, problems with mental health (Nacamulli, 2016).

Last but not least is coping with emotions. No matter what feelings are occupying your mind you still need to deal with them. The most destructive ones might be released by revealing them to someone or something, but referring to our historical background it's better to avoid talking to inanimate objects. Comforting yourself also might appear as a great stress absorber and emotion revealer (Kids Helpline, n.d.).

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HOW THE KIM FAMILY RULES NORTH KOREA

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The Democratic People's Republic of Korea (DPRK) has been in existence for 74 years. And during this period there were only 3 leaders. All leaders were members of 1 family. But how did they manage to hold on to power during all this time?

It all started when North Korea attacked South Korea on June 25, 1950. US assistance to South Korea, China, and the USSR helped the DPRK. After 3 years of bloodshed, the war ended with the signing of a world treaty. During the war, the territory of Northern Korea was almost completely destroyed by the bombs of the US Air Force. For example, about 200 000 bombs flew to Pyongyang, the capital of the DPRK over 3 years of the war.

Given the outcome of the war, Kim Il Sung should have been overthrown because the country received an incredible amount of problems. But this did not happen. Why? Because according to the DPRK, they won the national liberation war. They even held a parade on the ruins of the capital. Both China and the USSR began to help North Korea. After all, at that time the Cold War was already underway, and the United States was helping South Korea. Given the claims of victory in the war under the command of Kim Il Sung, the rapid restoration of the country under his own government, and the effect of propaganda, a cult of personality was created.

During the war, Pyongyang lost 10% of its population. This is a huge number for a country with only 10,000,000 people. There were many orphans left, for whom Kim Il Sung began to build an incredible number of orphanages. Education under the circumstances is carried out to the point that Kim appreciates their father. Propaganda elevated him to the title of Father of the Nation. Having become part of the family of the entire nation, he began to create the main pillars on which the family stands. One of the main features of the family is secure. And what can guarantee more security than nuclear weapons? To this end, North Korean scientists were sent to the Joint Institute for Nuclear Research. But Moscow was in no hurry to give nuclear weapons technology to Pyongyang. And when, as a result of the Caribbean crisis, the USSR abandoned Cuba in Korea, they realized that, if necessary, they could also turn away from them. Because of this, until 1966, the percentage of the budget for military spending increased 6 times to 30% of the total budget.

But behind the white stripe came the black one. The USSR collapsed, China went to rapprochement with the West, and in 90 there was a famine. Allied countries did not have the opportunity to help them, and as a result, the UN began to send humanitarian aid. But this was not enough for rehabilitation. Private business was allowed in the country. But it was impossible to allow big concessions. An example of the collapse of the USSR was nearby. In order to maintain power, Kim Jong Il began the "Army First" policy. This was done because there were more than 1.2 million militaries in the country. And with their dissatisfaction, weapons could be used. In addition, he needed to gain authority and support after the death of his father. For the military, many preferences were created. The cult of personality continued to develop. Portraits of Kim Jong Il were hung everywhere, in schools his biography was studied at the level of his father. Under his government, the nuclear program continued to develop.

In 2011, Kim Jong Un came to power in North Korea. Educated in Switzerland, he understood how the politics of Europe worked. Having come to power, he conducted nuclear tests, launched a satellite into space, and in order to prevent anyone from interfering in his policy, he threatened the United States with a preventive nuclear strike. Thus, Kim says that they are a powerful country that threatens the US, propaganda glorifies the ruler, and a coup is impossible due to the fact that the military supports Kim. He is also supported by the richest class. For these reasons, the Kim regime is monolithic and indestructible.

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SOCIAL ANXIETY AND HOW TO DEAL WITH IT

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In today's realities, the ability to communicate effectively and easily with other people is very important. It can help boost your own career or support a conversation during your lunch break with a friend you haven't seen in a while. And in general most people don't have a problem with it, which is not the case for people with social anxiety. Social anxiety or social phobia is an anxiety disorder characterized by the fact that a person has difficulty communicating with other people due to the fear of being judged or embarrassed by them. During interaction, such a person is very worried about how he is perceived by others. Accept this, people with this disorder may feel hot, sweat profusely, be distracted, or have a shaky voice. These feelings, which can be quite normal for certain life situations or new experiences, such a person perceives as an excuse to look stupid, not to be clear or interesting enough to others, what make them avoid similar situations. They become more isolated, as a result of which peers or colleagues begin to have less contact with them and in the end this problem can grow into depression or using of psychoactive substances. The formation of social phobia is influenced by a genetic factor, when a person has such traits as shyness or self-doubt. But usually people with this disorder had stressful experience in their early life such as bullying, family violence or embarrassment during public speaking or joint activities. These things greatly distort the vision of this world and affect further relationships with people.

Fortunately, today most cases of social phobia can be cured. Going through cognitive-behavioral therapy with a specialist is one of the most effective ways to cope with it. But researches show that only 15% of people with this problem ask for psychotherapeutic help, so there are some tips to help overcome social anxiety by yourself:

1. Remember, you cannot read another`s mind, focus on what exactly people are saying.
2. Avoiding of communication only increase the fear. Go ahead and try to make some social contacts with people.
3. People think about themselves at first. Understanding of it can help you get that no one really cares about how you look or what you do.
4. You cannot be liked by everyone and that`s OK.
5. Relax. Even if you made some goofy thing there`s nothing wrong here, everybody makes mistakes and that`s what makes us human.

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ADVERSE INFLUENCE OF SOCIAL MEDIA ON INDIVIDUAL

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From certain point of view, history of humanity has always been a spiral of struggles: first, we were fighting wilderness, overcoming adversities and, sometimes, surviving under conditions, nearly unfit for life; then, eventually, we started conquering the world of abstraction- building up complex concepts and ideas, which led humans to what was unthinkable mere centuries ago. Recently, humanity has reached new dimension of advancing- digital one.

Rooted in the near-divine designs of greatest minds of previous century, watered with trillions of dollars of investment and attention of billions, computers, mobile phones and internet emerged in a blink of historical eye and formed a new industry that immediately towered among others. As it grew, so too did the possibilities it provided to humanity. Many wondered how helpful would it be as a mean of sharing information and amazed at future of these technologies. But how, in fact, did it turn out?

In ancient times, new information was in real scarce: only way of obtaining it was through exploration and experimentation. But nonetheless it sometimes could play a vital role in survival of an individual or even a whole group, which the individual represented. Thus was formed a marvelous mechanism that has been pushing humanity to break the limits in its seek of knowledge: our brain releases dopamine- neurotransmitter responsible for feeling of joy and motivation- whenever we gain new information. But obviously getting to know, for instance, that certain species of trees have triangular shapes of leaves typically should not be as rewarding, as finding cure to illness that was ravaging your tribe, so there is another regularity: the "brighter" the information is, the more provocative the information is, the more emotional response it causes in individual, the more dopamine is released. It is also important to note, that besides a well-known fact that dopamine is a pivotal element in process of forming habits, there is another side of a coin: it is also a key to forming addictions.

Now, what social media is in its essence? It is a tremendous, almost unlimited flow of information rushing at any user that has mobile phone, internet and knowledge how to open his favourite website. There is no difficulty in finding tons of information, novelty is anywhere you look and little effort is needed. With just a single scroll or a single notification on the phone you get connected to a never-ending informational iceberg to be explored. And not only the amount of information is overflowing, but the quality of it too: as with great audience comes great lucre, millions of content creators

fight for attention of viewers, creating more colourful and concentrated material. As a result users brain is overflowed with dopamine. So, what can it lead to?

However clichéd it may sound, social media addiction is a real thing. According to US experts, around 10% of population are addicted to social media. And it is no wonder, as such immense feedback loop inevitably produces lots of dopamine, which primarily motivates us. Individuals experiencing social media addiction have higher risk of anxiety, depression. They tend to have lower self-esteem and isolate themselves. Those, who suffer from such illness sometimes also display a phenomenon called FOMO- fear of missing out. Social media addiction may also influence circadian rhythms, as blue light emitted by screens of modern devices is showed to disrupt it. Also, like any other addiction, it heavily influences motivation of an individual, as reduced sensitivity of dopamine receptors does not allow the latter react to stimuli from normal activities as it used to. That is how social media influences our psychological well-being, but is there way it affects our opinions?

Human mind naturally has homophily- tendency to surround ourselves with people, who have the same beliefs our opinions as we do. It is a powerful mechanism that throughout evolution helped groups of individuals unite, cultivate ideas and thus overcome adversities and survive. But an important point is that it does not only cultivate constructive ideas; irrational ones could grow this way too.

Social media algorithms heavily depend on homophily, suggesting videos that ideologically align well with others previously watched. Such phenomenon is called filter bubble- a persistent concept which states that search engines together with their recommendation and personalisation algorithms, are centrally aimed at the societal and ideological polarisation experienced in many countries. This way individual can not maintain healthy “informational” diet anymore and could stick with radical ideas. Some researchers claim informational bubbles, formed by algorithms, to be one of the moving forces of Brexit, Bolsonarism, Trumpism, far-left or far-right movements and other political phenomenons. Filter bubbles are shown encourage cognitive biases and shortcuts, causing negative influence on individual’s critical thinking abilities.

A group, placed into a filter bubble, could be lead to a so-called groupthink. Groupthink is a psychological phenomenon in which groups of individuals temporary lose the ability to think in a rational way. When every participant is experiencing exposure to repetitive confirmative data, the results could be nothing less than extreme. It might lead to excessive, unhealthy optimism, unreasonable risking, ignoring legal and social conventions, regarding people outside the group as enemies, censoring opposing ideas, and pressuring members to conform. As it happened with the Bolsonarism and US election, individuals experiencing groupthink inside a filter bubble only see their ideas as the truthful ones and have hard time considering other perspectives.

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MACROECONOMICS AS A BRANCH OF ECONOMIC SCIENCE

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Macroeconomics is a specific branch of economic science that studies all economic activity and interaction of a set of economic subjects, in other words, it studies the world or national economy as a whole. This science is considered the youngest, it reached its peak in the 1930s during the global economic crisis, but its beginnings date back to the Middle Ages. John Maynard Keynes is considered to be the actual founder of macroeconomics as a justification for active state intervention in the activity of markets. John Maynard Keynes is considered the actual founder of macroeconomics as a justification for state intervention in the activity of markets. At the same time, J. M. Keynes himself believed that the famous Ukrainian scientist M. Tugan-Baranovsky, whose works have practical applications for economics in most countries of the world, is the "father of macroeconomics" (Smovzhenko, T. S., Steblii, G. Ya., 2015).

Currently, macroeconomics continues to actively develop and this development takes place in two directions: the first is that this science is constantly new theoretical positions, and the second is a practical, consequential mechanism of functioning that generates new questions that need to be answered. Unlike microeconomics, which focuses on firms and individuals, macroeconomics examines overall aggregate economic activity, issues of growth, inflation, and unemployment, and national economic policies related to these issues (Economics Glossary, 2008).

Macroeconomic goals include full employment, economic growth, a stable price level, fair distribution of income, economic efficiency of production, economic freedom and much more. This science has tools - fixed (budgetary and tax) policy, monetary (credit and money) policy, income regulation policy, stabilization policy and foreign economic policy.

For me, the most interesting thing in macroeconomics are its subjects. The first subject is households - farms that are run by one or more persons who have common property, with the aim of reproducing the labor force. The main goal is to achieve maximum consumption with minimum costs. Next is the business sector - official firms and enterprises operating on the territory of the country. The main goal is profit maximization. Next comes the public sector. It unites all state institutes and institutions. The purpose of which is to create an increase in the standard of living of the population and labor productivity. Sector of financial institutions - institutional

units that perform financial operations on a commercial basis. External sector - relations with other states, and more precisely trade and capital movement.

Macroeconomics is also divided into positive and normative. Positive macroeconomics is a factor that operates on facts and ascertains the dependence between them and completely excludes subjective judgments. Normative macroeconomics is a direction of economic science that determines what the economy itself should be.

There is still such a concept as economic systems. They differ in forms of ownership. Market economy - operates with a private form of ownership of economic resources and the use of the market mechanism for economic regulation. In this system, everyone's goal is to achieve as much profit as possible for making personal decisions. A command-administrative or planned economy is the opposite of a market economy. It is based on public ownership and is regulated by means of centralized state planning. In this system, the market cannot function independently, it is also an object of planning. And the third system is a mixed economy. It combines features of market and planned systems. Depending on different countries, the parameters of the mixed economy change. The three most common examples of a mixed system are Japanese, American, and Scandinavian.

There are such concepts as macroeconomic modeling and macroeconomic concepts. The macroeconomic concept is knowledge systematized on the basis of basic indicators of economic processes. Macroeconomic modeling is a formal representation of aggregate processes of economic life. It is used to rationalize the economy.

Also, modern macroeconomics does not have a single dominant theory. It is based on a number of theories that interact and complement each other and give practitioners the opportunity to choose, that is, to determine the effectiveness of each theory themselves depending on their subjective perceptions, as well as taking into account the individual conditions, goals and priorities of the economic policy of a certain country. So, macroeconomics is a very interesting and multi-disciplinary science, and it takes a lot of time to study it, but it is worth it.

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PSYCHOLOGY

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At least once in a lifetime all of us have heard a word such as psychology. However, is everyone aware of what exactly this term means? Let's find it out.

Psychology is the field which involves studying and understanding mental processes, brain functions, and behavior. Psychology is a general name of a study

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which includes plenty of narrow directions. Behavioral Neuroscience, Clinical Psychology, Cognitive Psychology, Developmental Psychology, and Social Psychology are some of them.

The human brain is a fascinating and prodigious organ that is in charge of each part of our body, conscious and subconscious. Those who are extremely interested in this topic should get acquainted with the Psychology of Thinking. Let's ascertain it together.

What does thinking mean? It is a psychological process of finding and discovering completely new information, the process of mediation and generalization of the reflection of reality during its analysis and synthesis, which arises based on practical activity and experience.

The process of thinking includes the following stages:

1. Analysis; 2. Synthesis; 3. Abstraction; 4. Generalization; 5. Comparison.

On average, humans have from 12,000 to 60,000 thoughts per day, from which almost 92% overlap with those we had the previous day. What is even more remarkable is that 80% of the thoughts are negative. As reported by neuropsychologist Dr. Rick Hanson, Ph.D., to the human brain it was easier to learn lessons through bad experiences, because unpleasant thoughts strongly imprinted in our minds. All of us can say how pessimistic thoughts drain us of energy and leave us feeling emotionally exhausted. Even though sometimes feeling delighted seems to be as arduous and daunting as climbing Everest, scientists have found various ways to achieve happiness, among which the leading one is to train the cerebrum to stay positive.

There are multiple ways to tune in to the positive wave. Let's start with the first one, which is called the 12-second trick for positive thinking.

Neurons connect good experiences with positive emotions. Knowing this information, people can create new neural connections between emotions and experiences and thereby trick the brain to think positively.

So, the main idea of this life hack is to spend at least 12 seconds calling back to joyful moments or things that you have ever had while feeling stressed. It can be a memory of a meeting with your family or friends, some wonderful moments from your favorite movie, the taste of the best food you have tried during the holidays, or anything that gave you thrilling emotions. After doing this exercise regularly, the brain will automatically start looking on the bright side. Nevertheless, people still have to deal with the bad stuff that is happening in their life but do it with a clear and happy mind.

The next piece of advice is to scan for the 3 daily positives.

Let's be honest, everyone has ever thought about their life and decisions before going to bed, and very often those memories were embarrassing and/or made you feel miserable. What if you try doing something different, that will increase your mood and a sense of appreciation? Recall at least 3 things that made you feel good during this particular day. For instance, you saw a little child playing with a dog, heard a favorite song while shopping, or there was a beautiful landscape that made you smile.

The following information that you should take into account is to analyze the failure and take a lesson from it.

Making mistakes is normal, and failing is normal, but what is not acceptable is not having the desire to work on problems and solve them. As it was mentioned before,

it is easier for the human brain to absorb negative information, so why not turn it into an advantage? Many people have played a game, which had a level that seemed to be impossible. However, after going through the same level several times, you collected all the necessary information to succeed in the end. Think about a failure as an opportunity to gain more mastery before reaching the next level.

Last, but not least advice, is to control your body language.

Every time you are mad or upset you unconsciously show it through your motions and gestures. The face, the posture, the arms, everything tells others that you are not in the mood for any communication. As long as you express such an unfriendly aura, people will treat you the same way, it is a snowball effect. However, if you nip it in the bud just by smiling, people will exchange positive energy with you by starting small talk or smiling back. You will not even notice how your mood will slightly rise. Nevertheless, it does not mean that you can ignore problems, those are advice on how to deal with bad thoughts and how to look at issues from a positive corner.

Even though these recommendations seem to be obvious and too simple to work, it is not true. Life itself is hard, so there is no need to make it any harder. People underestimate the power of the mind, but once you try it out, you will see how much your life can change.

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ABOUT WHAT YOU DEFINITELY DID NOT KNOW ABOUT ART

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My future profession is an artist, a designer, so I believe that popularizing art and attracting more people to this topic is part of my job. I want to talk about the seemingly sensational things in painting, but those facts that few people know! Let's start with Raphael's Sistine Madonna (Kindersley, 2018, p. 42). You definitely heard about this picture at least once, and maybe you even saw it, because it is very popular. And what if, even after I showed you this picture, I say that you still do not see the picture?



Why? Because the true picture lies in the background. No, these are not clouds, as you might think. These are the faces of angels. And on the right hand of St. Sixtus depicts six fingers. Perhaps this is due to the fact that his name in Latin means "six". What is the first thing that comes to your mind when I remember Kazimir Malevich? You think that he is the first who created the Black Square? No, before him this was already done by an eccentric man named Ally Alphonse, who exhibited a black canvas in the Vignen Gallery and said that he painted black people fighting in a cave.

A very popular painting by Leonardo da Vinci is The Last Supper (Charles, 2004, p. 15). In fact, the history of its creation is very interesting. Da Vinci did not invent images for his painting from the head, he was looking for sitters, and for a long time, because he carefully selected them. For the image of Christ, he chose a man who worked in the church as a chorister. After that, he searched for 3 years for someone who would fit the image of Judas. And he found. This man was a drunkard, Leonardo saw him lying in a ditch and invited him to go to a tavern to create a picture. The man later admitted that he already had experience in being a sitter. Namely - it was a few years ago, when he was still singing in the church choir. Yes, it turns out it's the same person. There are many artists who are now considered geniuses and their paintings can be sold for millions of dollars. But many artists did not have time to become successful during their lifetime.



Vincent van Gogh, whom you definitely heard about, did not manage to achieve success during his lifetime (Hirmer, 2019, p.173). He sold one painting in his entire life! This painting was called "Red Vineyards in Arles". But now things are completely different. The painting on the left is worth \$109.4 million. It is a pity that the artist did not find this during his lifetime, because he does not even know that he has become a great artist for the whole world.

I hope that I was able to tell you about new things that you have not heard before. Now you know a little more about art. Masterpieces of art are not as simple as they seem at first glance, in fact, there is a lot of things that remain "behind the scenes" and I think that people should be interested to know about it.

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PENSION SYSTEM OF UKRAINE: PROBLEMS AND PERSPECTIVES

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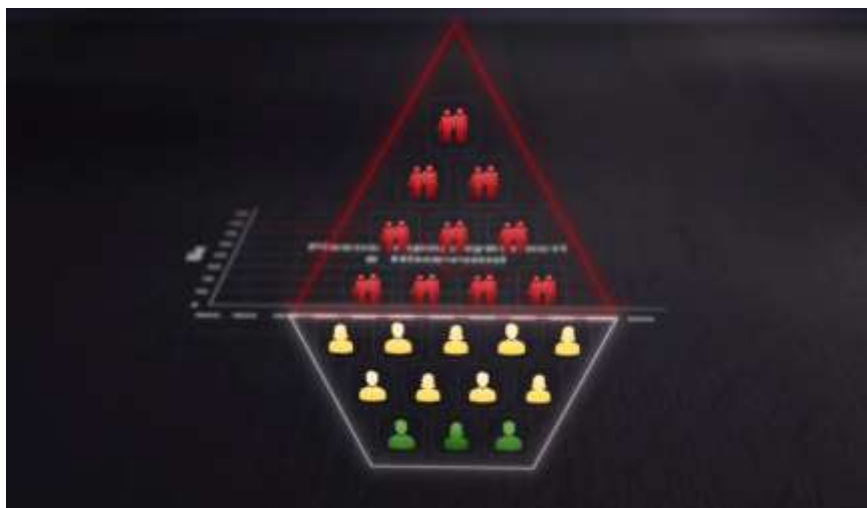
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One of the most painful topics for Ukrainians is the amount of pension provision for the elderly. We are told how pensioners of European countries actively travel around the world, acquire new knowledge, skills and engage in charity work. On the other hand, it is sometimes difficult for a pensioner in Ukraine to meet his basic needs for food, housing and medicine. Let's figure out what's the matter.

Since Soviet times and until today, a Joint Pension System has been operating in Ukraine. It means that elderly population gets the pensions due to money which legal workers pay as a contribution to Pension Fund of Ukraine. So, these people who worked nowadays will get the pensions in future thanks to the money of the next generations. Joint Pension System was implemented by Chancellor of Germany Otto von Bismark by the end of the 19th century.

However, it's not difficult to make a conclusion that such system can work only on the condition that the number of employees will grow constantly. For example, there is one pensioner. One working person isn't able to give from his earnings such amount of money which is enough to provide that elderly person. It's caused by the fact that except contribution to the Pension Fund working person must pay some types of taxes and fees. Therefore, in order to provide one pensioner, society needs two or three working persons. When these young people are old, we will need at least four workers. And so on. It seems like a snowball which firstly is light and attractive but then it can crush for the people who launched this snowball. According to the Prime Minister of Ukraine Denis Shmyhal our state won't be able to pay pensions in fifteen years.

As a conclusion, there is the urgent need to reform our pension system. Instead of joint system it must be Accumulative Pension System. It means that the pensioner gives the money which he has been saving during all his life. The state has to provide deductions from the salary some amount of the money (10 percent for



example) and save this money. It's important that this money is not just "lies on the shelf" but it's used by state's economies and is multiplied because of it. It looks like a bank deposit. Anyhow Accumulative Pension System is applied in most of Europe's countries and in the USA. But it isn't in Ukraine (Prokopenko & Mischenko, 2018, p. 423).

Despite the fact that the Law of Ukraine "On Mandatory State Pension Insurance", which provides for the existence of an accumulation system, was adopted back in 2003, the accumulation system is currently not functioning in Ukraine. This is understandable, because the transition from a solidarity system to a savings system cannot happen instantly. This requires strategy and timing so that current and soon-to-be retirees don't run out of money.

Two years ago a bill № 2683 was registered in the Ukraine's parliament. It contains regulation of gradual implementation of Accumulate Pension System which has to work together with Joint System. This bill provides that every employee must pay firstly 1 % from his salary to Accumulate Fund, then - 1,5 % and finally - 2 %.

According to the data of the Initiative for the Development of Analytical Centers in Ukraine of the International Revival Fund, in case of proper functioning of the accumulative pension system, the average citizen of Ukraine will be able to receive 12-13 times more than the pension in the solidarity system.

Consequently, Ukraine is going through difficult times in the field of pension provision for its citizens. The solidarity system, which is based on the payment of pensions by working people, has already "outlived its usefulness" and is not effective. In this regard, a gradual transition to a accumulative pension system is considered necessary, which consists in the fact that each person will necessarily save for his old age, and the state will organize and control this process. Let's confess that our state will succeed in this and the level of provision for the elderly population in Ukraine will be much higher than it is now.

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**UKRAINIAN FINANCIAL SYSTEM DURING THE PERIOD
OF MARTIAL STATE**

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The introduction of martial law in Ukraine led to changes in all spheres of life. In particular, changes occurred in the financial system of Ukraine. A well-developed financial system is the key to the state's performance of tasks and functions.

It is necessary to define the concept of "financial system", the current financial system has integral components and links, is characterized by interdependence and interdependence of a complex of financial institutions. An important element of the financial system is state finances, which directly include: the budget system; off-budget centralized trust funds; finances of business entities, industries and departments; credit resources.

Instability in the political and financial spheres is caused by the pandemic and the economic crisis. Due to the pandemic, there was an even greater burden on the financial system, the state adopted laws to overcome the negative consequences. However, not having recovered from the pandemic, the large-scale military aggression of the Russian Federation against Ukraine caused a great strain on the financial system, namely, the financial system of Ukraine was reorganized in a different way.

The first week of martial law was "shocking" for all spheres of social life. The consequence of this period was political tension and panic, which caused speculative attacks on the hryvnia and increased activity on the foreign exchange market. All this happened due to the massive purchase of foreign currency, which led to a significant devaluation of the hryvnia.

The result of hostilities was a large amount of destruction of residential and critical infrastructure. There was a problem of the imbalance of budget expenditures and revenues, the growth of state debt, and ensuring the proper implementation of local budgets became quite a problem. Effective functioning of the budget sphere is necessary to solve problems. In order to achieve the set goals, it is necessary to redistribute budget expenditures and provide loans from the budget under budget programs to finance the Armed Forces of Ukraine and other military formations, which will help the functioning of the Ukrainian economy.

Local budgets also underwent changes during the period of martial law. For the effective formation and better implementation of local budgets, a number of decisions were made regarding the introduction of changes to certain provisions of the current legislation. An example of this is the resolution of the Cabinet of Ministers of Ukraine No. 252, which states the transfer of powers of local self-government bodies and their executive bodies in the budgetary sphere to military administrations, if such bodies are formed, for the needs of armaments and fortification of the settlement. So, a new subject of the financial system of Ukraine appears - military state administrations, for

the period of martial law, but this does not mean that the entire budget of either the village or the region goes to the orders of the military administrations.

Currently, the transfer of funds from the territory of Ukraine abroad is limited. Treatment and transportation of patients in medical institutions, payment of tuition to the accounts of educational institutions abroad are exceptions. However, it is allowed to transfer foreign currency to support the Armed Forces of Ukraine. Therefore, currency regulation measures were adopted to preserve capital in the budget of Ukraine for its intended use.

As a result of the invasion of the Russian Federation on the territory of Ukraine, total losses reach hundreds of billions of dollars, so the financial system of Ukraine must function in accordance with the principle of attracting and forming a stock of financial resources for current needs and future recovery.

Currently, Ukraine is supported by a large number of states in various ways. Lend lease is one of the ways that the United States of America supports Ukraine. On May 10, 2022, the President of the United States signed the Ukraine Democracy Defense Lend-Lease Act of 2022. About 8.5 billion dollars are planned to be transferred as direct economic aid to the government of Ukraine to cover the costs incurred by the Russian Federation in order to prevent the collapse of Ukraine's financial system (Dudnyk, Harbinska-Rudenko & Yatsenko, 2022).

As a summary, the main task of the state is to ensure the stable functioning of the financial system of Ukraine, therefore, in the conditions of military aggression, it is important to maintain the financial and economic front as well.

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MEDIA LITERATE PERSON – A SUCCESSFUL PERSON

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It is difficult to imagine a modern world without media.

There is 21st century, which marks the rapid development of mobile technologies and the Internet. In the modern world, people are in constant flow of information, which is not always safe. No one is protected from the influence of mass communication media and social media today! It is for this purpose that each of us needs to form a new skill – the media literacy which has entered the list of skills of the future.

To become media literate, you do not need to finish school, get a higher education at the best university in the country, or take an online course and get a certificate. Media literacy is an ongoing process. Knowledge, abilities and skills in

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media literacy are accumulated over the years with experience, so a person must constantly be in the media space in order to master and acquire them. This process can be considered complete only when a person has critical thinking, knows how to analyze and give an adequate assessment of the information disseminated by mass communication means; to realize their essence and purpose.

However, how can media literacy help a person to succeed? It is very simple. A media-literate person is able to express himself/herself and use media to communicate, consciously perceives messengers and critically analyzes them, separates reality from its defiled copy by media sources. So, such personality traits, skills and knowledge will definitely help them to become successful. Will the ability to give a reasoned assessment, compare, understand the current event and different positions of the parties to the conflict prevent someone? My answer is no.

Media literacy has its basic principles and provisions. First, check information in different sources, even those that are unacceptable to you. This will help to remain objective. One of the most striking examples in 2020 may be the spread of fake information that Covid-19 can be cured by vibrations or wrapping with a hot towel. Many ordinary citizens blindly believed in the fiction without checking this message in several media sources.

Since the beginning of the full-scale war, the information front has intensified significantly. The amount of disinformation about global politics, internal affairs of Ukraine and Russia has increased significantly. This is one of the manifestations of the hybrid war waged by the Russian Federation. A striking example was the fake that allegedly President Zelensky was ready to resign and flee Ukraine at the beginning of the war. In fact, Russian media distorted the original Western article, which stated that Western leaders simply advised Zelensky to leave Kyiv. So, the first principle of media literacy is information hygiene.

The second principle is to avoid obsessive opinions or politics. Information in the media space is not always transparent, neutral and independent, so it is important to critically analyze the messages of the media in order not to fall into the net of manipulation. There are several examples of consumer control through the media. First, the widespread news that the TB vaccine can prevent infection with the new coronavirus - some editorial offices manipulate scientific data and make premature false claims.

And one more principle of media literacy - filter information. In the modern world, everyone, no matter man or woman, has the right to express themselves in the media space. As a result, there is an excess of information that needs to be filtered. A person can express their opinion, but the accumulation of millions of messages per day prevents them from being heard.

A media-literate person is a successful person, because a person armed with the ability to analyze not only information, but also his own actions, relationships, myths and types of control is able to conquer high peaks.

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THE LATEST RESEARCHES ON HUMAN PSYCHOLOGICAL HEALTH

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It is no secret that the 21st century is the time when people began to pay more attention to their psychological health. The condition of each of us is affected by various reasons. For example, there can be lack of acceptance in society, dependence on someone else's opinion, excessive concern for one's future, self-doubt and many others. In addition, according to general data, the number of visits to psychologists has almost doubled over the past three years. As a result, many specialists in this field began to publish more books of their own to help as many people as possible.

Against the background of this problem, a book "The Untethered Soul" written by Michael Alan Singer became popular among readers of similar literature.

Author is an American author, journalist, motivational speaker, and former software developer. Singer is best known for his writings on spirituality, meditation, and New Age philosophy. He wrote many books in the field of psychology, but this one took the first place among others according to the opinion of readers.

According to Alan, most human problems are caused by the fact that we do not know how to build relationships with our thoughts and emotions. Due to the fact that we are prisoners of our own thoughts, our mental energy cannot be released, and our consciousness cannot work independently without the help of society.

That is why, after reading this book, you can highlight three main tips that can help thousands of people to keep their natural psychological health:

1. Don't be afraid of problems. They are given to us in order for us to gain knowledge, experience and become spiritually stronger. You should not close in on yourself when you feel that it is difficult for you. It is important to remember that if you are always full of inspiration and energy, then every minute of every day will give you unforgettable moments (Alan, 2007, p. 59).

2. You do not need to be a "tiger in a cage". Suppose that every day we imagine a perfect life without any problems. This is our cage. We do not allow our lives to change us for the better, because we constantly feel threatened outside the bars. Let's remember that everything will always be fine with us. Nothing but our borders can disturb us. You don't have to control your life according to your thoughts. Let them go and enjoy every moment (Alan, 2007, p. 147).

3. Sometimes we think that we are completely unhappy. But the thing is, we just do not want to let happiness into our lives. We are only as happy as we allow ourselves the possibility of probable luck. It is up to you to decide whether to force yourself to be happy or just allow yourself such a luxury (Alan, 2007).

These tips will not be suitable for everyone, because the author assessed the general condition of those people who complained about such problems. But those who suffer from psychological problems should heed these tips. Because the quality of our life depends on the purity and clarity of our thoughts. We are the masters of our lives, and therefore only we are responsible for our problems, which, as it turned out, can only be fiction.

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ALCOHOL ABUSE AMONG YOUTH. IS A LACK OF ALCOHOL ABUSE EDUCATION TO BLAME OR ARE THERE OTHER FACTORS?

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Many teenagers often resort to bad habits. Among them is alcohol consumption. I think this is quite a difficult period in everyone's life. Someone has problems with parents, friends, or education. They often exaggerate and believe that problems cannot be solved, and some find a way out with alcohol.

Due to the expansion of alcoholic and low-alcoholic drinks in the middle of children and children, Ukraine is one of the first plays of the world, promoting a tendency towards the growth of child alcoholism.

Why do teenagers drink alcohol? One of the most common reasons given is to "improve" a party or holiday event, to make them more emotional and fun. The reason for use: "Because it's fun».

Mostly, teenagers start drinking when they become more independent, spend more time away from home and unattended, and the role of friends in their lives increases.

Girls noticeably drink alcohol more often to overcome internal psychological discomfort, get rid of a bad mood, cheer themselves up.

The Research showed a tendency to increase regular alcohol consumption among adolescents and the associated risks.

Alcohol is the poison that most affects the brain. Alcohol has a particularly detrimental effect on the body of a teenager, who has not yet completed the process of formation of some parts of the brain, as well as other important organs: heart, lungs, stomach, liver, kidneys. The toxic effect of alcohol on the body of a teenager is several

times stronger than on the body of an adult, because at this age the tissues are very saturated with water and quickly absorb and spread alcohol throughout the body.

Adolescent alcoholism, according to narcologists, has its own specifics. It is associated with the characteristics of the adolescent's body: an unformed nervous system, an extremely small number of enzymes that break down alcohol, hormonal surges. (Mallie, J 2021) All this leads to the fact that when intoxicated excitement prevails, energy is added, children feel confident, adults.

This often leads to unmotivated drunken fights, early sexual intercourse and their unpredictable consequences (HIV / AIDS, sexually transmitted diseases, pregnancy, etc.). Underage youth are more likely to drink in private contexts (e.g., own homes) than public contexts (e.g., restaurants, parks); experience could stem from drinking in private settings. (Jackson, C 2002) For example, one study suggests that heavier drinking at someone else's home is associated with greater risk of experiencing violence. This suggests that many of the drinking-related negative consequences that youth.

I think the situation can be corrected. To my mind, we can prevent this with the help of prevention (mandatory cooperation of teachers and parents):

– students should be acquainted with some minimum of socio-psychological knowledge of tempering the will with a focus on worthy examples; it is necessary to form in them the correct self-estimation;

Tips for establishing trust between adolescents and adults in the crisis period for them:

1. Listen carefully to the teenager. Make sure that the teenager understands that you are not indifferent to him and that you are ready to understand and accept him.
2. Offer your support and help.
3. Find out what worries the teenager the most right now.
4. Communicate confidently with the teenager.
5. In communication with the teenager, use words, sentences that will promote the development of contact: I understand, of course, I feel, I want to help.
6. In a conversation with a teenager, let him know that he is needed by others and unique as a person.
7. Underestimation is worse than overestimation. Inspire your teen with high self-esteem. Be able to listen, trust and inspire confidence in him.
8. Seek help, advice from a specialist if you are alarmed by the behavior of a teenager. (Baumrind, D 1978)

Parents and teachers should work together to preserve future generations.

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THE FRENCH REVOLUTION

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During the 18th century the French state faced a budgetary crisis and state debts, which was caused by structural deficiencies of government, waging the Seven Years' War and supporting the colonies in the American Revolution. The national taxes could be approved only by Estates General. However, they hadn't convened since 1614.

To improve the situation, the French king called the Estates General, which was divided into 3 parts: the First for clergy, the Second for nobility and the Third for commons. The first two parts didn't want to change anything, but the last one claimed itself “the voice of the common people” and wanted to reform the state. The estates of common people proclaimed the National Assembly and aimed at the proclamation of the Declaration of the Rights of Man of the Citizen and creating a new constitution. The king was forced to stop the convocation by the Swiss guard and this caused the rebellion. The crowd of rebellion sieged the Bastille. This proclaimed the Abolition of the Ancien Régime. The king was forced to recognize the existence of the National Assembly.

The National Assembly adopted the "Declaration of the Rights of Man and the Citizen", which proclaimed equality before the law, human rights. Louis XVI refused to sanction the Declaration and shortage of bread in Paris caused revolutionaries to march on Versailles and the king committed to constitutional monarchy, and his official title changed from “King of France” to “King of the French”.

In this time The National Assembly made reforms, some of them weren't successful because of political divisions. In 1791 Louis XVI tried to escape, but was caught in Varennes. Therefore, the revolution became more radical. However, the kings of Prussia and Austria signed the declaration of support for the French king. To spread the revolution The Legislative Assembly declared war on the king of Bohemia and Hungary, namely the Austrian emperor Prussia entered this war on the side of Austria. The French army wasn't prepared for war. The king of Prussia signed the Brunswick Manifesto with the threat of "military execution" of Paris in case of violence French king. But it backfired and in 1792 The First French Republic was proclaimed. After that there was a king's trial and he was executed.

In 1792-1795 in France there was a struggle for power between different political parties. After defeating their opponents, thermidorians tried to return to the principles of 1789 and signed a new constitution. In the winter of 1795, the economic crisis reached its peak. Period of rule of Directory (1795-1799) was unstable. In this time the

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French army went on the offensive and French general Bonaparte defeated Austria and forced peace. The Directory became dependent on the army and in 1799 Coup of 18 Brumaire brought General Napoleon Bonaparte to power as First Consul of France, it led to the Coronation of Napoleon as the Emperor. This historical event is considered the finish of the French Revolution.

The French Revolution ended with feudalism, brought liberalization of society, introduced human rights not only in France, but all over the world. It brought the spread of progressive liberal idea, such a cancelling slavery, human rights, equality before the law. Also, the Revolution causes decolonization of Latin America.

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ONLINE EDUCATION AND ITS ADVANTAGES IN MODERN LIFE

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Every new year brings us unpleasant surprises: covid-19, war, quarantine, crisis. Because of such problems, children and all students in general cannot freely attend their educational institutions and cannot receive knowledge at the required level. A few years ago, we were all transferred to distance learning and most of us have already got used to these conditions, which is why the term online education has taken root in our present. Online education is a really cool opportunity not to lie on the couch and watch a movie, but to learn something new just thanks to a laptop and free access to the Internet. However, despite the advantages of this type of education, people still have a lot of questions about online education and what it is all about. In this article I want to prove that online education is our future and our young generation is already adapting to this way of learning.

What is online education, what are its advantages and how does it differ from traditional education?

Online education is education that is carried out using the resources and technologies of the global Internet (Sanford, Daniel R., 2020).

What are the advantages of this type of education and its difference from the traditional type of knowledge acquisition?

Firstly, you choose the time of study yourself. Perhaps this is one of the main advantages of online education. It is especially convenient for people who do not have a stable daily schedule.

Secondly, with the help of online learning you develop independence. Students devote more time to self-study based on materials developed by professional teachers. Thanks to this, you learn to approach the matter consciously and responsibly. In adult life, such skills are very important.

Thirdly, online educational projects erase any geographical boundaries. You can be at home, or in a park, cafe or even in another country, while studying foreign languages, economics, stock exchange and any topics that interest you. Our children can now easily enter a foreign school or university without having to move to another country or even another continent. All this gives freedom of choice, which in the coming decades will become almost limitless!

Fourthly, online education is comfortable. You do not need to attend classes for hours, sit in an uncomfortable chair, a cold office and suffer from back pain until the end of the day. You will not be bound to physical classes when you choose online learning. All lectures and required materials are provided through online platforms, so you can easily access them from the comfort of your home. You won't have to use public transportation to get to campus, you won't have to spend money on a bus pass or gas for your car, you won't have to get up early to get dressed for class... the list of conveniences goes on and on. Comfort is a great advantage, but it can also have the opposite effect. You shouldn't let yourself get too comfortable while studying from home, so it would be better to put the sofa away from the working area in the room and create an inspiring study environment: all you need is a big table and a nice comfortable chair.

Online education is a whole new level of knowledge acquisition where you don't have to sit at a desk and listen to boring teachers. Here you decide what you want to learn and for what purpose you study it. And in the near future, online education will become the main opportunity to gain knowledge. Thus, online education is more convenient and cheaper than their counterparts in traditional education. These are the two main advantages of online learning. The best thing about online learning is that you can learn at ease, even if you don't want to eventually get a certificate. You only need the desire to gain new knowledge that will lead you to a new stage of life.

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**THE ENERGY MARKET OF UKRAINE
UNDER THE CONDITION OF MARITAL STATE**

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The Russian military invasion in Ukraine led to a review of development vectors and ensuring the stability of the socio-economic, energy, and environmental components of national security. A special importance is the consolidation of efforts at

the international level to strengthen energy security by finding alternative sources of energy resources.

Forthcoming activity in this direction is carried out in the European Union (Energy policy is at the center of EU foreign policy, 2022). In particular, in March 2022, Ukraine and Moldova joined the electricity network of the European Union. In April 2022 European Commission launched the Platform gas purchases of the European Union “EU Energy Platform”, in which Ukraine, Moldova, Georgia, Western Balkans has access to. Also, in April 2022 in Germany, the “Easter package” (“Osterpaket”) is adopted, which involves the activation of the process of transition to use renewable energy sources. Moreover, in May 2022 the European Commission approved the REPowerEU plan and adopted the strategy “EU external energy engagement in a changing world”, aimed at applying measures from giving up Russian gas by 2027 by switching to alternative sources of energy (use of hydrogen).

Anyway, we have to note that the solution to this issue involves making a compromise decision that will combine resource efficiency and climate neutrality of the economy. In general, the importance of improving measures for adaptation, mitigation and prevention of climate change and ensuring sustainable development. There are industries that cause or are affected by climate change the subject of discussion at the annual Climate Conferences in the United Nations and development by the Organization of the Series network Road maps until 2050.

On the other hand, while Ukraine stays in the conditions of martial law, subjects of energy as an important component of critical infrastructure are in areas at risk of destruction due to the threat of fires from military shelling. As a result, energy security is exposed to risks on the level of production, storage, distribution, supply and consumption of energy. After all, violation of access to primary (natural) sources of energy negatively affects the balancing of the energy system. Except moreover, these negative consequences aggravate the problem of climate change.

In particular, the important purpose of post-war reconstruction of the energy industry of Ukraine at this stage is the provision of financial and technological support, exchange of experience of the world community regarding implementation of successful practices of strengthening economic, energy and environmental components of national and global security. In May 2022, the European Commission proposed creation of the International Reconstruction Coordination Platform of Ukraine, which will lead together with the government for reconstruction of Ukraine with the support of the European Union. At this stage, the platform approved the Reconstruction Plan "RebuildUkraine", which involves assessment of the level of needs and determination of priority areas of support for the reconstruction of Ukraine (Energy policy is at the center of EU foreign policy, 2022).

If we consider the issue of defining climatic neutral potential of the energy market of Ukraine in the conditions martial law, it should be noted that the implementation of the Concept transition of Ukraine to green energy by 2050, approved by the pre-war period (2020), provides for the transition to ecologically clean transport due to the use of 70% renewable sources of energy in the production of electricity, the introduction of intellectual networks and abandonment of coal-fired power plants. In addition, during 2020, positive dynamics were observed in Ukraine

production of "green" electricity from biogas (from 34.9 million kWh in January to 43.1 million kWh in November) and biomass (from 20.7 million kWh in January to 27.8 million kWh in November) (Statistics, 2021).

Such data indicate the presence of climate-neutral the potential of the energy market of Ukraine, in the conditions of warstate by using renewable energy sources. In this context, the establishment of inter-industry cooperation is of particular importance between agricultural enterprises and enterprises with production of "green" energy on the basis of climate neutrality within the regions of Ukraine where active hostilities are not taking place.

Thus, Russian military aggression in Ukraine intensified solving the climate issue at the international level neutrality in energy by refusing to use natural energy resources and the transition to development of renewable energy. Post-war Ukrainian energy industry needs transformation towards the transition to "green" energy, optimization of energy management and development of critical technologies in the context of adaptation to climate change. Increasing efficiency of the transnational energy market, provision of energy efficiency and energy saving of enterprises and households involves the transition to production, marketing and consumption of "green" energy and development of "smart" energy networks. All this prompts us to radically change forms and sources of climate-neutral energy use energy consumption, including in conditions of martial law, when limited access to natural energy resources.

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CULTURAL SPHERE FOR THE PROVISION OF ADMINISTRATIVE SERVICES IN UKRAINE

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The sphere of culture is a key component of modern society, which includes a system of legal regulation by the state. The dynamic development of culture, both at the national and regional levels, requires the application of the latest trends and the implementation of effective policies to support and increase the level of the population's needs in this area. One of the main tools of the state to ensure the mechanism of cultural policy is the provision of administrative services.

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Considering the fact that the sphere of cultural activity is not trying to develop rapidly in Ukraine, the amount of administrative services provided by the central authorities, the executive authority, as well as local authorities is small compared to other industries. In order to understand the organizational and legal regulation of the provision of administrative services in the field of culture, it is necessary to develop basic legal acts, which are the general basis for the formation of the relationship between the subject of the provision of administrative services and the subject of the appeal. The legislative base consists of the Law of Ukraine "On Culture", which covers the main principles of state cultural policy. This Law defines the legal basis of activity in the field of culture, regulates social relations related to the creation, use, distribution, preservation of cultural heritage and cultural values, and is aimed at ensuring access to them (Burenko, 2011). The next house in terms of legal force is the Law of Ukraine "On the Protection of Cultural Heritage", which regulates relations in the field of cultural heritage protection, establishes the powers of various bodies of executive power and local self-government, and also contains norms that ensure the provision of administrative services, as well as: the principles of registration monuments, ensuring the regime of their protection and protection of the traditional nature of the environment, exercising ownership of cultural heritage objects, management and use of cultural heritage objects. The Law of Ukraine "On the Protection of Archaeological Heritage", which was adopted shortly after the ratification by the Verkhovna Rada of Ukraine of the European Convention on the Protection of Archaeological Heritage in 1992, is of important practical importance. It is a special law on the protection, preservation and research of archaeological heritage, the norms of which as a rule, they have precedence over the general norms of the Law of Ukraine "On the Protection of Cultural Heritage". Except of this, this every administrative service in the cultural sphere is accompanied by other legal acts.

The main provisions on the regulation of public relations in the field of culture, fixed in the legislation, are implemented in practice thanks to the entities providing administrative services. One of the main entities is the Ministry of Culture and Information Policy of Ukraine. Their powers include a large number of services that are within their competence. In our opinion, they should be classified according to which document the subject of the appeal receives. Accordingly, it is advisable to highlight: issuing certificates, permits, and approvals.

The issue of legislative regulation of the provision of certain types of services remains problematic, because, for example, approval of scientific and project documentation for the implementation of conservation, restoration, rehabilitation, museumfication, repair and adaptation of monuments, providing permission to move (transfer) monuments, approval of alienation or transfer of monuments by their owners or their authorized bodies to other persons for possession, use or management, as well as other administrative services, are not regulated by legal acts that would determine special principles their provision, established the procedure and procedure for obtaining them, or determined certain features of these types of services. Only the general requirements of the Laws of Ukraine "On Administrative Services", "On Protection of Cultural Heritage" apply to them (Venedyktova, 2009).

As conclusion, we can conclude that cultural policy on the part of the state in Ukraine needs to increase the level of organization for the implementation of high-quality and fast provision of administrative services, because insufficient understanding of the sphere of culture and its importance for the development of state activity affects the competence of the subjects of the provision of these services, and also affects the development of society as a whole. Despite a number of legislative acts regulating this issue, the practical meaning of the provision of services is not regulated and established only by basic laws, which do not allow to widely disclose both the theoretical and practical content of the administrative service.

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A PSYCHOLOGIST IS A FRIEND, NOT AN ENEMY

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In our country, a large number of people still perceive the word "psychologist" with confusion and do not turn to him for help if necessary. Let's figure out who a psychologist is and where to find him.

A psychologist is a specialist who knows the peculiarities of the human psyche and provides psychological assistance. A psychologist does not have the competence to prescribe medication. A psychotherapist is a psychologist who has completed additional training using psychotherapeutic methods. A psychotherapist has the right to use medications as auxiliary methods of treatment. A psychiatrist is a person who has received a medical education. He works with mental disorders and physiological lesions.

Very often, people have certain myths about the work of a psychologist.

Myth 1 – a psychologist deals with mentally ill people. A psychologist works with healthy people who have certain problems. Myth 2 – a psychologist independently solves a person's problem. This is not true, because the psychologist creates such an atmosphere in which a person can solve his problems. Myth 3 – a psychologist is a person who has superpowers. Receiving information from outer space, clairvoyance - does not belong to the field of knowledge of a psychologist.

Myth 4 – every person is a psychologist and does not need an education to work as a psychologist. Of course, there are elements of psychological help in a conversation between friends, but a psychologist deeply understands the processes that take place in

a person's head, which means that his work is more professional. Myth 5 – a psychologist can give advice that will immediately solve the client's problem. Psychologists do not give advice, because advice is based on a person's own experience, which may not be suitable for everyone.

The need to work with a psychologist is determined by a person's perception of the world. If one day a person was beaten, their car was stolen, their house burned down, and the next day they feel great, then you should not consult a psychologist. If a person's foot was stepped on in the bus, someone gave an unfriendly look, and these events do not allow a person to live peacefully, then it is better to consult a psychologist.

How to understand whether a psychologist / psychotherapist is suitable? It is imperative to find out about the education and experience of a certain psychologist. When working with a psychologist, the client should feel comfortable working with him. If there is discomfort during the consultation, the psychologist must explain why. If the specialist does not give an explanation, then you should contact another specialist. Psychologists and psychotherapists cannot work with people with whom they have emotional contact: relatives, friends. According to Carl Jung: What we resist stays with us. So, if your usual methods of solving problems do not work, then you should contact a psychologist. There is no need to be ashamed of a specialist who will help you solve your problems.

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NEGATIVE INFLUENCE OF MASS MEDIA ON PROCESS OF SOCIALIZATION OF ADOLESCENTS

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Scientists draw attention to the fact that the influence of mass media on human life is increasing. The problem of the influence of modern mass media on the adolescent's personality is of particular importance.

Teenagers develop an addiction to the Internet, which distracts them from real life. The negative impact of mass media influence on the socialization of teenagers is present only in those teenagers whose attitude towards the mass media is unconscious.

To overcome the consequences of the negative influence of mass media, it is necessary to work with teenagers. The most appropriate technologies in working with

teenagers are interactive technologies and such forms as lectures, training sessions, independent work, individual tasks, creative projects. The technological component characterizes the sequence of conditions for overcoming the negative influence of mass media on the socialization of teenagers. To work with teenagers, a combination of such technologies, methods and forms of work should be used, such as: educational training, discussions, "brainstorming", role-playing games.

The discussion has great educational and educational value, it contributes to the formation of independent thinking, teaches students to argue, lead, justify their own point of view, contributes to a deeper understanding of the problem, and also teaches to respect the opinion of others. Participating in a discussion is a complex intellectual process that allows teenagers, firstly, to practice a whole range of critical thinking skills, and secondly, to develop communication skills and abilities.

In the course of work with teenagers, mini-lectures are also needed, in order to concisely convey new information to a group of teenagers at the same time.

Another method of working with teenagers uses "brainstorming", which is used to find new ideas and summarize the information received (Shuhailo, 2017).

In order to overcome the negative influence of mass media on the socialization of teenagers, it is necessary to inform teenagers and their parents about the negative consequences of media influence. To implement the program of formation of a critical attitude of teenagers to mass media. And also use the following activities in working with teenagers: trainings, discussions, problem-oriented role-playing games, "brainstorming", mini-lectures.

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SCOTLAND IN THE CONDITIONS OF CONSTANT STRUGGLE FOR INDEPENDENCE

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Having analyzed the historical aspect of the stages of formation and development of many world powers, we can claim that the formation of many leading countries is in one way or another connected with their struggle for independence - one of the essential factors for the existence of political independence and sovereignty.

An example of such political processes is the struggle for independence of such countries as the United States, Scotland, and the Czech Republic. In addition, we cannot ignore the most painful issue for the people of Ukraine, as well as for the entire

international community. In the context of the active political struggle of the Ukrainian people for independence and territorial integrity of the state borders within the existing War for Independence of Ukraine, the study of the historical aspect of the formation of independence is particularly relevant. However, it is impossible to create the future of our country without drawing a parallel with others, without studying and researching global political processes, that is why in order to be conscious citizens of our country, we must be aware of the historical features of the development of other countries in order to borrow some experience and be able to analyze the mistakes made in order to prevent their repeated reproduction in the history of our country.

Having studied in detail the history of foreign countries, it is possible to state with confidence that Scotland is one of the countries whose aspiration for independence has deep historical roots: The First War of Independence lasted from 1296 to 1328, then, four years after the end of this military conflict, the Second War of Independence began, lasting from 1332 to 1357. Even after Scotland finally lost its independence and became part of the United Kingdom of Great Britain and Ireland, and after the unsuccessful results of the referendum in 2014, Scotland still continues to fight for independence, as evidenced by the appointment of the second national vote in the form of a referendum on the independence of Scotland on October 19, 2023.

The first war for Scottish independence was a defining moment and played a major role in the creation of the history of the country. Historical events show that this 32-year struggle began with the attack of Edward I - King of England on the city of Berwick. Due to the fact that the Scottish army and nobles were ill-managed, that is why in a month they were heavily defeated at Dunbar (Bonner, 1997, p. 8).

A particularly important event that changed the further course of the war was the election of Robert the Bruce as King of Scotland in 1306, who managed to win the Battle of Bannockburn in 1314. Subsequently, on April 6, 1320, the Declaration of Arbroath was signed, which became the basis for the emergence of the principle of "popular sovereignty" and laid the foundation for the further formation of Scotland's independence from England. It is quite important to mention that the significance of such a Declaration lies in the fact that it contained provisions that can be considered as the highest point of the Scottish vision of long-term independence (Brown, 2003, p. 5). That is, it can be argued that the Arbroath Declaration of 1320 was a stage in the Scottish diplomatic and internal political struggle for independence.

After the assassination of King Edward II of England, the new King Edward III signed the Treaty of Northampton on May 1, 1328, proclaiming the independence of Scotland headed by its King Robert the Bruce.

So, conditionally, this struggle can be divided into 4 stages: the invasion of England and the successes of 1296; campaigns led by William Wallace, Andrew de Moray and others from 1297 to 1304; campaign led by Robert the Bruce and the Battle of Bannockburn in 1314; the period from 1314 to 1328 (before the Treaty of Northampton).

Despite the First War of Independence, it did not result in the final independence of Scotland. During 1332-1357 the country continued to fight, which became known as the Second War of Independence, which resulted in the country's independence until the unification of the English and Scottish crowns in 1603. The Second war of

independence began with the invasion of Scotland by the pretender to the Scottish throne Edward Balliol in 1332 and resulted in the signing of the Treaty of Berwick in 1357, according to which Scotland had the status of an independent country.

Regardless of the existing tensions between Scotland and England, in 1707 Scotland came under English rule with the signing of the Act of Union (1707). The Act of Union (1707) united England, Scotland and Wales into a single kingdom, creating the United Kingdom (Vaillancourt, 2021, p.7).

At the moment, Scotland is preparing to hold a new referendum, due to the fact that not all citizens were ready to vote for the withdrawal from the Kingdom of Great Britain during the referendum in 2014 (55 percent chose to remain within the United Kingdom, and 45 percent were against).

Therefore, it is appropriate to mention that having gained de facto independence in 1314, and in 1328 - de jure independence, Scotland was not able to preserve it completely. That is why this country is currently continuing to fight for independence by voting in referendums, one of which took place in 2014, but which did not have a positive result.

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FEATURES OF TRANSPLANTATION IN UKRAINE: LEGAL ASPECT

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The issue of transplantology has long required the development of an actual legal framework in Ukraine that would meet European standards. Currently, the adoption of the Law of Ukraine "On the Application of Transplantation of Anatomical Materials to Humans" dated 17.05.2018 indicates the stabilization of state policy in this area, however, some aspects of the implementation of the law call for additional interpretation or adoption of normative legal acts. In European countries, the legal basis for the development of such a phenomenon as donation is much better developed than in our country, which is more positively reflected in the standard of living and health of the population of these countries. At the same time, the procedure of organ transplantation in Ukraine is on the way to its wide practical application.

At the beginning of 2019, the Law of Ukraine "On the Application of Transplantation of Anatomical Materials to Humans" (hereinafter referred to as the Law) entered into force, which regulates public relations, new for Ukraine, related to donation, in particular, posthumous, that is, from a "cadaver donor". As stated in the Law, this is "a deceased person, in respect of whom, in accordance with the procedure established by this Law, consent has been obtained for the removal of anatomical materials from his body for transplantation and/or the manufacture of bio-implants."

The main problems of posthumous donation in Ukraine can be identified as: insufficiently clear legal definition of the conceptual and categorical apparatus and the mechanism of application of the presumption of consent and disagreement; the absence, and therefore the necessity, of creating a register of recipients; critical level of state funding of this field of medicine; insufficient coverage of this topic by the state and, as a result, the need for society in the field of organ donation. The specified list of issues is not exhaustive, and therefore requires complex legislative, scientific and medical approaches.

The law provides for the emergence of a new profession of transplant coordinators and the creation of a register of recipients – the Unified State Transplantation Information System (hereinafter – EDIST). Recipients with donors must be entered in this register.

It should be noted that the adoption of the Law is one of the requirements for the adaptation of national legislation to European standards, in particular, it refers to Commission Directive № 2006/86/EU. Thus, based on the action plan of the Ministry of Health of Ukraine for 2018 on the implementation of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their member states, on the other hand, the Ministry of Health is entrusted with the following task:

- bringing the license terms and procedures of licensing and accreditation of institutions working with human tissues and cells into compliance with EU norms;
- establishment of requirements for activities (including technical ones) regarding the acquisition, receipt, testing, processing, storage and distribution of human tissues and cells in accordance with EU standards;
- creation of a mechanism for tracking the movement of tissues and cells from the donor to the recipient and vice versa;
- implementation of the mechanism of monitoring and exchange of information regarding negative phenomena and reactions related to the transplantation of human cells and tissues.

Returning to the specifics of the implementation of posthumous donation, we note that the grounds for the emergence of legal relations related to this phenomenon are the presence of a complex legal fact. It should be noted that this should not be a single legal fact, but a certain combination of them. Such grounds can be divided into two groups - medical and legal.

After the adoption of the law, "black" transplantation was almost the first topic of discussion. There is a widespread discourse among the population that the newly adopted law legalizes the previously impossible process of illegal sale of organs in the country and abroad. The law is not perfect, but it did not legalize the killing of people

for the sake of organs, at least for the reasons that this law operates on the principles of humanity, provided for in Art. 4 of this Law. In addition, the Law provides for a separate section concerning the social protection of the living donor and liability for violations of the legislation on transplantation. However, due to such negative media discourse, the development of domestic surgery is inhibited and the number of people willing to participate in voluntary donation decreases. Therefore, for the progress of modern transplantation in the country, the state should take care of dispelling such myths and encouraging Ukrainians to donate, including through the provision of measures to encourage potential and real donors, for example, by providing the possibility of sanatorium-resort treatment on a free basis (Golovko, Kukharchuk, 2018).

Based on the above, the Ukrainian legislation shows a trend of not forming a clear mechanism for obtaining consent from a potential donor. In addition, it is necessary to introduce a special system of protection of the Unified state information system of transplantation. It is also necessary to apply measures to stimulate donation, for example, by providing in the legislation certain benefits for providing medical care during life, additional vacations, cash payments, treatment in sanatoriums, etc. At the same time, people should have the opportunity to consciously make their choice regarding postmortem transplantology.

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LABOUR RELATIONS UNDER MILITARY CONDITIONS

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In Ukraine, the right to work is enshrined in article 43 of the Ukrainian Constitution, which states that everyone has the right to work, including the opportunity to earn a living by work that he freely chooses or agrees to do. The State shall create conditions for the full exercise by citizens of the right to work, guarantee equal opportunities in the choice of profession and employment, and implement vocational training programmes; Training and retraining of personnel in accordance with public needs. Martial law has had a dramatic impact on all spheres of life of Ukrainians, including work.

Despite the complexity of the situation, legislators continue to draft new laws and amend old laws to ensure the standard of living of their citizens.

Legislative innovations provide that when concluding an employment contract during the period of martial law, the condition of probation during employment may be established for any category of employees.

In addition, the amendments to the legislation provide that during the period of martial law, the employer has the right to transfer the employee to another job, not stipulated by the employment contract, without his consent (with the exception of transfer to another area where active hostilities are ongoing), if it is not contraindicated for the employee due to his health condition, only to avert or eliminate the consequences of hostilities, as well as other circumstances that endanger or may endanger the lives or normal living conditions of people, with remuneration for the work performed, but not lower than the average salary according to previous work.

Important changes concerning the termination of the employment contract at the initiative of the employee are that in connection with the conduct of hostilities in the areas where the enterprise, institution, organization is located, and the threat to the life and health of the employee, he may terminate the employment contract at on his own initiative without a two-week notice period (with the exception of forced involvement in public works in wartime conditions, as well as if such an employee is involved in the performance of work on objects classified as critical infrastructure).

In turn, the employer has the right to terminate the employment contract with the employee in connection with the liquidation of the enterprise, institution, organization, caused by the destruction as a result of hostilities of all production, organizational or technical capacities or property of the enterprise. The employee is notified of such dismissal no later than 10 days in advance, with the payment of severance pay in the amount of at least the average monthly salary.

As for working time, rest time and days off, legislative changes have established that the normal working time of employees during martial law cannot exceed 60 hours per week. For employees who, in accordance with the legislation, have a reduced working time, the working time may not exceed 50 hours per week. A five-day or six-day working week is established by the employer by decision of the military command together with the military administrations. The starting and ending time of daily work (shift) is determined by the employer. The duration of weekly uninterrupted rest can be reduced to 24 hours (Law on the organization of labor relations under martial law, 2022).

All in all, we live in a democratic and independent state, where an important condition for the country's development is its progressive activity in all areas of activity, even during martial law. It is worth noting that every day the legislator develops new legal acts and amends old laws in order to ensure equal and comfortable conditions for life, because the state first of all takes care of its citizens.

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**DISSEMINATION OF INFORMATION AS A PROBLEM OF REGULATION
OF INFORMATION LEGISLATION OF UKRAINE**

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The analysis of the normative-legal field of Ukraine confirms that our country has a number of legislative and other normative-legal acts aimed at regulation, protection and development of the domestic information space. External expertise, which was carried out repeatedly, in particular by representatives of the OSCE, confirmed that the legislative and regulatory framework of the functioning of the information sphere of Ukraine as a whole corresponds to European standards. That is, we can talk about the fact that today in our country the foundations of such a branch of Ukrainian legislation as information law have already been created.

As a result, a significant number of issues of the functioning of the information sphere in Ukraine still remain insufficiently regulated at the legislative level - this applies to both infrastructure problems and the activities of mass media, information and analytical institutions, etc.

In particular, in the modern period, in the system of information legislation, such problems in the field of creation, distribution and use of information need to be solved as:

- formation of legal conditions to ensure pluralism, transparency and impartiality of mass media activities, preventing their monopolization and use for manipulative purposes;
- normalization of information dissemination activities on the Internet;
- improving the protection of intellectual property in the conditions of the spread of Internet technologies;
- the question of the professional competence and moral responsibility of journalists before society remains a topical problem, which is also paid attention to by the National Union of Journalists of Ukraine (hereinafter referred to as the National Union of Journalists of Ukraine).

Currently, there are actually no consequences for the mass media or the journalist for violating ethical standards, neither on the part of audiences or the professional community, nor on the part of the state. In particular, Ukraine lacks an agreed Code of Journalistic Ethics and mechanisms for monitoring its implementation, as well as a definition of journalists' responsibility for violations of professional ethical principles in current legislation. We must state that the absence of mandatory legal requirements for compliance with professional ethical standards and an effective institution of self-regulation (institutions for monitoring their compliance) becomes a prerequisite for the violation of these standards both by individual journalists and editorial offices as a whole.

It is unlikely that this situation will be significantly affected by the introduction of the so-called "unified journalistic press card", which is being talked about in the

journalistic environment. We should not expect the creation of more powerful mechanisms of self-regulation of journalists at the industry level in the near future - for example, the transformation of the Journalistic Ethics Commission into an industry organization that will consider complaints against mass media or journalists at the national level and decide on their punishment.

Currently, a number of terms are used that are not sufficiently correct and/or do not have a clear definition of their meaning, which allows them to be used arbitrarily - such, in particular, are "informational and psychological security", "informational and psychological influences", etc. There is no definition of the concepts of "state information policy" and "national information space" in the regulatory and legal field of Ukraine. There is a need for a clear definition at the legislative level of such categories as "subject of information legal relations", "object of information law", etc. (Problems of information legislation of Ukraine in the field of creation, distribution and use of information and ways to solve them". Analytical note).

All in all, the issue of improving Ukrainian information legislation in the field of creation, dissemination and use of information in accordance with modern needs and challenges is becoming relevant today.

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THE MYERS-BRIGGS TYPE INDICATOR FOR MANAGERS

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For any human being controlling and understanding their emotions is crucial in personal and work life. For managers personal growth and emotional intelligence are keys to becoming a professional. The MBTI can be a tool for all of these.

The theory of psychological type was introduced in the 1920s by Carl G. Jung. The MBTI tool was developed in the 1940s by Isabel Briggs Myers to make the theory of C. G. Jung understandable and useful in people's lives (The Myers & Briggs Foundation - MBTI® Basics, n.d.). Isabel was intrigued by individuals' different ways of seeing the world and after World War II became determined to develop her theory and give people access to knowing their type. The original research was done in the 1940s and '50s (The Myers & Briggs Foundation - MBTI® Basics, n.d.). Myers hoped that if people understood each other better, they would work together better and there would be less conflict. Nowadays the MBTI has gained big popularity. The research is ongoing, providing users with updated and new information about psychological type and its applications. Millions of people worldwide have taken the Indicator each year

since its first publication in 1962 (The Myers & Briggs Foundation - MBTI® Basics, n.d.).

What is the MBTI about? The essence of the theory is that much seemingly random variation in the behaviour is actually quite orderly and consistent, being due to basic differences in the ways individuals prefer to use their perception and judgement. Perception involves all the ways of becoming aware of things, people, happenings, or ideas. Judgement involves all the ways of coming to conclusions about what has been perceived (The Myers & Briggs Foundation - MBTI® Basics, n.d.). So people perceive and come to conclusions in different ways therefore accordingly differ in their interests, reactions, values, and motivations. The MBTI does not describe every single facet of a human being, who is complex, but rather gives an idea of their preferences.

What value does it hold for managers? Managers work with people. Organising, planning, motivation and controlling - main functions of management - are highly intertwined and connected to people. So throughout a manager's whole work, they need to communicate with individuals, understand them, know when and how to listen, delegate, reprimand, and manage to get the best out of subordinates. At the same time, managers are just human beings too. Therefore there are two main uses of the MBTI: learning about yourself and understanding others.

Personal development is important for professional growth. The MBTI helps to realise what forces are at work in our minds that make certain things seem easy or insurmountable, how to bring the best out of oneself, step out of your comfort zone and challenge yourself. The MBTI can be a tool for achieving balance, understanding personal inclinations, and creating possibilities. All of these are essential for leadership roles, and management positions.

The MBTI is about how one makes observations and decisions, which is precisely what a manager needs to know working with individuals, as differing preferences are frequently a source of misunderstanding and miscommunication. If a manager pays attention to what people say and give away with their behaviour, he will be able to understand their preferences and pick up a pattern. For example, in the typology classification a manager is a feeler, while their subordinate is a thinker. It can be hard to reach a common ground explaining certain things from a feeler perspective to a thinker, though knowing the difference can help a manager to use the right categories like reasons and facts to obtain an understanding from their subordinate. The manager will better understand the way their subordinate perceives and judges the world and use the right approach to understand their point of view and motivate them. In this way, understanding typology can make one more patient and compassionate towards other people.

Also, obtaining knowledge about the MBTI and gaining experience in using it can help to predict what people will do, especially with repeating issues. It is crucial for a manager's planning and building future outlook.

The MBTI is not just interesting information. It is a very practical management tool that allows managers to understand and adjust their style where necessary to get the best out of people (Wood, 2018). The value of the theory is in receiving answers to questions like: Why do people act in a certain way? How can one influence their behaviour? Who will be the most suitable for a task? In what way will others

understand the best? Who and where will be the most efficient? For a manager's job picking up on different cues about individuals' features and understanding how to communicate with them effectively is substantial. Whether or not advanced emotional intelligence is innate, learning about the MBTI can improve it as a key component of one's managerial abilities.

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BLACK SWAN

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Most likely that you've just read a title and thought: “What does a black swan have to do with predictions and unexpected events?”. Long ago people used to think that there are only white swans in nature until they saw a black one – which was a surprise to them. The main part of this is how one simple notoriety that is missing can be significant for already known information. This fact gave inspiration to the name of the theory Black Swan, which was firstly mentioned in a book by Nassim Nicholas Taleb – the author of the theory.

We can understand how the Black Swan works, just with one simple example. Let's take a look at a simple chicken farm from the chicken's point of view. It lives there peacefully and farmers take good care of it for days, weeks, and months. Nothing could go wrong, right? The chicken is fed for thousand days and convinced its owners won't hurt it, until the thousand and first day, when a chicken's life ends up on someone's plate. That one final day is changing the whole sense of hundreds of days before and this poor animal would never predict that event would come, even if it could (Taleb N. N., 2007).

What happened on the last day is a Black Swan. An unpredictable event or observation that despite being random, has a high and valuable impact on our lives. Usually, its consequences are crucial whether for finance or even for people. The example with the chicken farm can be not so powerful, but it nicely shows how the theory works in words. In reality, Black Swans are much more serious, such as 9/11, COVID-19, two World Wars, and so on. After these calamities, a lot of experts and analytics appeared and said that they have known for years and they were sure that these events would happen. And the main question here is, why won't they warn people about it? (Taleb N. N., 2012)

Such “analytics” and their “predictions” are a significant part of Black Swan theory. The retrospective impression that they knew about certain things coming and

that there were a lot of facts leading to it – is just an impression, because none of them really knew. If they did, a lot of measures would be taken to prevent such a disaster as 9/11. The main idea is not to try to tell the future - you can't be successful with it but to higher our chances of coping with the results of the unexpected. However, Yuval Noah Harrari once said “knowledge that doesn't change behavior is useless, but the knowledge that changes behavior loses its relevance”. The more we are trying to prevent some catastrophes – the more we alter the going of our history, and our knowledge won't be so useful in that conditions (Aperture, 2021).

So, what do we have to do with Black Swans? Firstly, people shouldn't rely on different business analytics, forecasters and etcetera. If someone's trying to project what will be with our economy in the year 2050 – he is simply a populist and not worthy of attention or trust. It is a big surprise, that we cannot predict what's going to happen with oil prices, for example, in a year, but still, owners of large companies use services of different predictors, who make plans for years and years ahead. Secondly, we need to accept that sometimes our life cannot be controlled by ourselves fully. There is a lot of uncertainty in it, but we have to live with this fact and focus on common things in our daily life, but be extremely attentive to something rare and unordinary, remembering about Black Swans (Warner J., 2020).

To sum up, I want to say that this theory tells us that what you don't know yet is far more important than what you already know. Theoretically, you can use all your knowledge to prepare yourself for every extraordinary event known to humanity, just so that one Black Swan could prove that you are wrong and make your preparations useless. The main idea now is to be that one “farmer” and not his “chicken”.

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DEVELOPMENT AND IMPACT OF SCIENCE FICTION IN LITERATURE

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Science fiction – is one of the literary genres that stands out with its scientific features. Mainly it predicts future technologies and demonstrates their impact on people's lives (Michaud & Appio, 2022).

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It's mistaken to believe that science fiction was founded at the start of the XX century. Because this is the time when it finished developing and spreading all around the world. The first tales considered to be written in the genre of science fiction are myths and legends. The features pointing out it are voyages to other universes. It's clearly shown in Lucian's satire «The True Story» written in the II century AD (Fredericks, 1976). Where the main character describes his life as a traveller, including trips to the Moon. Such an aspect shows the perception of ancient society. Their knowledge of astronomy, physics and geography was not enough to prove the existence of anything beyond their islands.

However, it changed with the coming of the Renaissance, that period when inventions from diverse scientific spheres were made. An excellent example is Johann Kepler, a German astronomer, mathematician and mechanic. In his work "Somnium" he involved astronomy observations, specifically how the Earth would look like from the Moon's land. It was one of the first novels for children in the scientific genre. Perception of our universe got not only wider. But there is one more aspect, that is more social: the strong wish to spread knowledge in all possible ways. Lots of scientists inspired writers to spread education somehow. Such a writer was Francis Godwin who wrote «The Man in the Moon». He was inspired by Kopernik's research regarding the Moon.

In the next several centuries some basic physics inventions were tailored for any reader. A vivid example of it is «The Newtonian System of Philosophy Adapted to the Capacities of Young Gentlemen and Ladies» published by John Newbery in the middle of the XVIII century. To attract the attention of young readers he printed his books using colourful pages.

The end of the XIX century was marked by the novels of Herbert Wells – "Invisible Man" and «Time Machine» (Roberts, 2000). The first usage of bioengineering and new kinds of weapons are mentioned there. It looks like the tendencies of our modern life.

In the XX century, science fiction was spread widely. And there are several reasons for it. Firstly, pulp journals were invented (Tsykhovska, 2013). They included diverse science sci-fi tales, beginning with Herbert Wales and ending with amateur writers. Those journals developed unique illustration style. So, it influenced visual arts directly. The most popular journal was «Scientific American». Secondly, some social phenomena happened. It's clearly seen in Karel's Chapek play called «R.U.R». The writer mocks capitalism roughly with the help of robots which do not have souls.

Nowadays, science fiction is presented in not only literature but in films as well. And the main point of this genre hasn't changed: to make predictions and describe possible technologies.

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CRIMINAL-LEGAL ASPECTS OF AGAINST GROUPS DEATH AND DANGEROUS CHALLENGES

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The development of information and communication technologies has created conditions for unhindered communication between people in the global space, regardless of borders. We got the opportunity to work freely, study, get to know each other and even attend meetings while staying at home. However, in the digital space, in addition to opportunities, there are many dangers, to which children and adolescents are most sensitive.

Thus, recently the issue of the creation and functioning of death groups in social networks, as well as leading to suicide via the Internet, has become topical. Dangerous trends are spreading in social networks that "suggest" psychologically sensitive teenagers different ways to commit suicide. In February 2021 alone, there were about 10 cases of teenagers aged 10 to 18 falling from a height in the city of Kyiv and the Kyiv region.

Unfortunately, the problem of suicide in the CIS countries is either underestimated or used as a tool to strengthen authoritarian state control over the Internet space. At the same time, according to the WHO, suicide is the second most frequent cause of death among girls (after complications of pregnancy and childbirth) and the third among young men (after road accidents and interpersonal violence).

For a long time in the legal field, the legislator has established criminal responsibility for leading to suicide or attempted suicide, which is a consequence of cruel treatment; blackmail; systematic humiliation of human dignity.

The Law of Ukraine dated February 8, 2018 No. 2292-VIII expanded the list of methods of committing a crime: inclination to commit suicide, as well as other actions that contribute to the commission of suicide, and also added a feature of the subjective side of the crime - systematic illegal coercion to actions that contradict of her will. Thus, the legislator reacted to the newly discovered tendencies of suicide using the Internet and filled the gap in the legislation

However, it is worth noting some problematic aspects of such a legal construction. First of all, the legislation does not contain a clear definition of the concept of suicide, thus the question of which actions should be considered a suicide attempt is not settled. It is obvious that any forms of so-called "self harm", or inflicting physical injuries of varying degrees of severity on oneself, in the presence of external

psychological pressure, should also be given a legal assessment. Therefore, the terminological construction of suicide needs to be adjusted.

Secondly, the law does not regulate the issue of assistance in case of suicide, i.e. dissemination of information, providing the victim with the means to commit suicide. It should be noted that the criminal liability legislation of France establishes responsibility for advertising and promoting goods, services, means or methods, as a result of the use of which there is a possibility of causing one's own death. A similar legal construction is also present in the legislation of Poland, where a person who persuades or provides assistance that leads a person to attempt suicide faces imprisonment from 3 months to 5 years. The legislation of the Kingdom of Spain also includes among the components of the crime of aiding and abetting suicide, and the Criminal Code of Switzerland provides for imprisonment for a term of up to 5 years or imprisonment for self-interested inclination to commit suicide or providing assistance to the victim. A similar norm is enshrined in the legislation of Austria, Denmark and Sweden.

Ukrainian legislation and law enforcement practice require adaptation of such a norm and its inclusion in our Criminal Code. Supplementing the subjective side of the crime with incitement and aiding and abetting will allow the application of legal measures of influence on those persons who, perhaps, do not oppress the child's psyche, do not use blackmail or other prohibited actions against him, but provide assistance in committing suicide: as with the help of information about possible forms and methods of suicide, as well as by providing the necessary materials. Thus, it will be possible to apply measures of criminal liability to the authors of dangerous challenges that spread information about pills and various other ways of committing suicide.

Thirdly, the very fact of creating pages and groups in social networks that distribute materials that affect the suppression of the individual's psyche needs to be properly assessed. As S. Pavlenko notes, according to the results of psychological research, numerous cases of manipulation of the child's consciousness through social networks through psychological influence using neuro linguistic programming have been found in social networks.

This psychological influence is exerted with the help of various means that either suppress the emotionally unstable psyche of the child, or may even have a negative impact on a mentally healthy child.

In particular, the organizers of death squads carry out: recruitment of participants by distributing interesting information, which may contain a large number of numerical and alphabetic fonts, including those containing hidden words, Gothic symbols or Arabic elm; formation of a child's sense of uniqueness due to his belonging to a certain community, promotion of death as the only way out of crisis situations, psychological and social problems, cultivation of depressive states (propaganda of self-harm) and leveling of social values (family, friends, education). After all, a dangerous form of influence on a child's psyche is the establishment of total control over it, when curators incite a teenager to commit suicide, including using threats.

One of the problematic aspects of the criminalization of such actions is the promotion of death and the leveling of social values. It is at this stage that the mental state of even a healthy child is depressed. For this purpose, attackers use a variety of

media files that contain the appropriate coloring, text accompaniment, or sound content.

It is worth noting that the teenage psyche is characterized by repetition. One of the ways to influence a child is to create an "authority" - a personality in whom the child sees common features with him (including common psychological problems, environment or conditions, etc.).

It is worth noting that the current legal construction of Art. 120 of the Criminal Code of Ukraine does not allow in all cases to apply it to the creators of death groups, because the owners of such accounts do not always work with a specific victim. It is believed that suicide can be caused by the dissemination of informational materials that suppress the child's mental state and cultivate depressive moods in it, which may eventually result in suicide attempts.

To counteract this phenomenon, it is necessary to identify among the criminally prohibited forms of action the propaganda of suicide and the distribution of such suicidal content that cultivates depressive moods. Such a legal construction will allow opposing death groups already at the stage of their creation and dissemination of such information, when the psyche of teenagers has not yet been deformed and has not been brought to dangerous forms of behavior for it (Pavlenko, 2018).

As conclusion, despite the update carried out in 2018, Ukrainian legislation needs to be improved in terms of combating new dangerous trends by clarifying the content of suicide, including the consequences of self-mutilation, criminalizing aiding and abetting suicide and spreading information that has a depressing effect on the psyche.

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PSYCHOLOGICAL STATE OF THE UKRAINIANS IN THE CONDITIONS OF WAR

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Russia's full-scale aggression caused enormous changes. A large number of people were forced to leave their permanent place of residence and move to other relatively safe regions. Hope and anxiety became the main companions of Ukrainians in this wartime.

The results of research by scientists from the medical school in Jerusalem show that during war, the reaction of the human psyche is different: from moderate and

temporary stress, to severe mental injuries that have negative consequences for health, including depression, abuse of psychotropic substances and post-traumatic stress disorder (PTSD). What's more, a study conducted by scientists from the United States proves that the traumatic events of war can have long-term effects on health and well-being.

The project of scientists from Ohio (USA) shows that most people who survived the war gradually adapt to the new reality, recover, and some in response to stressful circumstances and events feel uplifted, as if they have a "second breath". This phenomenon is explained by Hubfall's theory, according to which trauma can lead to both loss and gain of important resources. So, it can be expected that exposure to war can lead to a deeper understanding of the value of life, which in turn can increase achievement and life satisfaction.

It is inevitable that a full-scale war on the territory of Ukraine poses serious threats to the psychological health and well-being of the vast majority of Ukrainians. Overcoming their terrible consequences requires the organization of a national system of measures to preserve and restore the psychological health of citizens, for example, the creation of a network of centers for psychological assistance to the population, including on a free basis, the development of uniform standards for information coverage of war events, in order to avoid secondary traumatization of the audience.

One of the reactions to an emergency situation (meaning the invasion of the military forces of the aggressor country on the territory of your state) is an alarm attack. This attack can be prevented because you can spot it when it starts. You may experience overwhelming anxiety that escalates to the limit when the attack itself begins, which usually lasts 30 minutes. If you start to notice the first signs of an anxiety attack, you can prevent it by gradually reducing your anxiety level.

If you feel anxious, you can try the following exercises several times a day:

1. Take a deep breath - deep inhalation through the nose, exhalation through the mouth.
2. Gently tilt your head forward as far as your neck allows; then back; in one direction; in the other direction and return it to the initial position.
3. Raise one hand above your head and shake it strongly, as if you want to remove all tension from it; lower the hand back to the body and repeat the same with the other hand.
4. Stand straight and vigorously shake one leg, then the other.
5. If you feel funny during these exercises, then smile.
6. Stand up straight and try to focus your attention on how your feet touch the ground/floor.
7. Keep your head straight and your feet on the ground.
8. Allow yourself to smile, just a little.
9. Shake your hands.
10. Lean forward freely, keep your legs outstretched, and lower your arms freely (Control of the emotional state during the war, 2022).

In conclusion, we should understand that war cannot last forever. Life after the war is our future, the future of our relatives and Ukraine. The future is exactly what Ukrainians fight for and defend their land for. Taking care of oneself and one's **Social Sciences**

emotions in situations where there is at least the slightest opportunity for this should become as important a part of the struggle for the future of Ukraine as the current bravery and fighting determination.

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ECONOMIC IMPACT OF COVID-19

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In 2020, people all over the world faced such a problem as a pandemic outbreak of RNA virus named COVID-19. It completely disrupted the political, social, economic, religious and financial systems of the world. Let's understand how COVID impacted on economic of the whole world.

A huge disease spread caused series of different decisions from people as well as from the state authorities. In quarantine conditions, enterprises and institutions, in best case, switched to remote work, at worst – introduced “stoppage”. Therefore, Gross Domestic Product fell by 2.7% in 2020, while it grew by 1.6% in 2019 (O'Neill, 27 July 2022). Besides, mass layoffs significantly affected the economy – “470 million people worldwide lack adequate access to paid work as such or are being denied the opportunity to work the desired number of hours” (Gomis, Capsos, Kühn, & Liepmann, 2020). Therefore, the level of unemployment at the end of 2020 increased to 6.57%, while at the end of 2019 this indicator was 5.36% (O'Neill, 19 October 2022). Even now the number of new job opportunities in many countries is still low. The IMF called the recession of economic the worst since the Great Depression of the 1929-30s (Gopinath, 2020).

Tourism and hotel business suffered serious losses, because there were canceled a lot of most kinds of people transportations, customers canceled a huge number of trips. That's why a sector of tourism was most affected. World industry of tourism lost 1.3 trillion USD during 2020 comparing to 2019 (COVID-19 and Tourism, 2020).

The sphere of education is also one of those on which the pandemic had a significant impact. Due to the closure of schools in 2020, education losses from classroom closures by the end of 2020 amounted to as much as a quarter of the school year in advanced economies and up to half in emerging and developing economies (Agarwal, 2022). In addition, the transition to distance learning was not organized as efficiently as possible in all countries and localities. And the process of distance education itself, even with its high level of organization, cannot provide the quality of

knowledge, abilities and skills that schoolchildren and students acquire in classes and classrooms in a healthy competitive educational environment.

Another problem that has worsened under the conditions of COVID-19 is the complication of the consequences of the epidemic for the countries of the third world in connection with the limitation of the population's access to certain types of services, as well as the quality of their provision. According to the International Monetary Fund, mortality from the coronavirus in countries with low access to health care services, in terms of the possibility of being hospitalized during an acute illness, is significantly higher than in countries with a more developed economy, health care and social protection system (Guglielmi, 2022).

Regarding Ukraine, GDP fell by 4% in 2020 in comparison with 2019 (Валовий внутрішній продукт, 2020). The sphere of temporary accommodation and catering (-19.7%), provision of services, including tourism (-19.8%), transport and warehousing (-17.1%) suffered most. On the other hand, such areas as construction (+5.1%), wholesale and retail trade (+5.1%), health care (+2.4%) are characterized by positive dynamics (State statistics service of Ukraine, 2020). The export of goods and services in Ukraine decreased by 5.9%, import – by 6.4% according to the results of 2020 (State statistics service of Ukraine, 2020). However, summary of quarters of 2020 show that people adapted to the conditions of quarantine. For example, the internet trading has developed greatly (Валовий внутрішній продукт, 2020).

To sum up, even if the economic consequences due to the suspension of production, the closing of borders, etc., for example, the fell of GDP, can be calculated and evaluated now, the consequences, including economic ones, from losses in the field of health care (the number of labor resources) and the field of education (quality of labor resources) the world will count and evaluate after many years.

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MODERN EDUCATION ON THE WAY TO EXCELLENCE

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The fundamental difference of the modern education reform from all previous reforms is that for the first time it is based not on the ideological requirements of the state class, but on the idea of a full and meaningful human existence based on logic and historical development. Logic is the intellectual and spiritual development of each personality, a certain range of its creative self-realization.

The process of personality education is a multidimensional phenomenon, it is determined by varying degrees of influence, we can note here the general social factors, individual and narrow. Therefore, we can conclude that it is not so easy to organize the education of modern youth without understanding certain factors at the stage of social development. I can mention constructive social factors, they have a very positive impact on the formation of a person as a personality, because of this the educational process is facilitated, but, unfortunately, they can also have a negative impact. In my opinion, there are still a number of complex issues in this regard, but it is up to teachers to decide.

We would also like to consider the nature of modern socio-educational factors through which the educational process takes place, finding its tendencies and identities. One of the decisive social factors is the relationship between people and the government. This caused a kind of enthusiasm for people's work, and generally increased motivation for the future.

Modern educational spaces are characterized by a combination of many components and structures of the educational process. We can note that the directors of various schools refused to enter outdated organizations such as pioneers, Komsomol and others. But the main thing is that the adult community has undermined the attitude of responsibility for childhood. Personal contacts and actions of adults are minimized. Parents give us care in the form of clothes, food, education in famous schools, etc., but only at the level of consumption.

The current state of purpose in society makes a child, teenager or young man define his goals for the future, to be involved in some activity, because it depends on how he will accept himself as a certain individual. And here the maximum that a teacher can do is to show in practice that only the individual as a subject of free and responsible actions or deeds is the sphere of the highest social values, and only he can set goals.

The main point of a teacher or educator as an organizer of social activities is to translate the goal into the life of adolescents. When a child accepts the goal, it becomes very significant, which is part of the system of his own goals (Bekh, 2021).

As conclusion, while achieving innovative educational goals, it should be borne in mind that it may have certain limitations, for example, the diverse development of children. In order to improve this development, it is necessary to create favorable as a system of socially significant labor, scientific, technical and civic activities. In such forms of practical life, primary school students will use and multiply educational achievements, opening the way to high spirituality.

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ACTUAL PROBLEMS OF EDUCATION IN UKRAINE

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Visiting Ukrainian schools, especially schools in village, it is hard to believe that country spends 6% of GDP on education - this is one of the highest indicators of budget expenditures for this sector in the world. Meanwhile, Ukrainian classrooms often need repairs, do not have modern equipment, and there are problems with high-quality textbooks. Schools in village sometimes do not even have indoor toilets, let alone outdated classrooms.

Crumbling infrastructure is only the most visible problem. The issues of Ukrainian education are much deeper – in particular, outdated teaching methodologies and teacher discouragement. Approaches to teaching and learning are outdated, often students learn material without understanding how to use this knowledge in everyday life. Lessons are overloaded with theoretical knowledge, while textbooks are written in academic language and overloaded with factual material, which weakens student's motivation and curiosity.

Another problem is informal payments, common in education. It's no secret that many schools collect money from parents for repairs, flowers or gifts for teachers. Sometimes parents have to pay a bribe to get their children accepted to school, to get good grades or to supervise their child. These practices distort student's understanding of the concepts of honest competition and the need for learning.

Many schools making this process more deeper what has become a vicious circle of poverty: children from poor families cannot apply the necessary skills and development to get good jobs and change social status.

The low social status of education workers and even lower salaries discourage and undermine the morale of professionals who perform a very difficult job. Lack of opportunities for personal and professional growth stifles creativity, dynamism and

motivation. As a result, not all Ukrainians have the same access to quality education which guaranteed by the Constitution.

Summarizing the facts listed above, I would like to say that the main issues of Ukrainian education are the next: crumbling infrastructure, outdated teaching methodologies, unofficial payments and low social status of workers.

I think that to resolve the current problems we need a complete reboot (reform) of the education system, which will include the solution of all the above-mentioned issues.

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PSYCHOLOGICAL THEORIES OF HAPPINESS

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Almost everyone consciously or unconsciously wants to be happy. It sounds like the most important goal in life. But what do we mean by saying "to be happy"?

To be honest, all questions about happiness are still being discussed. Since we can't measure or specifically describe it, psychologists and scientists of other branches are debating these questions frequently (Le Cunff, 2020).

Happiness is something that children feel better than adults. Happiness is emotional well-being that we can experience in different ways. It is not about the result, that we care too much, it's about the process that we want to feel during our lifetime (James, 2018). But what can make us happy? And there are two camps of people whose thoughts are completely controversial.

First type of people thinks that happiness is skill, that you can master and make your life simpler. All you need to do is to have a positive attitude to everything and increase your mental stability (Craig, 2019). In the realities of the current state of the world and people, this sounds impossible. But there is a second group of people. We can call them brain chemists, because exactly in this branch of medicine we can find "hormones of happiness": serotonin, dopamine, endorphin and oxytocin. They contribute happiness in our life. We can go further and think deeply about how these hormones work and which exactly influence each of them has on us, but it is not the field of psychologists.

Psychology of happiness says that everyone can find their own things, hobbies or people, that make them happy. It's something that each of us needs to feel sometimes to feel alive.

From all of the above the basis of the psychology of happiness was revealed, which is mostly the most important purpose of our life. We should remember about finding our determination, our happiness and don't be afraid to be happy.

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SOCIAL NETWORKS FOR CREATING AND DEVELOPMENT OF BUSINESS PROJECTS

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A social network is a network of people who meet online to communicate by posting information and images, leaving comments or sending messages. Today, it is impossible to imagine my life without her. Social networks have filled our lives for several years in a row. We spend a lot of time on social networks without even noticing it. Today, a person who does not have an account in any social network has a reason to be considered detached from the world. Because people have penetrated so much into this virtual reality that social networks have even become life itself for some people. They are used by a wide range of people. The population includes both children and adults.

With the advent of such a platform as social networks, the lives of their users have not only changed, but also affected the creation of business. Because the online market in social networks is rapidly developing and there is an opportunity to use it to find potential customers and conduct business. The online shopping market is growing more and more. The most popular products bought online were: clothes, accessories, electronics, household goods and appliances. A new reality is emerging that replaces office work with online. This is manifested in the fact that if you need to work online, then the world can stay at home and do it just as efficiently. After all, the main factor for this is a person and his knowledge. In this business environment, you can do business from anywhere in the world and you don't need to spend time getting to work. Today, every company has its own page or even a site in social networks.

There is a very large number of social networks that have open access for all Internet users and are very popular among the population. The most popular social network in the world is Facebook, according to official data from [statista.com](https://www.statista.com). It is this social network that is most suitable for solving business tasks. YouTube is one of the most famous social networks among Internet users who watch billions of videos every day and every minute. Instagram is the fastest growing social network in the world along with several others. Tik Tok is a social network where teenagers currently

account for 40% of the audience. Pinterest is a very interesting platform, but at the same time, it is also difficult and effective.

The advantages of the company's presence in social networks are: the ability to create business relationships with partners around the world, freedom of access: you can work from anywhere on earth with the help of computers and gadgets, the convenience of ordering goods even from other cities and countries using delivery service, if the products are not freely available, there is a very large audience: thousands of users of different ages and social status may be interested in these products. But there are also disadvantages such as the difficulty of recruiting an audience, unstable income: sometimes there are ups and downs in the level of income, irregular working hours (Yarmoliuk, Fisun & Shapovalova, 2020).

In conclusion, social networks are extremely relevant at this time and are gaining more and more popularity among Internet users. They have long become an integral part of the life of a modern person. For example, in Ukraine, more than 60% of the population are their users. For some people, pages in one or another social network have acquired commercial significance and have become a tool for generating income.

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FOURTH BRANCH AND MASS-MEDIA MANIPULATION STRATEGIES

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The 20th century changed the world absolutely. We are living in a time that has no similarity in the whole world history. A proof of that is fast dissemination of information and news. It was caused by the industrialization process which was accompanied by the development of technology. Later it transformed the society of the Earth into post-industrial or "information society".

New period started when the Internet was created. It changed everything including mass-media. Now they are called "new media". Marshall McLuhan formed a theory of "global village" (1962) about this. Literally random person will probably know the news from another continent but not from the nearest street. With the help of the Internet, it has become easier to become popular, which is why new concepts in society are emerging - opinion leaders and influencers. These people set today's trends that flood the minds of many people, and besides, speaking of manipulation, opinion leaders began to control their followers, imposing what is beneficial to them.

More and more scientists are talking about mediocracy era. There already have been three real branches: executive branch, judiciary and legislative branch. But the

media receive the greatest impact on society today due to globalization nowadays. So mass-media actually is the fourth branch that can “control” and manipulate people.

Based on the work of Noam Chomsky (2010) there are 10 strategies of manipulation that being used by the media: “A strategy of distraction” (switch attention to topics with no real importance), “Create problems and then solve them”, “Strategy of gradation” (to make people accept something just apply it gradually), “The strategy of defer”, “Addressing the public as younger children”, “Using the emotional aspect much more than a reflection”, “Keep the public in ignorance and mediocrity”, “Stimulate the public to be complacent mediocrity” (being stupid is the fashion), “Strengthening the revolt by self-blame” (instead rebelling against the system, the helpless people blame themselves which leads to inhibition of their actions), “Know more about people than they know about themselves”.

Most of those strategies of manipulation are based on sociology and psychology knowledge. Considering the empirical component of both sciences, we can conclude that these strategies make sense and should not be treated with skepticism. The “new media” is a powerful tool which can be used against humanity to satisfy someone's needs or interests.

Taking the aspect of the impact of mass media on society and their importance in people's lives, we can say with confidence that they directly influence our preferences and in some cases - our choices. The main tool for this is freedom of speech.

Everyone knows that thanks to the freedom of speech, the mass media acquires greater opportunities and because of this, new currents appear in various spheres of society and culture. It was because of gaining greater freedoms that we saw new rock bands, styles in art and fashion. But why do we even hear about them? Why do we observe them not only in one country? It was the mass media and their desire for sensationalism that contributed to this. Speaking about sensationalism, this desire was the main reason why freedom of speech in mass media have appeared and if it didn't become a thing, mass media would lose their popularity and influence back in a day.

The Internet has revealed the concept of freedom of speech in mass media. By having new opportunities in self-expression, we now can see a completely different world compared to the world that was 30 years ago. However, with these all benefits comes a bad part of it: lack of control from the government side. By that problem, we can observe a lot of fact manipulations and fake news, which can be potentially dangerous for society. So that's why all users of the Internet supposed to know basic rules of media and internet literacy.

In conclusion, we consider that mass media is a very powerful tool which can cause either bad or good things. It could be very useful for one person and harmful for another. In fact, depends on which hands this tool will be. As research shows, we are convinced of the importance of mass media in Ukraine.

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LEGAL REGULATION OF THE STATUS OF PRISONERS OF WAR IN UKRAINE

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Our national system of regulating relations related to prisoners of war is regulated on the basis of a number of international treaties, which in accordance with the procedure provided for in Art. 9 of the Constitution of Ukraine entered into force on the territory of Ukraine (Constitution of Ukraine; Law dated 28.06.1996 No. 254k/96-VR).

Ukraine is also a party to Geneva law, in particular the 1954 Geneva Convention on the Treatment of Prisoners of War. It is this Convention that contains provisions on the status of prisoners of war, guarantees of protection, rules of conduct, return procedures and others, which are considered the basis of the national legislation of Ukraine in this area. The Geneva Convention contains norms of direct effect, their implementation is mandatory not only for the Participants, but also for the Parties that entered into a conflict with such a Participant. It should be noted that the Geneva Convention was signed during the time of the Ukrainian SSR and became mandatory for independent Ukraine in accordance with the Law "On Legal Succession of Ukraine".

The Geneva Convention is part of national legislation, but it regulates interstate relations and imposes obligations on the state itself. In its turn, the state must think through and establish the mechanism for the implementation of such obligations with additional regulatory and legal acts.

Thus, the norms of the Geneva Convention are embodied in the Law of Ukraine "On National Defense". The law defines the competent bodies that decide this or that issue related to prisoners of war. The procedure for handling and keeping prisoners of war is established by the Cabinet of Ministers of Ukraine. There are no other laws that would affect this topic. As a result, further normative and legal regulation takes place within the framework of by-laws. They include:

1. Resolution of the Cabinet of Ministers of Ukraine No. 257 "On the formation of the Coordination Headquarters for the Treatment of Prisoners of War" dated March 11, 2022.

2. Resolution of the Cabinet of Ministers of Ukraine No. 413 "On Approval of the Procedure for Keeping Prisoners of War" dated April 5, 2022.

3. Resolution of the Cabinet of Ministers of Ukraine No. 441 "On approval of the Procedure for the transfer of enemy prisoners of war to the aggressor state and the release of defenders of Ukraine held captive by the aggressor state" dated April 12, 2022.

4. On June 17, 2022, the Resolution of the Cabinet of Ministers of Ukraine No. 721 "On approval of the Procedure for the implementation of measures regarding the treatment of prisoners of war in a special period" dated June 17, 2022 was adopted.

We believe that this regulation of the specified legal relationship is insufficient. Thus, Ukraine should determine the principles of policy formation regarding persons who are in Ukrainian captivity and Ukrainian military personnel who are in captivity of a foreign state within the framework of a single law.

In the methodological recommendations of the Apparatus of the Verkhovna Rada of Ukraine regarding the rules for the drafting of draft laws and the basic requirements of legislative technique, it is stated that before starting the preparation of a draft law, one should take into account the criteria that make it possible to distinguish a law as a special category of regulatory legal acts, namely: - issues that is supposed to be resolved in the law, belong in accordance with Article 92 of the Constitution of Ukraine to issues determined exclusively by the laws of Ukraine; - relations to be regulated are stable and important in society; - clearly define the need for the adoption of the law and the goals to be achieved with its adoption, namely, the possible consequences of the future law: economic, political, social, etc.

The requirement for legislative consolidation of relations related to military personnel is contained in the Constitution of Ukraine. Thus, according to Clause 9 of Article 92 of the Constitution of Ukraine, the principles of external relations are determined exclusively by the Laws of Ukraine. Relations with persons in Ukrainian captivity and Ukrainian military personnel who are in foreign captivity are part of international relations, as they have a foreign element: they are carried out in relation to persons of an adversary state, are associated with a large number of negotiation international processes, and also convey the position of the state to international arena (Methodological recommendations: Rules for drafting laws and basic requirements of legislative technique, 2014).

Relations related to prisoners of war are stable and important for Ukrainian society. During military aggression, Ukrainian society must show that it is civilized, democratic and humane. This is important for our international reputation and the formation of an international pro-Ukrainian coalition. The number of partners and help we will receive to fight against the aggressor and preserve the independence of our state depends on our reputation.

All in all, the law alone cannot fully regulate this area. In any case, a combination of legislative and bylaws is necessary to regulate this area. However, subordinate regulatory legal acts must comply with the principles defined in the law. At the moment, there is no full consolidation of the principles provided for by the Geneva Convention at the national level.

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DYSMORPHOPHOBIA:

AN INVISIBLE PROBLEM WITH VISIBLE CONSEQUENCES

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Dysmorphophobia (also known as dysmorphia, body dysmorphic disorder, or BDD) is a mental disorder characterized by the fixation of the patient on minor external "defects" or features of his body. The condition can affect different parts of the body and face, this list includes almost everything. The most popular areas of concern for people with this problem are skin, nose, hair, and weight (Phillips, Weisberg, 2005). It should be noted that a large number of people in the world also pay great attention to their appearance, but this cannot be considered a manifestation of dysmorphophobia. The disorder is characterized by excessive attention and obsessive thoughts about one or more "flaws" or one's appearance in general, an eternal desire to hide or correct problem areas, a depressed emotional state and dangerous consequences (suicide, self-harm, disability, inability to socialize, the development of other diseases, etc.). The prevalence of this condition ranges from 1.7% to 2.9% of the general population, most commonly in adolescents or young adults (Drüge, Rafique, Jäger, Watzke, 2021). With regard to gender, it is known that women suffer from this somewhat more often than men.

Specific causes of dysmorphophobia cannot be identified, but there is a multifactorial theory that suggests the likely influence of many factors in the development of this condition. Conditionally, the reasons can be divided into: biological, genetic, socio-cultural and psychological. It is believed that dysmorphophobia in certain people has a genetic predisposition, that is, it can be transmitted genetically, and also one of the reasons can be hidden in a violation of the normal functioning or abnormalities of the central nervous system. Dysmorphophobia can often be a manifestation of other mental disorders such as obsessive-compulsive disorder, generalized anxiety disorder, depression, etc. Clarity of the concept of beauty and unrealistic standards can affect the development of this condition. Media and beauty standards create a framework for people and limit the appearance that cannot be chosen and controlled. A person's tendency towards dysmorphophobia can also be influenced by painful life situations or failed social interactions. There is information that people with dysmorphophobia experienced psychological, physical or sexual violence in childhood (Feusner, Neziroglu, Wilhelm, Mancusi, Bohon, 2010).

Why is it dangerous to ignore this problem? Most often, this condition is not considered something dangerous and serious, which causes even more discomfort and emotional pain to patients. Embarrassment causes most teens and young adults who seek help to withdraw completely within themselves after being belittled by others and loved ones. In such a vulnerable state, they are prone to impulsive actions, the development of other disorders, a complete rejection of social contacts, etc. Suicidal tendencies in people with BDD are widespread. About 80% of people with this disorder have had suicidal thoughts, and 24-28% has attempted suicide without success (Phillips, 2007). A long independent struggle with this disease can increase the risk of other diseases or turn into a chronic form (provided that dysmorphophobia is not caused by them). One of the frightening consequences can be dysmorphomania, when obsessive thoughts about appearance become overvalued or delusional. The patient begins to believe that his appearance is the cause of all problems in life. Addiction to permanent plastic surgery, self-traumatic attempts to correct a “mistake,” self-mutilation, and refusing social interaction for fear of being bullied or ridiculed can also be dangerous acts. All these things completely reduce the patient's quality of life and make him a danger to himself.

Treatment for dysmorphophobia includes psychotherapy and medication. Cognitive behavioural therapy, which roughly speaking restores the ability to adapt to problems and the ability to cope, has proven its worth. The main goal is to remove from the patient's mind illogical thoughts, errors in mental processes and stereotypes of thinking about the features of his body. The positive results of the study show us the effectiveness of this method (Begoyan, 2015). There is no information on treating the condition itself with antidepressant drugs (SSRIs), but they do help the patient cope with anxiety, depression, and obsessive-compulsive thinking. It should be noted that with untimely treatment, dysmorphophobia often turns into a chronic form, which means that there is a risk of recurrence (Harding, Huins, 2017).

Dysmorphophobia can be a full blown problem or just a signal that something is wrong with your loved one. Ignoring the problem can have fatal consequences. Therefore, it is important not to close the manifestations of this disease. It is better to recheck your state of mind than face many negative consequences if you do nothing. As we have seen, the consequences of dysmorphophobia can be serious, so it is necessary to spread information about this phenomenon, often considered normal or safe, in addition to treatment.

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EUTHANASIA – MURDER OR THE RIGHT TO A PEACEFUL DEATH?

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The term euthanasia means the voluntary termination of human life who is physically or mentally suffering from incurable diseases.

Distinguish the following types of euthanasia: passive euthanasia and active euthanasia. Active euthanasia involves the introduction of certain drugs into the patient's body or the implementation of such actions, which are followed by quick death. Passive euthanasia is the termination of medical care aimed at prolonging the patient's life, which leads to the acceleration of natural death.

Translated from Greek, euthanasia is "peaceful death". The first legal euthanasia was performed in 1996 by Philip Nitschke in Australia. He administered the lethal dose of sleeping pill into the man who had been suffering from cancer for many years. The man fell asleep and never woke up again. After that one of the biggest propagandists of euthanasia was Jack Kevorkian who was nicknamed Doctor Death. About 130 people fell eternally asleep from his hand. Anyway he was sure that he's doing good thing and helping people to have calm, painless, therefore dignified death.

Millions of people were supporting and millions were against. In more than 20 year disputes are still going on and everyone have their own strong arguments.

On the one hand, human's life is the most important and valuable thing we have. If to speak about opponents of euthanasia, they affirm people don't have right to decide when to interrupt their lives prematurely by themselves. Even more they say euthanasia are the same like murder or suicide and no good intentions justify it. Moreover, euthanasia completely deprives a person of a chance to live and also slows down technological progress, because instead of taking care of the patient and looking for new ways to cure him, doctors allow themselves to end his life. The consequence of generally accepted euthanasia can be human`s life devaluation (Gorsuch, 2009, p. 276).

On the other hand, proponents argue that there are living conditions much worse than death, such as incurable diseases, when the pain becomes unbearable, or condition during severe mental disorders, when a person begins to lose his personality (Keown,

2018, p. 149). Many such terminally ill people decide to end their lives by suicide because their lives turn into existence and suffering and they can't live with it. So activists believe that the right to a peaceful death is as important as the right to a freedom, that's why euthanasia can't be equated to murder.

Nowadays euthanasia recognized and practiced in Belgium, Netherlands, Switzerland, New Zealand, Spain, France and more than 20 states of America. Anyway in Ukraine euthanasia isn't legalized that's why any doctor's attempts to do it will be considered as a murder even if it would help patient and relieve his suffering.

Currently, people don't have definitive answers to the questions that arise on this topic. In any case, in the modern world, euthanasia has the right to exist, and whether to use it or not is everyone's business.

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DEPRESSION AND ITS IMPACT ON LIFE

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Depression is a common and serious mental health disorder. Its prevalence in adults is about 12%, in children and young people - about 4-8%. Depression is a complex disorder that does not have a single cause, but is a manifestation of the interaction of biological, psychological and social factors. On the one hand, there is a genetic predisposition to depression, which does not mean at all that a person will have depression, but increases the risk if there are concomitant stressful events in life. Vulnerability to depression is also greater in persons who have experienced abuse, neglect in childhood, lack of adequate social support resources. Low self-esteem, tendency to self-blame, self-criticism also make a person vulnerable to depression. Depression reduces a person's ability to analyze the situation and respond rationally to stress. People find themselves in a dead end with limited ability to get out of a negative mental state.

Its symptoms affect how you feel, think, cope with daily tasks, sleep, eat, work. To be diagnosed with depression, symptoms must be present for at least two weeks. Depression is a common disease all over the world. There are several types of depressive disorders:

- major depression
- persistent depressive disorder (dysthymia)
- postpartum depression
- psychotic depression

- seasonal affective disorders
- bipolar disorder

Depression affects people differently and causes a variety of symptoms, from chronic low mood and feelings of hopelessness, to losing interest in everything you used to enjoy. There may also be physical symptoms, such as feeling tired, poor sleep, lack of appetite or sex drive, pain. Symptoms of depression range from mild to severe. It is estimated that 76-85% of people suffering from mental disorders do not have access to the treatment they need.

Many people living with depression feel better with lifestyle changes. For example, more physical exercise, giving up alcohol, smoking, and eating healthy.

The greatest danger of depression is that it can remain for a long time without proper attention both from the sick person and from his environment. Such invisibility can later have tragic consequences, ranging from serious mental disorders to suicide (Mori, 2021).

In the end, I would like to add that depression is not a cross on the whole life, it should not become an obstacle to the normal functioning of a person. You can find a way out of every situation, even when it seems that it is not so.

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ENERGY SAVING AS AN IMPROVEMENT FACTOR OF THE ENVIRONMENTAL SITUATION

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Due to the aggravation of the environmental situation in the world, the failure to solve local environmental problems, the demand to preserve the natural environment in optimal condition or at least the demand to reduce interference with it is becoming more and more frequent. The largest share in Ukraine falls on the energy sector due to emissions of harmful substances, which is as much as 25%. Due to the negative impact of energy production, a dangerous ecological situation has already been created in many regions, one of the main signs of which is the pollution of the air basin by gas and aerosol emissions. All this leads to very serious consequences, such as: the ozone layer is destroyed, the greenhouse effect occurs, and the "ice" effect also occurs...

If we are closer to the essence, then energy saving is an economical use of energy resources, and not a complete rejection of them. Of course, the word "saving" has a lot of meanings, because you need to save rationally, profitably and conveniently for yourself, you also need to think about economic benefit.

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In economically developed countries, energy saving is usually a very important and urgent task in connection with the need to solve global issues, namely the damage caused to the environment. These questions, obviously, in one way or another concern all people on Earth, affect the interests of all countries of the world.

The more we save energy, the less we pollute the atmosphere, water and soil, and also make savings, because energy supply is very expensive.

The main impact of energy saving on the improvement of the ecological situation is manifested in the mechanism of its influence: the lower the total energy consumption, the smaller amount of emissions of pollutants into the surrounding natural environment, the cleaner it is. Therefore, the lower the level of specific energy consumption for the production of a unit of products, the better the ecological situation is created; and vice versa (Toimentsova, 2014).

In conclusion, we would like to say that in order to improve the ecological situation and to reduce the consumption of energy resources, it is necessary for each branch of the economy to solve its set of energy-saving measures. Issues of a complex of energy-saving measures in the form of matrices for typical enterprises; environmental and economic assessment of energy saving measures may have the prospect of further development in this direction. Ecological and economic assessment of energy saving measures may have the prospect of further development in this direction.

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WORLD DEBT: CAUSES AND CONSEQUENCES. EXTERNAL DEBT SETTLEMENT MECHANISM

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In recent years, the problem of external debt has acquired a global character. The problem of servicing the state's external debt is one of the key factors of macroeconomic stability in the country. The nature of the solution to the debt problem will depend on the budgetary capacity of the state, the state of its foreign exchange reserves, and, consequently, the stability of the national currency, the level of interest rates, the investment climate, the nature of the behavior of all segments of the financial market.

Almost all countries of the world, carrying out economic transformations, resort to external sources of financing. The rational use of foreign loans, credits, and assistance helps to accelerate economic development and solve social and economic problems. However, the lack of a coherent state policy to attract and use external

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financial resources leads to the formation of external debt, which becomes a serious obstacle to economic transformation. In economic studies of recent decades, much attention has been paid to studying the problems of the economic significance of the goals for which external resources are attracted, the size of the borrowings themselves, as well as their impact on the economy. At the same time, financing of public expenditures through loans, as a rule, is not only approved but also recommended, since loan financing allows for achieving an optimal distribution of the financial burden on the state and avoiding tax increases to ensure government activities in emergencies. To overcome the crisis caused by COVID-19 and the war in Ukraine and ensure a strong recovery for developing countries, above all large-scale support in obtaining liquid funds is needed. Overall, since May 1, 2019, the IMF has approved about \$165 billion in loans, including those predating the pandemic. For example, to provide up-to-date, ongoing information on the policies implemented by countries to contain the pandemic and its damage to economies, the IMF created a [Policy Tracker](#) that summarizes the key economic responses governments have taken to limit the human and economic impact of COVID-19.

The lack of financial resources for economic reforms is forcing developing countries and countries with economies in transition to turn to external borrowing. Due to their low solvency, developing countries are experiencing serious difficulties in servicing their debt obligations. They have to negotiate with international financial institutions and foreign governments, and with transnational banks about deferred payments, rescheduling debt obligations, and even forgiveness of their debt. Developing countries collectively are net borrowers. The deficit economies of developing countries took shape gradually in the course of their independent development. The factors that stimulated external borrowing changed, their sources and scope expanded, and the conditions for foreign lending changed, but interest payments growing due to new borrowing and interest charges increasingly hampered the socio-economic development of most countries in the developing world.

The growing debt burden can lead to the fact that the country finds itself in the so-called debt loop when new external borrowings are mainly used to repay previously received loans, credits, and loans. A similar situation has developed in many developing countries and threatens several post-socialist states, which spend a growing part of their GDP and export earnings not on their development, but on servicing their external debt if they have enough funds for this service at all. As a result, such countries have a debt crisis, as, for example, in Russia. Also, against the backdrop of the war in Ukraine, the aggressor cannot pay a lot of external debts due to sanctions imposed on the Russian Federation. To prevent external debt from becoming an acute economic problem for the country, it needs to actively manage its external debt. Take steps to prevent or mitigate a debt crisis. These include measures: economic (minimizing the amount of external borrowing, restructuring accumulated debt, increasing the efficiency of using attracted financial resources, increasing the state budget's ability to service external debt); political (maintaining political stability in the country and good relations with external creditors); social (ensuring social stability); to ensure national security (first of all, maintaining an independent foreign and domestic policy from creditors). And if you apply all these methods of controlling the debt crisis at the right

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time and in the right place, and at the same time comprehensively, you can not only reduce the amount of external debt but also improve the country's economy.

The world community has recognized that finding a solution to the debt problem is the shared responsibility of debtor and creditor countries, commercial banks, and multilateral financial institutions.

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STRESS AS A COMPONENT OF EVERY DAY

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Every day, a person faces stress in varying degrees. Sometimes just an ad that starts in the middle of your favorite movie can be stressful. The level of stress varies from person to person.

Stress is a physical and psychological state that is a reaction to traumatic external or internal environmental factors. It is accompanied by a serious violation of the biochemical, physical, mental state and behavior of a person.

Sensitivity to a certain psychological stimulus depends on the level of stress resistance. This, in turn, depends on the type of nervous system. For example, people with a weak nervous system are more sensitive to traumatic events and take everything to heart more than people with a strong one.

It turns out that stress resistance is an innate factor, but it is possible to develop the body's resilience to stress, which is a useful protective function that allows you to adapt to external stimuli or ignore them. In other words, it allows you to learn to keep calm in any situation.

By changing your attitude to a negative situation, you can reduce its impact on a person's psychological state.

The thing is that we sometimes tend to greatly exaggerate the stimulus. Therefore, it is necessary to understand: is the reaction appropriate? Is there anything I can do about this situation? What is the worst thing that can happen to me as a result?

Thus, when everything seems catastrophic, you need to soberly assess the situation, think whether it really is as it seems. In this way, you can significantly reduce your fear of the unknown and calm down, because you will already know the true face of stress without unconscious exaggerations (Subbota, 2022).

If we look at the present in times of war, when an irritant often threatens a person's life, then under missile fire it is difficult to give a positive answer to the question «What is the worst thing that will happen to me?», but you can still make maximum efforts to minimize stress on your own. You should observe safety

measures, do everything you can. To help others in order to be distracted in a certain way. Do your favorite thing, but if it becomes impossible because of the war, donate, engage in volunteer activities in order to somehow bring victory closer and do everything you can for it (Subbota, 2022).

How can you help yourself deal with stress? To realize this side of stress, we need to talk about the hormone oxytocin. It even has its own cute nickname — the hug hormone, because it is released when you hug someone. Oxytocin makes you crave physical contact with friends and family. It enhances your empathy. But here's what most people don't understand about oxytocin. It's a stress hormone. And when oxytocin is released in response to stress, it encourage you to seek support. Your biological reaction to stress pushes you to tell someone about your feelings, instead of hiding it. Therefore, when you turn to other people under stress, either for support or for help, you release more of this hormone, your stress response becomes healthier, and you actually recover faster from stress. It's amazing that our body has a built-in defense mechanism against stress. This mechanism is human support (McGonigal, 2013).

So, stressful situations are unavoidable. But we can change our own perception of stress to avoid negative consequences (Aguirre, 2015).

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EDUCATION IN THE CONDITIONS OF THE MARTIAL LAW: CHALLENGES AND PROBLEMS

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The full-scale invasion of the Russian Federation into Ukraine affected various spheres of activity of Ukrainians, and education in this case was not an exception, but perhaps turned out to be one of the targets of defeat for the enemy. Learning in extreme conditions is no longer news to the world, and many ways to improve distance education have already been found. However, martial law has a number of features that distinguish e-learning now and during a pandemic.

The Ministry of Education of Ukraine has proposed several options for education, distance learning and mixed education have become especially popular, which includes both face-to-face attendance at an educational institution and online

learning. A mixed form of education allows you to increase the quality of control over the educational process and partially overcome psychological barriers, that is, to establish an emotional connection with the environment (Shelever, 2022, p. 186). However, in modern conditions, mixed training cannot take a full-fledged form due to fears and threats of shelling or missile strikes from a terrorist country.

Thus, it will be appropriate to highlight the following features of educational activities during military operations: air alert, poor communication, lack of electricity supply and stress. It is important to note that even now the problems of teacher qualification regarding the use of information and communication technologies and technical support of education seekers remain relevant.

Air alarm interrupts the educational process, which causes the need for independent study of the material, postponement of work in the classroom, and practices for another time. This significantly disrupts the daily routine of pupils, students, and teachers and has negative consequences in the form of a deterioration of self-organization, a decrease in the level of assimilation of material, and a superficial assessment of knowledge. The most vulnerable group to this factor are elementary school students. It is during this period that the foundation is laid for planning, self-organization, self-reflection, self-control, and awareness of one's own actions (Pysarchuk, Rudenskyi, 2022, p. 137).

Low-quality communication and lack of light significantly reduce the quality of distance learning, because it is based on the interaction of participants in the educational process through the network. This significantly affects not only the ability of educators to work, but also their motivation, since the lack of pairs/lessons or the inability to perform tasks well serves as a destructive element and requires constant adaptation to learning, which reduces the ability to work. It also greatly complicates the work of teachers, because online learning requires constant interaction with the network to fill out electronic documentation, prepare multimedia materials for classes, conduct the classes themselves, and evaluate student/pupil works (Osypenko V. Tymofiiieva, 2022 p.).

The issue of gadgets continues to be a significant problem, because still not all knowledge seekers have laptops or personal computers for more efficient and convenient processing of materials and tasks. In this way, students often combine several gadgets, the presence of the above-mentioned technology significantly increases the options for interactive interaction. Educators attend refresher courses and webinars to improve their knowledge in the field of ICT, but they face the same problems as pupils and students. It is worth noting that for the younger classes, the issue of technical support is relevant, as more than 20% of respondents do not have their own devices and use their parents' one.

Therefore, today is a difficult period for obtaining quality education due to a number of factors caused by the aggression of the Russian Federation. They influence not only the acquirers of knowledge, but also educators. However, the peculiarities of wartime training are reinforced by problems left over from the pandemic period. An important role is played by technical support and learning conditions, which affect the productivity and motivation of pupils and students.

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**THE INFLUENCE OF FOREIGN INVESTMENTS ON THE
DEVELOPMENT OF THE ECONOMY OF UKRAINE**

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The study of the problem of investment in the economy has always been in the center of attention of economic thought. This is due to the fact that investments touch the deepest foundations of economic activity; determine the process of economic growth as a whole.

Nowadays foreign direct investment (FDI) is a stable source of capital inflows. Therefore, from the point of view of predictability and financial stability of the state, it is more expedient to stimulate the attraction of direct foreign investments.

The development of foreign investment was facilitated by such factors as: the emergence of international corporations that can ensure the free movement of capital, the development of the global financial market, due to which the importance and value of foreign investments is growing rapidly. In addition, it is necessary to take into account the stability of macroeconomic indicators of developed countries, the deepening of the process of international division of labor, international industrial and scientific and technical cooperation, as well as the emergence of integration associations that strengthen international cooperation and cooperation.

The share of foreign investments in the structure of Ukraine's GDP in recent years was relatively insignificant and fluctuated between 3-5%, which confirms the difficulty of attracting financial resources from abroad to the national economy.

The country's investment climate plays a significant role in attracting foreign capital, namely a set of certain factors (social-economic, political, organizational-legal, etc.) that are specific to the recipient country.

Firstly, the main factors shaping the investment climate are: development of infrastructure, macroeconomic balance, political stability, tax policy, favorable legal framework, barriers to market entry, availability of natural resources, state of the financial market, quality and distribution of labor force, currency risk, quality of public administration, protection of intellectual property.

Secondly, today Ukraine has a number of investment-attractive factors that contribute to its expansion:

- investment relations:
- a large, capacious and almost competitively unlimited domestic market for most product positions;
- the location of the main transport routes between Europe and Asia;
- developed infrastructure (availability of ports, bridges, airports, warehouses, communication systems, water supply);
- cheap, but qualified labor force;

However, one of the indicators that determines the degree of integration of the country into the world economy, the development of its foreign economic relations and the desire to create an open, export-oriented model of the economy is the accumulated volume of foreign investments.

Currently, the East Invest - 2 Project has been developed in Ukraine, which formulates requirements for improving the business climate in the country. In order to attract direct foreign investments, Ukraine offers large investment projects: technological lines for continuous pouring of steel in the metallurgical industry, a complex for the processing and storage of grain crops, an agricultural complex with fish specialization, livestock complexes, etc.

Inflow of foreign direct investment (share capital) to Ukraine

Years	Direct foreign investments, million dollars. USA	absolute increase (decrease), million dollars USA	dynamics index, %	growth rate (decrease), %
2010	5851,2
2011	6033,7	182,5	103,1	3,1
2012	5290,7	-743,7	87,7	-12,3
2013	5462,1	171,4	103,2	3,2
2014	2451,7	-3010,4	44,9	-55,1
2015	4321,8	1900,0	176,2	76,2
2016	4405,9	84,1	102,0	2,0
2017	2511,1	-1894,8	57,0	-43,0
2018	2869,9	358,8	114,3	14,3
2019	2531,1	-338,8	88,2	-11,8

Direct foreign investments in the economy of Ukraine over the past 10 years have been quite uneven. The data in Table 1 show that the inflow of foreign direct investment into Ukraine from 2010 to 2019 fluctuates significantly and depends on the economic and political situation in the country.

From 2010 to 2011, there has been a gradual increase in foreign investments. But already in 2012 and 2014, as a result of the financial crisis and political instability in Ukraine, foreign investment inflows decreased by 12.3% and 55.1%, respectively.

In 2015 and 2016, the situation began to improve somewhat and the volume of foreign investments in the economy of Ukraine amounted to 4,321.8 and 4,405.9 million dollars, respectively USA, which, meanwhile, is significantly less than in 2011-2013. However, the effectiveness of economic reforms, the stabilization of the political situation, and the fight against corruption did not justify hopes, which also led to a reduction in the inflow of foreign direct investments, the volume of which in 2017 compared to 2016 decreased by almost 43% last year. A slight increase in revenues in 2018, totaling \$358.8 million USA or by 14.3%, continues to testify to the distrust of foreign investors in the possibilities of stable business and improvement of the investment climate in the country. In 2019, the inflow of foreign direct investment decreased by 11.8% compared to 2018.

It can also be noted that EU countries are strategic partners of Ukraine. Therefore, the attraction of foreign investments from these countries should not only contribute to the development of economic relations, but also form a positive image of our state. The increase in the inflow of foreign investments from the EU countries in recent years should mean greater confidence of the economic circles of the EU countries in Ukraine.

Therefore, the formation of an attractive environment for foreign investors in Ukraine must, first of all, begin with active actions of the state aimed at changing the political, economic and legal field in the country, which will stimulate the growth of foreign capital, ensure the most profitable for Ukraine their cross-sector allocation in accordance with the requirements of the chosen strategies for the development of the domestic economy and will improve the competitive position of the national economy on the international market. Prospects for further research in this direction are the study of foreign experience in regulating investment activities and attracting foreign investments to the national economy.

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ENTRY INTO THE ORGANIZATION OF A NEW EMPLOYEE AND ISSUES OF SOCIALIZATION

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Every person goes through entering an organization more than once in their life. There are several problems that the person can face during entry into the organization.

First of all, it is the adaptation of a person to a new environment that does not always pass as a trace, and the success which depends on the proper interaction of both parties: the person and the environment in the organization.

Secondly, there is a possibility of changes in the behavior of the person without which in many cases it is impossible to enter the organization

And the last is changes and modifications in the organization, which occur even if the company already has a vacant post for a person and itself takes the applicant to the place in the appropriate way to its needs and selection criteria.

The above problems that were listed above determine not only whether the person will be able to enter the organization, but their decision also depends on how a person will perform a certain function in the organization and how his interaction with the organizational environment will be carried out.

Those who are part of the organization should first study the following basic aspects of the organizational life cycle, values, behavioral and normative characteristics:

- the mission and main objectives of the production organization;
- acceptable and desirable means available to achieve the goals of the organization;
- the image and brand name owned and created by the organization;
- principles, rules, and norms that ensure the uniqueness and existence of the organization as a single organism;
- the responsibility that a person must take to gain a certain role in the organization;
- a standard of behavior that a person must follow while playing a role.

When entering the organization, a person must realize for himself what norms should be observed in communication with colleagues. How to explain the activity in the organization, which format and with which questions to address to the management, and in which format to go to work, as usual, the working time is distributed, and the rest time is lost (iEduNote, 2022).

There are two processes for training a new employee in the organization. The first is the process of teaching a person who understands organizational norms and values since their previous experience concerns working in organizations with similar values, norms, and behavioral stereotypes.

In this case, the new member of the organization should focus first of all on concrete facts of the usual behavior and norms and principles of communication. He can obtain the necessary knowledge and information, observe the behavior of certain key employees, identify problems, talking to colleagues and management.

The second process is used when a person from an environment with significantly different values and norms of behavior enters the organization. To know yourself as a carrier of a different system of values in this context is a very serious task and is a departure from these norms. Only then can we begin to learn the new norms and values that exist in the organization and that need to be adhered to (Gardner, 2022).

Different methods can be used to retain employees who come to the organization. In particular, such measures can be long-term encouragement of financial support, except for salary, promises of future increases or interesting work, opportunities for training and development at the expense of the organization, housing on preferential terms, and many other things.

At the stage of entering the new employee into the organizational environment the organization must simultaneously solve three tasks:

- destroy the old code of behavior of the visitor;
- interest the employee in working in the organization;
- instill a new code of conduct.

All these processes are closely connected and achieved with a certain set of techniques and methods. When a person joins an organization, insufficient loading, simple tasks, and vice versa, usually have negative results. Employees should not feel this at the initial stages (Seismic, 2022).

A successful organizational process of inclusion of a person in the organizational environment leads to the fact that it has a sense of responsibility for the affairs of the organization and internal obligations concerning the stability of the organization. If the

process of adaptation of new employees is over, the organization may consider that it has achieved significant results.

An effective way to train new employees in this regard is to invest a lot of money and time in the initial stages. In this case, the new employee begins to feel that the organization is too much investing in him and that he should pay it the same. The final stage of the process of inclusion of a person in an organization is its transformation into a full-fledged member of the organization. This is a very serious part of the entry of a person into the organization, and the organization should perceive it very seriously (Devika, 2022).

We should make efforts to integrate a person into the organization to minimize the anxiety that new employees may feel. Socialization is an initial effort of learning and development for employees who are focused on adaptation to the new environment, business organization, and working group.

One aspect of socializing relations is the content characteristics of the processes connected with the employee's joining the team, his adaptation to corporate culture standards, and other requirements of the organization. It is about the so-called organizational socialization and its characteristics.

The most general interpretation of the problem lies in this. It is generally recognized that the main resource of any organization and the factor in forming competitive advantages are its personnel. Among the personnel technologies, one of the leading places belongs to the attraction and maintenance of qualified and prospective employees. The formation of "healthy", harmonized social and labor relations in the collective is the creation of conditions for the entry of a person into the organization and its adaptation to the organizational environment (iEduNote, 2022).

There are three stages of the process of socialization which are the following.

Stage before arrival. At this stage, it is recognized that every person comes with attitudes, organizational values, and expectations.

Stage of the meeting. New members enter the stage of the meeting during the accession to the organization. Here people face the dichotomy between their expectations from their colleagues, their superiors, their work, and their organization in reality and in general. However, all differences in expectations cannot be solved through the process of socialization.

Metamorphosis stage. At this final stage, the new participant should fight any problems that were revealed at the stage of acquaintance. When the new members master their working groups and organization, the metamorphosis will end, as will the process of socialization.

The new members will understand not only their duties but also procedures, rules, and generally accepted practices. Finally, they will understand how to measure them.

They better understand the expectations associated with them, as well as the fact that forms a good job (Bhasin, 2020).

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**DIVERSIFICATION OF EUROPEAN GAS SUPPLY AFTER THE RUSSIAN
INVASION OF UKRAINE ON THE EXAMPLE
OF GERMANY, ITALY, AND POLAND**

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European countries relied on Russian gas in their long-term economic strategy for decades. It was a market leader and a big net of infrastructure was created to transport and distribute Russian gas throughout Europe. The share of Russian gas in total Europe gas consumption was about 35 percent (Jaller-Makarewicz, 2022, p. 3). Several big pipelines were built to transport it, for instance, the Brotherhood pipeline system (Soviet-era pipeline 1980-1988), Yamal-Europe (1996-2006), Blue Stream (2003), Nord Stream-1 (2011-2012), Turk Stream (2020), Nord Stream-2 (not in exploitation yet) (Jaller-Makarewicz, 2022, p. 5).

These pipelines made the transportation cost of Russian gas much cheaper than substitutes. That is why Europe was susceptible to Russian manipulation of gas prices and its threat to shut off the gas supply. Since the invasion and Russian intimidation to freeze Europe, it started looking for new sources of energy and ways of Russian gas replacement. In this article, we will try to summarize the progress which has been made since 24 February by country.

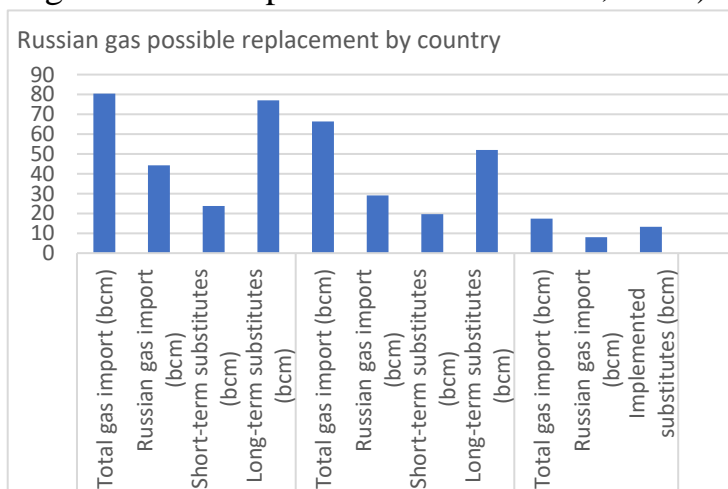
Germany is one of the most addicted to Russian energy resources countries. In 2020 the share of Russian gas was 55% of total gas imports (Hasler, Paraschiv, 2022, p. 1) which equals 44,24 billion cubic meters (bcm). To replace this huge amount of gas Germany takes some urgent measures now. The Netherlands agreed to provide one extra bcm of liquefied natural gas through their terminals, Norway will be able to transfer one additional bcm, and 0.95 bcm was purchased via the market operator Trading Hub Europe. From the short-term perspective, the plan is to increase domestic

import capacities of liquefied natural gas (LNG) by building up new floating and onshore LNG terminals. The first floating LNG is planned to start operating in 2022, its capacity is 5 bcm per year, and the second should be launched at the beginning of 2023. Additional two will start operating between 2023 and 2024. All these measurements should result in up to 33 bcm of additional import capacities by the summer of 2024. Furthermore, three onshore LNG terminals with up to 44 bcm per year should come into service by 2026. The second way to respond is decreasing gas demand which is under consideration too. The demand can be reduced by 10.8 bcm in the energy production and heating sectors. Some additional economy can be achieved by replacing gas as a heating element in the industry, however, its size is arguable. (Hasler, Paraschiv, 2022, p. 10-11). Meanwhile, Germany is already implementing some reductions in demand. German chancellor Olaf Scholtz claims that country is ready for the gas challenge and already increased a share of non-gas fuel in their energy sector and is ready to restore some atomic plants if it is needed. (Economichna Pravda. *Scholz declares that German is ready for the cut-off of Russian gas shipments* (2022))

Italy is the second largest importer of Russian gas in Europe after Germany. Its import in 2021 was 29,07 bcm (which equals 38,2% of total gas import). The main pipeline for Russian gas in Italy is Trans Adriatic Pipeline which is connected to Blue Stream and Turkey Stream (Bigerna et al., 2022, p.9). The country's government developed both long-term and short-term solutions for the energy crises. In the short term, it is possible to increase its production of gas by 2.2 bcm, the other option is to use existing LNG terminals which are able to provide an additional 6 bcm. The other option is to increase TAP's capacity (TAP is used not only for Russian gas because it also connects Italy with other producers of blue fuel as Azerbaijan) by 1.5 bcm. Also, the production of coal power stations can be increased to replace gas as an energy source. Last but not least, the Italian Minister of Energy Transition, Roberto Cingolani, that some additional gas can be provided by Qatar, Algeria, Angola, Democratic Republic of Congo. Together these sources can provide an additional 20 bcm in the short term and the medium term, however, the details of all the agreements or their reaching are still unknown. Nevertheless, in April 2022, Italy reached an agreement with Algeria and ensured the supply of an additional 3 bcm in short term, and in June 2022 Italy-Algeria summit announced scaling up the deal up to 4 additional bcm. One more agreement was reached with Egypt about 3 bcm in 2022[6]. One of the long-term solutions is to increase TAP capacity by 20 bcm per year, it can take up to 64 months. The other possibility is to rent a floating LNG terminal that can provide from 16 to 24 bcm in 12-16 months. Also, onshore terminals can be built which will lead to an increase in import capacities of up to 20 bcm per year, and it will take from 3 to 4 years. (Sarno, Rizzi, 2022, p3-6).

Poland was highly dependable on Russian raw materials, however, the set of measurements has been implemented since 2014. In 2020, Russian gas had 46% of total Polish gas imports which equals 8,011 bcm. The main pipelines are Yamal and Druzhba, the total capacity is around 100 bcm (Lewandowski, Sokolowski, 2022, p.5). Gas supply diversification in Poland is in the final stage and despite the shut off of Russian gas, we didn't see some emergency crises. The Baltic pipeline is introduced into service with its' 10 bcm potential capacities (Klaczynski, 2021, p. 3). It connects

Poland, Denmark, and Norway (which is a big gas exporter). Also, Poland signed the contract to expand its LNG terminal on the Baltic Sea by 3,3 bcm (Reuters. Poland signs deals to expand its LNG terminal, 2020).



Total import, prewar import of Russian gas, and a possibility to replace it with other suppliers in the long run and the short run. Built according to Eurostat. (2022). Import of natural gas by partner country and all other sources...

Overall estimation. Russia and the Soviet Union have been major gas suppliers for decades. And now it is hard to substitute its gas in the short-term perspective. However, most addicted to Russian gas countries are already searching for new ways to shipments. Unprepared countries (like Germany and Italy) will face strong challenges in the short-term perspectives because it is hard to replace big volumes of gas rapidly. Nevertheless, in 4-5 years these countries will be able to cover Russian gas shut-off twice. Of course, the long-term measurements

are implemented step-by-step and full replacement of Russian gas is possible in 3 years. Meanwhile, counties like Poland (which struggle to diversify their gas shipments since the Russian invasion of Crimea) are already independent of Russian gas import and are sustainable enough to face the whole shut-off of gas shipments from the hostile country. The estimation of current challenges proves energy security to be one of the prioritized spheres of modern national policy.

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LEGAL TECHNOLOGIES IN UKRAINE: THE FUTURE OF LEGAL SERVICES

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We live in a changing world, something that we could not imagine is happening now. The idea of the computer epoch is rapidly coming, and the legal sphere is not an exception. So, this article is dedicated to computer technologies in law.

Legal technologies (legal tech) - is the combination of law or technology, the way to give legal services using computers, chat-bots, internet platforms and other elements of artificial intelligence.

Let's determine: who needs it and who uses it? At first, it is a mechanism for lawyers, they need technologies to look up information and save it, to build algorithms and make contracts. That is why, legal tech is about a new lawyer, who uses the benefits of technologies not only to simplify own work, but to provide the clients with new services. Talking about clients I mean people who meet with legal questions in their work and who do not. And here we can see the phenomenon that lawyers can provide other layers with legal services. As an example, I would like to describe the project - "The court on the hand". This is a big base of the court decisions (that were made beginning from 2018) where a user can find the necessary decision, entering the keywords or phrases. The founders of this project explain the benefits of it - abridgment, selection of the essential elements, search categorization, an opportunity to choose specific sides of the case or sum of dispute (Zakharov, Buhay & Dantseva, Sud na doloni). These functions attract a lot of lawyers as they considerably simplify their work.

The essential questions of legal technologies are how they work? How to create them and how to rule this artificial intelligence? In general, legal tech can be a start-up. This is a project that is developed by a team and is aimed to create a new product. As it is a combination of technologies and law, it is necessary to have a lawyer and an IT-specialist in a team. The task of the lawyer is to analyze a legal problem and find

the way to solve it or explain how the law works in a situation. On the other hand, the task of an IT-specialist is to build algorithms and embody the concept in a computer. By the way, working algorithms is a weighty part of a start-up. This is like a map of a solution to the situation, which includes any steps and conditions, which will be used by a user. The important point is that legal technologies are not legal algorithms. The last ones are the set rules of actions and kinds of legal process, it is always about the subject of law, which follows it (Manko, 2019).

That is why, the algorithm is a frame, fixed in legal acts and the task of a lawyer and an IT-specialist is to implement it correctly in a project. For instance, a team has an idea to provide clients with contracts, adjusting them to any separate client. In this case, the algorithm is “how to write a contract”. The law shows which essential elements must be included, the lawyer proposes how to combine them and make a logical text and the IT-specialist writes the program where a user can write his date, conditions and get a prepared contract. Anyway, such algorithms can be various, it all depends on a project. If a team creates a chat-bot in a messenger, which can explain what to do when a person gets in a car accident, so yes, it is a typical way of adaptation of the algorithm. But this is a simple example. Let's look at the mentioned project “The court on the hand”, it is a big base of data, which must be analyzed and sometimes rewritten. It is not possible to write an algorithm to every act. So, in this case, the developers use the blockchain system. This system is mostly used in virtual assets - cryptocurrency. This system means coding information in different blocks, where the bigger one absorbs the less one. So, the information is code in different blocks, and key words help to find the necessary, ignoring other blocks. How you see this is a complicated process. If a team builds a scale start-up, it requires a lot of work, time, effort, and money. However, the other projects like chat-bots can be built by one person, who is not specialized in the IT-sphere.

And now we have the interesting question - can legal tech bring profits, how big is it? As I have mentioned, legal tech may be and in most cases is a start-up. So, it is like a business, opening it, it is necessary to make investments, and you do not know exactly, whether they return or not. But it is not as risky as it may seem. Before making investments, a team makes the prototype of a business plan, but in legal tech it is called “design thinking”. Usually, the Stanford model of it is used. It shows the position of four questions: 1) What is? (The stage of analyzing the problem); 2) What if? (How to solve the problem); 3) What works? (Which ideas of solutions will be effective); 4) What impress? (What is the best way to solve the problem) (Liedtka, 2013). After these stages, it is possible to decide whether the project is useful, and count the time, money, and efforts.

In the end I would like to show some aspects of legal tech in Ukraine. Even though legal tech is a new sphere, there are a lot of successful projects in Ukraine: “Opendatabot”, “Axdraft”, “Patentbot”, “Vkursi” and many others. Moreover, our government widely creates them on the state level. A great number of Ukrainians use the platform “Diia” the app or the web site that allows people to get public services in some minutes and use electronic documents. Also, we have a lot of registers, electronic cabinets and online portals which simplify many legal actions.

To sum up, legal tech has a great future in Ukraine, this sphere is developing both on private and public levels, and it is the key to save time and efforts for the users and the key to earn money and improve their own business for developers.

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HOW TECHNOLOGY AND THE INTERNET AFFECT THE MODERN LIFE

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Today's world is very susceptible to change. Thanks to the development of science and technology, technology is increasingly influencing our lives. It is important to note that the benefits of civilization are now available to a much larger portion of the population than before. In addition to the tremendous opportunities that are becoming available to most people, there are also problems associated primarily with privacy and protection of personal data, the spread of unwanted content on the Internet, and so on. However, there are more positive changes and the most important of them will be described below.

With the advancement of compact devices (from phones and tablets to laptops and computers), access to the Internet has become something commonplace. However, it is important to understand that the development of such technologies has completely changed the relationship between people and their communication habits. The more people use the Internet, the more users spend their time on messengers and social networks. According to the data for 2022, the number of Internet users has reached the value of 4,950 million people, and the total number of users of social networks - 4,623 million people. This growth in popularity is due to the covid pandemic, when people were looking for an analogue to their usual communication and usual activities (Digital 2022: another year of bumper growth, 2022).

If previously communication at a distance was limited to a phone call or a letter, now there are many more options. People don't have to dress up next to each other to see and hear each other's voice. Messengers have come a long way forward and now there are many options for creative users in addition to plain text and emoticons. It's

gotten to the point where the younger generation is more likely to respond with a text than address a question in a phone conversation. Based on surveys, more than 68 percent will text than call (Lemzy, 2019).

This has had a direct impact on the sales and marketing field of companies, which are always adjusting to people's habits. Thanks to text messaging, the customer is less stressed when communicating with support or consultants.

There have been big changes in education. With the advent of new technology and the general availability of the Internet, the educational system has changed greatly. Thanks to online platforms, people can get additional knowledge at a convenient time. For example, it is possible to get knowledge in programming and attend additional online courses for learning a foreign language at the same time. Certified online platforms where you can study courses from world famous companies and the best universities are becoming more and more popular. Some people abandon classical education in favor of online courses, arguing that this format is much more productive, interesting and faster. Another example is the shift to distance learning during Covid. Most institutions quickly switched to the new educational system for themselves. At the same time, many teachers and students noted that they liked this learning format better. However, there are downsides, as not all people are disciplined and self-organized, which slows down the learning process considerably.

Thanks to online technology, people can engage in self-development much more effectively, because in order to get the information of interest, it is not necessary to go to the library to study the works of artists in a virtual art gallery. Another example is online concerts, which were relevant during COVID-19. Although it was quite different from live concerts, such events were popular. People are ready to use new technology if they are motivated enough.

An example of how the whole world can talk about technology is the high interest in blockchain. Blockchain technology is pieces of information in digital form that are connected to each other and form a chain - a database. For a fairly short period of existence, this technology is used in many areas of life. For example, the sphere of finance, because this technology allows you to transfer any amount of money and be sure that such an operation is completely safe (Sharma, 2020).

Another promising direction is NFT (non-fungible token): a special unique token that cannot be counterfeited and exists in a single copy), which is also based on blockchain and smart contracts. NFT is a digital object that can be of any shape and form. Some people compare this technology to a new kind of art, because such digital objects can be collected, sold or exchanged, taking into account their value (Chohan, 2021, p. 1-2).

If we consider the value for business, large companies use this technology to involve it in marketing strategy or in advertising projects. This allows you to increase brand awareness, reach a wider audience, making it interested in an unusual approach to product promotion. Another example of use is fraud protection. Famous brands can use technology to protect themselves and customers from counterfeits. For example, Nike has patented a technology according to which a person buying original shoes will receive its digital analogue; the system will also be able to check whether the purchased goods are genuine (Beedham, 2019). Blockchain is one of the most promising

technologies that can significantly reduce the level of corruption, because all transactions with money will become transparent, and manipulations with funds can be fully traced. Thanks to this, companies will not be able to hide any part of their income, and if necessary, it will be possible to clearly identify the recipients of money.

In conclusion, I can say that the above-mentioned technologies are radically changing our lives. Now the Internet is a part of our lives. Modern communication with each other, learning and discovering something new is very different from what it was even 10 years ago. People are always looking for something new, trying to make their lives easier. Obviously, this is possible thanks to the development of new technologies: such important areas as the financial system, marketing, business and much more are changing. Nowadays comfort comes first, our habits make businesses look for alternative options to keep customers.

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INFORMATION SYSTEMS IN MANAGEMENT

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Modern developments of information management systems (IMS) are moving forward quite successfully, using the latest advances in information systems and communications technologies. Thanks to this, management information systems began to meet the growing requirements for providing information to their consumers. The effective application of information management systems in general depends on the capabilities of the hardware and software used, as well as the preparedness of personnel for the use of information technology. The use of various forms of automation of managerial work changes the main components of the management system and

provides qualitatively new functionality for the work of administrative and managerial personnel.

The purpose of creating information systems is to provide information support for managers when making decisions. Limitations in the development of management information systems can be due to both external and internal reasons. External constraints include legal issues, consumer wishes, and supplier needs. Internal constraints include the cost of developing an IMS, the availability of labor for use as personnel, the direction of the company's policy, and the technical characteristics of the computer-based on which the IMS is developed. Expert information systems provide the development and evaluation of possible alternatives by the user due to the creation of expert systems related to knowledge processing. Expert support for decisions made by the user is implemented on two levels. The work of the first level of expert support is based on the concept of "typical management decisions", according to which the problem situations that often arise in the management process can be reduced to some homogeneous classes of management decisions, that is, to some typical set of alternatives (Heorhiadi, 2006, p. 30).

The main areas of work in the field of management automation are manifested in the organizational, social, and personnel restructuring of management activities. Therefore, it is necessary to highlight the main benefits for organizations that the use of advanced information technologies in management provides them. Of great importance in the automation of management is the transfer of information arrays. The transmission of large information flows over long distances is carried out due to various types of communication lines (Ostaletskyi, 2015, p. 295). The implementation of management information systems provides an opportunity to consider problems in an interconnected complex and raise the efficiency of managers' work to a qualitatively new level, which will allow more clearly and accurately adhere to the general policy and strategy of the organization, as well as generally accepted rules and regulations, to manage personnel more efficiently based on maintenance the closest feedback.

Modern developments of computer information management systems are moving forward quite successfully, using the latest achievements in the field of information systems and communications technologies (Safonova, 2009, p. 246). Thanks to this, computer management technologies began to satisfy the growing requirements of managers for providing information.

Despite the difficult political and economic situation in the country, the active introduction of information technologies in the management of domestic enterprises ensured the maintenance of a certain level of their competitiveness due to the emergence of additional opportunities for reducing design time, improving product quality, and increasing labor productivity.

Today in the software market many automated information systems satisfy the most demanding users. The most famous foreign manufacturers of corporate information systems are SAP, IBM, Oracle, PeopleSoft, REAL Application, Hewlett-Packard, and others. Among the most common corporate information systems, it is advisable to single out Scala, BAAN, "Galaktika", Oracle Applications, System Aurora (Business/400), Infor SyteLine ERP, Microsoft Dynamics AX "Microsoft Dynamics NAV, "Kompas", "ASTOR", Business Control, Global ERP, etc.

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Their introduction into the practice of managing modern enterprises provides continuous accounting and control over the state and movement of inventory, financial, and human resources at the enterprise, obtaining data on the results of the enterprise in real-time, prompt preparation of analytical documents, forecasts and work plans of the enterprise, increasing the effectiveness of managerial decision-making based on reliable and complete information about the activities of the enterprise, available at any time (Mushenyk, 2020, p.65).

New opportunities for effective cooperation are created because, on the one hand, opportunities to present or transmit information (video information, multimedia) at qualitatively higher levels are provided, and on the other, barriers from afar disappear, just as the problems of connecting and transmitting information without distortions disappear (Purii, 2019). To make decisions based on information, the information must be accurate, timely, relevant, easily accessible, and presented in the required format.

Information technology allows you to process requests and, using the available information, form a response to these requests. Thus, at each level of management, information appears that serves as the basis for making appropriate decisions. The higher the level of management, the less the amount of work performed by a specialist and a manager with the help of an information system.

Conclusion. The introduction and effective use of information systems and modern technologies in the field of enterprise management becomes its real competitive advantage, because it ensures the integration and communication of the enterprise with the external environment, contributes to a more efficient collection and a more rational mechanism for processing and systematizing economic information, reduces the response time to external changes, provides timely receipt of more effective options for solving managerial problems, increases the level of labor productivity, reduces operating and management costs, contributes to the formation of an optimal strategy for the development of an enterprise in a competitive rapidly changing market environment, increases the level of efficiency of managerial decisions due to the access of managers of all levels to a single information base.

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PSYCHOLOGICAL IMPACT OF COVID-19 PANDEMIC

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The current situation, which everyone knows well about, has fundamentally changed our everyday lifestyle. Actually, the text is about COVID-19. It has been with us for almost three years, and its influence is not that small. The main idea behind this work is to study the impact of COVID-19 on people in a psycho-emotional way. Highlights from a few main themes:

-What exactly is COVID-19, and how did it appear?

-The real causes of mental problems

-The evolution of COVID-19's impact on people's states of mental health

SARS-CoV-2 is the coronavirus responsible for the current COVID-19 epidemic. The huge virus family known as coronaviruses is responsible for a number of respiratory illnesses in people, ranging from the common cold to more uncommon and dangerous conditions including the severe acute respiratory syndrome and Middle East respiratory syndrome. Finding a new virus entails the clarification of its origin. It is likely that the outbreak began in Wuhan, China. The results of the genetic makeup of the virus showed that the reason was bats from the genus *Rhinolophus*, or rather, bats that were infected once (World Health Organization, 2019).

In May 2020, the world met the Coronavirus, and then, as a result, the lockdown. A large number of people experienced feelings of panic, helplessness, loneliness, and depression. Before that, routine, commuting, and meeting friends helped people not notice psychological problems. However, confinement between four walls had some impact. The emergence of new rules and restrictions and this entire serious attitude toward the virus made people very worried. Everything happened too unexpectedly. One should also remember the large number of deaths from the virus. Many people have lost relatives, and this has had a huge impact on their mental state. In addition, people were very excited about the origin of the virus. Unfortunately, at the beginning of the epidemic, people were somewhat cautious about Chinese and Asians in general. Of course, this wasn't everywhere (Human Rights Watch, 2020).

There is an analysis of how things were going with mental health among people at the beginning of this entire pandemic. There was an overall increase in mental health symptoms detected between March and April 2020 compared to the pre-pandemic outbreak. According to the findings of the article on the National Library of Medicine website, the medical staff (49.7% of the participants) suffered the most. COVID-19 had a great influence on women and older people. Participants reporting suicidal thoughts are 32%. In addition, pre-COVID participants who expressed suicidal thoughts were less likely to talk to friends and family or do some basic things. The symptoms significantly decreased with time and eventually stopped being meaningful. Increases in depression and mood disorder symptoms were larger in May–July and remained significantly higher (Journal of Affective Discoveries, Volume 296, pp. 567–576, 2022).

The situation nowadays is not that bad. As of September 18, 2022, over 609 million confirmed cases and over 6.5 million deaths globally. Anyway, we are talking about the attitude towards COVID-19 in our society. Everyone has become accustomed to the conventions that emerged because of COVID. The mass panic has subsided, and compared to when it first emerged, the virus has had less of an impact on people's mental wellbeing overall. To put it more simply, people have adapted to these situations (World Health Organization, 2022).

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THE COLLAPSE OF THE EMPIRE

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After the collapse of the Russian Empire in 1917, as a result of public discontent, it became clear that even such a giant as Russia could be divided into smaller states, that is, decolonized. This process was launched from Finland, the Baltic countries,

Poland, Ukraine, the countries of the South Caucasus and Central Asia. Since Russia has always been a multi-ethnic state, in which there was no dominant domination of the Russian people over others, the processes of national liberation movements could not be suppressed. The tsarist government could inflict only limited damage on them, but by no means destroy them completely.

According to the first general population census in the Russian Empire in 1897, there were 5,566,7469 people who indicated Russian as their own language, or 44% of all citizens (Troitsky, 1904). That is, they are speakers of this language and, accordingly, ethnic Russians, because in those days knowledge of several languages was not widespread among the rural population, which dominated the urban population at that time.

2,238,551 people, or 18% of all citizens of the empire, identified themselves as native speakers of the Ukrainian language (Troitsky, 1904). It is worth noting that by 1916 the total population in the Russian Empire had increased by approximately 52 million people. If we take into account the fact that by that year the First World War had been going on for the third year and part of the territories of the empire had been lost, we can conclude that the estimate is approximate.

However, returning to the reasons for the collapse of the Russian Empire in 1917, it is worth understanding that the peoples of the then empire were dissatisfied with the situation at the front, the actions of the tsarist government and Emperor Nicholas II himself, the lack of food in the rear cities, and the exploitation of workers in factories. That is why communist propaganda had an impact on the masses. The main push for the abolition of the monarchy was made by the proletarians in St. Petersburg, but it was the left who led the movement against the empire, first the Provisional Government, and then the radical left - the Bolsheviks.

If the tsar involved Russia in the war, creating the conditions for the collapse of the Empire, it was the Bolsheviks who destroyed it. The provisional government of Lvov, and then Kerensky, tried to restrain the processes of separation of nations from Petrograd, and sometimes they succeeded, promising to solve the issue of self-determination after the war, because the forces that led the Russian republic during February-October 1917 were still loyal to the Entente obligations.

The Bolsheviks, keeping their finger on the pulse of the masses, realized that continuing to wage war made no sense, because the potential gains from victory could not be compared with the losses in 1914-1918. In addition, the people needed an end to the war. Armed with the slogans "Bread, land and peace", the CPSU(b) won the support of the masses for the start of the revolution.

Since during 8 months of activity, or rather, inactivity of the Provisional Government, nothing was done to solve urgent problems in society, Kerensky's cabinet was not supported by the masses of the people. The Reds easily captured Petrograd, almost without resistance. On the other hand, people who were tired of dual power bought into the slogans of "soviet power" and therefore supported the uprising in November 1917.

Solving the problem of the war was decided by Lenin and the company in an ordinary way - simply to stop fighting, hoping that the troops of the Central Powers would leave. Forces were concentrated on another type of struggle - to incite the

revolution further, in Germany itself, which invested in the Russian communists and provided them with comprehensive support.

The German Empire resisted, but did not leave such attempts just like that. Having launched a full-scale offensive to the east with the aim of occupying/liberating the territories of Ukraine, Belarus, Poland, Lithuania, Latvia and Estonia, the Bolsheviks were put in an awkward position. Peace had to be signed on the Kaiser's terms, which happened in Brest-Litovsk at the end of February 1918.

The full-fledged disintegration of the Russian Empire in 1917-1921 was also prevented by the Entente countries, which chose a policy of supporting the indivisibility of the Russian Empire. From their side, it looks rational, because it is much easier to negotiate with one government than with a dozen different ones. However, this policy does not apply to Poland, Finland and the Baltic countries, because they managed to win the national liberation wars against the Bolsheviks with the help of the same Entente. Presumably, this is due to the fact that these nations showed their political readiness to have their own state and to the fact that after taking over the red main territories of Russia, the countries of the West wanted to build a "Sanitary Border" against Bolshevism in order to restrain it on the approaches to "civilized countries".

It is worth noting a rather interesting thing: a peace agreement was signed separately between the Ukrainian People's Republic and the delegations of the Central Powers, which the Bolsheviks did not like, because they, having implemented Russian chauvinist content in socialist slogans, believed that only they had the right to represent the post-imperial space at the negotiations. And the actual recognition of the independence of the Ukrainian People's Republic by Germany, Austria-Hungary, Turkey and Bulgaria put an end to such plans of the CPSU(b).

This, in fact, was the beginning of the first disintegration of the Russian Empire, because during 1918 the Bolsheviks could not physically control the lands of Ukraine, Belarus, Poland, Finland, the Baltic countries and the South Caucasus while the Central Powers were there. Under German control, all nations living in the above-mentioned territories began state-building processes, which had an impact on neighboring lands that were not under German protection.

This resulted in attempts at national liberation uprisings in the North Caucasus, Central Asia, the Far East, and the Urals. However, the remoteness from the possible protector countries of these new formations and the encirclement of the territories of compact residence of those peoples made the development of state-building processes impossible, because they were quickly suppressed either by the Whites or by the Reds, and then representatives of non-Russian nationalities were mobilized by both sides of the civil war in Russia to conduct hostilities.

That is why Russian statehood did not collapse, ending the Civil War in 1922 and forming the USSR from the occupied Ukrainian, Byelorussian, Transcaucasian Federated States and, actually, the Russian Federated Socialist Soviet Republics. It is clear that the first three were exclusively puppet entities and did not represent the peoples of the territories on which they were formed.

So, the Russian state, in its essence, remained a monolithic state, albeit under a different ideological mask, but in its essence it remained a state with the domination of one people over others and the exploitation of the resources of the occupied territories.

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PROVIDING CHILD CARE LEAVE AS AN INTEGRAL COMPONENT OF FAMILY POLICY IN UKRAINE AND THE WORLD

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Today, one of the main directions of the state family policy is the policy on parental leave. In Ukraine, this issue is regulated by the Law "On Leaves". Despite the legislative consolidation of the right to parental leave for both the mother of the child and the father, judicial practice confirms repeated cases of violation of this right. In particular, for example, the ruling of the KAC of the Supreme Court of December 29, 2020 in case № 0940/2206/18, where the plaintiff (the child's father) stated that the defendant had unlawfully refused to grant him parental leave until the child reaches the age of three. In this case, the Supreme Court expressed the position that the childcare leave until the child reaches the age of three is granted, in particular, to the child's father on the basis of an application and a certificate from the place of work (study, service) of the child's mother that she went to work before the end of this leave and the payment of childcare assistance to her was terminated (with the date) (Resolution of the Supreme Court № 0940/2206/18, 2020). Since the plaintiff provided the necessary documents confirming his right, the conclusion of the courts of first and appellate instances established the unlawful inaction of the defendant in not providing the plaintiff with leave to care for the child until he reaches the age of three.

The issue of granting parental leave to the father of the child is interesting in legal terms. This right was not regulated by special norms of Ukrainian legislation for a long time, but was provided together with the provision of this right to the mother of the child. The main problem that put the father of the child in an unequal position compared to the mother of the child was that the father could get the right to parental leave only if the mother was officially employed. That is, the man is obliged to provide a certificate from the place of work of the child's mother. Accordingly, in the case when the mother is a private entrepreneur or does not officially work, this deprives the father of the opportunity to receive such leave.

However, on April 6, 2021, the Verkhovna Rada of Ukraine adopted the draft law № 3695 "On Amendments to Certain Legislative Acts on Ensuring Equal Opportunities for Mothers and Fathers to Care for a Child", one of the provisions of which defines parental leave until the child reaches the age of three as an equal right

of each of the child's parents (mother and father) (On amendments to some legislative acts, 2021).

Thus, today Article 18 of the Law of Ukraine "On Leaves" provides for the equal right of the mother or father of the child after the end of maternity leave to take leave to care for the child until the child reaches the age of three. In addition, paragraph 2 of Art. 25 of the Law of Ukraine "On Leaves" provides for unpaid leave for the father in the period after the birth of the child for up to 14 calendar days during the stay of the wife on postnatal leave (About vacations, 2021).

Analyzing this direction of the family policy of the state, it can be noted that it is aimed at ensuring equal opportunities for mothers and fathers to care for the child and combine work with family responsibilities, as well as to create legal prerequisites for the development of responsible parenthood in Ukraine. However, the Ukrainian practice of granting such leaves to the father of the child shows that men rarely exercise their right to take paternity leave instead of their wives. This is due not only to existing stereotypes, but also to the significant difference in earnings between men and women (in favor of men) that exists in Ukraine.

Instead, in many EU countries that implement the policy of equal opportunities for men and women, the provision of such leaves is more common. The provision of maternity and paternity leave, as well as parental leave for both parents, is one of the main elements of family policy in the EU. This trend is aimed at ensuring family income before and after the birth of a child under 3 years old. Leaves exist in all EU countries, but their differences depend on the level of public social investment. Accordingly, where investments are higher, citizens are offered more paid and longer leaves.

Family policies in most EU Member States in the area of parental leave aim to create a balance in the distribution of child-rearing responsibilities between parents. Thus, there is a tendency to increase the time that a father spends with his child, which is ensured by the following measures: leave is non-transferable, well paid and accompanied by other means of family support, such as flexible working hours.

An important fact is that in most EU countries the period of maternity or parental leave is taken into account when calculating pensions. That is, the legislation of the EU countries provides for compensation by the state for the time for which employment was suspended due to parental leave in order to reduce the "gender gap in pensions". Accordingly, maternity or parental leave is taken into account in pension systems. Countries such as Sweden, Switzerland, Denmark, Spain, Croatia, Estonia and Romania, for example, provide some form of coverage of pension contributions at the expense of public funds (Family policy in European countries, 2020).

This policy of the states is quite effective and aimed primarily at ensuring equal conditions not only at the time of birth and upbringing of a child, but also for the future of the parents themselves, which can be an interesting and useful experience for Ukraine, since so far the practice of providing paternity leave to men in many other countries of the world is more effective and widespread than in Ukraine, which indicates the need to improve the Ukrainian mechanism for implementing family policy in this area and ensuring equality in the rights and obligations of fathers and mothers.

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THE PSYCHOLOGY OF SMOKING AND ITS IMPACT ON SOCIETY

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Today, humanity suffers from many problems. All these troubles greatly affect the psychological health of all mankind. And just like physical injuries, psychological ones need to be treated as well. Not everyone today wants or is able to visit psychologists, so they are looking for other ways to get rid of problems.

Nowadays, people are looking for salvation in bad habits, such as smoking, alcohol, drugs... According to research, smoking is the most common.

It is quite common to think that nicotine improves mental activity. For many people, smoking makes communication easier. But most often they use it to distract themselves, to calm the nervous system, if that's what you can call a dulling of the transmission of nerve impulses by the body.

Most smokers believe that they can quit this habit at any moment. As Mark Twain noted: "Quitting smoking is very easy, I personally did it 72 times". From this it follows that it becomes an addiction.

Everyone talks about physical dependence on nicotine. But I think that there is only emotional, that is, psychological dependence, from which side effects on the body arise.

What is this psychological dependence? Based on my personal observations and interviews with friends, I can draw several conclusions. It is based on feelings at the time when a person wants to smoke and at the time when a person smokes.

Many people smoke after some shocks, others during heavy physical and psychological stress. There is this type of people who just want to "fit in" in the company or want to be like someone, to have authority.

And here are a few conclusions I made while organizing the information I received:

- smoking is only a psychological addiction that can be cured;
- nowadays, people very rarely turn to psychologists for help;
- due to the influence of the environment, the younger generation has an attraction and opportunity for bad habits, in particular due to easy access to them.

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EMERGENCE OF PROBATION IN THE LEGAL SYSTEM OF UKRAINE

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Probation, as one of the types of punishment, is a relatively new concept in the legal system of Ukraine. However, its detailed study will contribute to considerable improvement in criminal justice. So, probation is a system of supervisory and social-educational measures applied by court decision and in accordance with the law to convicts, execution of certain types of criminal punishments not related to deprivation of liberty, and providing the court with information characterizing the accused (Novopokrovsk Territorial Community, 2021).

The main goal is to reveal the meaning of probation in order to spread it in criminal justice, which in turn will contribute to the development of the legal system of Ukraine.

Based on the research and study of foreign experience in the field of probation, the following main tasks can be distinguished:

- promoting the criminal's integration into society and forming his respect for social and legal norms;
- participation of the victim in the criminal process and restoration of justice in relation to the protection of his rights;
- involvement of the criminal in the restitution process;
- protection of society thanks to the effective application of alternative types of punishments;
- reducing the risk of committing repeated crimes (Lyska).

That is, the essence of probation is that the probation staff exercises effective control over the criminal. In addition, the probation staff also motivates the person to change, suggests what needs to be changed, and provides assistance, being the so-called "mediator" in the process of life changes. However, we must not forget that such changes are possible only at the personal desire of a person.

Therefore, considering all the specifics of the functioning of probation, experiments on working out the elements of probation in criminal proceedings were started in Ukraine as early as 2003. In addition to this, the Law of Ukraine "On Probation" is currently in force. In this law, the legislator created a clear system of measures aimed at the rehabilitation of a person, considering also the execution of the punishment imposed by the court. The law also provides for providing the court with information about the accused at the stage of the trial (Novopokrovsk Territorial Community, 2021). In this way, one of the most important functions of probation is ensured - pre-trial. However, in practice in Ukraine, the criminal-executive inspection, which acts as probation staff, mostly performs only a post-trial function — after the sentence has become legally binding and received for execution by the criminal-executive inspection.

Consequently, analysing the above material, we see the need for a further detailed study of the issue of probation and the expediency of its application in the legal system of Ukraine, in particular in criminal justice.

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**FEATURES OF ACTIVITY OF THE REPUTATION
INSTITUTE IN UKRAINE**

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The political system of Ukraine in the international arena and in the public consciousness of Ukrainians themselves is often associated with corruption, nepotism and evasion of the law. Such a vision of Ukrainian politics can often become an obstacle to its progress, negatively affect the investment market and undermine relations between the governments of countries in crisis periods.

The first stage of the development of Ukrainian political system on the way to transparency should be "preemptive work", which consists in preventing the admission to power structures of persons or companies that have previously been seen in bribery, blackmail, anti-state activities, illegally visited the temporarily occupied territories of Ukraine, cooperated with representatives of the country of the aggressor or committed other actions that raised doubts about their integrity and citizenship. It can be controlled by the state as well as the public and commercial institutions.

In Ukraine, there are a number of executive bodies that ensure anti-corruption policy. These include the National Agency for the Prevention of Corruption, the National Anti-Corruption Bureau of Ukraine and the Specialized Prosecutor's Office of Ukraine. The Security Service of Ukraine is a special purpose body that, in particular, works in the direction of identifying and neutralizing entities that engage in anti-state activities.

Society itself regulates the exclusion of dubious persons from politics. This is manifested in the mass culture of cancellation. This term can be interpreted as society's condemnation of the actions or statements of a certain person, as a result of which a person finds himself outside social or professional circles for behavior unacceptable from the point of view of a certain group of society. Of course, it is impossible to consider the culture of cancellation as a full-fledged element of countering the dishonesty of politicians.

In general, such actions fall under the characteristics of the concept of the institution of reputation. It can be considered as a term that indicates the importance of the reputation of a brand, company, institution or person for the performance of certain social, political or public actions. The Reputation Institute is also the world's leading reputation assessment consulting company, also known as RepTrak. Starting from 2021, this company announced the beginning of the creation of branches on the territory of Ukraine.

So, although it is too early to talk about the full-fledged work of the reputation institute in Ukraine, features of its activity are present in many spheres of social life, including politics.

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METHODS OF PSYCHOLOGICAL INFLUENCE ON THE CONSUMER

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The main task of advertising is not just to inform the consumer about the product, but also to encourage him to buy this product. In order for the consumer, after seeing the advertised product, to express a desire to purchase it, advertising must contain the following methods of psychological influence: informing, persuading, suggesting and encouraging.

It is necessary to start with receiving information, which is the first stage of psychological influence on the consumer. This stage provides information about the product that the consumer simply needs to know. There are usually no persuasive or manipulative techniques in this information, just some data. The purpose of this method is to acquaint the consumer with the product and its characteristics. But informing in its pure form is very rare in advertising, since it is not able to motivate the consumer to immediate action on its own.

Then the next stage comes to the rescue - this is conviction. In general, at this stage, several psychological methods are used, which help to influence people at different levels. The first method is informational, although it is aimed at providing sufficient information about the product, some psychological mannerisms are still used in it. For example, often before the release of a product, some price is indicated, which is unconditionally inflated. This cost is a so-called fraudulent hook, to which the buyer is attached even before familiarizing himself with the product. When the product is released on the market, the price is indicated below the previously listed price, which causes consumers to believe that they will gain something from this by buying this product. In fact, at the price confirmed at the beginning, no one was going to sell the product, but after experiencing first a noble price, and then, as it were, a discount, the buyer remains confident that it is a very profitable and prudent purchase.

The next is the emotional method, one of the most used methods of emotional influence, focused on demanding certain emotions from the consumer when viewing advertising. In order to achieve the desired result, well-known and familiar symbols are used, which activate associations necessary for the manufacturer. For example, you can take the Coca-Cola company and its advertisement "The holiday is coming", where for many years consumers have associated the branded cargo van with New Year's holidays. The expansive component of advertising messages is intended to demand

pleasant memories from the consumer and to combine them with their products. Using such concepts as friendship, love, family, advertisers manipulate our emotions, offering their product to confirm our feelings towards people. For example, the marketing link "Buy your relatives something - show them how much you love them." So, with the help of advertising, the product is integrated into our lives, producing a minor replacement in an important associative series.

Another method of persuasion is the patriotic method, which is widely used in our difficult times. It is similar to the previous one, as it replaces and juggles the consumer's emotions, only unlike the emotional method, this method is intended for only one thing - a sense of patriotism and love for one's homeland. It is characterized by the use of patriotic drawings, well-known state sayings such as "Glory to Ukraine", "Ukraine is indomitable", "Fight - overcome" and others.

And the last method of the stage of persuasion is the method of awakening fears. It is used to organize in the buyer's mind some danger that may happen if they do not buy the offered product. Awakening fears is a very effective method when advertising drugs or launching a freshly baked product on a market where there is a regiment of competitors. We all remember the advertisement of the washing powder "Ariel" and what happens if you wash things with ordinary powder. Chewing gum "Orbit" in its videos shows the consequences of what happens through food, if you do not use "Orbit". All of the above methods are mostly used to convince the consumer to prefer the advertised product.

The next stage of psychological influence is suggestion. Unlike persuasion, suggestion does not require critical perception of information. If persuasion is addressed to the logic and mind of a person, then suggestion is aimed at the willingness of the consumer to trust the information offered without any verification. Suggestion is a subtle process of influence on the human psyche, the result of which largely depends on the personal characteristics of the person himself: life experience, level of knowledge, competence. The lower these indicators, the higher the suggestiveness.

And the last thing is encouragement. Its purpose is the immediate reaction of buyers to advertising, encouragement to purchase goods or use services. In order to achieve the desired result, advertising messages use the following slogans: "Call firmly now", "Come to the store and you will learn about our promotions and discounts". Thus, a call to action is intended to encourage the buyer to take action, so the call to action always looks like a short slogan or company motto, with some kind of call to action hidden in it.

So, we can come to the conclusion that with the help of certain psychological tricks, every person can be manipulated by marketers. In order not to fall under this influence, people should familiarize themselves with the psychology of consumers and marketing methods.

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WHAT IS IMPOSTOR PHENOMENON AND HOW TO DEAL WITH IT

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From the point of view of self-psychological theory, the impostor phenomenon is seen as the result of the search for self-respect by trying to conform to an idealized image to compensate for feelings of insecurity and self-doubt. People with impostor syndrome have a nagging sense of their own incompetence and of deceiving others about their abilities. It has been studied that imposters are characterized by introversion, anxiety, the need to appear smart in the eyes of others, a tendency to shame, a conflicted and unsupportive family.

Therapeutic approaches based on self-psychology and cognitive therapy are offered to reduce a person's dependence on the positive evaluations of others regarding his self-esteem and to build a more stable sense of self-worth. Successful therapy helps people reduce their need to gain approval and live according to their own inner needs, shift their focus of attention to themselves, and reduce their need to manipulate their environment for support in order to respect their own skills. Psychologist Paulina Clance (1985) described the self-styled behavior that results from this preoccupation with the impressions of others as a "mask." The goal of therapy is to make this mask no longer necessary.

Recent research (Bussotti, 1990) has supported the idea that the impostor experience is related to the presentation of a false self, the development of which in childhood requires constant validation and evaluation of the child by parents. Based on psychoanalysis, therapy can be a bit more interpretive and can have more connections with the past. Based on this, therapy with imposters will often need to focus specifically on the family dynamics and early experiences that may have caused them to invest so much in proving to others that they are intelligent. An examination of family background is likely to lead to a new awareness of the pressures and forces within the family that have led the child to adopt a role designed to please others in order to gain support and approval. This analysis of the past can make people feel sad and angry because of the lack of real upbringing in childhood.

Therapy can also focus on changing behavior in the present by exploring the catastrophic fears of failure that make performance anxiety so dominant for imposters. Active techniques, as described by Clance (1985) can provide gestalt change exercises to access the needs underlying the desire for good work and homework to experiment with new behaviors and risk-taking, and cognitive restructuring to change an impostor.

However, there is also Langford's (1990) finding that impostor feelings are related to the cognitive set described by Dweck (1986) in which intelligence is seen as a stable trait and mistakes indicate personal failure and inadequacy. If people have a view of intelligence as an entity, the therapist can focus on it by raising questions about the origins and consequences of this belief. Clients may find that parents or teachers have helped instill a belief in intelligence as a quality that must always be demonstrated. Impostors can be asked to consider how this belief may be hindering

their efforts to achieve results. They can also be encouraged to create alternative ways of thinking about intelligence. The client needs to understand how their feelings and behaviors may stem from their way of thinking about intelligence and effectiveness. Techniques recommended by Imes & Clance (1984) based on Beck's (1979) cognitive approach can be used in working with beliefs about intelligence, for example, having the client list the advantages and disadvantages of perceiving intelligence as fixed and malleable, writing in a notebook how these the two beliefs will affect daily experience differently. This work with a person's cognitive functions is likely to be most effective when combined with attention to hidden feelings and needs, work on self-expression, exploring the origins of the impostor pattern, and focusing on behavior change.

Also, in addition to psychotherapy, independent work of a person with his own competencies will help. There should be a clear awareness of what you are an expert at and what you are a beginner at, and a sense of where you know a lot and where you don't know enough. This will help you assess yourself correctly and understand your strengths and weaknesses. In conclusion, the best result of psychotherapy and a person's independent work on himself will be an adequate assessment of his skills and achievements and the realization that most of our mistakes are not as fatal as we think and they can be completely corrected. Losses should be treated as a lesson and an opportunity to learn something new.

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LEWIS CARROLL. ALICE'S ADVENTURES IN WONDERLAND

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Literary fairy tales are original tales written by specific modern authors with all the flavour of a traditional folktale. These tales fall somewhere between classic literature and fantasy.

Literary fairy tales exhibit many of the same features as traditional folktales: conventional settings in a distant "generic" kingdom, predominantly flat and stereotyped characters, accepted magical elements, and typically the requisite happy ending.

When we are talking about Lewis Carroll, we use the term "nonsense". This term has become firmly established in literary criticism but has not received a theoretical development (Flodden, 1939).

In nonsense, everything is unclear. Researchers so far agree on a little: that nonsense is something completely specifically English, sometimes even incomprehensible to other nations. That nonsense in England is represented by only two names - Lewis Carroll and Edward Lear.

However, the term "nonsense" is often used in reference to Carroll's creative method. Often, nonsense is seen as a kind of allegory for describing actual events.

Carroll's works are investigated by a biographical method, substituting for Wonderland's fabulous events and Through the Looking Glass the events of Carroll's home life, what happened in the Liddell family at the time when fairy tales arose, or with the doctor himself and his relatives (Carroll, 1978).

Of Lewis Carroll, Virginia Woolf said, "since childhood remained in him entirely, he could do what no one else has ever been able to do—he could return to that world; he could recreate it so that we too become children again" (Chernyavskaya, 1982).

The figure of Lewis Carroll has recently attracted more and more intent and widespread attention from scientists of various specialties. Two small tales about Alice, written more than a century ago for children by the Honorable Doctor Dodgson, a humble Oxford teacher who became famous under the pseudonym of Lewis Carroll, have long been the property of "big" literature. Lately, they have become the property of "great" criticism.

There are few masterpieces, the date of creation of which we would know with such accuracy. "Came up the river," Carroll wrote in his diary on 4 of July when Dodgson told the girls a story that featured a bored little girl named Alice who goes looking for an adventure. The girls loved it, and Alice Liddell asked Dodgson to write it down for her (Carroll, 1986).

Carroll not only rewrote the first manuscript of Alice's Adventures Underground for the girl but also decorated it with thirty-seven of his drawings. He finished rewriting the manuscript in 1863, and sent it to Alice, at the rector's house, only in November

1864. In the interval between these dates, Carroll, who at first "did not think about publishing the manuscript", but in the end convinced by his friends, began negotiations with the publishing house "Macmillan" about publishing it at his own expense.

"Through the Looking Glass" had a different Alice (Gardner, 1978). It was then in London, visiting Uncle Skeffington, he met Alice Theodora Raikes. She was then eight years old, and she used to play in their garden.

Using characters from fairy tales, nursery rhymes, and jokes, Carroll built a special, wonderful world, living according to its logic

Lewis Carroll faithfully reproduces characteristics of the "dream life" and strange changes, quirkiness, and finally, the physical sensations in a dream. Here with Alice happens something so characteristic of dreams: she, falling, flies somewhere down. Carroll is very close to the child's view of reality.

Ultimately, Carroll remained the founder of such a phenomenon of the twentieth century as literature and the theatre of the absurd, entirely built on the inconsistency of the logic, the chaos in which things reside (it is no coincidence that Alice finds herself in a dark forest in the Looking Glass, "where there are no names and titles").

Carroll left in its hundreds of little jokes and games that you can find with a little digging. As I mentioned below, mathematical columnist Martin Gardner once published a whole book of annotations to 'Alice in Wonderland' and its sequel 'Through the Looking Glass' (Gardner, 1978).

In his attention to folklore, Carroll is not limited to just one fairy tale. He turns to song folk art, also subjecting it to rethinking. However, the nature of this rethinking is qualitatively different. The text of both fairy tales contains many direct folklore song borrowings (The Guardian, 2022).

Carroll's "Alice" is one of the most difficult works of world literature to translate. Although the number of languages into which it was translated has reached almost fifty and it has been translated into many languages more than once, it still does not exist the unified principle of its translation. Alice's first translators - French and German – found it such a difficult task. Lewis Carroll himself advised them not to attempt to "transfer" England from English to any other language but to change the parodic background of the book - to make it French or German.

Alice's Adventures in Wonderland is one of the most celebrated books. The book is as famous as The Adventures of Robinson Crusoe or Gulliver's Travels.

But unlike Robinson and Gulliver, which were not written for children at all, but eventually became children's reading, Alice's Adventures in Wonderland experienced an opposite fate in this sense: the adventures of a little girl in Wonderland, first said to children, and then written down and printed for them, managed to interest adult readers. Carroll's book was divided into proverbs and sayings.

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POLITICAL SOCIALIZATION OF A PERSON IN THE MODERN ENVIRONMENT

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The adult life of a person begins with the realization that modern society and its political life are regulated by the norms and traditions of politics. A person is a creator of politics when he participates in political life in accordance with his interests, influences a change not only in the behavior of people, but also in political relations. This is manifested in various political groups, parties and institutions.

Since the development of society and all its links are not only aimed at satisfying people's needs, but also depend on them, a person must be mature, educated and proactive in various areas. In democratic societies, political activity is the main factor in the self-realization of an individual. In Ukraine, the transition from totalitarianism to democracy had a very positive effect on society.

Political socialization in our time provides many opportunities, first of all for young people, for example, to learn social, political and psychological skills. Since Ukraine gained the status of independence, people have faced the problem of studying the processes affecting social mobility, so scientists have started studying this issue.

Modern political socialization is closely related to its culture and behavior, these two derivatives are its results. The level of political socialization makes it possible to determine social experience, and this, in turn, makes it clear how dependent a person is on socio-political conditions.

The political system is one of the parts of the general culture, and should be formed in the process of political life, as a result of which favorable conditions will be created for interaction between citizens and the state, and various political institutions. Therefore, in order to further develop political socialization, modern people must have a developed knowledge of the political culture of society and an adequate moral state.

Scientists investigate the modern problem in a variety of ways, focusing on political science, psychology and sociology. They claim that every person in politics has an active level, as he is an active participant in the process.

Currently, political socialization among young people occurs spontaneously, which is a negative factor. Since, unfortunately, children from adolescence are not taught this process, its signs and concepts, they do not have political practice.

There is a division of political socialization into political and non-political, but this is a formality, since in certain situations, political socialization can occur without certain factors, and as a result of acquiring practice, there is a transition from acquired knowledge to beliefs, which forms a clear position of a person in society.

It is important that each type of political socialization corresponds to a certain type of personality. In the modern environment, the following types prevail - "observers" and "passive observers", also due to certain disappointments in the political sphere, the number of "apolitical citizens" is increasing. The events currently taking place in our country are giving impetus and the youth is becoming more active, but not enough for greater development of modern society (Akymenko, 2019).

To sum up, in order to raise the level of political education in our society, we need people who will be interested in the development of this issue, will promote this current, and popularize it among the youth, because the youth is our future.

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CHANGES IN THE UKRAINIAN IT SECTOR WITH THE BEGINNING OF A FULL-SCALE WAR

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Ukraine has a very strong IT industry. We have one of the biggest labor markets in Europe and the largest number of graduates with IT specialization. Before the war, in 2021, we had over 280 000 specialists (34-38% of women, 62-66% of men) and \$6.9 billion in export revenue (Lviv IT cluster, 2022, p.6). The data shows us a high potential for expanding employment in this sector through formal education and retraining. However, today we have a full-scale war, thereupon, the Ukrainian IT industry has changed. It is rather evident that knowledge of these changes is not only overriding but also can be beneficial for future development.

The economics of our state suffers immensely. Financial sustainability is getting destroyed more and more. Inflation in Ukraine is breaking records. It is about 21% (NBU, 2022, p.13) but The Cabinet of Ministers makes even sadder forecasts for 2023 — up to 30% (NBU, 2022, p.14). And it affects the labor market directly.

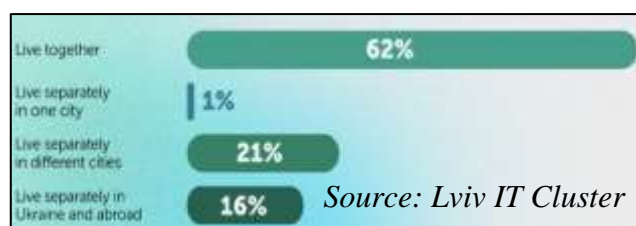
First of all, it has caused a high level of joblessness, which will remain above its natural level for a long time due to the long-term effects of the war. The unemployment rate has risen sharply since the end of February.

In the IT sector, labor market activity has declined significantly. It has been gradually recovering in recent months, but labor supply will continue to significantly exceed demand. Since the beginning of the war both the number of vacancies and CVs have decreased. However, the quantity of CVs has started to increase since April. Instead, the number of job offers is rising very slowly in the IT sector. The reason is a deep recession of economic activity, uncertainty, and reduction of the financial resources of enterprises.

Mobilization has a great impact on the IT industry. Approximately 7 000 IT specialists joined the Armed Forces of Ukraine or Territorial Defence. Roughly 63% of companies of different sizes confirm the presence of mobilized employees, 34% do not have such specialists. The situation with receiving agendas in the army is similar: 58% have employees who may temporarily stop working in the near future due to conscription, 32% have no employees who have received calls. (Lviv IT cluster, 2022, p.27)

IT specialists fight on multiple fronts. At the beginning of the war, the first in our history Ukrainian IT army was created. It is a voluntary army and has approximately 300 thousand soldiers. That is why it was difficult for the invaders to carry out their criminal actions in the national digital space.

Migration is also one of the main reasons for the decrease in the number of professional amount. The war forced to move abroad to be safe, especially it applied to women. A big part of them with high possibility will not come back home. They adapt to life abroad, study a language, and look for job or work already. Therefore, the number of IT specialists is 20% less than a year ago. Moreover, every sixth person has family members abroad because of war (Lviv IT cluster, 2022, p.8). Thus, it can become a reason to abandon Ukraine to be connected with them. Since that Ukraine loses qualified workers.



However, there are people who work in Ukrainian companies remotely. A lot of enterprises have given up office work. The Covid-19 pandemic has started this trend, so it is not new for IT specialists. In wartime realities remote type of work is beneficial because renting is expensive now and can cause huge expenses, thus, the cuts in expenditure can help the company to keep the lights.

In the IT sector, likewise in other spheres, salary has changed. In some areas, they either decreased by 10% or remained at the pre-war level (NBU, 2022, p.15). In **Social Sciences**

the future, with economic recovery, a revival of demand for labor, wages will grow rapidly and exceed the pre-war level, however, taking into account inflationary processes, real wages will still be lower than before the war.

Service companies have focused their activity on international market. Many companies considered this possibility but military actions have forced them to speed this up. Besides, the number of companies abroad that are ready to hire Ukrainians specialists for remote working increases.



Despite all of the above, the IT industry has development prospects. According to the results of nine months of this year, the national IT industry maintains positive growth dynamics and remains the only export industry. By the end of 2022, tech sector's export revenue is expected to reach about \$8 billion (Lviv IT cluster, 2022, p.47). It is a very high rate of growth.

Digitalization of the state aims at the transformation of all government services into the online sphere, to provide almost the entire population with the best quality of the Internet, to provide millions of Ukrainians with the basics of digital skills — is the priority for the next 5 years. Besides, IT education also needs improvements. Today many young men and women prefer to study IT through courses or in private schools. Therefore, non-formal education should be available and recognized in the formal system. Also, educational programs in universities need to be improved. For instance, it can be the involvement of practitioners and foreign teachers, and the development of dual education.

The Ukrainian IT sector is one of the locomotives of the state's economic development. Even in the military realities, the industry shows good growth and development. War is a complex test. Nevertheless, Ukraine has true professionals who are more than competent and lead the state to the future.

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WHY MUSIC HELPS IN MATHEMATICS

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For a long time, music and mathematics have stayed on separate sides of a fence. The majority tend to see them as absolutely different things. People even associate these two subjects with other parts of the brain.

However, some research finds that music activates the same areas of our brain that subjects use while solving spatial-temporal reasoning tasks. According to comprehensive study and knowledge that certain types and frequencies of sound are processed by the two hemispheres of the brain differently, using specific music or sounds may help to boost one hemisphere more than the other and possibly create more balance in the brain. Therefore listening to music could enhance a student's cognition and ability to learn math skills. A study conducted in 2012 showed that listening to music during a math test could improve performance by 40 percent (Brain Balance, n. d.).

What about people who are taught to play musical instruments, they get more benefits from music than someone who listens to it. Learning music improves math skills because, in some ways, all music is math. The reason is in time signatures, beats per minute, and formulaic progressions, which are used while playing musical instruments. Hence, performing music strengthens parts of the brain used when doing math. Investigations show that children who play instruments can solve complicated mathematical exercises better than their peers who do not study in music school (Brain Balance, n. d.). Moreover, if students study to play an instrument, they will gain compatible motor skills and pretty good patience. It is a well-known fact that if you want to play music well, you need to develop your critical thinking and problem-solving skills (Arktik Meta, n. d.).

Furthermore, what do music and mathematics have in common? Both have rules and formulas that make them work. Despite music being typically more artistic than math, the rules are just as strict. Either can help us to understand that when we follow the rules and formulas, we can get the desired result. To play a song, you need to understand the individual notes, their relationship to each other, and what happens to them (Arktik Meta, n. d.). This almost perfectly can be displayed by equations and the relationships that numbers have to each other, used in math. Another example of such a similarity between these two different subjects is the use of patterns. Music has repeating sections of songs known as choruses, and math patterns are used to explain and predict the unknown. Mathematics is the study of templates, and you can study everything in music from different mathematical viewpoints, including geometry, number theory, trigonometry, differential calculus, and signal processing. Research has even shown that certain pieces of music end up being more popular due to their mathematical structure. It is our innate need as humans for rhythm and patterns. These

facts could be the reasons why a lot of the pop music we hear on the radio nowadays has so much repetition (Omaha school of music and dance, 2016)!

In conclusion, music and math have a lot more in common than you might think, and you can use music to help learn mathematics. Mathematics is the study of the relationships between numbers, and if you replace those numbers with notes, rhythm, and timing, you have music.

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LEGAL BASIS OF THE POLITICAL SYSTEM OF UKRAINE AND CHARACTERISTICS OF ITS COMPONENTS

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The activity of the state is a reflection of the peculiarities of the organization of its main components, which are formed and function under the influence of certain circumstances and taking into account the peculiarities of society. It is the correct organization of state activity that contributes to the effective implementation of state policy, guaranteeing the protection of the rights and freedoms of citizens, and solving the problems of modern society. The performance of the main functions of the state is based on legal principles.

The term "political system" was introduced by the famous American political scientist David Easton in the 1950s. The introduction of this term had a practical and theoretical justification. Theoretical - to demonstrate politics as a separate independent sphere of society, which is connected with other systems functioning in the state. It is practical to find conditions that will help to ensure the stability and development of society, to find mechanisms that harmonize the interests of individual social groups.

The political system is a whole set of institutions regulated by legal norms that govern social processes that arise in the state in relation to the type of political culture. That is, the political system characterizes the relationship between the state and the citizen, society.

The political system consists of separate elements that function among themselves. Political institutions are political organizations that play an important role in the political life

of society. The first task of any political institution is the unification of society and social groups for the purpose of exercising political power, taking into account the interests of citizens. An important task is to ensure the protection and development of the system of social relations, preservation of values and traditions inherent in the social group.

The state is a sovereign politico-territorial organization of society that possesses power, which is exercised by the state apparatus on the basis of legal norms that ensure the protection and coordination of public, group, and individual interests. The state also has its functions, which can be divided into external and internal. The function of mutually beneficial cooperation in various spheres and the function of defense of the state can be attributed to the external ones. The internal functions of the state are further divided into economic, social, legal, political, cultural and educational.

General features of the state:

- Has a monopoly on power throughout the country
- Connects a person to the state through citizenship.
- Has an apparatus of state coercion
- Territory, population, power
- Has an apparatus of legal coercion
- Has an official tax system
- Has sovereignty
- Has a special control device
- Issuing binding legal norms through competent authorities
- Has a coat of arms, an anthem, a flag

Another no less important component of the political system is the mass media. The main reason why mass media occupied such an important place in the political life of modern society was that thanks to them, the state and other political institutions are able not only to inform the population about the goals and positive consequences of their policies, but also to arrange relations with the public related to the formation representative authorities and ruling elites, supporting their authority.

Summing up, it should be noted that the political system is a single entity consisting of many different parts, which represent a complex of interacting elements dependent on the institution of the state, as the main institution of the political system.

The correct organization of state activity ensures the effectiveness of state policy, which is a reflection of certain circumstances in a specific society, which has its own traditions, values, norms, and orders. In order to legally support the activities of the state, there are regulatory and legal acts, which we have considered in this course work on the example of Ukraine, as well as the process of forming its political system, its main components, advantages and disadvantages.

So, Ukraine is a young state that has officially established its democratic path of development, but our country still has a lot to overcome in order to achieve it.

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SMALL BUSINESS IN THE CONDITIONS OF WAR: HOW ENTERPRISERS AND STATE SUPPORT ARE RESTORED

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The research of this topic is more than actual in our time, because small business or so-called small enterpriser is the most dynamic element of the national economy and, accordingly, the most effective way to stimulate the country's economy, which is extremely important in the conditions of war, given the sharp decline in economic aspects. According to Art. 1 of the Law of Ukraine "on State Support of Small Business" dated 19.10.2000 № 2063-SH Small enterprises are understood by legal entities — subjects of business activity of any organizational and legal form of business and forms of ownership, in which the average number of employees for the reporting period (calendar year) does not exceed 50 persons and the volume of annual income does not exceed 500 000 euro [1].

It is assumed that small business is one of the most vulnerable economic problems, because even the smallest changes can have a significant impact on enterprises of this type. However, Ukrainian experience can argue with this as an argument using the state of microbusiness in the conditions of war. At this stage of the war, which has been holding for more than seven months, Ukrainian small enterprises demonstrate extraordinary stability and endurance. According to the European Business Association, only 10% of enterprises were forced to move their offices to safer regions of Ukraine and 4% to other countries. 71% continue, despite the danger, active activity and return to the pre-war rhythm work (pic.1) [2].

Picture1. The impact of the war on the work of enterprises



Source: Monthly survey of enterprises "Ukrainian business during war". Institute for political Research and Policy Consulting, 2022

Taking into account the survey conducted by the Institute for Economic Research, already in the second month of a full-scale invasion, small business began to adapt to work in the conditions of war. Despite this, it did not happen without consequences, which were particularly noticeable in March. According to the poll, 73% of small enterprises were forced to stop their work during the first month of the war, but it is worth noting that already then, a large part of them were ready to continue their work as soon as possible. Despite the fact that in April military actions did not stop 47% of micro-enterprises resumed their work, adapting to the current conditions [3].

The war has put in a rather difficult position employees of small enterprises, given the limited budget. Thus, in March 2022, only 26% of hired workers received full wages, and 8% of the employee had an opportunity to provide additional funds to the employees. More than 20% of employees at small enterprises were deprived of payment for an indefinite period. Support of their employees and the Armed Forces is a very important characteristic of small business in the conditions of war. Despite significant losses and reduction of capital, small enterprises find ways to support the Ukrainian army. Thus, according to recent research, 47% of mini companies continue to supply products and support their employees who joined the Armed Forces or the Defense Forces. 44% of them provide financial support [4].

Despite the positive mood and desire to win both the actual and economic war, small businesses suffered significant losses, some of them became fatal for enterprises. Referring to the statistical data that the European Business Association further on, 15% of the enterprise lost more than 100 thousand dollars, 28% - from 10 to 50 thousand dollars and 40% - to 10 thousand dollars and only 6% managed to conduct their activities in war time without loss. If we calculate the total losses of mini enterprises, this sum will be about 2 million dollars. These figures literally destroy and make it impossible to develop small business in Ukraine, that is why the state decided to support this sector of economy as far as possible from the first months of the war [5]. Since the beginning of the full-scale invasion, the government has decided to reduce taxes first and foremost, entrepreneurs can pay only 2% of the EAP instead of 20% for the period of military action. Moreover, small and medium-sized businesses were allowed to pay a single tax on a voluntary basis before the end of the fighting. If the FBP does not receive income, it also receives the right not to pay the ERUs. By analyzing these decisions, it becomes clear that the state will suffer significant losses due to the decrease of the state budget revenues directly from the enterprises, but the government is interested in the small business continuing to operate on the territory of Ukraine [6].

Summing up the above, it is possible to say that small business continues its activity even in military time, despite significant losses. Mini enterprises make every effort to return to the normal rhythm of work. A large part of them managed to come to the background and adapt to the activities in the conditions of military time in just two months. I would like to draw attention to strengthening the ties between small business and the state, because despite significant losses on both sides we see a desire to support each other. Mini enterprises continue to work for the benefit of the country and in various ways to maintain its economic balance. In turn, the state does its best to keep small business in the future and to be able to develop even in extreme conditions.

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THE ESSENCE OF THE CONCEPTS OF "POLITICAL PARTIES" AND "PARTY SYSTEMS"

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The question of the typology of party systems and the peculiarities of their direct functioning is relevant, important and a priority in the research of leading scientists at any time in all countries of the world, because it directly concerns the state, where every citizen should be interested in their life and functioning of the entire political system as a whole since the life of such a citizen depends on it. Therefore, it can be said that no state remains aloof from this issue.

Any problem acquires a political character if its solution is related to class interests, the problem of power. There are a high degree of independence and exerts an extremely strong influence on the economy and other spheres of society in politics. Political activity is one of the forms of social activity, but it is a special, specific sphere of activity. It represents a set of actions of social groups and individuals, as well as parties, which are engaged in the realization of their political interests, and primarily it concerns the acquisition, use, and retention of power.

In the scientific discourse of the typology of party systems and the peculiarities of their functioning, the publications of such foreign authors as K. Hajiev, J. Sartori, Y.-E. Lane, S. Erson, P. Ordeschuk, M. Duverezhe, U. Raiker, B. Isaeva, L. Smorgunov, U. Andersen, V. Voike and others.

Political parties are one of the main channels of engaging citizens in political activities. The forms of political activity within political parties are different: controversies, disputes, and a wide exchange of opinions both in the audience and in the mass media. The purpose of such a dialogue is to clarify points of view, reach a consensus on certain issues, and the most importantly, implement agreed actions. Political parties are an integral part of the political system of a modern democratic society.

Etymologically, the concept of "political party" is "a voluntary association of people who strive to achieve the realization of the ideas they share, the satisfaction of common interests. It is a part of some social stratum, or class, organized in a certain way, called to express and protect the interests of this community, to seek their observance and implementation, to be its political "voice", the "personification" of individual group interests" (Tomakhiv V., 2018, p. 68)

The signs that distinguish the party from other political forces were formulated by J. Lapalombara and M. Weiner in the work "Political Parties and Political Development". Leading experts in the field of political theory focus on these characteristics. They identified four characteristics of the party:

- 1) a party is an association of people at different levels of politics (international, state, local), which has existed for a long period of time and has a clear structure, all elements of which are in a constant relationship;
- 2) a political party is necessarily the subject of a certain ideology;
- 3) the goal of the party is the conquest and implementation of power. The desire to exercise power makes it possible to distinguish parties from, for example, pressure groups;
- 4) each political party tries to win the support of the people. Ensuring public support, starting from voting and ending with active membership in the party. (LaPalombara J., Weiner M., 1966)

The concept of political parties is considered inseparable from the concept of political systems due to the fact that the totality of political parties and the relationships between them constitute a party system. Party systems are a set of stable connections and relations between various types of parties with each other. This opinion is also held by M. Duverger (Duverger, M., 1964, p. 439), who believes that it is incorrect to include other political and public institutions in the concept of "party systems". In each country, the number of parties, their internal structure, their ideology, their relative sizes, their alliances, and types of opposition acquire a certain stability over a more or less long period of time. This stable relationship forms a whole system of parties. The party system is formed as a result of the interaction of various factors, among which general and specific factors can be distinguished. Duverger included socio-economic, ideological, and technical ones among the general ones. By the latter, he understood the interaction of the political regime and the electoral system. By the party system, M.

Duverger understood all the parties of this country operating on the basis of stable connections.

The party system is a mechanism of interaction and competition between parties in the struggle for power and its implementation. The party system is an institution of political space that connects society and power, directly contributes to the development of political participation of citizens, and therefore contributes to their political socialization. The peculiarities of the party system largely determine the specifics of the functioning of the political system. The level of development of political parties and the party system is one of the most important indicators of the degree of consolidation of democracy in modern societies.

To sum up, political parties and political systems are inseparable concepts. When we examine the topic of party systems, it will be impossible and inappropriate to bypass the issue of political parties. Having analyzed the definitions of the leading researchers, it can be determined that everyone describes the concept of "political parties" in the same way. That is, a political party is a stable organization of people, which is carried out voluntarily, the task of which is to promote a certain ideology to the masses, as well as to obtain and implement power through the broad support of the people. At the same time, the entire set of political parties existing in the country, as well as the connections between them, determine the party system of a given country. It can also be defined that the party system is a certain mechanism by which parties interact with each other based on the power struggle. It is the party system that determines the degree of participation of the population in state affairs, it is a certain bridgehead for interaction between the government and the population. There are an incredible number of types of political systems, as each country has its nuances, but they can still be grouped and classified.

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THE KEY TO OVERCOMING SOCIAL ANXIETY

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Fear is a very useful thing for survival, but not always useful for a modern person. Unlike animals, we have an imagination. Many consider this ability to be the main reason for the development of civilization and human dominance on the planet. We are able to imagine in detail not only the terrible events that may occur, but also our feelings at the same time. However, this same imagination can turn our fears into experiences and cause anxiety disorders. It is quite normal to worry. Anxiety is a strong emotion that arises when a person perceives danger. Unlike other strong experiences,

anxiety is always associated with fear, conscious or unconscious. Our brains don't care if it's a real threat or an imaginary one. Fueled by fear, the alarm mechanism is the basis of the instinct of self-preservation and is responsible for our safety. Anxiety mobilizes the body: it injects adrenaline and noradrenaline into the blood, pumps blood to the muscles, fills the lungs with air, increases blood pressure. Makes you run first, and then think, while turning off everything unnecessary, including some parts of the human brain. To distinguish ordinary anxiety from frustration, it is necessary to distinguish between our experiences.

One of the first mentions of the disorder, which is associated with social anxiety contained in the process Bekhterev VM (1899), which describes the clinical picture of the disease, who suffered from a pronounced fear of primordialism in humans (to know which author used the term "erytrophobia"). Subsequently, the psychopathological manifestations reflect a terrifying representation on people, looking at whole lines of scientists (often depending on podinological clinical cases) within phobic or obsessions (Kennair, 2018).

There are many keys to dealing with social anxiety disorders. The best way to deal with SAD on your own is control our thoughts. People with social anxiety tend to overestimate how badly others think of them. Keep in mind: your thoughts are only guessing about what others will think or what you will do. How you think is a habit and habits can be changed. Become more aware of your own thoughts that we have on average every single day. Which is why people need to start building a mindfulness habit like meditation where you try to clear your head and try to focus on one thing like your breathing when you build a mindfulness practice. Once you start becoming more aware of your own thoughts you can start doing another mental exercise.

The greatest success in achieving this goal has been conditioning yourself to believe that others spend the majority of their time thinking about their own problems and themselves which is actually true. The more people start to do this the more they will internalize the spotlight's effects which in turn will allow you to start feeling less and less social anxiety as you start to realize people just are not paying that much attention to you.

We humans often overestimate how much others care about our negative and also positive actions. We think that the spotlight is on us, that everyone is looking at us and judging us when in reality the large majority of people simply don't care and this is a very important concept that everyone needs to internalize if you are struggling with social anxiety. The main reason we feel anxious around others is because we feel like they are looking at us and judging us. But in reality, the large majority of people simply don't care that much about you. Most people are stuck in their own heads and think about themselves, not you. The moment when people start to internalize this concept and genuinely start believing in it, their level of social anxiety will drop significantly.

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FREEDOM OF THE MASS MEDIA AS A FUNDAMENTAL COMPONENT OF A DEMOCRATIC SOCIETY

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Mass media plays a crucial role in shaping public opinion. Millions of people are immersed in the boundless world of media space every day. Freedom of speech is one of the principles of the mass media; the main source of popular control over the activities of the authorities. So, freedom of the press is one of the components of a democratic society. Freedom of the press is guaranteed by Art. 10 of the European Convention on the Protection of Human Rights and Fundamental Freedoms (Convention on the Protection of Human Rights and Fundamental Freedoms, 2017), Art. 34 of the Constitution of Ukraine (The Constitution of Ukraine, 1996) and a number of other legal acts.

The problem of observing freedom of speech is getting worse and worse, particularly in current conditions. In a democratic country, there can be no oligarchs or political capital to monopolize the information space. However, we can observe that the majority of Ukrainian media is owned by certain political forces.

Ukraine was ranked 97th in the World Press Freedom Index 2021 ranking of the international human rights organization Reporters Without Borders (RSF) (Holubov, 2021). It is worth noting that since the beginning of this year, IMI recorded 165 cases of violations of freedom of speech, 84 cases of obstruction, 21 beatings, 15 cybercrimes, 12 threats and 11 restrictions on access to information, and 6 cases of censorship (*Barometr svobodi slova za listopad 2021 roku, 2021*). Recently, the whole world was shaken by the news that Kyiv Post, the most famous independent English-language publication, is closing down. The Kyiv Post newspaper from 1995 writes about Ukrainian realities for foreigners in English. In 2002, its online version appeared. In March 2013, Kyiv Post became the first Ukrainian newspaper to introduce a paywall. Already on November 8, 2021, the publication announced the temporary suspension of work. At the same time, according to the dismissed employees of the publication, the history of expansion and arbitrary appointments was only a trigger of long-standing problems. Former Kyiv Post journalist Anna Myronyuk claims that the publication was pressured, and the Prosecutor General Iryna Venediktova herself and a member of the "Servants of the People" political council (Henprokurorka Venediktova tishna na KYIV POST cherez kritiku - zhurnalistka, 2021). Tamara Istomina, the editor of the publication, notes that the owner of the impartial media has repeatedly called on journalists to be more careful with their statements towards the authorities, hinting that he suffers from oppression. The staff of the former Kyiv Post launched a new Kyiv Independent resource. Unfortunately, this is one of the many cases where high-ranking officials pressured independent media.

Defender of the free press, Trevor Timm, claims that "an independent press is one of the main pillars of democracy" (D'Arcy, 2017). The press is often considered

the “fourth branch of government” because it also helps balance power in government. Without this “fourth branch”, the concept of a democratic system of government begins to weaken, and after a while democracy will collapse. This is because the power of democracy lies in the hands of the people, which means they must be informed to make the right decisions when voting. In order for us to make informed choices when we elect our representatives or vote on certain issues, we need to know what is really going on.

A free press can report truthfully about politicians and their actions. Corruption, patronage, embezzlement—it often happens that we learn about the crimes of our representatives or other authorities only thanks to a society that protects the freedom of the press.

So, freedom of the press is the main value of democratic systems. An attack on this freedom means that the whole system is at risk. If we have disengaged media, our goal is to support their work. It also means that we support the right to freedom of speech, which goes hand in hand with freedom of the press. We should elect politicians who support these things in hopes that they can pass legislation to protect the free press. Regulating the advertising industry or digital media will give small, independent media a chance to compete with the giants in the media market.

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**SOCIAL PROTECTION OF WAR VETERANS:
PAST, PRESENT AND FUTURE**

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The war in Ukraine is a horrifying act by Russia in the 21st century, which does not leave anyone in the world indifferent. The accidents changed not only the lives of every Ukrainian, but also led to global changes in the functioning of the state. The changes did not bypass the sphere of social protection and social services.



1 Gennadiy Dobrov - Congratulations to friends on Victory Day (Vasyl Lobachov defended Moscow and was wounded)

The main problem of the social protection system in Ukraine now is that it is of the post-Soviet type. This system provides for the payment of cash assistance and coverage of many preferential categories, while the rehabilitation and reintegration systems are not developing at all. The main goal of the system was to isolate people with disabilities from society, to hide them away from other eyes. This is confirmed by the fact that after the end of the war, only one victory parade was held, after which Stalin ordered "not to arrange such spectacles that glorify the soldiers who were doing their everyday work - fighting", explaining this by the fact that the veterans "just by their appearance disgraced and " a great victory, and the Soviet state itself" (Ziatiev, 2022). In fact, the government at that time was afraid of the growing authority of the army, which saw all its insidious actions from the inside.

Most of the veterans were



2 Gennadiy Dobrov - I don't want a new war! (Former scout Viktor Popkov)

taken to remote areas. The famous story about the island of Balaam: thousands of people without an adequate supply of products, food and other benefits of civilization; everything necessary for existence is on the island. The removal of veterans took place in a barbaric manner: all people with disabilities were removed from the cities overnight. These people lost their families, homes, and as a result, their further normal life in society like everyone else.

Social benefits to veterans amounted to 80-150 rubles (in comparison: a kilo of pork cost 120 rubles). Boarding houses where veterans lived often forgot to provide basic things: pillows, mattresses, etc. Social adaptation was generally absent, in connection with which begging became widespread. During the existence of the USSR,

people with this way of life were called "parasitic elements", for this reason, during the years 1951-1953, more than 70 thousand veterans were detained every year (Ziatiev, 2022).



SEQ_1* ARABIC 3 Gennady Dobrov - Returning from a walk (Seraph Komissarov's scout)

The text contains drawings by Gennady Dobrov, who lived with veterans on the island for 3 months and wrote them and their stories down on paper. In everyone's eyes, we see a sense of guilt and a request for forgiveness. As citizens of Ukraine, we must not allow such treatment of our veterans, therefore we must influence the authorities and initiate changes in the protection system and take an active part in its development.

According to the Law of Ukraine "On the Status of War Veterans, Guarantees of Their Social Protection" dated October 22, 1993, revised on October 27, 2022, we can conclude that comprehensive assistance is provided not only to veterans or persons with disabilities, but also to their families ("Law of Ukraine № 3552-XII", 2022). However, the law only provides for the provision of benefits, and social support is prescribed by other documents inherited from the Soviet Union. In connection with this, fortunately, projects are now being launched in Ukraine that will close the niche of social support. These projects are aimed at the reintegration of veterans into society from the military careers to civilian life, vocational guidance, employment, social support of veterans and their families, physical and psychological rehabilitation. The main final goal is to provide veterans with barrier-free opportunities for self-realization and self-development, which will further affect the positive development of the state (National Recovery Council, 2022).

The main mission of citizens now is to realize the grave consequences of war and to be ready to face many people with disabilities. The main mission of specialists is to actively promote the development of barrier-free access in their field.

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**THE ROLE OF THE ENGLISH LANGUAGE IN THE MANAGERIAL
PROFESSION AND THE IMPACT OF THE ENGLISH LANGUAGE ON THE
ECONOMY OF UKRAINE**

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The English language is an integral component in the life of every person, because it is very important. Every profession requires knowledge of the English language, the realm of the manager is going to be singled out. The manager's profession is very popular and in demand both in Ukraine and abroad. In order to investigate whether the English language really has an important place at work, we went to various job search sites. After propanalizing the sites, we realized that every second company requires knowledge of English, so as a result, you need to learn this language. The manager is the face of the company and he must know English for the following reasons.

Firstly, the English language is the connection with other countries. The company cannot but cooperate with foreign investors. Every manager, understanding the English language, can advertise his company and product from the best side, because knowing the language makes it clear what you want and what they want to hear from you. The English language makes it easier to work in the company, because you will be a highly qualified worker who can adequately present the business.

Secondly, the better you can know the English language as a specialist, the more skills you will have in working outside the country. Without English, it is simply impossible to go abroad, because you simply will not be able to answer or ask something. In the manager's work, there are office programs that are mainly in English, so it is necessary to study English so that it does not become, because you simply will not be able to work.

Where else is English needed in the manager's work? Our answer is everywhere. It is one of the most important languages in the world. All connections between countries are established through it. This is a chance to become a smart and educated person who will be valued at work. English is something that we should value and use in work and in life.

The second question for consideration is how the English language affects the economy of Ukraine. If we know the English language, we will be able to bring our economy to a better level and to make it famous and productive so that our state and economy are appreciated in the world. Having analyzed how the English language affects the economy, it is the key to success and is really needed in our country.

Firstly, if the majority of entrepreneurs and workers know English, it means that the way to relations with other countries will be open. What do I mean? When we have connections with other countries, our imports and exports improve, that is, the economy will develop very well, and this will bring a lot of money to our country. The level of knowledge of the English language is strongly correlated with the general level

of development of the country. Proficiency in English is not only an indicator of high profits for business. It is also an indicator of the level of intellectual development of society. Thanks to the knowledge of the English language, businessmen will be able to develop their business not only in Ukraine, but also abroad, and people will be able to communicate freely with foreigners.

Secondly, if the whole society knows English, the country will be able, so to speak, to lure foreigners to visit our cities and buy something, and this will have a positive effect on our economy as a whole. If the employees in every store know English, then foreigners will go there, because they will understand them and answer any questions that may arise. The more tourists there are in Ukraine, the stronger the economy will be, but it depends on the whole society. If people do not take care of their level of knowledge, then the economy will also fall sharply, so this cannot be allowed. It is better to learn English, which will be useful to absolutely every person in life.

No matter what happens, you need to know the English language, because it plays a big role in life. The English language is an incentive to work on yourself, on the well-being of your country. The English language is a path to success that can be discovered only by those who try and who want it. This was the original decision to introduce the study of this language to our country. This is the way to the world. Every person can improve himself, but if you do nothing for this, then you can remain nobody in this life.

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DIGITAL HR AND WHY EVERY MODERN COMPANY SHOULD INVEST IN IT

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It is common knowledge that not only fashion, but also the sphere of human resources management is characterized by particular trends - answers to the inevitably new demands of time. Thus, Digital HR - the tools that are aimed at automation of processes, the newest equipment and apps usage, creation of a system where the greatest priority is an effective use of information - came into force as a result of large-scale world digitization.

Obviously, it has made some dramatic changes that primarily have caused the abrasion of geographical and communication barriers, increasing of training and staff selection requirements, boosting of processes due to reducing paper work, which actually allowed HR managers to pay more attention to the development of talents and strategies. Digital HR has helped to make the information more accessible and easier

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to process for employees, candidates for work, separate departments. Moreover, it eases not only submitting data, but also collecting and analyzing it. And everyone can see it on the basis of the current internal systems of document circulation, special company portals for its employees, use of accessible social networks and even producing of own communication programs (Kumar, P. S., 2021).

Despite of the fact that digitalization and automation are about technologies and processes, the main approach in this system is sincere client service. And under clients mean real external customers, who bring companies direct income, and internal clients – employees. For HR, it means that it is important to develop a trusted corporate culture.

In turn, speed is another factor of digitization and manifested in accelerating data processing, making management decisions. In general, it affects literally all aspects of the work procedures. Besides, digitalization needs to be considered as an instrument, rather than a “process for the sake of the process,” which, unfortunately, quite frequently occurs now depending on the scale, budget and the scope of the company. Some of these instruments I suggest to review now (Nesterenko, K.;2020, July, 7).

First, the new HR vision requires fresh methods of recruitment, for instance, a funnel, which is similar to the well-known sales funnel, but concerns the process of staff selection. In most cases, there are seven stages of the efficient recruitment funnel:

1. Brand awareness. In order to increase reputation as an employer of choice, HR manager needs to ensure that as many potential candidates hear about the company from any third party at least once, so with great probability while being in search of work will make a choice in favor of this organisation.

2. Attracting applicants. For capturing the attention of target audience and cause their unshakable interest a recruiter posts a pre-prepared vacancy description on special job search portals (LinkedIn, Glassdoor, Independent), in mass media, social networks or spreads information through his or her co-workers.

3. Screening candidates. HR manager can narrow down a number of applicants by checking their knowledge and abilities in a variety of methods, for example, skills assessments.

4. Interviewing. Candidates who receive the best results after testing can be interviewed in any rounds by a hiring manager or hiring panel and even via video conferencing.

5. Background check. This stage is unnecessary, but is a significant last candidate screening, which consists of checking truthfulness resume, hidden criminal records, fraud, relations with competitors, decency of work etc.

6. The job offers. It is quite worrying stage for an employer and his team because the last word belongs to a candidate who can make a decision about accepting, negotiating or rejecting the offer outright.

7. Onboarding. Full hiring an applicant is not possible without adaptation time for him or her, which typically lasts for ninety days, when a recruiter has the opportunity to determine the correctness of his/her decision (Lucas, S., 2022), (PageUP, 2020).

What is more, if we take into account the features of HR Digital transformation, young candidates, who are apparently good at the sphere of digital and can work cross-

functionally across the organization, come out winners at the time of recruitment almost always. With the participation of them then are held the hackathons – events that focused on forming project groups aimed at the creation of minimally viable products for the development of experimental HR programs.

Therefore, HR teams from scratch are thinking about their solutions in terms of technological processes to reinvent the candidate or employee experience, in other words, to reimagine HR, as an example, Royal Bank of Canada, Deutsche Telekom, Ford have teams of digital designers in their own HR departments (HR Ligue, 2018, June, 4).

As for the market of suppliers, it has adjusted to current conditions by implementation new HR products and solutions, concentration on use of mobile apps, artificial intelligence and taking into consideration client experience. Moreover, modern digital tools allow HR to perform almost in real time. For instance, a chat-bot is a virtual assistant or a specialized software based on artificial intelligence that simulates the human conversation of candidates and employees of the company with its HR specialist in the format of correspondence via messengers (WhatsApp, Telegram, Skype, Viber). Obviously, such tools are extremely useful, especially in carrying out various polls, informing all members of workflow, onboarding, screening candidates, scheduling interviews, managing employee referrals and more. As a result, thanks to such a wide functionality and undeniable advantages, now about 2/3 HR specialists are satisfied with the introduction of chat-bots and already perceive them as a natural way of reporting necessary information to the employees of the organization (pepleHum, 2020).

Finally, I want to tell a little about last, but not least an important tool in Digital HR – gamification. That is a kind of skill to separate from games all funny, exciting elements and their application in real or labor activity. The main thing - to define specific goals for game mechanics, as well as necessary level of their efficiency. By the way, the most widespread engaging of this practice is noted in training, selection of candidates, motivation, teambuilding, and organization of healthy climate in the working environment. Due to this, complex tasks turn into thrilling quests, stress in the office is gradually declining, and healthy excitement in the process of results achievement is simultaneously increasing.

For example, one of "Big Four" Deloitte launched in 2019 the "Chosen_Analyst" game for new coming analysts. In this game, players would save the world from a zombie apocalypse by passing game levels and learning skills like MS Excel at their own speed. Deloitte marks the game's success that helped HR save costs on employee onboarding and reduce time-out-of-market for new analysts.

Also, Marriott created a complete game which was related to recruitment process on its Facebook career page called My Marriott Hotel, where applicants could put themselves in the shoes of a hotel manager. They could then click a button "Do it for real" call to action and apply for the job (Dubreuil, M.; 2021, August, 19).

So, in the modern era of digital transformation, the global HR trend is Digital HR. This is a primary indication of the need for experiments with digital platforms, programs, devices; the formation of new methods of talent management, the use of

appropriate tools (as an example, chat-bots, gamification), that in one way or another help get accustomed to the new reality, see in it not a threat, but space for opportunities.

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THE EMPLOYER BRAND

AS A MODERN GUARANTEE OF COMPANY'S SUCCESS

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The main features of the modern labor market are the growing mobility of workers and increased competition between companies for skilled specialists. It becomes clear that in such conditions their attraction, hiring and retention turn into a difficult task for the HR manager. Over time, most companies are still beginning to adapt to the new reality, and the development of the employer brand - a way of attracting the younger generation to work and keep existing employees in the company - helps in it.

The growing number of promising specialists among Millennials forces the company to invest more in talent retention. This is because today a stable income and promotion on the career ladder once for several years are not enough for an employee. Under such circumstances, company should not only create an open and free work culture, but also provide their employees and potential candidates with all possible

facilities and decent salaries, that is, constantly remind about its competitive advantages (Hurma; 2019, June, 28).

So, how to form an employer brand, once and for all? First, the company should define its goals and objectives. It is enough to outline the problems the company faces.

In the next stage, the organization should immediately begin to develop the overall concept of the employer brand, while controlling that the value expectations of existing and potential employees are relevant to the values offered by the employer brand.

Then the responsibility for its formation, as well as for the value system, should be taken directly by the company's top management, which develops the general idea of brand management. Moreover, specific target audiences of company also need separate concepts. And as a final stage, it is necessary to adjust the communication system (Employer brand, 2018).

In addition, forming the employer brand, companies should also focus on the factors of its influence on the final candidate decision, for instance, on a decent salary, a job security, proper work conditions, unshakable work-life balance and career development opportunities. It often happens that a candidate needs to choose one of two possible vacancies, in such case, the company's awards or the employer's personal destinations are the deciding factors (Whatishumanresource, 2015).

As a result of hard work, the company receives a strong employer brand, which can become its “lifeline” in difficult times, when financial incentives aimed at attracting new employees become impossible.

A kind of business card for the company's business environment is “business reputation”. As a rule, this is an objectively formed set of attitudes about the company of interested parties who are somehow related to it (employees, investors, shareholders, creditors, consumers, government officials, analysts, mass media and others). In the modern world, they are also known as stakeholders. Business reputation is the “good name” of the company and is formed by such factors as image, brand, authority and popularity.

Then let's move on to the concept of “reputational capital” - a valuable expression of the organization's intangible assets, which include knowledge of the market, the availability of its own communication technologies, accounting for the loyalty of stakeholders and improving the quality of services. Besides, reputational capital includes the company's marketing orientation, responsibility to business partners, quality of management and offered to the consumer solutions, social responsibility, staff policy.

Head of organization should be aware of the need to build up reputational capital, since, compared to material resources, its impact on the company's competitiveness and financial stability is much greater and longer. As an example, companies with a good reputation are able to set favorable prices for their goods, set their own requirements for terms of delivery, attract highly qualified specialists and, most importantly, win the loyalty of customers (Shkrobot, M.V., & Nazarchuk, N.V, 2016).

If we consider the phenomenon of the employer brand using the National Technical University of Ukraine “Igor Sikorsky Kyiv Polytechnic Institute” as an example, the “Big 4” or “Final 4” will immediately come to mind. The one whose first
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association coincides with the names of the countries is close to the truth. The “Big 4” is the world's largest audit companies that additionally conduct tax, strategic and management consultations, market research, provide certain guarantees for their clients, and, one of the innovations, offer consultations on digital transformation.

The list generally includes PricewaterhouseCoopers or PwC, Deloitte, Ernst & Young and KPMG. Corporations, state institutions, non-profit organizations, as well as private individuals are willing and able to become clients of these companies.

If we consider public organizations in particular, the vast majority of the Fortune 500 list are loyal customers of the “Big 4”. For example, Berkshire Hathaway, Ford Motor Co., Apple, Exxon Mobil and Amazon. According to a 2018 CFA Institute report, 30% of the S&P 500 were audited by PwC, 31% by EY, 20% by Deloitte and 19% by KPMG (Kenton, W.; 2022, June, 24).

The “Big 4” has an open HR policy, and therefore, as an example, regularly participates in job fairs for students. In turn, those of them who successfully pass the interview get a chance to intern at the world's best companies in order to have a stable work and a wide range of career pathways in the future.

However, even the submission of a CV to one of the “Big 4” companies is almost the final stage, first of all you need to accumulate experience in working with a team through extracurricular activities, volunteering, perhaps, part-time work experience. And at the same time, improve your English language skills.

So, now we live in times when the struggle for qualified specialists and talents is much tougher. The employer brand is more associated with daily care of employees, creating attractive working conditions for them, than with business expansion and global popularity. Having a strong employer brand also helps retain relevant employees within the organization. Thus, it definitely saves the cost of finding talent, as well as time, which is measured in money.

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HOW TO MANAGE EVERYTHING OR A GUIDE:

THREE STEPS TO SUCCESS

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At the beginning of preparation for writing this article, I decided to conduct my own small experiment, using different methods of organizing the working day. I wrote in advance a list of everything that I need to accomplish in the next 1-2 weeks. And this is the first tip on how to optimize the work process. Prepare a list of tasks for tomorrow or for the whole week in the evening. That way, in the morning you will immediately get involved in work and know what to do, because keeping information only in your head can cause unpleasant problems in the form of missed deadlines. It will be even better if the entire list of tasks is divided by priority and due date. In this way, you will easily get to-do lists for each day, starting with the highest-priority task with a limited amount of time.

The second tip will be about the proper use of time. Sometimes, looking at a huge pile of tasks, we begin to doubt our abilities and postpone everything until the last day. In order to interest and deceive your brain, there is a wonderful technique called "At least n number of minutes". The technique is that you put everything aside and force yourself to work for at least 5-10 minutes. If you don't have the strength to work, you put it off, but usually after 5-10 minutes, a person, realizing that he can stop at any time, then you are passionate about the work, and in the future, the execution of the work is easier. So, the main thing is to begin. OK, we've started to get some work done, but how do we know when to take a break and how to improve overall productivity and concentrate? They offer you an effective method - "The Pomodoro Technique" (Francesco, 2006). A 30-minute period of time is called a tomato - 25 minutes for work and 5 minutes for a break, then you go to work again. After every 4 repetitions (tomatoes) - a break of 30 minutes. I used this method personally and it helped me to concentrate on work and not be distracted. But it is very important that you do not spend 5 minutes of rest in messengers.

Work is sorted out, let's talk about rest. Proper organization of rest will be a mandatory 3rd step to successful work. A change of activity will help with this. Especially if it will be some kind of physical activity: a walk in the fresh air, a short trip somewhere, a trip to the gym – these things will restore your internal reserve of strength, even when it seems that there is no strength to do anything. Basically, we get tired from mental work, so physical exercises are necessary for the proper functioning of body systems.

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The key to a good rest and well-being is, of course, a proper sleep regime. Remember that health is more important than work. Do not stay up late at work, as this will only decrease your productivity. It is better to use the methods which described above and plan the course of your actions. Finally, I want to say that all the tasks that I planned have been completed, so the methods really work.

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THE IMPORTANCE OF MENTAL HEALTH FOR IT SPHERE WORKERS

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Everybody knows about programming. Nowadays, it is one of the most demanded professioni worldwide. Young people pursue learning new programming languages, their lexis, features, and application. Having good professional and language knowledge, a specialist can easily earn from two to five thousand dollars a month. Also, the only thing you need to work on is a laptop with fast internet. At first glance, it seems that this is a dream job. But is it so? Let's look at the problems that programmers face and try to find a solution.

The first and one of the most valuable causes of depression and anxiety is no daily schedule. As usual, this problem contributes to the development of a downed sleep pattern. It works like a snowball. As a result, a person always feels fatigued and lethargic, unwilling to do anything. Besides lack of sleep, some workers forget about meals, especially breakfasts. Without a doubt, breakfast is the main meal of the day. From a scientific point of view, after breakfast, a person feels much better and calmer, because eating suppresses the stress hormone cortisol released in the morning (Smialek, 2021).

Another important problem is the distribution of work and rest. The majority of IT specialists are working at home. A lot of people say that it is their dream to work indoors and not waste time and money commuting to and from work. But scientists are talking about the downside of working from home. Our nervous system remembers certain places and events associated with them. Thus, the brain is not tuned for productive work in the same room where you watch your favorite series or spend evenings with friends.

The third but not on the list is the problem of lack of social life. Due to work specifics, programmers have to stare at a computer with little human interaction, which can cause depression and anxiety. Depression is noted by a constant mood of sadness or loss of interest in daily life and activities. Coding depression is not fiction. It occurs

when programmers and coders spend those long hours without any human love coming their way (Civilize Caveman, 2022).

When programmers spend those long hours with more trouble than troubleshooting their code, the risk of depression and anxiety increases. Many experts say that the average programmer and coder is more at risk of psychological disorders than the average human. The pitfalls of mental health risks are real in this industry.

What is the solution? The answer is pretty simple. Try to discipline yourself. Keep statistics on sleep time, quantity, and correctness of food intake. At first, it will be difficult, but over time the organism adapts, and it will become the norm. Don't forget about the working space. You should separate the rest area from the work area. Also, you can work in some special establishments, such as lounge offices, built for comfortable digital working.

Here are some other general tips for improving mental health. Try to spend more time outdoors, and have more physical communication with friends and family. Also, it is a good idea to get a pet if you live alone. Walking in the evening or hanging out with friends has a much better effect on the condition than scrolling through the feed on social networks. Another win-win option is to have more exercise stress if you haven't. Moreover, spending time in a gym kills two birds with one stone: you become healthier and stronger, and your hormones are back to normal, that's why you feel better.

After reading this article, you will be able to overcome the difficulties described before or those who need it.

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FAMINE - GENOCIDE IN UKRAINE (1932-1933)

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The Holodomor is one of the most terrible events of the last century. A disaster that claimed millions of lives due to the ambitions of the bloody dictator Joseph Stalin. A tragedy that led to cannibalism and cannibalism. This is a black spot in our history, caused by harsh politics and inhumanity to the Ukrainian people.

Stalin was afraid of losing Ukraine as a resource, because we always had and still have extremely hard working people and very good natural factors. Not wanting to lose Ukraine, the Soviet regime came up with a plan to destroy part of the Ukrainian

population. This plan was disguised, that is, everyone believed that the population gave their bread to the state. But in fact, we all know that it led to tragedy.

Some villages were included in the so-called "black boards". This meant that the settlement was isolated. They were surrounded by police units and Soviet special services. All food supplies were taken out of there and no longer supplied. Trade was prohibited. Almost twenty-two and a half million people were physically trapped within the territory of the Holodomor.

Some questions still remain unsolved, but the fact of the genocide of the Ukrainian people has already been recognized. For a long time, until the 80s of the 20th century, only Western scientists dealt with the problem of determining the consequences, scope, and origins of this terrible event in Ukraine. This was facilitated by the curtain created by the Soviet leaders. They banned not only our language and culture, but also hid our own history from us. The leadership destroyed the evidence, the originals of historical documents. It sought to hide its crimes against ordinary, strong-willed and disobedient peasants. Therefore, information about the famine was not made public, but on the contrary was secret.

V. Hryshko, V. Davydenko, M. Verbytskyi, O. Vtoropai and some other representatives of the diaspora were the first compatriots who investigated the causes of this phenomenon. Trying to educate as many people as possible, they published intelligence data and materials that confirmed the fact of genocide. In their opinion, the main goal of the Bolsheviks is not only the weakening and subjugation of the Ukrainian people, but even their extermination.

The consequences of the Holodomor were extremely large-scale and terrible. During this period, more than 7 million people were lost in Ukraine, as well as 3 million ethnic Ukrainians. First of all, these are the regions that were historically inhabited by Ukrainians: Kuban, Kazakhstan, Lower Volga, North Caucasus.

Every year on the fourth Saturday of November, the Ukrainian people light candles as a symbol of memory for those killed by hunger.

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ADMINISTRATIVE STATUS OF EXECUTIVE AUTHORITIES

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One of the three branches of state power is the executive power, which was created to develop and implement state policy, ensure compliance with legislation and

manage spheres of public life. In general, the executive branch is accountable to the legislative branch of government. Compliance with the current legislation and the activities of the executive power are supervised by the judiciary. The bodies of the executive power should be considered a whole system of law-enforcement bodies of the state executive power headed by the Cabinet of Ministers of Ukraine.

Turning to historical sources regarding the development and formation of local executive bodies in Ukraine, it is worth noting that their improvement has a rather noticeable effect on the population of Ukraine. The state nature of executive management bodies consists in the implementation of tasks, functions and interests of the state to create activities that would meet the interests of not only the state, but also citizens and society as a whole.

In administrative and legal science, it is indicated that executive bodies of power are part of the State constituent (organizational) structure, which has a personal organizational model and staff and performs, within the established competence, the tasks of state management in the economy, social, administrative and political spheres of society.

This concept has the most important characteristics of law enforcement agencies. These state authorities are law enforcement agencies and, together with legislative and judicial authorities, form a single state law enforcement agency. From which we can conclude that executive bodies of power have all the important features of state authorities and, moreover, have their own specific characteristics due to their tasks and the specifics of state government.

They form the state administration apparatus. Which is one of the complex systems of state management. This system is a complete and complementary system consisting of many and different parts - these are separate bodies and their structural units. Within the framework of the state installation, law enforcement agencies have their own internal management structure and staff of relevant employees.

Any powerful executive body acting on its behalf and having state status has a legal basis and status acting as the owner of relevant legal and power powers, the implementation of which ensures the achievement of the goal of executive and administrative activity.

Law enforcement agencies have the necessary operational independence, which is expressed in such powers - subjects of competence, rights, duties, territorial boundaries of the activity of each state body.

Each powerful executive body must have an official name and permission to use various attributes with the symbols of the country (stamp, official forms with names, etc.).

According to the competence, the powerful executive bodies are divided as follows: bodies of general competence; competent industry professionals; powers of specific (functional) competence.

Law enforcement bodies differ significantly from legislative and judicial bodies: their purpose; features of the program; feature of activity; the order of formation of individual bodies and relations between certain authorities; the composition of employees and the procedure for replacing them in positions; forms and methods of exercising legal powers.

The relationship between powerful executive bodies is based on subordination, which means coordination between a higher and a lower level, for example: the Cabinet of Ministers and Ministries or local self-government bodies; regional and district state administrations, etc.

At the same time, the cornerstone of relations between bodies of the same organizational and legal level is the principle of coordination. It is reflected in the coordination of actions and decisions, consultations between them, discussions, joint events and publication of joint acts, conclusion of administrative contracts (agreements), etc. between these bodies (Kitsul, 2014).

We can conclude that the independent branch of state power is the executive power. The main activity of the executive power consists in the implementation of laws and control, as well as the implementation and observance of tasks assigned to improve the life of society and support the interests of the state. State executive bodies carry out executive and administrative and organizational activities. To date, the study of state authorities is given quite a lot of attention, as it plays a role in the functioning of the state mechanism.

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PROBLEMS OF POST-TRAUMATIC STRESS DISORDER IN OUR TIME

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People are constantly risking their lives during wartime. War affects the mental state of both military personnel and civilians. Most citizens of Ukraine have already experienced grief, combat injuries, death of relatives or friends, and other horrors of war.

Combat trauma refers to traumatic incidents associated with warfare. In many cases, the types of traumas faced by military personnel are not significantly different from those faced by civilians.

Not everyone suffers from PTSD in such situations. It is not enough to know what this person has experienced in order to diagnose this disorder. Every person adapts to trauma, grief or loss in a different way. Some of these problems can cause serious health issues. Prolonged stress in most cases appears as symptoms of mental disorder, especially during wartime.

We researched an array of scientific sources and found out that people with post-traumatic stress disorder (PTSD) may experience some of the symptoms related to functional disorders. For instance:

- avoidance of social interaction;

- extensive reaction to stimuli (increased vigilance/anger/irritability) ;
- frequent mood swings;
- emotional numbness;
- dissociation;
- emotional dysregulation;
- difficulties in social interaction;
- low self-esteem.

Scientists from the University of California conducted an experiment using method of the brain neuroimaging. This is the process of recording brain areas that have been activated since the person became aware of grief. They concluded that the experience of grief is related to different parts of the human brain. Which are responsible for the retention of information, the ability to perceive another person's point of view, and the experience of pain.

Grief is not only destructive emotional state. Also, grief is a process of adaptation to life in new circumstances. A person can feel the exact same feelings again, even years after the tragedy. Therefore, psychological help occurs through multiple experiences of grief in the period shortly after the incident. A person begins to feel the emotions associated with traumatic memories in a different way.

A traumatic experience provokes the production of a superfluity of stress hormones, which cause various reactions to a stimulus. For example increased heart rate, blood pressure, breathing rate, and sweating. These symptoms can lead to insomnia, loss of appetite, anxiety, and chronic fatigue.

In an article for Henry Ford Health Care organization, neuropsychologist Janelle Phillips offers strategies that can help ease the pain of loss. Such as:

- Self-care. Regular exercises, good nutrition, and healthy sleep will help the body and mind recover
- Rest. After a severe breakdown, person needs to take a break from work and routine, but it is important to control the condition so grief does not worsen.
- Support. If it is difficult not to think about tragedy, you should try to find people who have gone through similar experiences. They already know how to put up with loss and can share how they cope with it.
- Keeping a diary. A person may begin to write disturbing memories or nightmares. This method will help the patient become aware of their thoughts, memories and emotions, as well as build new neural connections that will help the one who suffers adapt to life after a loss.

The benefit of the mindfulness system has been found for:

- improvement of physical health;
- recovery of mental health.

Mindfulness sessions consist of many activities such as concentration on breathing or sounds and group discussions about the connection between the body and the brain. PTSD can be cured even years after the traumatic experience. It is never too late to start treatment. Before starting therapy, symptoms should be carefully evaluated to determine the severity of the disorder.

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INFORMATION WARFARE

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Along with the war unfolding on the territory of Ukraine, there is not only physical but also informational confrontation. In addition to acts of disinformation, there are clashes between representatives of the countries themselves. Thus, there is another front that has a significant impact on the consciousness of the world community.

Information is a weapon. A vivid example of this is the way the population of the aggressor country and local authorities behave in the conditions of war. Despite the fact that most of the world (including the UN General Assembly) condemned the actions of the Russian Federation regarding the invasion and attempts to annex the territories of Ukraine, ordinary citizens continue to support the actions of the ruling elite and blindly follow the instructions of the government, as evidenced by numerous audio and video materials, comments, publications, posts in social networks created by the Russian people on the Internet. Of course, there is a certain part of the population that is trying to counteract the current circumstances and supports the opposition anti-war blocs, but the government of the aggressor country continues to suppress the existing opposition. We can see the lack of significant changes on the part of the population, so propaganda is quite successful. For example, opposition activist Maryna Lytvynovych, who called for street protests on Instagram in the evening of February 24, was detained by the police as soon as she left her house. That same evening, another 1820 protesters who also supported similar ideas were detained (“Human rights activist Marina Litvinovich called on Russians to protest against the war in Ukraine. She has been detained”, 2022)

While, as described above, there is no freedom of speech in Russia, Ukrainians and representatives of other countries are publishing and disseminating real information from the scene, allowing every member of the global community to know the truth. The first thing that citizens who are not media representatives do is to

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challenge disinformation. People share their own stories, photos and videos, destroying myths produced by hostile television and so on. The second aspect is the prompt dissemination of news. Ukrainian channels and social media accounts have not only switched to Ukrainian - they have been filled with content in different languages, including English, to quickly convey information abroad.

Professional journalists, in turn, are not left without work either. Correspondents of CNN, BBC, the Guardian, New York Times, Bild, Al Jazeera and others are constantly working in Ukraine. For example, they come to Lviv to get first-hand information. Hot spots are visited by our Ukrainian journalists, including Nataalka Nahorna, Oleksandr Motorny, Oleksandr Zahorodnyi, Mykhailo Ukhman, Ruslan Yarmoliuk and many others. On September 9, 2022, President of Ukraine Volodymyr Zelenskyi presented state awards to journalists and other media representatives for courage and dedication in defending the sovereignty and territorial integrity of Ukraine, as reported on the website of the official Internet representation of the Head of State. The main distinction of the awardees was their achievements in the information war (Sadlovska, 2022) (“The President awarded journalists fighting for Ukraine on the military and information front”, 2022).

As long as the war continues, there is an information front. Currently, Ukraine is winning in it and we should thank both media representatives and ordinary citizens for that.

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HIDDEN MANIPULATION OF MUSIC: BECAUSE OF THIS, 14% OF PEOPLE BUY MORE IN STORES

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Music can be used in highly specific ways to affect both what shoppers buy and how much they're willing to pay.

The tempo, loudness, style of the music you play can help communicate your brand's personality to customers, even before they enter your door. Music is such an

effective **cue to a brand's image** that it's often enough to hear notes streaming out of a store to realize the brand's and products' personality.

One study on music's effects on shopping behaviors – (Donovan and Rossiter, 1982), is also known as the pleasure-arousal-dominance (PAD) model. The results suggest that a store's atmosphere affects the emotional states of consumers.

Let's look at a few properties of music that can manipulate you in the store:

- The **genre** of music. It can change shoppers' perception of your establishment. Classical music, for example, projects an air of expense and quality. In conclusion, following a 2007 study on the effect of background music on consumers, Nicolas Gueguen et al. stated that playing classical music in a wine store increased sales while influencing consumers to purchase more expensive merchandise. If a retailer is running a clothing store for the female teenagers, Top 40 pop music might be your best bet. If an outdoor clothing store aimed at 30 to 50-year-old males, country music might be the right choice.

If it's not enough, I can tell you about one experiment, when students who heard classical music were willing to pay more for social identity items, while students who heard country were willing to pay more for utilitarian ones.

It is interesting that a smart retailer plays different styles based on the time of the day and desired goals. For example, a retailer may decide to play fast tempo, louder music when it's close to closing time, to encourage customers to speed through the store; conversely, slow music could be played during off-peak times, to inspire shoppers to wander around and browse the merchandise for longer.

- **Tempo**. In 1982, Ronald E. Millman published an article in the Journal of Marketing that examined customers' purchases based on the tempo of ambient music. Millman found that when background music was faster, customers bought less — they walked more quickly, picked up only what they came for, and spent little to no time browsing. When the tempo slowed down, however, customers' movements did, too. They browsed more and spent more.

- **Volume**. In a 1966 study in the Journal of Applied Psychology, researchers found that loud music caused shoppers to exit the store more quickly than soft music, which was correlated with lower sales. In addition, shoppers exposed to loud music thought more time had passed in the store than shoppers exposed to softer music.

- By itself, background music helps create a personal space for customers, giving them **privacy** as they walk around the store, browse the products and make comments to friends or family.

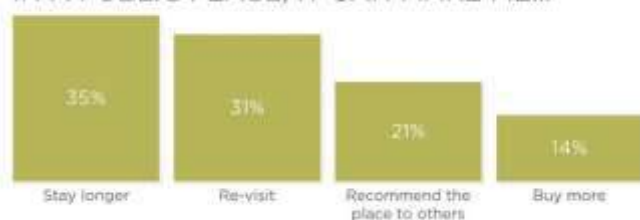
Some tips for retailers:

When planning for maximum spending power, don't use music alone to influence shoppers.

- Appeal to customers' visual pleasure by arranging items in an easy to find, aesthetically pleasing way – it encourages them to spend more time browsing and shopping.

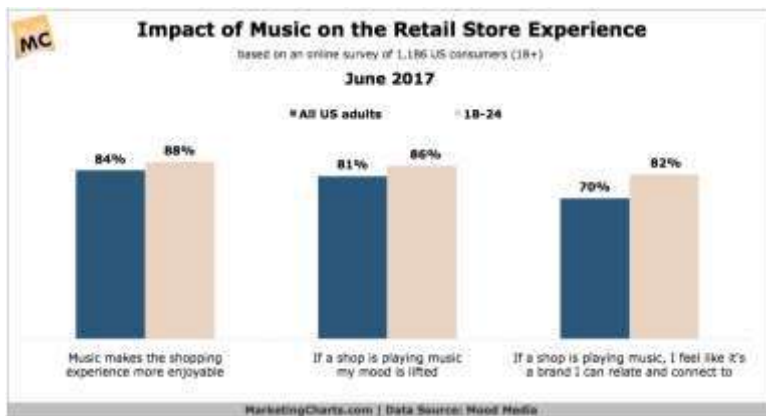
Social Sciences

WHEN MUSIC THAT I APPRECIATE IS PLAYED IN A PUBLIC PLACE, IT CAN MAKE ME...



Heartbeats International. Uncovering a musical myth. 2011

- Engage their tactile sense by encouraging shoppers to touch items – picking items up can influence them to want to take them home.



Finally, don't be afraid to combine music with other sensory effects for a full experience. A 2005 study in the *Journal of Business Research* found that a combination of holiday-themed music and scents boosted sales in a Christmas shop more than the music alone — and much more than the scent alone, which

actually decreased sales.

As Philip Kotler noted in a 1973 article for the *Journal of Retailing*, “In some cases, the place, the atmosphere of the place, is more influential than the product itself in the purchase decision. In some cases, the atmosphere is the primary product.”

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PSYCHOLOGY IN TRADING

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Trading is one of the most interesting and stressful work in the world. This is an area where you can become a millionaire, work for yourself and take vacations whenever you want. All you need for this is only a computer and access to the Internet. However, why are only a few people successful at this? The problem is hiding in psychology.

Trading is a profession that consists of two elements: technical and psychological. The technical part is very simple and can be learned in a few months. It includes: chart analysis, opening and closing positions in a special Internet terminal, tracking news, etc. But what about the psychological part? This is where everyone falls. A human is arranged in such a way that it is easier to perform a given task than to set

a schedule and a list of duties for himself. So, what is psychology in trading? It is all about emotion and moods, personality and social pressures. You can say: «Really? It's very easy! I became a successful trader in a week!». Unfortunately, statistics say that only 5% of people succeed in this job.

Emotions and moods. We are all human and we can't live without emotions because it is embedded in us biologically. In trading, you come face to face with greed, fear and hope. Fear occurs when you are sure that you can make money, but you are afraid to open a position. Hope occurs when you are in a position, but you think you can make more money. As a result, you stay in the position for too long, which leads to a loss of capital. Greed occurs when you are overconfident. You ignore risk management and buy an asset risking a larger amount than usual. Everyone knows how it ends. We can say that emotions in trading are equal to losing money. However, you need to remind yourself that capital preservation is the rule number one (Psychology in trading, 2022).

Personality. In our opinion, this is the most important thing. This is what will show you whether this is your life's business or not yours at all. I associate three icebergs of trading with personality - discipline, patience and confidence. If you can't create your own daily schedule and stick to it day by day, you lack discipline. If during the work day you buy or sell an asset at a place where you are not planning, then you do not have enough patience. You may have a gambling problem, which is even worse. If you have fear when trading, such as fear of opening a position, then you lack confidence. These problems are individual. Some of them are solved by practice and collecting statistics, some by time, but sometimes you have to turn to a specialist who will change the way you think about the subject.

Social pressures. This issue is most common among beginners and people from poor families. When starting to learn, they can read information that they need to take responsibility for. However, not everyone understands what this means. Beginners see only one task in front of them - to increase their capital. And what do you think they do in this case? Subscribes to so-called channels with signals in social networks. Unfortunately, in practice, everything ends in failure. Because of this, experts give advice as soon as possible to leave the illusion of quick money and start taking responsibility for your actions. But I would like to emphasize something more unpleasant. Lack of support from friends and people close to you. Very often you will not be supported in such a risky business. You will be despised, they will tell you that it is not yours, that you will lose everything. Therefore, I want to ask one question: What kind of business is not risky?

In conclusion, we would like to note that trading is an extremely difficult profession from a psychological point of view. You will have to face all your inner demons and defeat the strongest enemy in your life - yourself.

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**THE PROBLEM OF EDUCATION
IN THE MODERN INFORMATION WORLD**

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A large-scale crisis has covered almost all countries of the world. For the first time, a scientific diagnosis of the crisis state of education was made in the sociological works of F. Coombs in 1970 and 1985. He was the first to suggest considering education as a single system.

According to UNESCO, more than 100 million school-aged children did not go to school in the early 1990s, and the number of illiterate people in the world reached almost 1 billion people. In recent years, there has been a tendency to decrease the number of illiterates in developed countries, but in the countries of the "third world" they are not growing so rapidly. But over time, the concept of "functional inexperience" appeared. This is a phenomenon that prevents literate individuals from performing functions that correspond to their level of education. According to experts, the number of functionally illiterate people in a number of leading countries has reached tens of millions of people. After all, in some underdeveloped countries of the world or states, it is possible to qualify a relatively noticeable decrease in the rise or expansion of the scale of education systems.

What are the manifestations of the global education crisis? First of all, it is about the crisis of socialization. The classical education system is the least capable of ensuring that young people master all the multifaceted social roles or solving the problem of painless adaptation of young people to real life. Secondly, the growing gap between education and culture.

Traditional education and learning practices allow mainly to acquire knowledge or lifestyle norms, but not values of spirituality and culture and do not ensure imitation in the spiritual connection of generations. The gap between education and science is growing year by year.

Science of the 20th century, radically changed in fundamental and special aspects, but the education system methodologically and didactically stopped within the boundaries of the world of the 19th century, which reduces the authority of the elite and the motivation to acquire them.

The Institute of Modern Education has not been able to overcome the problems of oppression of the human in man, as evidenced by the functional task of the education system to prepare for the state objects of social manipulation, rather than subjects of social action.

In addition, the global crisis is closely related to the dysfunction of modern educational systems that do not meet the social expectations of people in society. The educational crisis in our country was caused not only by global factors, in particular, the collapse of the main principles of Soviet education, caused by the fall of the past political and ideological system, the distortion of the goals and social functions of the

school, the lack of new models of education and the social and ethical gap between the teaching staff, students and students.

Recently, in the writings of economists, sociologists, philosophers, political scientists, and teachers, the opinion is proclaimed that the most significant characteristic of the modern world, which determines its picture, is the movement of gigantic flows of capital, goods, and people, which increases the exchange of information.

If we consider the possible development strategy of Ukraine in the conditions of globalization, we can say that along with the possible risk, these processes give our country a real chance to take a worthy place in the new stage of civilization. When it comes to globalization, there is no equality. Instead, there is the subordination of education to the interests of powerful foreign transnational corporations that impose their standards of education, their language of communication, regardless of national characteristics, supplant national languages - carriers of distinctive cultures.

Ukraine, which seeks to integrate into the world and European space, cannot stand aside from the globalization processes that are taking place today and affect almost all countries. The education of any country reflects its most important civilizational and cultural characteristics and features of the current historical moment, ensuring a combination of national traditions with relevant innovations. The state of education significantly affects both the integrative processes of world life and social transformations in a particular country.

The acquisition of state independence by Ukraine turns out to be one of the most important internal factors that determines the need for a significant transformation of national education. The inconsistency of the classical system of education in its Marxist-Leninist interpretation with the realities of today is the cause of the deep difficulty from which domestic philosophers, scientists and teachers are trying to find a way out.

A new task arises before education - to give a person knowledge not only about the world and its laws, but also the methodology of transforming this world, to form appropriate skills and abilities that would be based on acceptable human values.

The Ministry of Education and Science of Ukraine is making a lot of efforts to reform the education sector. But there are still many problems that cannot wait. Let's list some of them:

- Low wages and social insecurity of teachers.
- Old textbooks, content and teaching methods do not meet current requirements
- Education is still evaluated according to internal criteria. The assessments necessary to recognize the role of secondary general education for a successful human life, for the economy, do not exist and are not applied either by the education management bodies or by society.
- The stratification of society makes quality education less and less accessible for more and more children.

The Law "On General Secondary Education" stipulates that "the general secondary school should, as a rule, be specialized". In this regard, the Ministry of Education and Science of Ukraine, together with the departments of education and science of regional state administrations, is conducting work on the analysis of the **Social Sciences**

network of educational institutions. In particular, the proposal to transition to a new model of the educational network is being discussed.

Therefore, the problems of quality and access to secondary education are solved through the rationalization of the network of secondary educational institutions.

The current world globalization processes are taking place at a time when information is the main resource, and knowledge is the factor that stimulates or limits the development of society.

The importance of education in a person's life is growing, and therefore it cannot be limited only to the period of study. The urgent need to constantly improve the level of knowledge has led to the emergence of such an interesting phenomenon in social life as continuous education. This process is accompanied by the search for new forms and methods of learning that contribute to the correct formation of a scientific worldview.

Education integrates various types of educational and educational activities, their content into a single social system, orients them to the social order, to the social needs of humanity. Among the social institutions of modern civilization, education occupies one of the leading positions (*Problema osvity v suchasnomu informatsiinomu sviti*, 2022).

After all, the good of man, the position of culture and spirituality in society, the pace of economic, scientific and technical, political and social progress depend on the quality and level of education.

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HOW DOES TEXT AFFECT WHAT WE BUY?

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The modern buyer is facing a world of goods and services that is expanding every second. A lot of different ads fall on the buyer, who just screams to buy something. However, without advertising, it is impossible to form broad markets for the sale of goods, transform the existing needs of a certain target audience into demand. Therefore, many companies create ads that should keep the interest of an existing target audience and attract a new one. Therefore, advertising should attract attention not only for its visual appearance, but also have a semantic text.

First of all, text is one of the main parts of advertising. Slogans, mailing lists, and calls to action are all part of text advertising. It gives us a holistic understanding of what exactly the seller wanted to say and why we should buy this particular product. If the seller does not talk about their product, there is a risk of getting lost among competitors.

However, how exactly does the text affect the buyer's choice?

Text advertising can actualize a large number of different images that can be used to evoke emotions and associations that represent real events, life, and profession, described in simple and understandable words. Thus, the text creates an understanding that this particular product will help solve their problem.

A great example is the Snickers ad. The slogan "You're not you when you're hungry" refers to the usual human experience of excitement and anger from hunger. The brand identified the main point of the customer and positioned Snickers as a smart solution. Therefore, the audience responds well to smart ads that look both surreal and related.

In addition, you can use individual words or whole sentences to recreate a picture of what the consumer wants to get in the end result. We choose those words and statements that create or generate the context in which we would like to see our statements. If an ad creates a real and meaningful picture for the consumer, then they will try to turn it into reality. Thus, individual words or even phrases can have a big impact on the consumer.

In the early 2000s, we all understood that "what happens in Vegas stays in Vegas." It was this phrase that attracted the attention of many visitors to the city. A key element of Las Vegas' emotional connection with its customers is freedom. The freedom of doing things, seeing things, eating things, wearing things, feeling things. In other words, we were able to be someone we were not at home. The result is a decade of advertising that creates situations involving a lack of information. This allows viewers to fill in the blanks and start imagining their own Vegas adventures.

Summarizing the above, I want to say that advertising is a special type of communication, so you need to be able to choose not only how it should look, but also to be able to successfully formulate why consumers should pay attention to your product.

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DIGITALIZATION OF UKRAINE ON THE EXAMPLE OF "DIIA"

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Digitalization is becoming one of the most important factors in the economic growth of any country. This is a modern trend of development and consistent

improvement of all business processes of the economy and related social sectors, based on increasing the speed of mutual exchange, accessibility and security of information.

The level of digitalization brings Ukraine to one of the dominant countries in the world. Ukrainians are building their state, which is becoming a service, without queues, corruption and bureaucracy.

On February 6, 2020, Ukraine presented a new application for smartphones – “Diia”. This is a place to keep all the necessary documents in one place. The first such documents were a driver’s license and a vehicle registration certificate. (“What is the “Diia” application and how does the ‘state in a smartphone’ work?”, 2020)

Today, you can upload a birth certificate, ID card, passport, student card, taxpayer card, COVID certificates to the Diia app. In order for the documents to appear in the phone, it is enough to download the application to your smartphone and log in to it, then the documents will be downloaded automatically. They can be used instead of originals, confirming the authenticity with a QR code that appears after clicking on the required document. It is also important to note that in the presence of confirmed documents in “Diia”, paper originals are not required.

In addition, today in the application you can send an application for receiving UAH 1000 to the ESupport card for both doses of the COVID-19 vaccine (temporarily impossible due to martial law), pay taxes, fines, unified social tax, file a declaration, e-petition, apply for a pension or subsidy, register LLC, sole proprietorship.

Thus, Ukraine became the fourth country in Europe where electronic documents operate, having acquired the status of the so-called “electronic state”.

Disadvantages that arose at the beginning of the development of “Diia” in Ukraine: not all users automatically received a driver's license and vehicle registration certificate, or they appeared, but without a photo. To solve this problem, an additional system was created to import photos from the registers of the migration service, i.e. from passports and ID-cards. (Baryliuk, 2020)

Another crucial drawback is the security of the data entered. On May 11, 2020, a database with 26 million driver’s licenses was published in an anonymous Telegram channel. However, after an investigation, the National Police proved that the leak was a compilation of databases from various organizations (both public and private). Although the innocence of “Diia” was proved, this led to an increase in people's distrust of the application.

One of the most recent situations related to the security of “Diia” was the information of January 22, 2022 about the sale of data of millions of Ukrainians, which were taken from diia.gov.ua. The sale announcement was posted on the RaidForum. The price set for all the data was fifteen thousand dollars. Some cybersecurity experts stressed that the probability that the data is real is very high. There were many options on the Internet where the data of Ukrainians came from: compilation from different databases with the addition of “Actions”, a stolen copy of data from one of the developers of Kitsoft (Kitsoft is a Ukrainian company that develops and implements digital technologies for government agencies and commercial organizations), or a simple provocation, as claimed by the state authorities. They emphasize that the application does not store personal data, but only displays what is already stored in the relevant state registers. However, the Internet did not agree with this either, as there is

evidence against the words of the Ministry of Digital Transformation of Ukraine. (“Leak or provocation? What is known about the probable sale of personal data of Ukrainians from “Diia”, 2022)

It can be concluded that even today it is difficult to say whether the data of Ukrainians is safe.

In connection with the martial law in Ukraine, new products were introduced in the application: services such as “eDokument”, “eEnemy”, as well as the possibility of contributions, donations to the army (first to the “Come Back Alive” fund, and then to the United24 platform), the ability to register the status of an internally displaced person, notify about damaged housing, the possibility of purchasing military bonds, etc. (“Digitalization during the war and new functions in “Diia”: interview with Mstyslav Banik, representative of the Ministry of Digital Transformation”, 2022)

As of May 2022, the application and the portal are already used by more than 17 million people. There are already 72 services available on the portal, and 9 services and 15 digital documents in the application.

By 2024, the government has set a goal to transfer 100% of public services online.

Thus, today Ukraine is one of the most digitized countries in the world. The main portal “Diia” has been rapidly developing since its launch, despite the external conditions that Ukrainians have faced recently, so in the future we will see it even more modernized and convenient.

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LOBBYING AS A METHOD OF INTERACTION WITH THE AUTHORITIES

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Lobbying is a legal form of influence on the legislative process by the widest range of social groups, which makes it possible to ensure the transparency of the political process. It provides methods of conflict resolution in interest groups, which contributes to the development of democracy and realization of public interests.

Lobbying activities enable legislators to take into account specific interests of certain population groups, which would not conflict with society as a whole, in regulatory acts. The second function of lobbying is to broadcast important information, analytics and separate opinions to officials, which allows them to make a balanced and socially beneficial decision.

Also, lobbying makes it possible to expand the circle of participants in the political process, which will prevent the state monopoly on making political decisions. Lobbyists play the role of an intermediary between society and government agencies by informing about each other's needs and informing officials about the development of one or another area. In this way, a higher legitimacy of the legislative process is achieved and the decisions taken by the parties have the most objective meaning, because they are based on facts and taking into account the interests of both parties. Lobbying arises with the appearance of corporate groups and becomes a tool for realizing their interests, parliamentary activity is not so much a factor in the emergence of lobbying as a phenomenon, but a field of its implementation (Syrunina, 2007).

The main problem of lobbying as a phenomenon of the political sphere of society is the development of the necessary legislation on the regulation of lobbying, the uncertainty of the legal construction of lobbying activity, which does not allow to distinguish it from other forms of political representation of interests. The next problem lies in the legislative regulation of lobbying activities, namely in determining the permissible limits of lobbying activities. It is necessary to clearly outline the base of means and methods of influence on state authorities, the circle of state authorities, in relation to which lobbying activities cannot be carried out. For example, the legalization of lobbying in judicial authorities is inadmissible, since judicial activity is carried out by persons with regulated procedural rights and obligations. The legalization of lobbying activities in the system of election commissions discredits the principle of representative democracy and control over the legality of the election process, which will entail negative consequences.

Despite the difficulties in its formation and development, the lobbying institute plays a key role in the political and legal life of the Ukrainian people. Lobbying is a fairly effective method of establishing the necessary interaction with representatives of the authorities. Despite the negative context of the perception of the institution of

lobbying, the creation of an effective regulatory mechanism can qualitatively eradicate corruption and ensure the access of the population and interest groups to the law-making process.

Relying on foreign experience can eradicate all problems and achieve absolute legalization of lobbying, which will reduce the level of corruption in the sphere of state relations (Musiienko, 2013).

Therefore, it is impossible to imagine a modern, legal system of the state without a properly functioning institution of lobbying. It is the international experience that gives impetus to the search for a high-quality way of legalizing lobbying, which will meet the requirements of modern democracy and guarantee the protection of the rights and freedom of citizens, satisfying their needs.

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INTERNATIONAL LEGAL METHODS OF COUNTERING INFORMATION WARFARE

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In the modern world, information technologies affect all spheres of social life: economy, politics, medicine, education, etc., as well as the personal space of each individual person. Almost all achievements of civilization, information technology can be used both for the common good and for harm. A new cyberweapon has appeared that can imperceptibly destroy the information infrastructure of an entire state. Moreover, a number of countries (Estonia, Iran, Germany, the USA and others) have already experienced cyber attacks. Back in 2010, the British magazine "The Economist" called cyberspace "the fifth domain of warfare, after land, sea, air and space" (The Economist, 2010).

Defining the concept of "information war" and creating the appropriate international legal regulation is an extremely difficult task, especially since the attention of scientists until recently was mainly focused on the problems of preventing cyberattacks by private groups.

After analyzing the opinions of scientists and the essence of this phenomenon, we consider that information war is a state of emergency caused by actions violations of information security and are aimed at the information itself (change and distortion,

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addition of new or destruction of old), with the aim psychological impact on the population of the state, as well as on the information infrastructure and means of information processing of another state with the aim of disrupting the normal functioning of information systems, provoking difficulties in the work of authorized users.

As for the international legal regulation of information warfare, it is worth noting that the legally binding documents in the field of cyber security are the Convention on Cybercrime or Budapest Convention (The Council of Europe, 2001). Ukraine ratified the Convention in 2005 (Verkhovna Rada of Ukraine, 2005). The specified document is actually the first successful attempt to settle the issue of information security, but its main purpose is to establish the legal basis for combating criminal crime, but not to solve the problem of introducing international rules and requirements in the conduct of information wars.

Regarding the national level, it is worth considering the US cyber doctrine. The Pentagon's position is that the United States, in the event of a coordinated cyber attack on government or military information systems, the banking and financial sectors, electronic air traffic control systems, hydroelectric power plants, public utilities, or other similar targets, has the right to self-defense. The US may take any necessary action in response to a hostile attack, including similar cyberattacks on foreign targets. However, the use of such measures requires the approval of the President of the United States (Roscini M., 2015).

To date, states have not reached an agreement on the creation of special legally binding mechanisms for countering information wars, neither at the universal nor at the regional level. Despite the urgent needs of modern times, even general approaches to ensuring the information security of states are not agreed upon.

Although individual models of international legal regulation can be adapted to the problem of information warfare, they are unable to provide a comprehensive legal mechanism in this area. The efforts of the international community should be aimed at concluding a special international agreement and creating an appropriate international legal regime for the prevention of information warfare and countering information aggression.

Currently, it is mandatory to create an appropriate international legal regime for the prevention of information war and countering information aggression and the conclusion of a special international agreement, which should contain the following provisions: 1) normative definition of the terms "information war" and "information aggression"; 2) the prohibition of deliberate enemy propaganda and the use of cyber weapons and the responsibility of states for such actions; 3) determination of which state (victim or alleged aggressor) must prove guilt (or innocence) in perpetrating an information attack; 4) grounds for using cyberattacks in response and the limits of permissible self-defense. A counterattack should be allowed only if other countermeasures fail; 5) the obligation of states to establish responsibility and apply its measures to persons who deliberately (and if it is impossible to prove deliberate distortion of facts, repeatedly) spread false messages hostile to another state. If the state does not do this, the fact of the information war should be recognized and responsibility should be placed on the state.

To counteract the information war, a special non-governmental structure like ICANN – the Internet Corporation for Assigning Names and Numbers can be created. ICANN is a non-profit organization responsible for the global coordination of the system of unique IP addresses, its stable and secure functioning. Such an organization could assume certain responsibilities for detecting malicious cyber activity on the Internet, its expert independent assessment and blocking if necessary. An independent arbitration shall be established to resolve disputes that may arise in the event of the termination of certain users. If there are no suspicions against the state, cases can be tried in national courts.

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STUDENT'S MENTAL WELLBEING IN EDUCATION

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Until adolescence itself, educational institutions occupy a central place in a person's life. This is not surprising, because five days a week we spend most of the time there, and for another two days think about how to make the next week easier. However, the role of educational institutions is not limited to the academic one. This became especially clear with quarantine isolation due to COVID. As it turned out, the mental health factor is no less significant in the development of adolescents than children. This seemingly simple fact has important implications for the operation of any university. In particular, in addition to expanding the scientific and academic base, universities should be concerned about providing a productive and safe environment in which students will improve in the same way as at lectures and practices.

One of the important environmental metrics that is not directly related to learning is stress. The level of stress of a learner is influenced by many factors, the most significant of which is academic performance, because the whole future of a person depends on it. If you think about it, a heavy burden in the daily life of a student - that is exhausting self-improvement without a vision of the final result and with no guarantee of a good, prosperous life. In addition, each student has to deal with deadlines, difficulties in mastering the material, and the human factor on the part of

teachers. It is evident that education is a stressful process, and universities cannot provide education without addressing the related problem of student stress.

Here is an example of how educational institutions link student well-being with the productivity of the educational process. Schools have determined that hunger reduces concentration and attention, so they have developed a solution in the form of regular lunch breaks. Since a cluttered or troubled mind cannot focus on learning, many schools are becoming interested in addressing this aspect of wellbeing. But besides the obvious link between stress and academic performance, there is a less pronounced, but indirectly even more important correlation between stress and mental health (“Mental health”, 2022). Problems such as depression, anxiety and suicidal thoughts only grow stronger in a hostile environment, and without timely intervention can lead to consequences for life. This fact is due to the connection between mental health and mental functions. But it should also be noted that there is an inverse relationship – between a safe environment and academically beneficial consequences. Namely: lowered risk of suicide and self-harm; increased resistance to mental conditions like depression or anxiety; more mindful behavior, which reduces the risk of violence and the development of alcohol or drug addictions; productive use of cognitive and mental faculties, which promotes academic achievement and reduces the risk of expelling; active participation in university life (Zada, Wang & Gul, 2021).

Based on the previous statements, we will justify the conclusion reached by many educational institutions.

- 1) A person spends a significant amount of time at the university
- 2) While learning a person experiences severe stress for long periods of time, which puts him at risk of acquiring or exacerbating mental conditions
- 3) Mental health is directly related to academic performance and vice versa.

Therefore, it was only reasonable to think about early mental health diagnosis and potential safeguards for students' wellbeing (“School based mental health”, 2019; “Mental health in schools”, 2022).

To conclude, a student's mental wellbeing determines their academic performance and excellence in life. Being a very influential environments, many universities decided they must provide safe learning conditions and mental health supervision in addition to academic services. These conditions include, but are not limited to, easy access to professional organizations, mental health awareness and the services of a professional university psychologist.

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SCIENTIFIC AND TECHNICAL COOPERATION BETWEEN UKRAINE AND CHINA IN GLOBALIZATION

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Globalisation has made it possible for countries to interact not only with their neighbours, but also to have various types of relations with states located at great distances from them or even on other continents. An example of such interaction is Ukraine's cooperation with the People's Republic of China in the field of science and technology. The mechanism that implements this interaction consists of the Commission for Cooperation between the Government of Ukraine and the Government of the People's Republic of China, which was created in 2011, as well as a number of specialised Subcommittees, the history and work of which I propose to investigate in detail.

First, the Subcommittee will be considered, which develops cooperation in the scientific and technical sphere. It was created as a replacement for the Joint Ukrainian-Chinese Commission, which operated from 1997 to 2010. During its existence, 98 projects were financed, which were part of two-year cooperation programs. Priority areas of cooperation were determined: aircraft construction, shipbuilding, development of aerospace technologies. In 2017, the First Ukrainian-Chinese Scientific and Innovation Conference was held, where the Cooperation Agreement between the Academy of Sciences of Shandong Province and the National Academy of Sciences of Ukraine in the field of scientific and technical cooperation was signed. In 2018, the third meeting of the Subcommittee was held, where a new program for 2019-2020 was approved, in which it is assumed that Chinese funds will finance Ukrainian institutions. That is, the work of this sub-commission shows that China is ready not only for scientific cooperation with Ukraine, through the cooperation of scientific academies, but also that it can invest in the scientific and technical sphere of our country (Embassy of Ukraine in the People's Republic of China, 2022).

The second Sub commission, dealing with cooperation in the space industry, was created to replace the Sub commission, which was active in the field of use and research for peaceful purposes of outer space, which was active from 1997 to 2010. I will cite only some meetings of the Sub commission, because I believe that the results of others in comparison to these are much smaller, and therefore almost did not change anything in the cooperation of the two states. At the third meeting of the Sub commission held in 2016, the fourth Program of cooperation in the space industry for 2016-2020 was adopted, this program contained more than 70 promising areas of cooperation. On October 22, 2020, the sixth meeting of the Subcommittee was held, where the Program of Ukrainian-Chinese cooperation in the space industry for 2021-2025 was adopted, it contains 69 joint projects. The work of this subcommittee shows that relations in the space industry between China and Ukraine are stable and have the potential to expand (AUCC Association of Ukrainian-Chinese Cooperation, 2021).

The Third Subcommittee cooperating in the field of medicine, in my opinion, achieved results on October 27, 2020, during the fourth meeting, where they agreed on cooperation in the field of cardiology and cardiac surgery of medical institutions of the two countries.

Based on the above, cooperation between Ukraine and China is currently at a transitional stage from the creation of cooperation projects to their implementation. This also proves that the amount of direct foreign investment from China to Ukraine for 2020 amounted to 260 million dollars. According to CES research, over the past 5 years, the volume of Chinese investments has increased more than five times, that is, from 50 million dollars. in 2016 to 260 million dollars. in 2020. An example of this is the state-owned Chinese company CNBM - the owner of the largest share in the field of renewable energy. But, in my opinion, although cooperation is growing at a fairly good pace, if we compare China's investments in other countries, it is small. I believe that the main problem that does not allow cooperation to develop at an extremely fast pace is Ukraine's desire to increase cooperation with Western countries, for example, the USA. First, it diverts resources from cooperation with China. Secondly, since China competes with the USA, it is afraid to invest in our country, which can become an ally of the USA, that is, its competitor. Therefore, Ukraine needs to interact more actively with other states, except the Western ones, which will give more benefit in its development.

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WHY DO PEOPLE READ THE BOOKS AND WHY IT IS SO POPULAR?

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Many believe that the modern young generation, in the vast majority, is not interested in literature. This opinion is primarily caused by the rapid development of computer technology, which provides access to any information, facilitates the possibility of virtual communication and the presentation of a large list of various entertainment. There is a stereotype that many young people are addicted to gadgets, and unlike previous generations, have little interest in books. However, fortunately, this is not the case. Nowadays, the publishing industry is quite developed. More and more teenagers and young people are fond of reading and popularizing books. There are many young authors and, accordingly, new interesting works.

The young generation always strives for development. Despite the popularity of virtual reality, progressive young people are well aware that reading literature is not only in trend, but also a significant training for different parts of the brain. By reading, we develop our analytical abilities. It fires our imagination and stimulates the memory centers of the mind. In turn, it helps to recall information, as well as stabilize emotions, develop oratory skills, etc.

In addition, books help to find oneself. They work as portals to new worlds. Books can shape our attitudes towards others and life, and open up new ways of thinking about everyday life.

One of the main reasons why people enjoy reading is that books can be the perfect escape from reality. They can cheer us up when are upset, motivate us when we are sad, and even keep us company when we are alone.

Having conducted a survey among people aged 14 to 19 on the topic "Reasons for reading books?", I received the following results: 34,9% of those who reads books said that most of all they like the entertainment value of reading, good and interesting stories, a good plot, 27,9% chose the pleasure of reading, the same number said that the reason was relaxation while reading and spending time in silence. 25,6% said that they like the physical properties of books – their feel and smell. 18,6% of respondents reads for self-development, and 14% chose the option to learn, gain knowledge and discover information. 9,1% indicated their reasons. (Somova Y. 2022)

Also, the popularization of various books in such a social network as TikTok, which has rapidly gained popularity among users of all ages around the world, has become a way to spread reading. The platform for demonstrating short videos allows you to expand the range of hobbies, give free rein to imagination and show acting talents. And also to exchange impressions about books.

At the beginning of last year, a large-scale increase in the popularity of videos in which users recommend books began. And at the moment, videos with the hashtag #BookTok have a total of 86,2 billion views. This is another evidence of the growing

popularity of books. Thanks to these videos, you can learn about new books from around the world, about their content and characters, etc.

The TikTok network has become a kind of ideal platform for the distribution of various books. Therefore, on the covers of some of them you can often find the inscription “TikTok sensation”.

According to the 2022 reading statistics, the most popular category of fiction is young adult, followed by fantasy novels, children`s fiction, literally fiction, science fiction and thrillers. Romance took 9th place out of 10 on the list. (Errera. R. 2022)

Among the most popular genres of documentary literature: memoirs, self-development, stories, religion/spiritually, cultural/social issues, biographies. (Errera. R. 2022)

Summing up, it can be noted that the popularity of reading literature among the younger generation is gaining momentum again. Of course, with the development of modern information systems, this hobby has been somewhat transformed.

Nowadays, many people stare at texts tucked into a convenient “reader” or just on their mobile phones – and these are people of all ages, but still mostly young people. So there is a kind of paradox: the same new technologies and the Internet attract people to reading.

But in fact, perhaps the greatest role, as always, is played by the eternal factor – the education that a young person received from parents. If they managed to instill in a child a love of reading – he or she will read no matter what. And still he will hear throughout his life the thesis “Modern youth reads little”.

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CURRENT PROBLEMS OF FIGHTING CORRUPTION IN UKRAINE

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Corruption is one of the most dangerous phenomena for society and the state. It undermines the authority of the state apparatus and the civil servant. Destroys its basic principles: equality of citizens before the Law, Justice, impartiality of justice, protection of a person by law enforcement agencies from various kinds of illegal encroachments and arbitrariness of officials. In addition, corruption causes significant economic and political damage to the state.

Almost all researchers of corruption, legal scholars, philosophers and sociologists determine its essence, based on the fact that corruption cannot be reduced to primitive bribery or other offense. In many encyclopedias and dictionaries, the ***Social Sciences***

definition of corruption is given as a literal translation from Latin “corruption” – “corrosion, corrosion, destruction.”

We believe that in modern conditions this problem becomes particularly acute and necessary for scientific analysis, because the state continues the processes of reforming the law enforcement system and at the same time reforming and developing the Armed Forces of Ukraine.

It should be noted that a prerequisite for the effective functioning of law enforcement agencies, high-quality performance of the tasks assigned to them by law, compliance by officials of these bodies with the rule of law, and ensuring law and order is a clear legal regulation of their activities. After all, according to Article 19 of the Constitution of Ukraine, the legal order in Ukraine is based on the principles that no one can be forced to do something that is not provided for by law.

The formation of Ukraine as an independent, democratic state determines the need to counteract social phenomena that negatively affect the development of public relations and pose a threat to the existence of principles inherent in a state governed by the rule of law. One of these dangerous phenomena that hinders the proper development of any state is corruption, because it creates serious obstacles to establishing normal relations in the legal, political and other spheres of public life (Harashchuk & Mukhataiev, 2010).

Summing up, we would like to note that today in Ukraine the authorities are effectively fighting corruption and trying to get rid of it. Our government is able to resolve this issue both in the middle of political organizations and in the middle of the state mechanism.

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INTERNATIONAL HUMANITARIAN LAW

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International humanitarian law is a body of rules whose purpose is to limit the consequences of armed conflicts in the humanitarian field. It is sometimes also called the law of armed conflict, or the law of war (*jus in bello*). Main goal of IHL is the limitation of the means and methods of warfare which can be used by the parties to the conflict, and providing protection to persons who do not or no longer take a direct part in hostilities, and humane treatment. In short, IHL includes rules of international law that establish minimum standards of humanity that must be respected in any situation of armed conflict.

The purpose of IHL is to provide protection to victims of armed conflicts and regulate military actions based on the establishment of a balance between the military

necessity and humanity. International humanitarian law must be distinguished from legal systems that may apply simultaneously with it, but which have different objects and purposes, for example from the UN Charter, the law of neutrality, human rights law and international criminal rights. Warring parties must comply with their humanitarian obligations under all circumstances - regardless of enemy behavior and the nature or causes of the conflict. Although International humanitarian law is today one of the most detailed codified and widely ratified industries of international law, its norms can be derived from custom, and general principles of law.

Recent developments and developments in politics, social life, economics and technology challenge major achievements and rigorous implementation of the IHL.

International humanitarian law is based on a balance between considerations of military necessity and the demands of humanity. On the one hand, it is recognized that, in order to defeat the enemy in time of war, military necessity may require killing, injuring and causing destruction, as well as taking more severe security measures than is permitted in peacetime. On the other hand, IHL makes clear that military necessity does not provide the belligerents with a *carte blanche* to wage an unrestricted war. Considerations of humanity impose some restrictions on the means and methods of warfare and demand that those who fall into the power of the enemy side be treated humanely at all times. The balance between military necessity and humanity finds more concrete expression in a number of basic principles summarized below.

The cornerstone of international humanitarian law is the principle of distinction. It is based on the recognition that the only legitimate aim that states should have in time of war is to weaken enemy military forces", while "the civilian population and individual civilians enjoy general protection from the dangers arising from military operations. Therefore, parties to an armed conflict must always distinguish between civilians and combatants, as well as between civilian objectives and military objectives, and accordingly direct their actions only against military objectives (Meltser, Kaster, 2017).

If we do not follow the simple rules of war, chaos will come into the world and will destroy humanity.

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ANALYSIS OF STATISTICAL DATA ABOUT AN IMPACT OF SOCIAL MEDIA ON UKRAINIAN TEENAGERS PSYCHO

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The internet is one of the brightest signs of the twenty-first century. It is obvious that with its appearance, as during every scientific and technical revolution, life has undergone irreversible changes. And our task is to investigate all risks and to become

able to adapt to reality as good as possible. For the last twenty years, social media has occupied a serious place in the life of every citizen of Ukraine, especially teenagers. Identifying their impact on psychological health will help create recommendations and prevent the formation of destructive situations in everyday life.

The number of people who use social media constantly increases. As of January 2020, the global social media usage rate stood at 49 percent. Market leader Facebook was the first social network to surpass one billion registered accounts and currently boasts approximately 2.7 billion monthly active users, making it the most popular social network worldwide (“Number of worldwide social network users 2027 | Statista”, n.d.).

In our own analysis 34.4 percent of asked people had registered their own profiles in social media from 6 to 9 years old. And the positive sides of it is a field of wide discussion. For one side it is normal because of more flexible and accelerated development. On the other side, the Internet is a less controlled system of information transmission. About 37% of young people between the ages of 12 and 17 have been bullied online. 30% have had it happen more than once (“Cyberbullying Data 2019 - Cyberbullying Research Center”, n.d.). Young people who experience cyberbullying are at a greater risk than those who don't for both self-harm and suicidal behaviors (“Self-Harm, Suicidal Behaviours, and Cyberbullying in Children and ..”, n.d.). Also, there are a lot of types of cybercrime: online drug trafficking, cyberstalking, identity theft etc. (“What is Cyber Crime? Types, Examples, and Prevention ..”, n.d.).

A colorful and at first look more interesting world, quite attractive for young persons. 65.6 percent sometimes and 21,9 always procrastinate by "sticking" in social networks. It is caused by undeveloped and unstable self-discipline at a young age. Also, 15.65 percent admitted that communication online is more comfortable for them than in real life. And if this tendency will grow up, we face the problem of socialization. If we assume the reasons with which this is connected, then being "behind the screen" people are more open and carefree than in real life because they do not feel pressure from the interlocutor, have more time to think about the answer and, in general, feel more secure and free.

The problem of dependence on social networks is acute. 21.9 percent of teenagers pay attention to social networks more than 6 hours a day. 9.4 percent of respondents confirm that they neglect healthy sleep because of the desire to watch once more videos on YouTube or to continue chatting with someone. Prolonged sleep loss may negatively affect emotional development, increasing risks for interpersonal conflict as well as more serious mental health problems. Mental health disorders like anxiety, depression, and bipolar disorder have routinely been linked to poor sleep (“Sleep for Teenagers | Sleep Foundation”, n.d.). 50 percent check the news on the Internet in the morning, immediately after waking up. It turns out that our brain processes new information of varying degrees of harmfulness almost around the clock, and this also leads to the problems mentioned above.

Another problem is rapid loss of concentration. Microsoft found that since the year 2000 (or about when the mobile revolution began) the average attention span dropped from 12 seconds to eight seconds (“You Now Have a Shorter Attention Span Than a Goldfish | Time”, n.d.). Also it depends on new opportunities of the rapid

release of dopamine and serotonin - the hormones of pleasure and happiness, for example while we are watching shorts videos.

Of course, social networks have many positive aspects, too. The report says our ability to multitask has drastically improved in the mobile age. Or 65.6% of people from 12 to 18 ages confirmed that social networks are a platform and a way for their self-realization. But in order to optimize their use as much as possible and reduce the risks of bullying, addiction or other problems mentioned above, we need to develop a convenient education mechanism. We also need rules of conduct for the healthy use of new tools (social networks) that have appeared in our lives.

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CHARACTERISTICS OF THE PSYCHOLOGICAL LEVEL OF THE VALUE OF HEALTH

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If the issues of health prevention, strengthening of the body's defenses and treatment of diseases have been in the field of attention of traditional medicine since ancient times, then our ideas about the essence and ways of ensuring health related to the psychological level cannot yet be recognized as satisfactory. Health at this level is one way or another connected with the personal context of consideration, within the framework of which Man appears as a mental whole. The more harmoniously and combined all the essential properties, components of the personality, the more stable, balanced and able to counteract the influences that seek to disrupt its integrity. Well-

being in a person's mental health can be disturbed by the dominance of certain negative character traits, deviations in the moral sphere, and so on.

Data provided by many researchers show that the number of people who do not have any mental disorders, that is, completely healthy, is approximately 35% of the population. The results of many studies and facts show that the individual and psychological properties of a person are one of the most important factors, that affect the state of human health. The described personality types are prone to diseases of a certain type, depending on the characteristics of behavior, which differ in the degree of risk of occurrence of diseases characteristic of them.

Type A: prone to cardiovascular diseases People of this type are characterized by impulsivity, impatience, the desire to do everything in time, uncompromising, ambitious, inability to reduce activity, conflict, irritability.

The opposite type is type B: They are not prone to competition, slow and calm, compare their opportunities with harassment, have a balanced view of life and are realistic in their endeavors.

The last type is type C: they are prone to oncological diseases and are characterized by high sensitivity to stress, unable to relieve negative emotions and relieve tension (Kotsan, Lozhkin & Mushkevych, 2011, p. 8-12).

As a summary, examining health at the psychological level shows that if a person lives in constant discomfort, a state of anxiety, insecurity, lack of fulfillment, internal conflict, he self-destructs. Therefore, it is not surprising that about 80% of all diseases are classified as psychosomatic, that is, those arising as a result of mental disharmony.

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PHYCOLOGY OF MUSIC PREFERENCE

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Every man to his own taste. But what determines this very taste? Why do children who grow up under the same roof have different preferences? Or why people from different parts of the world can be united by one composition? What are the reasons?

The problem of studying musical taste is very complicated. The music itself is often used for a variety of purposes. In the modern world mostly it is being used for aesthetic pleasure. It is important for an ability to inspire for a dance and physical movement. Many people use music to regulate and improve their mood, especially teenagers. Music is used to divert attention from troubles, reduce feelings of loneliness. It is no less important to use it as a group self-determination. Young people tend to listen to the music their friends listen to, which helps define their social identity. Other

uses: to increase concentration, motivation, preservation and transmission of oral knowledge, rituals and religion, etc. What we use music for inflicts our taste.

The modern scientific view is that musical preferences are manifestations of psychological traits. It is important to understand that these preferences interact with all different life experiences. A theory has been put forward that people prefer a musical environment that reflects their attitudes and emotions and helps them express themselves as a personality.

Another significant limitation is related to the understanding of the term musical genre. This is a problem because a genre is an extremely broad concept. Therefore, results for studies, based on the evaluation of genres are very rough and imprecise. Not all songs fit into one genre, moreover, some genre categories are not applicable to some pieces.

In the end, all kinds of causes lead to conflicting results. This complicates the systematization of the results of different approaches and studies.

To begin with, musical preferences depend on a mood. People in misery tend to prefer melancholic compositions, while those in a good mood tend to prefer loud and rhythmic. People with aggressive disorders consider music to be a powerful emotional outlet. In addition, it is important what feelings people attach to music, whether they have associations with it. If people listen to a certain type of music and develop an emotional experience not only for the songs, but also for the genre, it greatly increases the amount of enjoyment they get from the music. This you can also tell, observing people, listening to music they have heard as kids. They have especially strong emotions towards the music their parents were listening to.

In a study of whether there are correlations with gender, regarding music preferences, researchers figured out that men have a greater preference for bass music than women. An interesting fact, the same applies for people with antisocial and borderline personality disorders. In the meantime, women are more likely to react more expressively and emotionally.

Culture is always of a big importance with how music is perceived, especially in a social context. Listening to traditional music in a company of the same cultural group can help establish greater movement predictability, which can lead to greater movement synchrony, further enhancing the sense of group bonding and enjoyment of the music.

Preferences tend to change with age. At an older age, people choose more calm and complex music, which correlates with their experience and an everyday rhythm of life. It is also very interesting how teenagers, who prefer heavy music are more likely to show low self-esteem, have tense relationships within a family, and often do not receive a needed response to their requests and needs. Their peers, who prefer light music have problems with self-determination, it is difficult for them to build independent behavior.

What also matters is how a person wants to be perceived. Especially that goes for men. Frequently, music is used to build self-esteem or acquire a certain mood or state. Music, as well as appearance, is a signal-message to others about ourselves.

The time of year can also influence preferences. More complex music is associated with cold temperatures. Meanwhile, energetic and rhythmic music sounds

more appropriate in warm seasons. Nonetheless, pop music is rather universal at any time.

Familiarity and complexity have interesting effects on musical preferences. People like difficulty up to a point, but when it gets too overwhelming, it gets on the nerves. In addition, people are more likely to sympathize with something they are already familiar with.

In conclusion, this topic is not yet fully explored. There are a certain patterns by which we not only intuitively determine the musical preferences of others, but also deduce them as theories. However, due to too many variables and the lack of reliable specifics, it is problematic to conclude anything certainly. There is an unambiguous answer to the question why we like this or that, but it is complex. This is probably why scientists are tirelessly trying to unravel this secret.

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HOW TO OVERCOME THE MENTAL BARRIER THAT PREVENTS YOU FROM STUDYING

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Pupils and students constantly ask themselves the question of how to maintain the desire to learn and not create mental barriers that will hinder learning. The purpose of this article is to understand the essence of this problem and how to solve it.

First you need to understand what this psychological barrier to learning consists of. It is usually a combination of insufficient self-discipline and excessive laziness. That is, we need to simultaneously reduce laziness and improve our self-discipline. How to do this? Let's define our motivation: write the goals that you want to achieve thanks to studying at the university.

The second but no less important fact that can create this barrier is insufficient self-organization. We are all human and we do not have an infinite charge of energy, so we need to use it effectively and replenish it in a timely manner. Create a clear schedule for yourself, which will give you an understanding of when you need to focus on work as much as possible, and when you can rest.

You also need to understand that it is better to work efficiently and focused on one task than to divide your attention into multitasking.

Кількість одночасних проектів	Відсоток часу для кожного проекту	Втрати через перемикання контексту
1	100 %	0 %
2	40 %	20 %
3	20 %	40 %
4	10 %	60 %
5	5 %	75 %

You can use the SCRUM technique, which is based on sprints, which help to complete the task as quickly as possible, thereby the body will receive a dose of dopamine that will charge you with energy and motivation to solve the next tasks.

Also, an important tip is not to overwork, since the effectiveness of this action is close to 0. Instead, try to do everything in the time allocated in your schedule for work and leave time for rest.

Summarizing these tips, be sure that applying these tips will turn your learning process into a comfortable and enjoyable process.

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PECULIARITIES OF EMOTIONAL BURNOUT SYNDROME OF DOCTORS

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Given the fast pace of life, people are exposed to a significant influence of various stress factors, which leads to emotional or professional burnout. Of course, workers in the medical field are one of the most vulnerable groups due to the high level of stress in their work, associated with high responsibility for the life and health of other people.

The occurrence of burnout syndrome is primarily related to the accumulation of negative emotions during work. It is characteristic of people who are excessively devoted to their work, while neglecting their personal life. It can be diagnosed based on various physiological and mental reactions. This phenomenon in medical workers has been the object of research by various specialists, because it is a fairly common problem. In particular, more than 70% of cases of this syndrome have been recorded in medical workers.

Symptoms can be conventionally divided into three groups: psychophysical, socio-psychological and behavioral. It is quite clear that psychophysical ones are related to changes in the work of the body, social-psychological ones are related to the emotional sphere, and behavioral ones are related to the general attitude to work.

By the way, this problem is more often faced by general practitioners, such as dentists, ophthalmologists, and not the same surgeons or traumatologists, because the work of the former is more related to communication with patients, which is very often emotionally stressful. Moreover, the causes of the syndrome can be a high level of responsibility associated with the work of doctors, excessive workaholism in the absence of a positive evaluation of the employee's activity and support, emotional oversaturation, etc. Among the internal factors is the personality type of the doctor. Predisposed to the development of this syndrome are mainly emotionally cold people who find it difficult to divide time between work and rest (Bodrov, 2006).

In general, according to Boyk's classification, three phases of emotional burnout are distinguished, which include anxious tension, resistance, that is, resistance to this anxiety, and exhaustion. A study conducted in 2012 at the Cherkasy Regional Hospital proved that the majority of doctors suffering from emotional burnout are in the second phase, that is, resistance. In addition, a correlation was observed between the fact that men are more often in the exhaustion phase, while women are in the resistance phase. The relationship between the age of professionals suffering from this problem was also noticed. These are primarily young specialists due to their inexperience and insufficient work experience and specialists with more than 25 years of experience, which can be explained by an even greater increase in responsibility and complexity of operations. In addition, anesthesiologists and gynecologists have the most pronounced symptoms, and endocrinologists have the least.

Of course, the presence or absence of emotional burnout affects the quality of work performed by doctors. Specialists who do not have this syndrome have a pronounced tendency towards professional success and an effort to solve problems that arise during work. Doctors with pronounced symptoms, on the contrary, are dissatisfied with their career development and realization in the chosen field.

There are some recommendations to avoid this syndrome. Many of them are related to finding interests that are not directly related to the work of a doctor, such as conducting various studies, participating in conferences where there is an opportunity to exchange experiences with different people, or even walking in the fresh air. It is also important to learn to maintain a stable self-esteem that will not depend on criticism from the environment.

So, the syndrome of emotional burnout is characteristic of specialists of various fields, but, nevertheless, one of the groups most prone to it are workers in the medical field. This is easily explained by the high level of tension that always accompanies their activities. But for this, special techniques should be developed to prevent the occurrence of this syndrome, because the presence of this syndrome significantly affects the professional activity of doctors.

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WAYS AND METHODS OF ENSURING THE COMPETITIVENESS OF THE ENTERPRISE

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Competitiveness is the actions of people in certain enterprises, firms that help and ensure the level of sales, showing and convincing customers, first of all, with good quality products and that their production is the best of all others. I believe that nowadays competitiveness plays a bigger role in certain enterprises than in the past. Why is it so? In my opinion, at the moment, many different companies, firms, and businesses in general are being created, so competitiveness is one of the important factors in them. It creates a good consumer opinion and encourages the purchase of a certain product in the company that has a well-built system of competitiveness.

City Competitiveness Index, 2019-2022



The competition is the most important link in the whole system of market economy. First of all, it depends on customers who need something more and create new requirements with each period, as well as on other enterprises that also cope well with competition. In my opinion, we can distinguish such methods to ensure competitiveness as:

- taking into account all the requirements of the customer; (that is, the specialist must convey to the production, which products are in greater demand among consumers);
- market analysis of various competing companies; (the specialist must analyze the market of all companies with which there is competition and provide his company with the best factors);

- quality and attractiveness of products; (the most important task of manufacturers is to introduce products that will be of high quality and reduce the requirements for it);
- objective price; (also specialists should analyze the prices of other competing enterprises and choose the price that is suitable for all consumers and will not bring losses to the budget of their own enterprise);
- marketing factors of sales growth and demand for goods; (these factors should influence the population and encourage them to buy the company's products).

The level of quality of prices for certain products is probably the most important component of ensuring the competitiveness of enterprises.

In order for the company to be one of the best, it is necessary to create and implement something new, to spend money on new equipment. I believe that this will raise the company to a new level and customers will be interested to learn about the new product. This will give the company an increase among other competitors and if it is an extremely high-quality product that customers really need and will be useful for them, it will affect the economy of the enterprise.

The money that the company will earn from the sale will go to reimburse the funds that in the past were spent on equipment, materials, etc. This will be a kind of circulation of the company's economy. The main thing in this activity is to analyze the products that are in the greatest demand, to research and bring them to the market. Then all these actions will ensure the competitiveness of the enterprise, as well as improve the economy of the enterprise.

There are some examples of the ways of competitiveness of the company called "Apple". This company is now very famous not only in Ukraine, but also around the world. "Apple" develops various equipment (phones, computers, headphones, etc.). It is very promising and, in my opinion, among all competitors in this field, it is the best company. Why is this so? Because it does not focus on any one product, but tries to create something new in a short period of time. It does it best because its products are of high quality according to consumers, and the company creates an interesting product that encourages people to buy it. If we talk about the price, it is the only disadvantage of the product, because it is not objective in the market and not everyone can afford it. In general, the company adheres to the ways and methods of ensuring competitiveness, which are given above. Therefore, it is the first in the market of competitors.

In conclusion, the ways and methods of ensuring competitiveness can be different for everyone, as well as the concept of "competitiveness" for different theorists, economists, researchers, such as Y.B. Rubin considers the competitiveness of an entrepreneurial firm "as the ability of this firm to use the aggregate competitive potential to fight against rivals and achieve competitive advantages".

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ROLE OF WOMEN IN IT

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Women have played a significant role throughout history, from Ada Lovelace to Marissa Mayer.

Women in IT have one global problem: our society believes that women are not smart enough and different from men to have certain achievements in computer technology and programming. The Internet can be called mostly male: only 15% of women visit it (information for 2008). The gender imbalance on the Internet is quite acute: 12% fewer women than men use the global network in the world (Women in computing, 2022).

Women have made a great contribution to the development of information technologies. Now a little more about these exceptional women who made our stay so much easier:

Ada Lovelace described an early version of Charles Babbage's general-purpose computing device, the Analytical Engine. She wrote the first program (for this machine) and introduced the terms "loop" and "work cell".

Actress and inventor Hedy Lamarr, together with composer George Antheil, developed the Secret Communications System technology, which formed the basis of public mobile communications, Wi-Fi, GPS, and Bluetooth.

In 1952 Grace Hopper developed the first ever compiler - A-0, and in 1957 she created the first compiler for data processing using English commands B-0 (FLOW-MATIC), used mainly for payroll calculations.

American developer Erna Schneider Hoover developed a program for situations when there are a lot of calls, and you want to leave everything so as not to go crazy. The first software patent was granted for their invention "Feedback Control Monitor for Program Stored Data Processing System". Erna herself was the first woman to lead the technical department at Bell Labs. Their development is still used today in telecommunications devices.

Kateryna Yushchenko developed the concept of a formal language of Address Programming, where operations with computer addresses were introduced in the form of a mathematical formalism (such as taking a value by address: "stroke operation") (Yushchenko, 2022).

In 1959, Mary Allen Wilkes, while working at MIT, worked with computers such as IBM 709 and TX-2 (1959-1963). At that time, she developed various operating systems for LINC in the English Instrumentation Computer Laboratory, with the name LAP (operating system), the English assembly program for LINC (the first minicomputer), until the evolution to LAP6.

Karen Spark Jones tried to prove that women are not inferior to their male colleagues in terms of intelligence if only they are given such an opportunity to implement their ideas. The inventor specialized in language and information processing at Cambridge. Her dissertation on "Synonymy and Semantic Classification" in 1964 was far ahead of the scientific achievements of the time.

The novel "Uncle Roger" by Judy Malloy was the first online project with hypertext links.

The word "web surfing" was coined in 1992 by New York librarian Jean Armour, who later wrote books about how to stay safe on the Internet.

But time doesn't stand still, women are fighting for more and more couples and breaking stereotypes even more. For example, James Damore was fired from Google in 2017 after saying there was a biological reason for the low number of female computer scientists (Matviyev, 2022).

In summary, women have done a lot for the development of the Internet and computers in general, because intelligence does not depend on gender. Every year, the number of female Internet users and programmers increases, thanks to which we successfully fight against stereotypes and provide women with more development opportunities.

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POLITICAL SCIENCE

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Power is one of the fundamental beginnings of human society.

The reasons for its appearance were: the need for self-preservation of society, the need to the continuation of the human race, the need for the collective nature of work, personal preferences of people in certain spheres of life. Power is one of fundamental foundations of the political development of society. She has a legal economic, spiritual and ideological character, exists wherever there are any association of people (family, tribe, state), closely related to the political sphere, is a means of implementation and a way of approving a certain policy. The field of political the science that studies power is called craniology. A significant contribution to development theories of social power were made by M. Weber. The concept of state power is much narrower than the concept of political power.

SPECIFICITY OF STATE AUTHORITY:

- state power arose later than political power (which arose in the pre-state era).
- any state power is always political, although not every political power is state power (for example, the power of parties, movements, public organizations).
- only it has a monopoly on coercion, the right to issue laws, etc. (the state power does not necessarily use coercion to fulfill its instructions, but can also achieve its goals by other means - economic, social, ideological, etc.).
- state power is divided into legislative, executive and judicial and is carried out with the help of a special apparatus;
- extends to the entire territory of the country;
- functions according to the political-mepumopial principle: it does not recognize any gender differences, but fixes the population to a certain geographical territory and turns it into its subjects (monarchy) or into its citizens (republic);
- state power - sovereign, i.e. supreme, independent, complete and indivisible within state borders and independent and equal in external relations.

"State power and the state cannot be equated, they are not the same thing. State power is a way of leading society, and the state is a way of organization 20 society. State power is a sign of the state, its necessary element as systemic education. The state

is the organization of society as a whole, managed by a special apparatus of power, which extends to the entire population of the country and its territory"

FUNCTIONS OF STATE AUTHORITY:

- developing a state management strategy;
- development and adoption of detailed decisions on the main areas of state development;
- operational management and regulation of social processes;
- control over the most important parameters of stability and direction of society's development. . All that related to the manner in which power is established. The subject of power must acquire it.

Ways of achieving power largely determine ITS functioning and activity structural elements of power. "Historically, such ways of conquest are known, achievement of political power: political reform; political revolution; counterrevolution; militaristic way; various kinds of political coups.

The method of gaining power determines all further activities of political forces, which came to power. Let's reveal the meaning of each method" So, we can say that state power is the highest form of political power. Political power includes state power, power of self-government bodies, power parties and pressure groups, the power of political leaders, mass media. Central in political power is state power. The specifics of state power is that, firstly, it is carried out by a special, separate from the rest of society as an apparatus; secondly, is real in the territory to which state sovereignty is extended.

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WOMEN'S RIGHTS: GENDER INEQUALITY THEN AND NOW

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Gender equality is a painful, but always relevant topic for all women, although it is a key to ensuring the development of society. As before, as now, negative beliefs about discrimination against women dominate in almost all social spheres, and the most important aspects of their expression are in the sphere of power distribution, economy, and the perspective of influence. Not even for centuries, but for millennia, women have been fighting to be treated like men, but most live by stereotypes. For them, women are weak, emotional, cunning, illogical, uneducated, and their main task is to be a mother and a housewife.

Previously, women's rights were very limited, there were no so-called women's professions. They could not engage in science, art, politics, business, there was a basic ban on getting an education. If we talk about the 18th and 19th centuries, a more rapid intervention in this issue has already begun here. But questions still remained. Is a

woman a person? Does she have the right to vote? The right to education? Solve questions about your property?

For a free and equal existence, the rights must be the same for everyone, regardless of a person's gender. For example, the management community has a powerful force in eliminating certain manifestations of injustice caused by various political, social, economic or cultural factors. It plays the most important role in ensuring a compromise for the clear formation of social changes. Perfect legislation will not be able to ensure certain changes regarding the rights of women and men, if its governing community does not show understanding about the values of gender equality and is not educated in its problems and consequences.

In the modern world, women are constantly faced with the problems of oppression and suppression of their rights, and in some countries they are even considered the property of men. Studying this problem, Tamara Zlobina (head of the expert resource "Gender in Details") made a great impression, who shared her experience of studying gender discrimination. Her apt statement is that "it is important to understand that gender discrimination is not just prejudice based on sex. It is an imbalance in access to power and resources in which one group is privileged (men) and the other is discriminated against (women)." It is worth agreeing with this judgment, because a woman in many countries is removed from the possibilities of influence in general. Based on the restriction of women's freedom, the feminist movement was born, which was officially recognized only at the end of the 19th century. The significance of this ideology lies in the equality of the sexes, which is based on the protection of women's rights.

The first and most important wave of such a movement is suffragism. Its role is to ensure women's voting rights so that they can act in the political life of their country. The suffragettes made a great contribution to solving the problem of women's rights. These women had money and property, but they were confused by only one question: "Why can my gardener vote in elections, but I can't?" Only after the so-called collapse of empires were women allowed to leave the kitchen and bedroom. First they were allowed to get an education, and then the right to vote, but full gender equality is still a long way off.

Unfortunately, in the countries of the Middle East and Africa, women's rights are very limited, and in some places they are almost non-existent. In Syria, women received the right to vote in elections earlier than in other countries of the Middle East, but their freedom is still severely limited. After all, they cannot even leave the house on their own without their husband's permission and choose their place of residence. Algeria has a constitution that provides for gender equality, but at the same time, women cannot apply for a passport on their own. Women's rights are most limited in Iran, as there are no legal norms that indicate gender equality. If we talk about Iran, women have been able to vote here since 1963, but in this country they cannot choose their place of residence, leave the premises independently, have no protection against domestic violence, cannot get a job without the permission of their husband, and the minimum age for to marry without father's permission is only 13 years old. In Arab society, women are often discriminated against because of religious and cultural views, which are prescribed at the legislative level.

In Sweden, the management community is doing a lot for equality, but there women are still paid less than men, even though they have identical work responsibilities and education.

Regarding gender equality in Ukraine, the state shares the principles and directions of activities to ensure equal rights of women and men, the norms of which are approved in the Universal Declaration of Human Rights, the European Convention on Human Rights and Fundamental Freedoms, the Convention on the Elimination of All Forms of Discrimination against Women, the Declaration on the Equality of Women and men, etc. Unfortunately, gender equality in Ukraine is not at the desired level. In 2021, Ukraine ranked 74th out of 156 according to the gender gap index. We have an advantage in the field of education, where we occupy 27th place, but in politics it is as much as 103rd. According to analysts, it will take 136 years for our country to achieve gender equality. In Ukraine, inequality is manifested in stereotypes, that is, a woman is the keeper of the family hearth. We also have a difference in wages compared to men in the same professions, there is sexism and sexualization, that is, evaluation of appearance, not mental qualities. The most important problem is violence, every year in Ukraine it is almost 150,000 and these are only those cases that are known.

Many may think that the issue of women's rights is inflated only because of the whims of the female sex, but this is not so. Gender equality tact greatly affects the state of the entire society. There is development in the economy, rapid growth of GDP, development of business, improvement of health, participation of women in politics, security sphere - increases trust among the population.

We can say that women's rights and gender equality is a very important issue, because it concerns not only the feelings of women, but also the development of the entire society. An example of this is the so-called "best countries for women" - Sweden, Belgium, Iceland, Denmark, Canada. All these countries are developed, have a high GDP and rank first in terms of women's rights. And as we see, such an intervention of the women's article in the sphere of public life is not negative, but on the contrary, it is even very useful.

Discrimination of women and oppression of their rights is a global problem of the universe, which was relevant before, but unfortunately, it is also now. In order to overcome this problem, states need to make changes to laws that will not provide for an effective fight against gender inequality, but must introduce mandatory methods of responsibility for violations of equality. Countries around the world, where there is discrimination against women, should approve clear laws or norms regarding the equality between women and men, or completely improve the already prescribed ones, in order to form a sustainable and at the same time free development of society. Ensuring gender equality will only happen when women have adequate legal protection and countries carry out an analysis of legislation regarding the equality of people, regardless of their gender.

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CHILDREN'S HOMES OF FAMILY TYPE IN UKRAINE

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Today, the topic of family-type children's homes is quite relevant. After all, every child has the right to be brought up in a complete family, to grow as a harmonious individual.

Family is a complex and diverse concept. From the point of view of the legal category, there is no definition of the term "family" in the legislation. In particular, in Article 3 of the Family Code of Ukraine, it is noted that the family is the primary and main centre of society. The composition of the family is defined, which includes: persons who live together, are connected by common life and have mutual rights and obligations. From a legal point of view, this definition is paradoxical, it does not correspond to the essence of the family, neither in the sociological nor in the legal sense (Family Code of Ukraine, 2022).

A family in the sociological sense is a small group of people based on marriage or blood kinship, whose members are connected by common life, mutual moral responsibility and mutual assistance. In my opinion, the family is, first of all, moral values, because it is in the family that such fundamental concepts as love and respect for people, responsibility, without which it is difficult for a person, and especially a child, to adapt in society.

Unfortunately, the issue of creating family-type children's homes is very urgent. According to the Ministry of Social Policy of Ukraine, as of today, 30,684 people are orphans and children deprived of parental care. Therefore, the creation of family-type children's homes is a very important issue. Let's consider what family-type children's homes are in general, what is the purpose of their creation and what is needed for this.

A family-type orphanage is a separate family created at the request of a spouse or an individual who is not married, who take in at least 5 orphans and children deprived of parental care for education and cohabitation (On the approval of the Regulation on a family-type orphanage, 2022). The total number of children should not exceed 10 people, including the parents' own children.

The purpose of creating such categories of families is to ensure proper conditions for raising orphans and children deprived of parental care in a family environment. That is, it is very similar to an ordinary large family in which 5 to 10 children are raised. Children can go to a regular school or kindergarten, return home, where loving parents are waiting for them. This form of education is supported by the state, because in this way the large number of orphans and children deprived of parental communication is reduced. This is evidenced by statistics that show the dynamics of the increase in the number of family-type homes: as of January 2021, there are 1,180 such institutions in Ukraine, in which more than 8,000 children are educated, compared to 2015, when similar indicators were at the level of 900 and 5, 5 thousand, respectively.

So-called foster parents can create such families. Educators must be of legal age, able to act, have completed special courses organized by regional (city) centers of social services for families, children and youth with the involvement of specialists in psychology, pedagogy, medicine, etc., have no criminal record, and have no physical or mental health defects. Parents-educators bear full responsibility for the life, health, physical and mental development of children. They are also legal representatives of pupils in all bodies, institutions and organizations. Custodial parents cannot use the rights granted to them contrary to the interests of the child (Tokarchuk, 2019).

The decision to create and ensure the operation of a family-type children's home is made by the district, district state administration in the cities of Kyiv and Sevastopol, executive bodies of the city councils (hereinafter - the body that made the decision) on the basis of an application by a spouse or an individual who is not married, who expressed a desire to create such a home, and the appropriate conclusion submitted by the children's affairs service about the existence of conditions for its creation, taking into account the recommendation of the social services center based on the results of the training course on raising orphans and children deprived of parental care. The Children's Affairs Service must inform such persons about the state of health, physical and mental development of the children whom they wish to adopt for upbringing and for joint living. The body that made the decision is responsible for ensuring the functioning of the family-type orphanage in accordance with the legislation (On the approval of the Regulation on a family-type orphanage, 2022).

After analyzing various Internet forums, a number of questions of interest to potential foster parents were revealed. Most often, they ask about the need for parents-educators to obtain a pedagogical education. Of course, no, the legislation does not provide for requirements for any kind of education for parents-caregivers. The second ranked question, do children lose their status as orphans or children deprived of parental care? All benefits and state guarantees are kept for children raised in family-type orphanages. They also ask about how and by whom the functioning of family-type children's homes is ensured and at the expense of which funds the children are

kept? The body that made the decision to create a family-type children's home must immediately provide a house or multi-room apartment to foster parents. The provided housing must be equipped with everything necessary. As for the funds for the maintenance of pupils, in this case the state adopted a single financing mechanism from the state budget "the money follows the child».

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ECONOMIC RESOURCE LAND

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Political arithmetic is an argument about the size and value of land, population, buildings, agriculture, manufactories, trade, fisheries, artisans, etc., as it all applies to all countries in general. William Petty is an English scientist, inventor of political arithmetic or statistics. His most famous formula is "labor is the father of wealth, the earth is its mother." It was the result of reflections on the nature of the source of various incomes in connection with the problem of their taxation. An interesting theory of the researcher's land price. It illustrates the development of the theory of asset pricing, which includes land. The price of land, like the price of any asset, is formed by summing the stream of discounted income:

$$P_0 = \sum_{t=1}^n \frac{R}{(1+i)^t} \quad P_0 = \frac{R}{i}$$

(1.1)

(1.2)

where P_0 is the market price of the land at time 0; R - annual rent from this area; i - annual interest rate; n is the service life of the asset. In the case where the asset has an infinite useful life, formula (1.1) is reduced to the following expression (1.2).

Understanding the theoretical and practical achievements of physiocrats is impossible without recourse to the methodology of F. Quesnay's study of economic processes. Considering society as a human body, that is, an organic system, the scientist put forward the idea of equivalent exchange, which took center stage in his works. F. Quesnay is the author of a model of simple reproduction on the example of the French

economy. He based the model on the movement of the social product between three classes of the nation's citizens: the productive class (peasants, farmers, employees), owners (king, landowners, clergy), and unproductive (industrialists, factory workers, merchants, small traders, servants). . The basis of wealth considered the land and only those who work on it - the productive class. The economist Mirabeau wrote: that three great discoveries had been made since the beginning of the world, the first of them was the invention of writing, the second was the invention of money, and the third was the "Economic Table" by F. Quesnay, which is the result of the first two "

The main sources of prosperity of any state are its land resources that play an important role in agriculture. The interpretation of the term "earth" is very broad, it can act as a planet, as land, as soil, as a territory with land. Many scientists have studied this issue. Therefore, to directly understand the term "land", we should consider several examples of interpretation of this term:

1. N. Titova: "A certain part (mass) of matter separated from the natural environment by human labor "(Tytova, 2005)

2. D. Babmindra: "The earth is the material basis for the well-being of members of society and the spatial basis for the location of productive forces and the resettlement of people."(Bambindra, 2006)

It should be noted that the concepts of "land" and "land" also differ in that in private ownership can be only individually identified, allocated in kind on the ground land plots that have established boundaries and differ in purpose. Many scholars identify the concept of "land" with the concept of "land", explaining that they have the same meaning. Let's consider in what these concepts are common, and in what divergent.

Common features:

1. Both land and land are not the product of human labor
2. Fertility
3. Ability to self-recover
4. Spatial real estate

Distinctive features:

1. The land plot has established boundaries
2. Land and land are related as part and whole
3. Only individually defined land plots can be privately owned

So the land has always been and will remain in the future the main national wealth and a special natural resource. Therefore, the reform of the agricultural sector is associated primarily with changes in land ownership.

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**THE MAIN FUNCTIONS OF THE PROFESSION OF
A SCREENWRITER AND THE IMPACT OF
A SCREENWRITER ON A PERSONAL BRAND**

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Every year, social networks reach more and more people, currently Instagram has more than 2 billion active users. (*Salvador Rodriguez, 2021*) Now SNS is not only a space for relaxation, but also a convenient platform for sales, conducting business and finding new customers. In the new realities, other professions are becoming relevant: social media manager, target specialist, and others. I propose to consider the influence of the profession of **a screenwriter of stories** on the formation of a **personal brand**.

Let's start with the fact that a screenwriter of stories, unlike a storymaker, does not deal with the visual design of stories, he is responsible for the meaningful part of content creation, partly affects sales and helps **to present** the real life of the client in an interesting way. The screenwriter does all this because he understands the motives and events that influenced the client's behavior, he knows the values and goals of his client and his target audience. On the basis of this knowledge, firstly he creates the content plan and then the storyline.

The reason for writing a storyline? The lives of many bloggers consist of different fragments, the audience will not lose anything in terms of information if they do not watch blogger's stories for a few days. Therefore, the screenwriter's task is to make the audience interested in watching the hero's way **from beginning to end**. For this, they use internal conflict (conflict of the hero with his personal fears) or external conflict (conflict of thoughts between the client and another person). The easiest example: put the hero in a zone of discomfort (for example, a blogger is afraid of public speaking, but in a month he will need to speak live to an audience of 100 people) and give the audience the opportunity to watch what the hero will do. The main thing for a blogger at all stages of this storyline is to **maintain sincerity** and **real emotions**. After all, through the demonstration of feelings, increases an emotional connection with the audience, they find themselves in the blogger's situation.

Also, the screenwriter should know the target audience of his client well, because it is the factor that determines which stories should be shown. For example, a larger part of the audience of a girl blogger: young women 18-34, so if you raise the topic of abusive relationship, it will most likely find a response and increase emotional loyalty.

If we consider the benefits of the storyline from the point of view of personal branding, let's remember that one of the goals of creating and promoting a personal

brand is to **build trust and loyalty of the audience to the brand.** («*What is a personal brand: basics*», 2022)

Let's consider the scheme popular in the media:

Strong personal brand = interest in company = high audience reach = trust = purchases.

As a result, we see that the scriptwriter's work satisfies most of these points: the audience follows the blogger regularly (on average, the storyline increases the audience reach by 8-15 percent), the audience is loyal and trusts the blogger.

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LABOR DISPUTES IN UKRAINE: WAYS AND PROSPECTS OF REFORMING UKRAINIAN LEGISLATION

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The Constitution of Ukraine guarantees everyone the right to work and the right to defend violated labor rights and freedoms in court. The employee can independently choose the method of legal protection, which is provided for by the Civil Procedure Code of Ukraine and the Code of Administrative Procedure of Ukraine. Along with the judicial procedure for the protection of violated labor rights of the employee, the Code of Labor Laws of Ukraine introduces a mechanism for pre-trial settlement of labor disputes.

The statistics of consideration of individual labor disputes show that the majority of such disputes are considered in courts.

An important role in the collective labor dispute resolution system is played by the National Mediation and Conciliation Service (NMCS) and bodies for pre-trial resolution of labor disputes, which are created at the initiative of the parties to a collective labor dispute for its consideration (conciliation commission, labor arbitration).

Analyzing the results of the NMCS activity over the years of operation, we can conclude that the vast majority of demands put forward by employees arose in connection with disagreements regarding non-fulfillment of the requirements of labor legislation and non-fulfillment by the owners of collective agreements, agreements or their individual provisions. The rest of the requirements related to disagreements between the parties of the social dialogue on the issues of establishing new or changing

the existing socio-economic conditions of work and industrial life, as well as regarding the conclusion or change of a collective agreement.

Most collective labor disputes arise at the production level. Among the sectors of the economy, the largest number of them falls on enterprises, institutions, organizations of machine-building, housing and communal services, education, transport, and the coal industry.

The practice of resolving labor disputes in Ukraine shows that individual labor disputes are focused on the judicial procedure for their resolution, while collective labor disputes, on the contrary, have strikes), only an out-of-court settlement procedure and, in fact, deprived of the possibility of consideration in court, which makes the judicial system an insufficiently effective tool for consideration of labor disputes.

At the same time, the NMCS does not provide for the possibility of settling labor conflicts between the employee and the employer out of court, and the potential of social dialogue is not used enough.

The lack of a coherent and effective system for resolving labor disputes in Ukraine is a prerequisite for the need to develop and implement new models for resolving labor disputes.

One of these models developed by the expert group is the "New Model for the Resolution of Labor Disputes in Ukraine", which has been presented on the official website of the NMCS for discussion since the beginning of 2014, but the norms and principles of this model have never been integrated into the national legislation.

The main proposed principles of this model are:

1. rule of law and legality;
2. independence, equality and legal capacity of the parties to the labor dispute;
3. resolution of labor disputes on the basis of social dialogue;
4. speedy resolution of labor disputes and optimality of the estimated terms;
5. simplicity and accessibility of the procedure for resolving labor disputes;
6. prioritization of conciliation procedures and compromise solutions when resolving labor disputes;
7. free conciliation procedures for parties to a labor dispute;
8. the binding nature of labor arbitration decisions;
9. mutual responsibility of the parties to a labor dispute, their representatives for the implementation of labor arbitration decisions, obligations under agreements reached (A new model for resolving labor disputes in Ukraine, 2020).

The introduction of the above-mentioned principles into the national legislation, along with the expansion of the functions of the NMCS, would have a positive effect on the dynamics of the occurrence of labor disputes and the relief of the courts with the relevant categories of cases.

Also worthy of attention is the model of specialized labor courts, which has been implemented in most European countries for a long time. Such courts have been established in Austria, Belgium, Great Britain, Norway, Finland, France, Germany, Switzerland, Sweden and some other countries. Labor courts are either part of a single court system or, as in Germany, constitute an autonomous system of courts with broad jurisdiction.

The creation of specialized labor courts will allow more effective protection of the rights and interests of the parties to the social dialogue at all levels (Chanysheva, 2010). Positively assessing the possibility of reforming the labor dispute resolution system in Ukraine, analyzing the models of resolving labor disputes, which are based on reconciliation, notes that when using foreign experience, it is necessary to take into account the peculiarities of the national legal system, historical experience and local socio-economic conditions. The use of mechanisms that provide for a mandatory multi-stage negotiation process between the employee and the employer's representatives before applying to the jurisdictional body is completely unacceptable under the current socio-economic conditions of Ukraine. Such procedures will not only not contribute to the reduction of social tensions and the prevention of the occurrence of individual labor disputes, but will also significantly complicate the procedure for the protection of labor and the rights of employees, which will lead to delays, the establishment of an unnecessarily long procedure for resolving labor disputes.

One of the stages of the introduction of new models of resolving labor disputes should be the creation of specialized labor courts with the adoption of a separate procedural code, which would provide for all the features of consideration of the specified category of disputes.

It is also considered necessary to adopt the Law of Ukraine "On Labor Disputes", which would take into account the peculiarities of the national legal system, historical experience and local socio-economic conditions, which will make it possible to improve and unify the procedure for resolving labor disputes depending on the types of dispute and its subject, which in turn will create an opportunity not only to expand the powers of the NMCS to resolve labor disputes, but also to provide appropriate legal mechanisms for the implementation of such powers, and to create conditions for preventing the occurrence of labor disputes.

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CONCEPTS AND SIGNS OF PERSONAL NON-PROPERTY RIGHTS OF A LEGAL ENTITY

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Nowadays, in Ukraine, the field of personal non-property rights of a legal entity is at a very low level of research. Most scientists pay attention to the study of personal non-property rights of an individual. But despite this, the share of legal entities in the modern world is growing rapidly, due to which violations of personal non-property

rights of such persons are also increasing. This situation entails the need for a more detailed study of this area and, accordingly, the improvement of modern civil legislation.

One of the important issues is the definition of the concept of personal non-property rights of a legal entity. There are quite a few studies on this issue, but all of them are mostly devoted to individuals. For example, even if we take into account Art. 269 of the Civil Code of Ukraine "Concept of personal non-property rights", it can be seen that there is no specific concept of personal non-property rights in it at all, but only certain signs are indicated. And even these signs are revealed as relating to individuals (Civil Code of Ukraine, 2003).

In modern textbooks on civil law, the authors still try to define personal non-property rights. Some authors define personal non-property law as a measure of a person's possible behavior in relation to his absolute non-property goods, which have no economic content and which provide a person with the opportunity to independently determine his behavior in his personal life, without the intervention of others. Others reveal the personal non-property right as a subjective civil right that is inseparable from the bearer, does not contain an economic content and is aimed at satisfying non-material needs, and the object of such a right is personal non-property good.

Having studied the legislation and the views of various authors of textbooks and scientific works on this issue, we can conclude that personal non-property right is an absolute subjective right that belongs to each person, does not contain economic content, individualizes a person, arises from birth, is inalienable and belongs to her for life. But all these signs, which are indicated in the concept, apply only to natural persons, and our main task was to reveal the concept of personal non-property rights of legal entities.

Therefore, summarizing the above, we can say that the personal non-property right of a legal entity is an absolute subjective right that has no economic meaning, belongs to each legal entity, cannot be alienated from it, is such that it individualizes it, and begins to act from the moment when a legal entity is created and operates until the legal entity ceases to exist.

For an even better understanding of this issue, it is necessary to study in more detail the signs, the list of which is contained in the concept of personal non-property right of a legal entity.

One of the most essential features of personal non-property rights is that they have no economic meaning. But despite this, they still have a connection with the property sphere. For example, in case of violation of personal non-property rights, a legal entity will suffer significant property losses, which may worsen its property condition in the future. The most successful example, in my opinion, is the dissemination of false information or information that defames the business reputation of a legal entity, which in the future may lead to negative consequences, including affecting its property status.

The next feature of personal non-property rights can be determined by the fact that they belong to each legal entity. This feature is manifested in the fact that, regardless of the form of ownership, field of activity or property status of a legal entity, it in any case has the right to personal non-property benefits.

Also, a characteristic of personal non-property rights is their inalienability. This means that a legal entity that has such rights cannot transfer them to another person, nor can it be deprived of these rights.

Another feature of personal non-property rights that should be highlighted is the individualization of a legal entity. Scientists noted that it is thanks to the institution of personal non-property rights that we have the opportunity to distinguish one subject of law from another.

It should also be noted that personal non-property rights are absolute. This means that a person who is the bearer of such rights is opposed by an indefinite circle of obliged persons, each of whom must refrain from actions that violate these rights. That is, the absoluteness of personal non-property rights is manifested in the fact that they are protected from all persons, from any illegal actions against them (Fedyuk, 2013).

And the following signs, which I would like to pay attention to, are the moment of emergence and termination of personal non-property rights in a legal entity. According to Part 1 of Art. 269 of the CCU "personal non-property rights belong to every natural person from birth or by law." If we consider this feature in relation to a legal entity, then the emergence of personal non-property rights in it occurs from the moment of its creation, that is, from the day of its state registration.

As for the termination of personal non-property rights, according to Part 4 of Art. 269 of the Civil Code "an individual owns personal non-property rights for life". The word "for life" means "until the death of an individual". And again, if we consider this feature in relation to a legal entity, we can note that its personal non-property rights cease from the moment of its termination, that is, from the day of entry into the unified state register of its termination (Civil Code of Ukraine, 2003).

Having analyzed all the features that are characteristic of personal non-property rights of legal entities, we can say that it is thanks to them that we have the opportunity to better understand the essence of the concept of personal non-property rights of a legal entity and to be able to distinguish these rights from any others.

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FEATURES AND ROLE OF LEGAL RELATIONS IN THE NATIONAL LEGAL SYSTEM OF UKRAINE

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The legal system of the state has a number of specific features, structure, historical processes that influence its formation and stage of development. However,

this legal phenomenon does not exist in isolation, global transformational processes to one degree or another affect society as a whole and the nature of the relationship between the state and law.

In general, in the literature, as a general term, it is accepted to consider: "The legal system of society is a complex of interconnected, mutually coordinated, and interdependent legal phenomena and processes that develop systematically, cyclically and consistently, as well as legal institutions that exercise managerial influence on public relations in accordance with a clearly defined procedure". Regarding the definition of legal relations, there is a permanent definition. Legal relations are a type of social relations that arise on the basis of law and whose parties are the bearers of subjective rights and legal obligations.

Legal relations are an integral part of the functional subsystem of any legal system. The national legal system of Ukraine is no exception.

It is thanks to legal relations that the operation of legal norms finds its realization in the environment of society and the state expresses its will. In fact, they act as a connecting link between the legal system of the state and society.

The current state of the legal system of Ukraine is transitional. There is a transformation of standard approaches to understanding the usual legal categories, including the category of "legal relations". Such changes are a kind of challenge of time. After all, we are eyewitnesses of the European integration stage of development, which led to the reformation of the legal system on a new basis.

The state grants legal subjects new types of rights and obligations, with the help of which they satisfy their needs and interests. This is exactly the opinion held by one of the classics of Ukrainian legal theory, P. M. Rabinovych (Rabinovych, 1994, p. 127). Therefore, this process leads to the development of civil society and, as a result, individuals report to the legislators what types of relations need to be regulated and improved.

As the legal system undergoes changes, reformation is also involved in each individual element. Transformations are taking place not only in state and legal life, but also society is adapting to new life trends.

Summarizing, it should be noted that today a new state-legal reality is being formed in Ukraine, outdated types of social relations are gradually dying out, new ones are appearing that did not exist before, and existing ones acquired over the years are being improved. Therefore, the issue of researching legal relations, for the sake of improving the legal life of the state as a whole, is quite urgent. The level of protection of human rights and freedoms, law and order in society depends on the quality of legal regulation. Of course, the path to the formation of the national legal system of Ukraine is thorny, but it will lead to the formation of a true European society.

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BODY IMAGE

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Body image means how we feel about our physical appearance. Images of beautiful people in advertisements can make us anxious about the way we look. This pressure often affects teenagers in particular, and it can be a difficult to enjoy life when you don't feel good about yourself so try to raise your self-esteem.

Remember that most of us will never have perfect bodies! The images that surround us are created to sell things, just so we buy the products to be a beautiful and 'happy' as the models in advertisements. However, most real people enjoy the company of a real person rather than an attractive but unreal creation.

Concentrate on your good qualities, not the things you can't change. This will help you enjoy other aspects of growing up, such as having friendships and facing challenges. Remember: your self worth shouldn't depend on anything else but the way you see yourself.

Change the way you see and think about yourself. Decide what you can realistically change about your appearance. You can't change your height or shoe size, but you might want to be fitter. Once you've decided, set realistic goals and keep track of your progress.

If you feel great, you're more likely to think and act positively. Make a list of things you like about yourself and give yourself at least three compliments every day. And the next time someone compliments you, believe it and say "Thank you!" Be grateful for all the things that make you great!

APPLICATION OF MANAGEMENT IN INTERNATIONAL COMPANIES

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In recent years, there has been a noticeable increase in the number of employees from different countries working in the same company. The clash of different nationalities and cultures can cause problems with understanding each other's priorities and problems.

To successfully manage employees who belong to different cultural groups, you need to understand the similarities and differences in the nature of nations. For example, the British do not really see the prospect of cooperation with the French. According to the workers of an English company, the French are unreliable colleagues, they are constantly late and take a very long time to submit projects. At the same time, the employees of the Indian company see the French as promising and creative colleagues who can empathize with problems. Therefore, it is important to understand

into which groups of employees should be divided in order to achieve effective cooperation.

No less important is the appointment of the head of a certain structural unit. It is necessary to take into account how the management process is carried out in different countries. This can be explored in the example of Mexicans and Swedes in the company of Erin Meyer. Appointing Mexicans as leaders, she subordinated them to the Swedes, who did not consider them an authority. Swedes respect freedom of action. This can be analyzed in the example of Swedish schools, where students see the teacher only as a method of obtaining knowledge and do not consider it their duty to obey instructions, but perform tasks with their own interpretation, while in Mexican schools the teacher is an authority to whom they listen. Therefore, it is important to know the mentality of nationalities in order to build a competent management system and prevent similar problems.

It is also important to focus your attention on HiPo employees. HiPos are employees with high potential. An international company must maintain a brand of excellence in everything, and non-standard employees will help them in this. An example of NiRo is Steve Jobs. Out-of-the-box thinking led him to enormous success despite the fact that he could not find a job due to an incomplete higher education. These employees can be of any nationality. To find them, you need to give more space for ideas to employees and identify the most extraordinary thoughts that have the right to be implemented. It is these employees who will bring the company primacy in innovation in any field. They can be worthy thought leaders, motivators and company leaders.

The last point is to focus on employees, not customers. It is necessary to embody the individuality of nations in work to achieve the best result. The worst thing you can do is to look for a common method of managing all employees. This is a hopeless method, because it will lead to the transformation of people into robots that perform tasks without standing out. As a result, the company will not develop, quarrels will begin due to the suppression of the identity of nations.

So, as a conclusion, I can say that different people can cooperate in a company, if the rules of intelligent management are followed. It is important to understand the value of each international employee and what they can bring to the company.

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PSYCHOLOGY

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From the earliest stages of human development, the problem of understanding the inner forces of man has always arisen. The inner world has always been difficult to explore. For the first time, certain features of human life were realized in the period of antiquity. It was then that the name of this science was born for the first time. Psychology is the science of the soul, as it was believed in those days.

Psychology was formed over centuries. And also this science can be classified as one of the most interesting. At the current stage of development, psychology is a developed field that is closely related to other sciences. Psychology is a complex science that is very important and interesting for a person. Our present is filled with new discoveries in various fields, including psychology itself. But the most mysterious secrets have not yet been fully explored. It is very difficult to study a person, and especially his spiritual world. Psychology studies mental phenomena and human behavior. And she also studies the general regularities of mental processes.

To understand what psychology studies, one must start with the origin of the very name of this science. The word "psychology" comes from the Greek "psycho" - soul, character and "logos" - teaching. At the beginning of this science in the 5th century BC. and until the 18th century AD. e. researchers considered the subject of psychology to be the soul itself, with a distinction in the perception of the soul as a material and immaterial phenomenon in various currents. Two philosophers played a significant role in the development of psychology in ancient Greece. These are Plato and Aristotle. Plato is the founder of the psychological tradition as a theory. And Aristotle believed that psychology is the science of the soul. And later thinkers of the New Age believed that psychology is the science of consciousness.

Ancient sages said: "Know yourself and you will know the world." The truth of a person begins in self-knowledge, that is, knowledge and understanding of oneself. Our body is, as it were, a tool for learning about the space where we are. Knowing yourself opens up all the possibilities of your own human progress, success, happiness and prosperity in life and in the eyes of the people around you. And if a person understands and adheres to his purpose and reveals his mission, then the knowledge of himself will gradually be revealed more deeply. Knowing yourself means understanding your inner world, seeing and accepting not only your positive qualities, but also your negative ones.

In the 19th century, psychology became an independent discipline. Thanks to this science, people learned to understand the nature of mental phenomena.

Psychology, like other things, plays an extremely large role in our lives. Someone is more psychologically stable, someone less. It all depends directly on the person himself. The study of psychology is necessary for the construction of a scientific worldview. The study of psychology enables us to better understand people. The

importance of psychology is very important for any work, to take into account their mental state and understand their individual characteristics. The ability to know the mental life of a person contributes to a better understanding of many features. Psychological knowledge and skills are needed in all areas - raising children, marital relations, working with clients of our services, communicating with colleagues on the team at work, effective self-organization of time and setting life goals, and many others.

Every person needs to know psychology in order to care for both himself and his loved ones. Psychological knowledge and skills help us better understand ourselves, each other, and the relationship between us. They give us the opportunity to better care about our own psychological state. Psychology makes it possible to understand oneself, to know one's strengths and weaknesses. And knowing yourself is necessary for self-education, for working on yourself, on correcting your shortcomings, on developing your abilities. Knowing yourself is also necessary in order to consciously choose such a specialty, such a job, in which you can bring more benefit and get more satisfaction.

Psychology studies how the external influence turns into an internal, mental reflection and becomes a regulator of our activity. And it also studies the general regularities of mental processes and the peculiarity of their flow depending on the conditions of activity and on the individual typological characteristics of a person.

In everyday life, we constantly encounter psychological phenomena. Each person fulfills the role of a psychologist, since without a suitable stock of psychological experience and knowledge it is impossible to live among people, people acquire psychological knowledge in their practical activity of living communication. Each of us knows how to distinguish other people's character traits, draw conclusions about their capabilities and abilities, and predict their behavior. In interpersonal relationships, they often mislead us, in our personal life we make mistakes, behaving tactlessly, finding enemies where there could be friends. Scientific knowledge differs from life experience in that it is based on the strength of common human experience and special research, and therefore allows to reveal regularities of psychological processes.

The subject of psychology is the most complex sphere of human activity - the psyche. Psyche is a subjective image of the objective world. Knowledge of the psyche, the nature of mental phenomena and their regularities is extremely important in the life and activity of a person in order to manage the mental development and activity of an individual. Psyche, from the point of view of other psychological studies, is the highest product of the processes of self-organization of nature, acting as a mediator between the subjective, human and objective external world.

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THE OPIUM WARS, THEIR CAUSES, COURSE AND CONSEQUENCES

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The Opium Wars is a series of armed conflicts between China and Britain in the mid-19th century. It was caused by the illegal opium trade (Opium is a highly addictive non-synthetic narcotic that is extracted from the poppy plant. The opium poppy is the key source for many narcotics, including morphine, codeine, and heroin.). At the end of the Qing dynasty, China was a major exporter of goods to Europe. At the same time, China imported few goods from Europe. The country traded only for silver, so Britain's silver reserves were depleted. Britain began to illegally supply opium and take payment only in silver to restore its treasury.

At the beginning of 1839 there were more than 10 million drug addicts in China. The leaders of the country decided to destroy opium stocks in the port of Canton, it became the beginning of an armed conflict. Thus began the first opium war, which continued for three and a half years. The English fleet is easily won, because at that time China did not have a sufficiently developed military engineering potential. The empire's troops fought aggressively, often firing fiery arrows at British ships, but this was not enough, so the British managed to resume the drug trade.

As a result of Britain's victory, China was forced to allow trade in 5 ports, pay 21 million dollars and hand over control of the city of Hong Kong.

The people consider losing the war to be a national humiliation, so a civil war begins inside the country, it is supported in every way not only by the British, but also by the French and Americans, who by that time also enter the opium market. China begins to degrade, it is completely dependent on the British, the country is falling into ruin.

The premise of the Second Opium War(1856-1860) is the seizure by the Chinese authorities of a ship transporting contraband opium, so the British fleet again begins military operations, but not alone, with the support of France.

China loses again and becomes even more dependent on European countries and the USA. For Western companies it was five new ports were opened, foreign ones were created embassy in the imperial capital, officially was allowed trade in opium. In addition, the subjects of the West states had freedom of movement throughout the country, and Christian missionaries - the opportunity to preach freely.

So, in the Qing Empire, a period of near-colonial dependence on Western countries began, due to their technical and military superiority, the policy of isolating China and the internal upheavals that the country has experienced over the past 50 years.

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LEVEL OF SOCIALIZATION OF UKRAINIAN PUPILS IN THE EDUCATIONAL SYSTEM.

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In our time the actual world revolts for happiness, popularity, self-realization, success, health, wealth both soulful and material. Most importantly, all of these points are implemented through social interactions. In this reality there are students who are also subject to all the world trends. But how do they determine from the school bench the direction where they will feel in their place? There are two important aspects to personality formation: the family and the school system.

Personality is the product of the socio-historical and ontogenetic development of man. The formation of the personality is impossible without social activity, only by engaging in the process of historical practice, the individual manifests social essence, acquires social qualities, develops values.

Socialization is a complex, multifaceted process of social formation and development of the personality, which takes place under the influence of the social environment and purposeful educational activity of society. The process of the socialization of the individual involves the transformation of the individual into a fully fledged member of society, ready to perform the social functions of a worker and a citizen.

The most important tool for the socialization of the individual is education as the most important social institution. In modern science, education is seen as a social system that actively interacts with the social environment. Its effectiveness is determined by the systemic characteristics of the interaction of education and society. The functioning of the educational system takes place in the context of real relations in society. Hence, the educational reform process should be based on existing social patterns of social development. The social, economic, political, moral and ethical changes taking place in society determine the need to renew the education system, Its substantive functioning to ensure adequate preparation of youth for changes in society.

In the current conditions of democratic transformation of the social environment and creation of civil society, the role of education is growing immeasurably, its functions are expanding, and the responsibility for education of moral values of students is growing. In the field of education, the basic values are established, the basic social foundations and deviations from them are assimilated, and motivation for social behavior is formed. Hence, it is natural that in many pedagogical works socialization

is considered in connection with the concept of «education» and is interpreted in terms of orientation of education to social standards, fixed in the public consciousness.

Unfortunately, in the practice of educational institutions, the process of learning to live happily and successfully has a secondary role, giving first place to the process of studying subjects and professions. As a result, we can observe poorly formed life competencies, undeveloped social skills and because of this difficulty in adapting to modern socio-economic realities, inability to self-realization in society and manifestation to asocial behavior.

Early socialization takes place in the family, where the first ideas about peace, good and evil, understanding morality are formed. The process of socialization involves: family, school, kindergarten, classmates, social networks. As much as we want, if a person is in a social environment he socializes, but it is important how high the level of development of socialization is. Considering everything, it is possible to sum up the two main functions of school activity for the formation of socialization of pupils first - compensation for the shortcomings of primary socialization, that is, excessive care, assistance that hinders the development of the child, Lack of commitment and preventive relations, inability to resolve conflicts. The second function is to control the process of socialization of the person, prevention or correction of pupil complexes. It is necessary to create a friendly moral and psychological climate in the primary collective.

It is important to note that one of the important points of socialization is education and understanding of moral values of society. For teenagers (11-16 years old) it is important for the process of socialization participation in school self-government, as well as sports, hobby groups, festivals, courses etc. If we talk about activity after hours helps: 1. To realize the private opportunities to cooperate with team members. 2. Create a sustainable motivation. 3. Develop communication, openness, operational thinking and its constructiveness. 4. Development of critical thinking and the ability to qualitatively solve tasks, as well as to solve force majeure circumstances. 5. Awareness and understanding of your place in the team and ability to be useful, show a propensity for leadership. These skills are all very helpful in the future for the development of successful, socialized, mature, self-realized personalities, as the paradigms important for understanding social interconnections will already be mastered.

Social maturity comes when one becomes a person who is able to take responsibility for oneself and one's life. An adolescent is considered «socially immature» if he cannot predict and plan his behavior, make decisions. In the educational process, it is important to understand one important truth that J.Goethe highlighted: If we accept people as they are, we make them worse. If we treat them as if they are what they should be, we help them become what they are.»

In conclusion, it can be said that to socialize a child is first and foremost to teach him to live in balance within himself and with the world. V. Sukhomlinsky wrote that it is possible to achieve a developed personality only step by step to introduce the child into the world of various human relations and to encourage him to independence and responsibility. This is what you need to pay attention to the entire system of image of Ukraine in that ratio with training for the growth of a prosperous and decent generation.

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WHY FLIPPED LEARNING IS THE EDUCATION OF THE FUTURE?

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The most pressing issue of modern education is the relevance of the "green" worker. A large number of graduates cannot find their place in the labor market. In my opinion, the problem of employment has its roots in the education of the future employee. In order to get rid of this problem, educational institutions should take the orientation of flipped learning in the future.

Flipped learning is a form of active learning that allows you to "reverse" the usual learning process in the following way: homework for students is to watch relevant video clips with the educational material of the next lesson (students go through the theoretical material on their own), and in the classroom, time is used to perform practical tasks.

Thus, children will be able to get the most out of their education, because it will be focused on acquiring practical skills. It will reduce the psychological burden of students, who are often afraid of becoming useless to employers after graduation due to insufficient amount of practice (especially through disadvantages of distance learning).

«Listening» less means doing and learning more. The flipped classroom makes learning more interesting and productive for students and their teachers.

This quote tells us that lessons will be more interesting because students will come to class with a prepared base of homework and questions that they did not understand or that seemed difficult to them. When someone in the audience asks a question, others will have the opportunity to express their opinions and join the discussion, which will also allow them to find effective communication skills that they will need in their future profession

Flipped learning is also beneficial in that it considers the daily biorhythms of each individual, because we all have different times of greatest productivity and relevance of certain tasks.

It can also be concluded that flipped learning is the type of education that is most adapted to children with non-standard daily biorhythms, for example, to children with hyperactivity (who are often the objects of bullying due to their peculiarity).

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MOTIVATION OF CIVIL SERVANTS

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Let us start with the definition of the concept of motivation itself. Motivation is a certain process of encouraging a person to act and achieve the company's goals by creating an incentive for them. Motivation is one of the most important means for achieving the goals of the authorities.

In addition, the motivation of public servants is a more complex process due to the specifics of the system of state authorities. It is the motivation within the organization that affects the level of efficiency of public servants, and the higher this level is, the better the employees cope with their duties.

In public administration, what the public institution and its employees achieve largely depends on the level of employee motivation. If civil servants are not motivated, they will only perform at an average level just to keep their jobs. As a result, the state authority will not be able to effectively respond to the needs of citizens.

Motivation plays an important role in the strategic planning of state authorities. In many countries of the world, the stimulating aspect of public service personnel management is of great importance. In particular, European legislation provides various approaches to stimulate the interest of civil servants in the results of their activities, thereby increasing work efficiency.

Scientists distinguish two categories of factors for assessing the degree of satisfaction with the work performed, namely factors that keep people at work (hygiene factors) and factors that motivate them to work (motivators). Hygiene factors include working conditions, salary, administrative policy, relationships with colleagues and managers.

In turn, motivators are responsibility, achievements, career growth, etc. Imperfections or the absence of hygiene factors usually lead to a person's dissatisfaction with his work. The lack of motivators does not lead to such consequences, but the efficiency of the employee becomes much lower.

All incentive strategies aimed at improving the efficiency of civil servants are determined by legislation. In European legislation, special attention is paid to good material and social security.

The most common are the use of administrative, economic and socio-psychological methods of encouragement.

The material approach is the pursuit of a certain standard of living and wealth, which is achieved, as a rule, through decent salary, systematically differentiated accounting of types of work and results, travel expenses, food benefits, health care, etc. This method is quite effective to use. However, other types of incentives should not be

underestimated, because some employees and managers prefer non-material methods of motivation, because career growth is a priority for them.

Intangible methods are non-monetary incentives for employees that help to form a management spirit and good internal relations within the organization.

Соціально-психологічні методи ґрунтуються на врахуванні особливостей

Social-psychological methods are based on taking into account the characteristics of people, cultural norms, values and forms of communication. They include:

- ensuring the opportunity for employees to provide their comments and suggestions;
- improvement of working conditions;
- corporate culture;
- approval and support in performing tasks of varying difficulty;
- personal and public recognition at general meetings of the team;
- providing opportunities for autonomy in work and decision-making.

In conclusion, we can say that the motivation and involvement of public servants is a very important component of the successful operation of state authorities. Therefore, choosing an effective method of encouragement, whether material or non-material, should take into account the needs and interests of subordinates, as well as the strengths and weaknesses of each individual employee, so that work activities are most effective.

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RULES OF EFFECTIVE COMMUNICATION AT WORK AND IN FRIENDLY COMMUNICATION

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Nowadays communication occupies a large part of the life of every person. Firstly, It can help people to get emotional and spiritual satisfaction, relax in hard busy life. Secondly, it helps to solve lots of problems, make the right decision when you are in doubts and just to get more information to develop yourself to become a successful person. It is extremely important to have enough communication and to communicate with clever people to get various useful experience. However, not only the amount of communication is important, we should do it correctly. So these are rules which should be followed (Macabee, 2012). For example:

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Respect other people's authority and experience. There is a large difference between experience and knowledge. From time to time it is difficult to believe that a thing which you can not understand in no time can be extremely effective advice and can lead you to the best solution of your problem. So, even if veterans say something that you can't understand, listen to it carefully and ask enough questions to clarify everything for yourself.

Do not interrupt the speaker. If you are going to take part in some activity like a meeting or conference you should know what other participants will say to avoid interrupting. By interrupting people you can show disrespect for others that can cause unpleasant feelings. Every person should have the opportunity so say everything what he/she wants as long as it does not break any timetable or other rules of the conference/meeting.

Think carefully before giving the answer. It is clear that you should think hard before giving the answer if you are not sure about it, but even if you can answer in no time, think whether everything should be said or not, or whether your idea has appropriate view and what kind of consequences will be.

Focus on the subject. For different conferences or meetings you should focus on the main topic being discussed. You have limited time and all the ideas should be clarified. If you have too little time you will need to skip something to reach the main conclusion anyway. Besides, answer enough questions during other speeches to show your great engagement.

Organize your speech. This advice is related to the previous one. You should clearly define all the priorities. Say the main idea and the most important topics at first, then you can add your own comments if it is necessary and if there is enough time for it. Also, divide your questions and answer separately if the main topic includes more the one thought.

Accept the fact that you don't know everything. If there is a question and you don't know exactly the answer, it is very appropriate and natural to say just "I don't know". No doubt you must know practically everything that is directly related to your speech. But when this project was made by the group of people it is normal not to be aware of some details related to work other people.

Don't question the facts. You should be aware of the existing information of the major part of the project but also must know how to behave in the situation when you come across the new facts which are related to your project. You should stop debating in no time if it occurs and admit factual information.

To sum up, there are more guidelines how to be successful during the communication with colleagues and friends and if you follow them you will get a lot of profit and pleasure from the communication.

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**CIVIL-LEGAL MEANS OF PROTECTING THE RIGHTS
AND INTERESTS OF THE TESTATOR**

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Inheritance law is one of the main institutions of civil law, since the problem of inheritance affects every person. Inheritance relations are special and they affect the private side of the life of a person and his family.

The Constitution of Ukraine ensures the protection of the rights of citizens and subjects of hereditary relations. These relations are regulated by the Civil Code of Ukraine. Inheritance performs the function of protecting private property after the death of its owner and the execution of his last will regarding the property.

Inheritance law is a legal norm that legalizes the transfer of property from a deceased person (the testator) to the heirs specified by the deceased in the will.

A testator is a person who made a will (a person's wishes, which must be fulfilled by the heirs specified in the will after his death) in case of his own death. Every competent person can make a will and, as a rule, appoint any other person as his legal successor, regardless of family ties.

In Roman law, wills made to non-relatives were considered invalid. They had to mention the son in the will and each of the closest relatives to whom a certain share specified by law is allocated.

Mandatory heirs are also distinguished, who receive a share of the inheritance regardless of its content, but the heir must prove his kinship with the deceased. The consent of other heirs or the consent of the testator is not required to receive a compulsory inheritance. However, in some countries, the court can reduce the amount of compulsory inheritance or cancel it altogether. This applies only to certain property for life or professional activities.

In Ukraine, the size of the mandatory inheritance can also be reduced, taking into account the relationship between the deceased and the heir or other circumstances (Kuznichenko & Osypenko, 2022).

Currently, it is possible to supplement the Central Committee of Ukraine with the article "Deprivation of the right to a compulsory share in the inheritance". In this norm, it is possible to reduce the size of the compulsory inheritance or to deprive it, foreseeing certain circumstances, without judicial discretion.

Summing up, we would like to note that the new inheritance legislation is the achievement of world experience and national traditions. It enables a person to choose an acceptable form of disposal of his property in case of death.

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THE LEGAL ISSUES OF SURROGACY IN UKRAINE

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With the development of scientific technology, it has become possible to use assisted reproductive technologies to solve the problem of infertility. One of them is surrogacy, when a woman gives nine months of her life to give the happiness of motherhood to another family. Recently, the topic of surrogacy has become the subject of constant debate. Through certain ethical, moral and religious beliefs, different opinions are expressed both in defense of this method and for its categorical prohibition.

Legal provision of surrogacy is one of the legally unregulated and most difficult issues in the legislation of Ukraine, in particular, in the field of family law. Its relevance is due to the lack of sufficient regulations governing the implementation of surrogacy in Ukraine and the need to solve problems that arise in practice.

It should be noted that the nature of the surrogacy agreement is identical to the service agreement. Under this agreement, one party, the contractor, undertakes on behalf of the other party to provide a service consumed in the course of such activities, and the customer undertakes to pay the contractor for this service, unless otherwise expressly provided by the contract. There may also be questions about the biological parents dying before the child is born to a surrogate mother. In this case, the child will be recognized as left without care and will be registered by the guardianship authorities.

Although, according to some scholars, it would be more favorable for the child in this case to recognize the child's dead potential parents, which would allow her to have inheritance rights and other privileges (Pirozhenko, 2018).

Thus, surrogacy in Ukraine is allowed at the legislative level, in contrast to foreign countries such as Italy, France, Germany, where it is strictly prohibited. The current legislation does not define the concept of surrogacy. Surrogacy should be understood as the process of carrying a child by a woman on the basis of a contract. The study shows that it is necessary to regulate the relationship between the biological parents and the surrogate mother by adopting the relevant legislation. In addition, to provide for cases of refusal of a surrogate mother to give the child to her potential parents, as well as the legal consequences of the birth of a surrogate mother of a child with birth defects and refusal of her biological parents.

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NATURAL SCIENCES



**SUSTAINABLE DEVELOPMENT GOALS:
PEOPLE, PLACE, AND ENVIRONMENT**

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Global sustainability is deemed impossible without local sustainability. Drawing on the latest dynamic research in social and cultural geography, people connect it with current thinking on a range of topics such as food waste, disability, and permaculture.

There is no doubt that the world has made significant progress in many areas of health and well-being but will need a focused effort to achieve Universal Health Coverage and reach the furthest behind. For example, according to UNICEF while child deaths have been cut in half since 1990, the lives of 9 million children under age 5 are still at stake if countries fail to meet SDG 3 on good health by 2030, with Nigeria, Pakistan, and the Democratic Republic of Congo accounting for more than half of these lives.

At least half of the world's population, 3.5 billion people, do not have access to essential health services due to financial constraints or a lack of accessible facilities. Further human pressure risks causing widespread, abrupt and possibly irreversible changes to basic Earth-system processes. Water shortages, extreme weather, deteriorating conditions for food production, ecosystem loss, ocean acidification and sea-level rise are real dangers that could threaten development and trigger humanitarian crises across the globe. Growing affluence and the right to development among the world's poor demand that people of all nations make the transition to sustainable lifestyles.

It will drive higher rainfall in shorter periods, faster coastal change, longer droughts and more frequent heatwaves. Population growth and increasing demands for energy, land and water will compound the impacts on wildlife and the environment. People will feel the health impacts of a changing climate through changes in temperature, disease and pollution (The Sustainable Development Goals, 2022).

To become a nation more resilient to a changing climate people need to take action now. This means many countries need to embrace the uncertainties around the likely impacts and adopt flexible approaches to building resilience. Mankind's thinking has to change faster than the climate. People have to recognize that the current ways of working have been developed through events experienced in the past – rather than the challenges they will face in the future.

To sum up, the driving principles remain still. They are reducing poverty and hunger, improving health and well-being and creating sustainable production and consumption patterns. As far as a goal of improving lives and livelihoods, for example, would promote sustainable access to food, water and energy while protecting biodiversity and ecosystem services.

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CHROMATOGRAPHY. SEPARATION OF MACROMOLECULES AND PROTEINS. IMMUNOCHEMICAL AND IMMUNOCHROMATOGRAPHIC TESTS AS METHOD OF ANALYSIS OF BIOLOGICAL OBJECTS

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Chromatography is a highly effective method of separation and analysis (used as a method of identifying components) in which the investigated substance is distributed between two phases: moving and stationary. The stationary phase stays stationary while the moving phase transports the ingredients of the substances across the medium used. Stationary phase limits many components in the mixture, which makes their movement slower than the moving phase. The movement of components in the moving phase is controlled by the importance of interactions with the moving or stationary phases. Their difference is determined by such factors as the solubility of some components in the moving phase, so some components will move faster than others and this will cause the mixture to separate (Katlewa, 2016).

The principle of action can be compared to runners at competitions, someone will always overtake someone else. There are many types of chromatography, but we will consider the most effective for the separation of macromolecules and proteins that is ion exchange chromatography, which is a variety of liquid chromatography. Ion exchange is a process in which some substances absorb from the solution of the electrolyte of the cations or anions and allocate in a solution an equivalent number of others ions with the load from the same sign (Minaeva, 2013).

The principle of separation in this method is that there is a reverse exchange between target ions that are present in the sample solution to those present at the exchanges. The essence of cation exchanges is that they have a negative charge group and it attracts cations positively charged. These exchanges are quite possible to call materials "acid ion exchange", it is connected with the fact that their negative charges originate from ionization of oxygen groups. Instead, anion exchangers positively charged groups have a property to attract anions that are infected negatively.

Therefore, they are also called materials of "elementary ion-exchange" (Aryal, 2022).

The main instruments of ion-exchange chromatography are (Fig 1):

- 1) High pressure pump with monitors and to transfer eluent;
- 2) Injector to enter a sample in the eluent flow and column;
- 3) Columns to separate test mixtures into separate components;
- 4) The furnace, not necessarily;
- 5) Detector for measuring analytical peak as an eluent column;

6) Data system for collecting and organizing chromatographs and data.

Detection of biological fluids (e.g., blood, saliva etc.) provides important

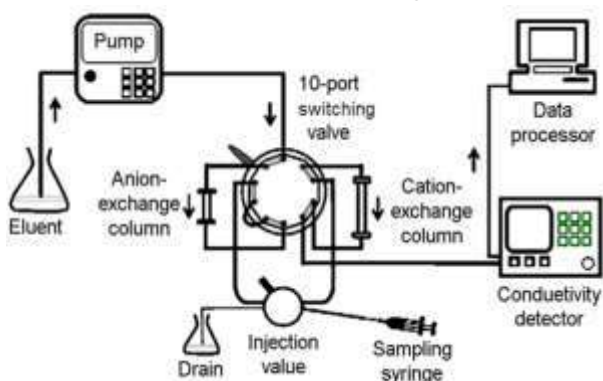
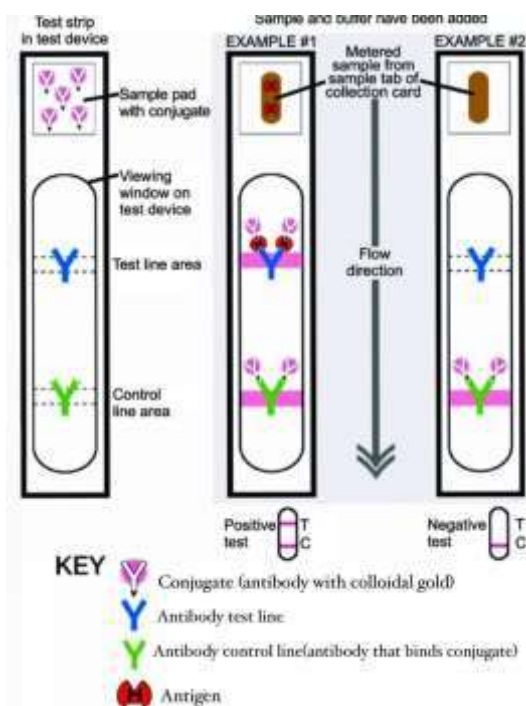


Figure 1. Schematic diagram of devices for ion-exchange chromatography

information about the state of the body and/or certain parts of it. Immunochromatographic tests are widely used due to their sensitivity, specificity, and ease of use (Basset, 2022). Today we will consider in more detail the immunochromatographic method on the examples of detection of *Helicobacter pylori* bacteria in the blood, detection of drugs etc.

In immunochromatography the capture antibody is immobilized on the surface of a porous membrane (Teflon, nylon, nitrocellulose) and the sample passes along the membrane. An absorbent material beneath the membrane draws liquid reagents through the membrane, allowing unreacted components to be separated from the membrane-bound antibody-antigen complex. The first major target analyte for in vitro diagnostic kits using the principles of immunochromatography was (human) chorionic gonadotropin (hCG) to determine pregnancy. In these side-flow assays, the analyte-specific ligand is immobilized on the membrane (Fig.2).

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The detection reagent, usually coupled to latex or a colloidal metal particle, is placed in the conjugate pad. When a sample (urine, plasma, blood) is added to the conjugate pad, the detection reagent is solubilized and begins to move with the sample stream up the membrane strip. The analyte in the sample is an antibody that is coupled to the detector reagent. When the sample passes over the area where the capture reagent is immobilized, the analyte-detection reagent complex is trapped, and a color proportional to the amount of analyte present in the sample appears (Koivunen, 2006).

Now consider the immunochromatographic method on the example of determination of *H. Pylori*

antigen. *Helicobacter pylori* is a spiral rod-shaped bacterium found in the gastric mucosa. *H. pylori* infection is currently considered to be one of the most common causes of gastritis, gastric ulcer, duodenal ulcer, etc. To perform the test, a certain amount of dissolved stool sample is added to the sample cell on the test cassette. The sample flows through a pad containing *H. pylori* antibodies coupled to red colloidal gold. If the sample contains *H. pylori* antigens, the antigen will bind to the antibodies on the colloidal gold particles, forming antigen-antibody-gold complexes. Under the action of capillary force, these complexes move along the nitrocellulose membrane to

the test line zone, on which *H. pylori* specific antibodies are immobilized. When the complexes reach the test line, they bind to the antibodies on the membrane to form a band. A second red control band always appears in the reading area, indicating that the test is correct and the product is working properly. If *H. pylori* antigens are not present in the sample or their concentration is below the detection level, only the control line will appear. If the control line does not appear, the test is invalid. Another equally well-known way to use the same test is the rapid covid test, using saliva and/or nasal mucus, which looks for the presence of antigen to the SARS-CoV virus. The immunochromatographic test is also used in forensics. For example, it helps determine the presence of narcotics. Each type of antigen and antibody is produced with an individual contact plane for binding. However, antibodies form binding sites not on a specific molecule, but on any of its fragments, that is, immune reactions always occur with other substances that have this fragment in their structure. Therefore, the common feature of all immunoassay methods is their cross reactivity. As a consequence, a positive response is given not specifically to morphine, but to opiates, not to phenobarbital, but to barbiturates, etc. Group specificity allows one reaction to determine the use of a whole group of substances rather than a single drug. For example, when using heroin, codeine, morphine, opium, etc., immunochromatographic analysis will show a positive reaction to opiates (Skorobahatko, 2011)

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**IS UFO UNIDENTIFIED FLYING OBJECT OR
UNWISE FICTITIOUS OBSESSION?**

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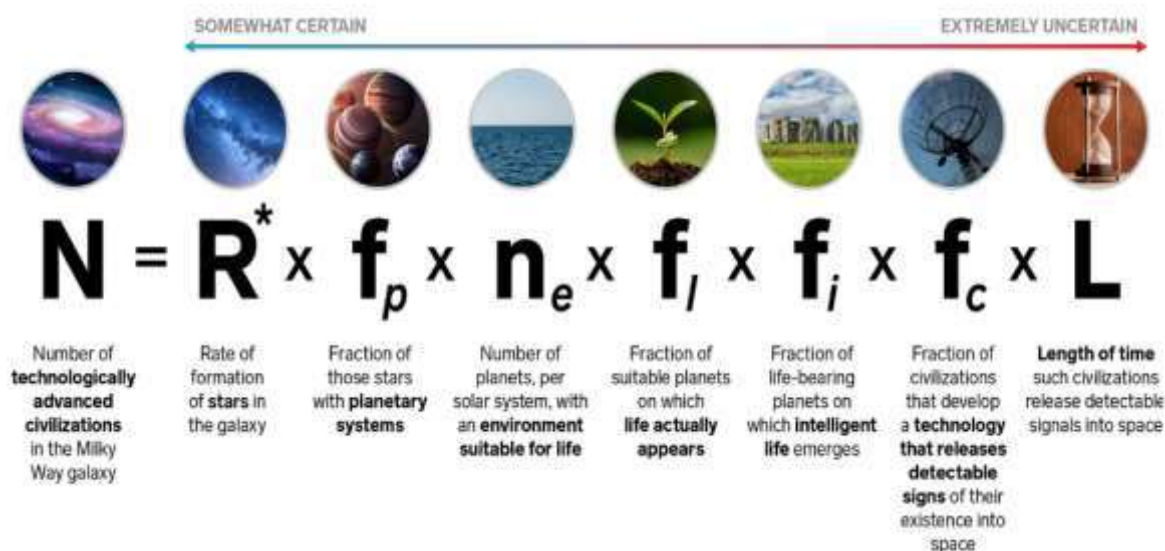
Once Socrates said: "To know is to know that you know nothing. That's the meaning of true knowledge". Although humanity has reached a high level of scientific knowledge, many things cannot be explained yet. But what if we start pondering about the mysteries that came to us from the outer universe? Are we alone in the whole galaxy? Is the Roswell trident a conspiracy? Who made these hieroglyphs on the Egyptian pyramids? What are the files of Pentagon pilots? Does the government cover the aliens in Zone 51? Have some of us been kidnapped by aliens and then wiped out the memory...?

So let's figure out where reality turns into fiction.

Are we alone in the whole world? Some theories are trying to glimpse the interplay of hidden universal civilizations. The most popular of them is the Fermi Paradox. The problem of the lack of evidence for the existence of extraterrestrial civilizations in contrast to the presence of many theories. So to say, Fermi asks: "If there are billions of planets that are habitable why no one contacts us?"

Of course, the scientific community puts some theoretical explanations on this matter. The one that looks the most possible is the Zoo Hypothesis. It means that we are observed like animals in a zoo by aliens who do not want to interrupt our history to provide its normal course. While speculating about alien contacts many people think that they would come with good intentions to share their technologies just like elder brothers. But what if they come like the conquistadors and we will be in the role of the Aztecs in that story...

So, here, the other theory comes out, The Theory of the Dark Forest. It is well developed in the roman trilogy of Liu Cixin the Chinese science fiction writer. He presents the Universe as the dark forest and the civilizations inhabiting it as hunters praying in the dark, once some of the hunters show he immediately becomes the prey of a more developed and skillful one. That is why nobody wants to be found in such a dangerous place. Except for the silly boy "Humanity" that made a fire and screams: "I'm here!". Only one paradox and so many solutions, however, it is easier to solve the problem when it is divided into parts. Here comes the Drake equation, which calculates the probability of the existence of extraterrestrial civilizations. It is presented as follows (Mosher, 2022):



So you can try to count it if you like, but the fundamental problem is that the terms are completely unknown. So that equation exists for dividing the problem into levels of questions that can be answered easier, but unfortunately we have not reached that level of technology to answer at least one of them.

Taking into consideration these theories, many historians, astrologists, and even mere mortals, who are not relevant to science at all, claim that there is irrefutable evidence of alien contact. The first great event in the conspiracy community that comes to mind is the Roswell incident. It happened in the summer of 1947 in Roswell, New Mexico. The legend says that the UFO with its crew crashed in the area near that city. There are two arguments in support of that legend. The first one is the mummy of the alien kept in the museum, the other alien body was prepared, and that event was even shot (Buzzy, 2015).

So-called “Roswell photo” (Savia, 2015) on which the creature that was a member of the crashed UFO crew is pictured looks. But, it seems that in 1947 the dead babies were falling from the sky...



Several lines later you will understand what I’m speaking about. Skeptics with help of the photo manipulation technique were able to recover the inscription on the plate, which said: «Mummified body of a two-year-old boy». That made UFO searchers apologize for their mistake.

In 1995, Ray Santilli released the film in which the alien’s body was operated on by two surgeons. After the release on television, the whole world was shocked. But the professional surgeons quickly exposed that film since the actions of the “surgeons” in that film admitted to being the best ones (who else could be taken by the US government for that mission) were so rough and factitious that the doubts about the originality of that footage just can’t help appearing. In 2006,

Santilli admitted that that was a reconstruction but continued claiming that there had been the original celluloid of the surgery. Sculptor John Humphreys, who admitted that he played the role of one surgeon in that footage, made the body of the alien.

In 1994 The USAF made a report that the “UFO debris” were just parts of Project Mogul System (nuclear weapons surveillance project) tested in the atmosphere. A second Air Force report, published in 1997, stated that test dummies were mistaken as “alien bodies”.

All the conspiracy theories can be easily exposed using simple logic, but do not forget that there is an incomprehensible amount of galaxies in which life can be born every second. Maybe in a galaxy far far away some bacteria have just moved on to the next step of evolution. Still, every second some planet can be erased with all its inhabitants. Regrettably, humanity is not able to see further than its nose. Yet unable...

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ENVIRONMENT UNDER THE INFLUENCE OF WAR

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On 24 February 2022, the occupying power launched an invasion against Ukraine by land, sea and air, using such heavy weapons. Ukraine has suffered not only human but also significant environmental costs. Today our people, infrastructure and economy suffer great losses. The environmental consequences of war are usually not given much attention. However, it should be emphasized that crimes against the environment may be noticeable not immediately, but over several years. In the long term, they will have quite negative and large-scale consequences

Among all types of human activity, war has the greatest impact on the environment, therefore, in conditions of open hostilities, direct and indirect consequences should be distinguished.

Direct consequences include explosions, as a result of which our environment suffers. Ammunition, abandoned equipment, shell fragments - all these things pollute our land, air and water bodies with a large number of toxic elements.

The indirect consequences of environmental pollution are not caused by the hostilities themselves, but by the causes that lead to them. For example, blackouts in

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infrastructure facilities that ensure the normalization of life. At the Chornobyl NPP, electrical lines that were supposed to cool the spent nuclear fuel in the local storage facility were damaged. The radiation that was released as a result of these actions can be carried by the wind throughout the territory of not only Ukraine, but also other European countries, which will harm both human health and the environment (Patseva, Alpatova, Demchuk, Kireitseva & Levytskyi, 2022).

The actions of the Russian army not only cause man-made and environmental disasters, but also destroy the habitats of rare species of organisms that are now endangered. Today, as a result of the war of the occupying state against Ukraine, about 900 protected areas of 1.2 million hectares, which is about a third of all protected areas of our country, are in danger (Tvorydlo, 2022).

It can be concluded that at the time of active hostilities it is difficult to know the true scale of the disaster, the state of the environment and the level of its pollution. We will be able to conduct an accurate investigation only after the fighting on our territory stops. It is determined that the invasion of the occupying state has caused a large-scale ecosystem disaster, the consequences of which we will have to overcome for years after the victory. Given the scale of the damage, we need to develop methods to improve our state ecosystem now. Also be prepared that in the coming years Ukraine will experience not the best stage of ecological development. It will take us years to clean up the territory.

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AN ATTEMPT TO SEE THE WORLD THROUGH THE EYES OF A COLOUR-BLIND PERSON

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We have all heard about such a disease as colour blindness. It is a well-known fact that colour-blind people have difficulty distinguishing particular colours. There is a myth in society that traffic lights are one of the biggest problems of colour-blind people. Many people are also convinced that normal life with colour blindness is hardly possible. Is it really so? Let's consider colour blindness (further – CB) in more details.




Colour blindness is the decreased ability to see colour or differences in colour. (Wikipedia, 2022)

There are several different classifications of types of CB, but the typical one follows the von Kries classifications, which uses severity and affected cone for naming. According to this classification, there are two main types of CB: total colour blindness (monochromacy) and partial colour blindness. Total CB is much less common than partial CB. Considering the fact that red, green and blue are the basic (primary) colours, partial CB has three subtypes:

- Protanopia. In this case, the sick person perceives the red colour and its shades in a distorted way. In general, the world of a person with protanopia is coloured in yellow and green colours.
- Deuteranopia. This is a difficulty with the perception of the green colour. A person with deuteranopia sees the world mainly in yellow and blue shades.
- Tritanopia. Distorted perception of blue colour and its shades. This subtype is extremely rare. With tritanopia, all colours of the spectrum are seen as shades of red or green.

Below we have the opportunity to get acquainted with the table, which shows the differences in colour perception (for each subtype). The table does not distinguish total CB, because in this case all colours are shades of black, gray and white.

The Differences in Colour Perception

Normal Vision						
Protanopia						
Deuteranopia						
Tritanopia						

It was already mentioned at the beginning that there is a widespread myth about the complex relationship between colour-blind people and traffic lights. However, traffic lights are not really the biggest issue. Colour-blind people note that this aspect of life is quite easy to understand because the placement of colours is intuitive. But there are some real handicaps for people who are suffering from CB (Colblindor, 2021):

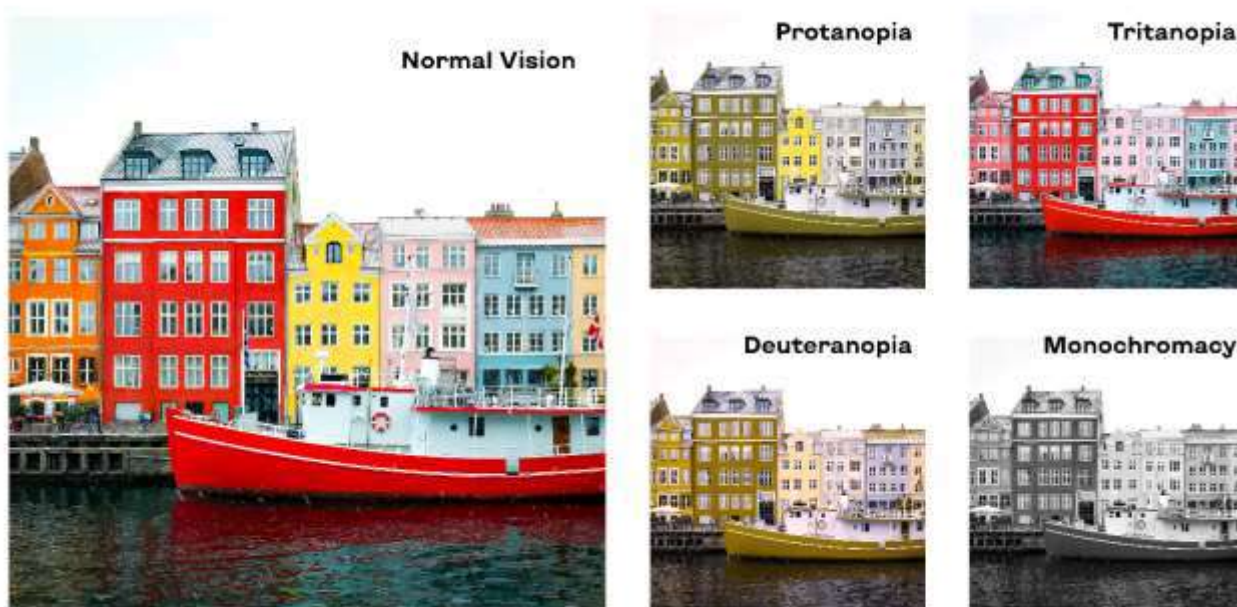
- Sunburns. It is almost impossible to understand that you have received a sunburn, because colour-blind people do not notice any changes in skin colour.
- Cooking meat. It is difficult for colour-blind people to understand whether or not it is ready, because you need to take into account the colour of the meat to determine the degree of its readiness.
- Fruits and vegetables. People who do not have CB determine the ripeness of fruits and vegetables mainly based on their colour. It is clear that colour-blind people often have to use their intuition in this case.
- Clothes. This issue is probably obvious. Colour-blind people have difficulty in making sure that the colours of clothes are harmoniously combined with each other.

It may seem that living with CB is very difficult. However, in real life, colour-blind people have learned to adapt to the perception of the world in a slightly different way. Their friends and family help in choosing clothes. In addition, now there are

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special apps for smartphones that determine the colour of the photographed object. And in general, all people who have CB are constantly inventing new life hacks to make their lives easier.

However, it is clear that sometimes problems can arise. Therefore, if a person approaches you in the store and asks you to suggest if an orange is ripe, or asks "What color is this shirt?", do not be lazy – you will spend only a minute of your time on this, but you will make that person's life much easier. Below you can see some pictures of how people with colour blindness see our world.



I hope that after reading this report, you will become a little closer to understanding colour-blind people.

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AMAZING SECRETS ENCODED IN FAMOUS WORKS OF ART

Alina Dubchak

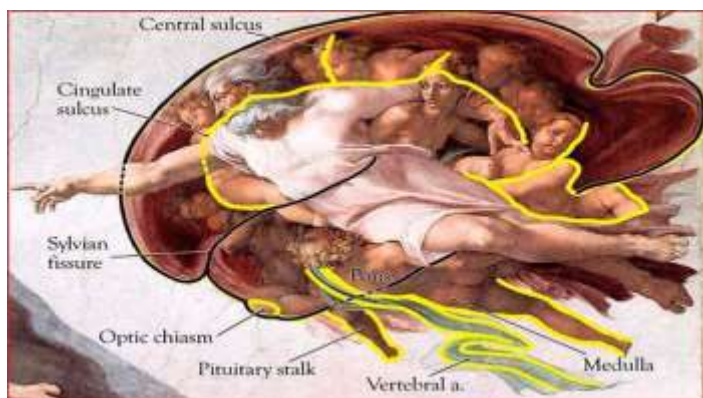
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Many masterpieces of different eras have survived our time, ranging from historical events recorded in manuscripts to sculptures and buildings, the beauty of which is fascinating and sometimes even frightening. Painting, as a branch of art, will be considered. Today we have quite a large number of paintings ranging from the most famous artists such as Leonardo da Vinci, Edvard Munch, Pablo Picasso, and others to unknown authors who have not even finished their works. Each of them put his soul into his work of art, his experiences, emotions, desires... And we feel it when we look at these paintings, we often ask ourselves questions: "What did he feel at that moment? Why did he decide to paint this?" and maybe we can even give ourselves an answer to this question by analyzing his story and comparing our feelings with the feelings of the painting that it demonstrates. But some artists painted their paintings not only to convey their emotions and feelings but also to encode something for the future for other generations, in the hope that it will be the same discovery for them as it was in their time so that they can also feel these experiences when decoding this picture. A striking example is the book "The Da Vinci Code" written by American writer Dan Brown in 2003. It presents the secrets that paintings can hide from us.

An outstanding person like Michelangelo Buonarroti also has some mysteries. We all know about his masterpiece as the Sistine Chapel in the Vatican, which was built in the 15th century. One of the famous images on it is "The Creation of Adam". At first glance, nothing is so special, but it has a little more meaning than we think. So, we know Michelangelo as a unique artist of genius, sculptor, and architect, but before all this, he was also an anatomist. At the age of 17, he began to dissect corpses from the church cemetery to take a closer look at the person and his works of art were as close to reality as possible. But obviously, he hid it and burned all his records so that no one would guess what he was doing, but his experiments did not go unnoticed. After he painted the Sistine Chapel, 500 years later, his hidden anatomical illustrations were found by experts Jan Suk and Rafael Tamargo. In their article published in the May 2010 issue of the scientific journal *Neurosurgery*, they made their discovery public. Suk and Tamargo are specialists in neuroanatomy at the Johns Hopkins University School of Medicine in Baltimore, Maryland. In 1990, Dr. Frank Meshberger published an article in the *Journal of the American Medical Association*, in which he deciphered Michelangelo's images and made the startling conclusion that the image of God creating Adam in the central panel on the ceiling is a perfect anatomical illustration of the human brain in cross-section.

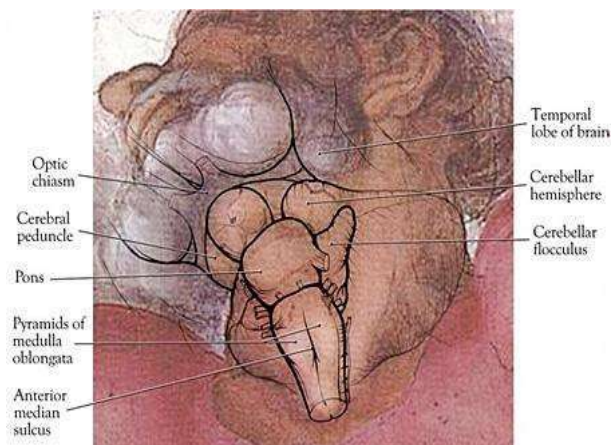
Meschberger suggests that Michelangelo depicted it in this way to show that God endowed Adam not only with life but also with supreme human intelligence. Furthermore, in the panel "Separation of Light from Darkness", the researchers also saw something interesting, namely, leading to the center of God's chest and forming



his throat, they found an accurate image of the human spinal cord and brain stem. But that's not all. Scientists suggest that Michelangelo also depicted other anatomical features in other places, such as a kidney. It was especially interesting for him because he suffered from kidney stones. Stunning discoveries can also be seen in the work of

Leonardo Da Vinci, who also showed similar illustrations of the brain in 1487, and he and Michelangelo knew each other's work very well (Fields, 2010).

Leonardo da Vinci's work is another great example. We all know the Mona Lisa for what it is worth with its enchanted smile and look. Leonardo Da Vinci is considered a genius of the Renaissance and especially in his illustration "The Vitruvian Man". It has such a name because Davinci himself worked on the works of architect Marcus Vitruvius. Vitruvius himself is the author of a treatise that became a reference book on architecture in the Renaissance. In turn, Leonardo and Michelangelo read his treatise and tried to grasp his concepts. Why was it so important? It covered a lot of knowledge of the era, based on which one could draw conclusions based on these concepts that were set out in the book. Vitruvius wrote that a building should be symmetrical and proportional to be beautiful. Both features can always be found in nature, and there is no more perfect natural example of symmetry and proportion than the human body. So, the masters tried to draw a human figure that would correspond to Vitruvius' set of proportions and be inscribed in a circle and a square. This is what the "Vitruvian Man" shows us. How Leonardo considered it. We all know how to calculate the area of a circle and a square, but how, knowing their areas, to build a circle that would be equal to the area of a square? This problem is unsolvable because of the natural number pi. As for Da Vinci's solution, he depicted a man in the center of a circle and a square. The navel of the man was considered the center of the circle. He also measured that the length of the arms is proportional to the height of the person, which allows you to enter the person in the square (Hdez, 2014). He used Vitruvius' ideas to solve the problem of squaring the circle with the drawn man as an auxiliary element to calculate the area of both figures. That is, from here we can say that this is not just a drawing drawn with a pen, but the whole calculation of the "eternal" problem for which there is still no answer.





The third example that I would like to consider is none other than Vincent Van Gogh and his painting "Starry Night". We all know him as a psychologically unstable person, but if you take a closer look at his paintings, there is something more extensive that scientists have been able to discern in this painting, which was painted in June 1889 in the chamber of Saint-Paul-de-Mussel after he cut off his ear. And it is a turbulent flow in the dynamics of fluids. How can it be? Well, turbulent flow is self-similar, that is, large vortices transfer energy to small vortices, which transfer it further. Somehow scientists, observing this phenomenon on a distant star, remembered the painting "Starry Night" and it prompted them to do a detailed study of the light in the picture. The result



was as follows: a bright structure of turbulence vortex flows was revealed and by digitizing and changing the contrast of pixels they became even more convinced (Clair, 2022). It can be assumed that at the moment of great suffering he came to realize such great things and to express them in the picture, thus connecting all this in his mind to the great mysteries of the flow of light.

To sum up, we can say that our universe gives us gifted people who not only can implement their thoughts, but also encode them both in writing and painting. So, Leonardo Da Vinci approached the solution of a global problem in mathematics, Michelangelo transferred his knowledge of anatomy to the picture, and Van Gogh was able to convey the law of physics. This coding makes us understand that even after thousands of years it is relevant to date and who knows, perhaps another cipher will give us a saying about what we do not already know even close to or what science has not yet been able to answer.

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MARTIAN LAKES

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It is well-known that water is one of the main reasons our planet is habitable. Water covers about 70% of Earth's surface and can be found in a lot of types: from small streams to large oceans. But somewhere in the middle of this long list are lakes, a very special type of waterbody.

As Wikipedia (2022) states, "A lake is an area filled with water, localized in a basin, surrounded by land, and distinct from any river or other outlet that serves to feed or drain the lake". So basically, the fact that the lake is isolated from any other water body plays a huge role in the development of life in it. They are teeming with various life forms, such as plants (cattail, pickerelweed), animals (fish, frogs, snakes, otters and others) and bacteria.

Let's take a break from Earth's abundant life and take a look at Mars. At first sight, two planets are completely different, but there is evidence that a long time ago Mars had some forms of life on it. We're talking about lakes, a type of waterbody described in the previous paragraph. Modern science knows approximately 500 ancient lakes with an area larger than 100 km². But scientists say that about 70% of lakes are yet to be discovered, because they have smaller areas and are harder to find (ScienceDaily, 2022). Finding these lakes is pretty important, because they may contain crucial information about climate change on the red planet. Most of the lakes date to the period 3,500 to 4,000 million years ago. Their lifetime varies from 10,000 to 100,000 years (ScienceDaily, 2022). This fact tells us that throughout the entire history of Mars, there were a lot of temperature and humidity changes that led to lakes disappearing and appearing again.

Ancient martian lakes contained water, energy sources and nutrients. These conditions may have led to the birth of microbial life. It is obvious that lakes are the main interest of astrobiology and thus are very important. But every lake is not the same. Some of them may be more interesting because of the location, depth, size, lifetime and a lot of other reasons which could be the causes of a hydrothermal system suitable for life of simple organisms.

An ecologist at HKU School of Biological Sciences, Dr David Baker (2022) stated, "Earth is host to many environments that can serve as analogs to other planets. From the harsh terrain of Svalbard to the depths of Mono Lake - we can determine how to design tools for detecting life elsewhere right here at home. Most of those tools are aimed at detecting the remains and residues of microbial life" (ScienceDaily, 2022).

Recently, China has successfully landed its first lander on the surface of Mars. It is now roaming through Utopia Planitia, performing mineralogical and chemical analysis of the reds planet surface. This and a lot of other research are very significant because they can tell the causes of climate change and disappearance of life on Mars.

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**PERSPECTIVES OF QUANTUM COMPUTER AS A FUTURE
TECHNOLOGY**

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In 2022, the Nobel Prize was awarded to three scientists: Alain Aspect, John F. Clauser and Anton Zeilinger for their experiments with entangled photons, detection of violations of Bell's inequality, and pioneering work in quantum information science. This work has made invaluable contributions to the development of quantum computers.

Quantum computer is a computing device, its operations are based on the principles of quantum mechanics. It differs from an ordinary computer in that an ordinary computer uses bits (0, 1) for calculations, while a quantum computer uses qubits (bits that have the value of both 0 and 1 at the same time). A quantum computer has a much higher speed of solving problems and calculations than a traditional computer.

With the help of quantum computers, it is possible to discover new medicines, materials, that will be stronger than titanium and, at the same time, lighter than plastic, the most accurate models of DNA and molecules. Quantum computers will be able to provide absolute security of encryption or make perfect AI.

Our country is also not far behind in the development of similar technologies. For example, the Ukrainian IT company 'SoftServe' and Ivan Franko National University of Lviv opened a study program "Quantum computers and quantum programming". The goal of the program is to train specialists capable of conducting scientific research in these developments. Today, quantum entanglement is one of the most progressive quantum fields. Giants such as Google, Intel and Alibaba are already developing their quantum computers. 'SoftServe' also aims to start similar developments involving progressive youth.

Also, scientists of the Kyiv Academic University are looking for the key to the development of new materials and technologies in electronics that can be used to build a quantum computer.

World-leading countries, including Ukraine, are currently spending billions to develop quantum computers. Developers and scientists believe these machines will help solve tasks beyond the capabilities of classical computers. The new era is coming.

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RESEARCH OF RINGS SYSTEM OF SPACE OBJECTS

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In 1610, during the first observation of our Solar system, Galileo discovered a previously unseen phenomenon - Saturn rings. But Galileo didn't know what it was, they appeared to him as 'ears' of the planet. Only in 1655 Christaan Huygens proposed that Saturn was surrounded by solid rings.

The rings of Saturn have been a great puzzle for scientists before NASA's Voyager 1 and 2 missions. They revealed some secrets of rings. Nowadays we know for sure that the particles in Saturn's rings are composed primarily of water ice and range from micrometers to meters in size, some of them can be parts of asteroids. In these rings we also can see some features like spokes or irregular ripples. Now we can guess that some of them might be signs of asteroids plunging through the ring system or even tiny moonlets which were previously discovered nearby Saturn.

Later it appeared that Saturn isn't the only planet in the Solar system with rings. Neptune, Uranus and Jupiter also have barely visible rings around them.

Second discovered ring system belongs to Uranus. The question "When?" still remains unanswered. Many sources say that in 1977, J. L. Elliot observed them with a three-channel occultation photometer attached to the 91-cm telescope aboard the Kuiper Airborne Observatory, but much more earlier, in 1797, William Herschel wrote that he observed Uranus rings. Nonetheless, many astronomers doubt Herschel's words, since Uranus rings are extremely dull, and nobody else observed them for 200 years after Herschel.

Uranus rings aren't visible through telescopes as Saturn ones, so Elliot caught rings during a stellar occultation when the planet passed between a star and Earth, temporarily blocking the star's light. In this condition if a planet has rings we can observe not only the brightness drop of the planet, but also a small brightness drop of the rings system.

Neptune planet has 5 main rings and four prominent arcs that we know so far. These rings are young and short-lived(in the cosmical times) and named after famous physics - Galle, Leverrier, Lassell, Arago, and Adams. Neptune's rings also have a peculiar system of dust called arcs. Three of them named after the national motto of France Republic and Republic Guitty which was popularized during the French

Revolution - Liberty, Equality, Fraternity. Not long ago NASA's James Webb space telescope got a new infrared image of Neptune rings.

Jupiter's rings were first discovered by the Voyager-1 spacecraft in 1979 using stellar occultation effects. When Jupiter was between the Sun and Voyager spacecraft caught faintly glowing rings of the planet which are barely seen between the occultation photometer of the satellite and the Sun. In contrast to Saturn's large icy and rock chunk rings, these consist of small dust.

As you could notice, all Giant Planets of our Solar System have rings systems around them, but not only them, nowadays we already know many exoplanets(planets outside of the Solar System) which impressed us with their ring radiuses. One of them is J1407b or Super-Saturn. It is true to its name, having 20-times bigger mass than Saturn it is orbited by a mind-blowing ring system which is 180-million kilometers across (that's 30-millions larger than distance between the Sun and the Earth).

Somebody may think that due to the optimal Roche Limit, bigger attraction force and greater size only Giant Planets have rings, but that's not true. About 5 years ago scientists discovered rings around dwarf planet Haumea beyond Neptune. Haumea spins 6 times faster than Earth and is only a third of the Moon's mass, but as appeared it is enough to form a small ring system around it.

In conclusion, ring systems, being a really interesting and important topic to discover, still have many black spots. Who knows, maybe in future we would be able to recreate "Interstellar's" finale and live on Saturn's orbit inside these mesmerizing rings.

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DÉJÀ VU EFFECT

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One of the most famous psychological and psychiatric terms is the "dejavu effect". Déjà vu, or a false impression, has happened to each of us at least once. This is a distinct feeling that the situation you are in has already been in your life. The word "déjavu" came to us from the French language and has the following explanation: "Déjà vu is a psychological state of a person in which he feels that he has already been in a similar situation, was in this place, saw certain objects". An important feature is that the déjà vu effect can occur both in completely healthy people and in people with mental disorders and neurological diseases; it is especially common in people who suffer from epilepsy. In addition, cases of déjà vu are observed after brain injuries.

The result of the manifestation of the phenomenon can be: a feeling of loss of reality; the illusion of the unnaturalness of events; the feeling of being lost in time. To date, the most popular explanations for the déjà vu effect are:

1. Acute emotional outbursts;
2. Brain abnormality;
3. Fatigue;
4. Mental problems;
5. Forgotten dreams and fantasies;

Today, there are many different theories and assumptions about what déjà vu is. Some believe that these are memories of forgotten dreams that suddenly emerged from the depths of memory. Others believe that these are manifestations of the subconscious work of the brain, when the amount of accumulated and processed information moves to a new level. Modern scientists believe that the phenomenon of déjà vu is related to a certain area of the brain. It is called the hippocampus. This zone is responsible for the identification of objects. With the help of experiments, it was found that the dentate gyrus of the hippocampus allows you to instantly recognize the smallest differences in similar images.

HYPOTHESES OF THE EMERGENCE OF DÉJÀ VU

Multiplicity of existence - some researchers connect déjà vu theory from reincarnation. We learn about what we have actually already seen or heard, but in our past incarnations.

Universal infinity and non-linearity of time - the hypothesis is close to the previous one - the universe is cyclically reborn and we, together with it, experience the past events again and again. Some parts of the story change, while others remain the same. Past, present and future exist simultaneously.



MULTIPLICITY OF BEING



UNIVERSAL INFINITY AND NON-LINEARITY OF TIME



PSYCHOANALYSIS AND MEMORY GAMES



HEAD INJURIES



MENTAL PATHOLOGY

Psychoanalysis and memory games - during sleep, our brain processes options for the future that worries us. One dream, one option. We constantly see dreams, but we remember them extremely often, bright moments remain in our memory and almost never details. Memory stores everything that we cannot arbitrarily pull to the surface of consciousness. These flashes of memories are what we call déjà vu.

Head injuries - doctors suggest that déjà vu can be caused by a brain injury. The left hemisphere is responsible for the perception of the present and the future, and the right hemisphere is responsible for the perception of the past. When the functions of one of the hemispheres are disturbed, the picture of the past or the feeling of the real can be distorted. Failures occur not only with physical injuries, sometimes with enough stress to cause confusion in memory.

Mental pathology - from the point of view of psychiatrists, déjà vu is a symptom. We would like to explain breakthroughs in clairvoyance or intuition, but psychiatrists are relentless - repeated manifestations of déjà vu are a mental pathology. Specialists from psychiatry are concerned by the fact that the phenomenon is accompanied by a loss of connection with reality, however, only for a few seconds.

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THE SOUND. ITS IMPACT AND ROLE IN LIFE

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Man lives in a world of sounds. Sound is what the ear hears. We hear people's voices, birdsong, musical instruments, forest noise, thunder during thunderstorms. We hear the sound of cars running, vehicles in motion...

Sounds affect people in different ways: they may delight or annoy us, calm us or frighten us with their unexpectedness.

In the past, sound seemed to people an amazing, mysterious creation of supernatural powers. They believed that sound could tame wild animals, move rocks and mountains, block the way of water, cause rain, and perform other miracles. The ancient Egyptians, having noticed the amazing effect of music on people, used it for their own purposes. No holiday was without songs.

There is no place in today's city that is completely devoid of sound. The city speaks to us in its own language. We read it, like visual images, consciously or not.

The researchers of the Chatty Maps project have deliberately identified the relationship between different types of sounds (cars, nature, people, music) and people's emotions and their perception of space, depending on the sound background. Based on their research, they have compiled sound profiles of twelve cities that can be used when relocating, choosing a place to work, rest or a business site. Perhaps a proper selection of sound backgrounds, just like office decor, would help us to focus or, on the contrary, to relax.

Our perception of sounds changes when we compare them to something. For example, if you close a window that looks out onto a noisy street, the room is quiet and a friend who comes in for tea immediately notices how loud the wall clock is ticking. The kitchen is one of the loudest places in the house: the kettle whistles and clicks, the fridge hums monotonously, the oven timer clatters, the water pours from the tap, the fire on the cooker hisses softly. Despite this, for me the kitchen is still the coziest place in the house, where long heartfelt conversations take place and the necessary vitality is replenished.

Noise, music and silence are all sound constructors; when they change one another they create different tracks. Usually our attention is drawn to music - the slender, organized sound rehearsed by the performers, or noise that irritates the ear - the movement of trucks, the work of construction equipment or the shrill signal of an inoperative TV channel. But we're missing out on a lot of other sounds, and the alternation of noise and silence can create a unique melody. In 'The Sound of Noise' a team of musicians perform a concert in which the city plays the role of a hall and the city's infrastructure plays the role of musical instruments. Their final and most important piece is the change in noise and silence that is achieved by switching off the electricity at just the right rhythm throughout the city.

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KESSLER SYNDROME AND CLIMATE CHANGE

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Since 1957, when the space age began and the first satellite was launched, up to nowadays humanity launches more and more rockets. Which loft to the orbit satellites, telescopes and, unfortunately, space debris like upper-stage rocket bodies, and non-operational payloads.

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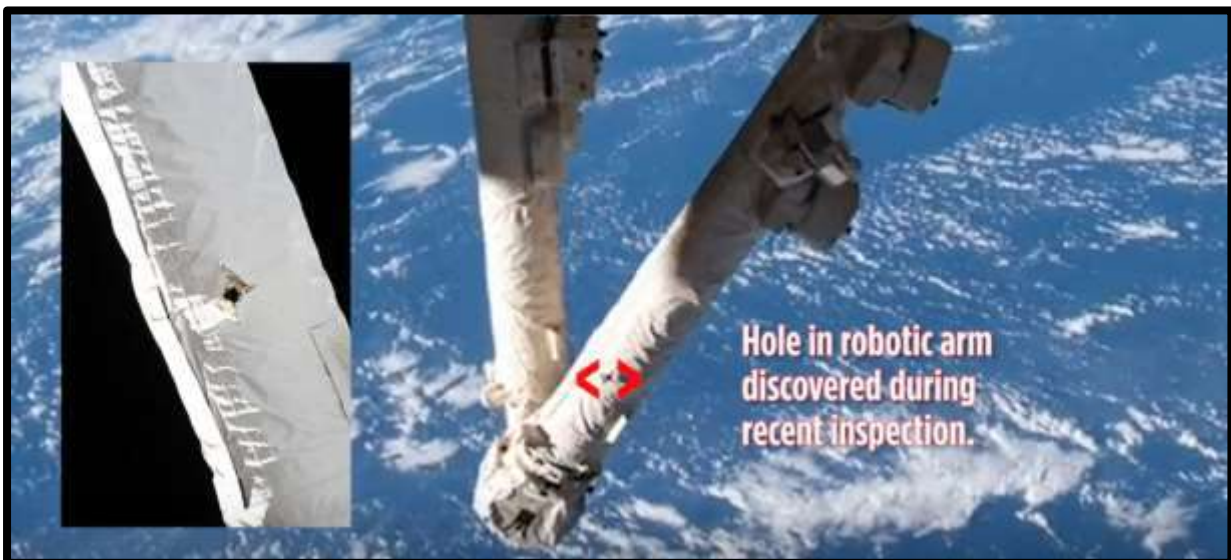
Donald Kessler and Burton Cour-Palais thought about the consequences of these launches back in 1978. They released the study in which they write: "Satellite collisions would produce orbiting fragments, each of which would increase the probability of further collisions, leading to the growth of a belt of debris around the earth"(Donald, 1978).

The latest study shows how many tracked objects are in Earth orbit:

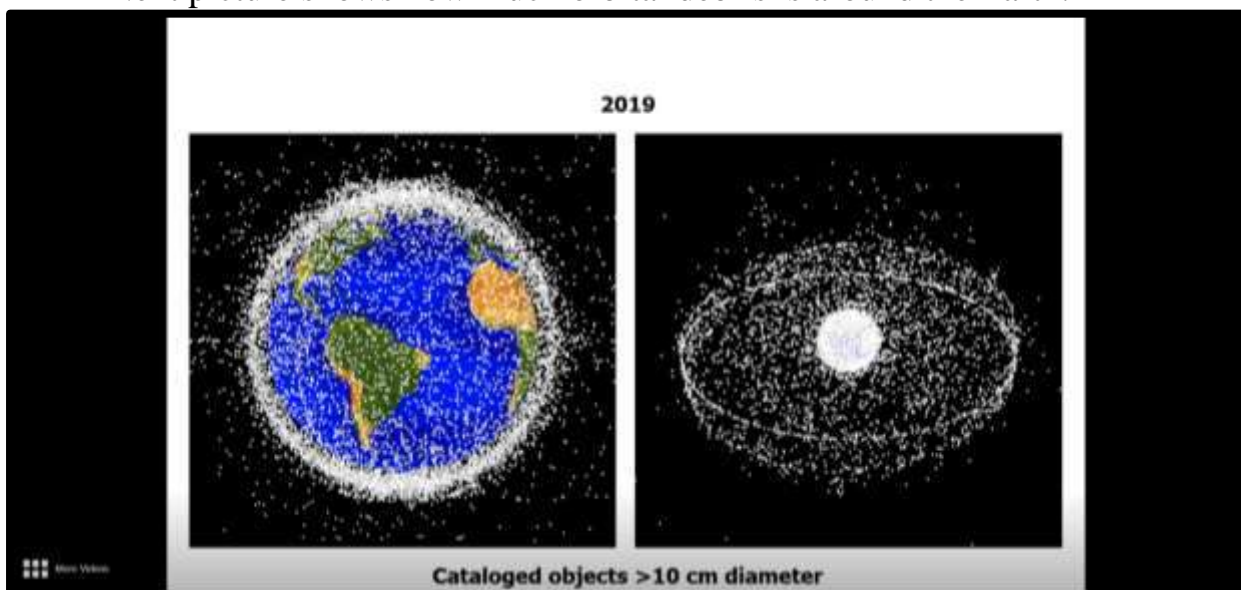
- 36,500 objects over 10 cm wide;
- 1 million objects between 1 and 10 cm across;
- 330 million objects between 1 mm and 1 cm;

You might think "What can these small objects do to multi-ton space stations or satellites?", but it's worth remembering that the orbital speed at 400 kilometers up is about 27,500 kph. And now you understand that space trash is life-threatening shrapnel. From 1999 to 2021, the International Space Station (ISS) had to dodge space junk 29 times.

In the picture above you can see the consequences of hitting orbital debris.



Next picture shows how much orbital debris is around the Earth.

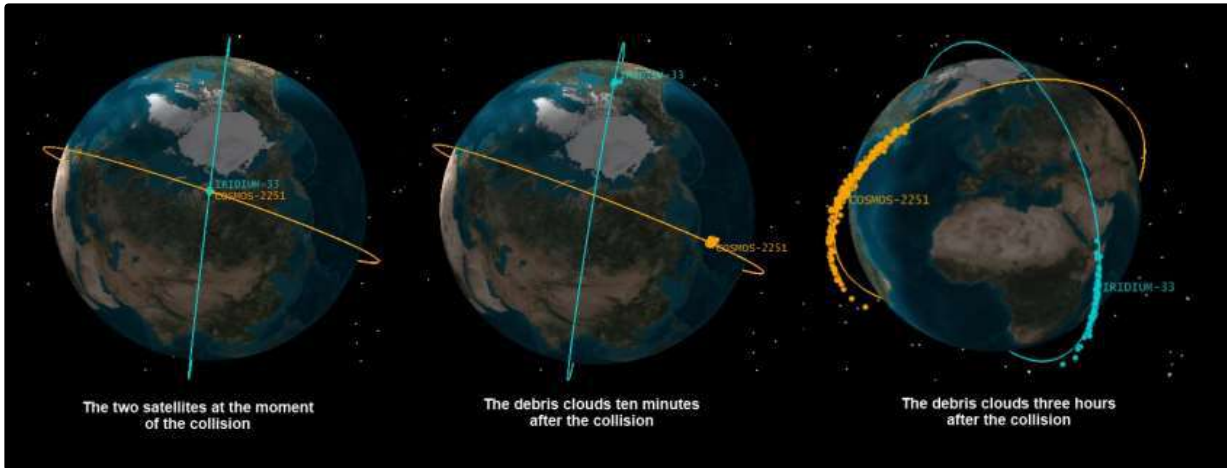


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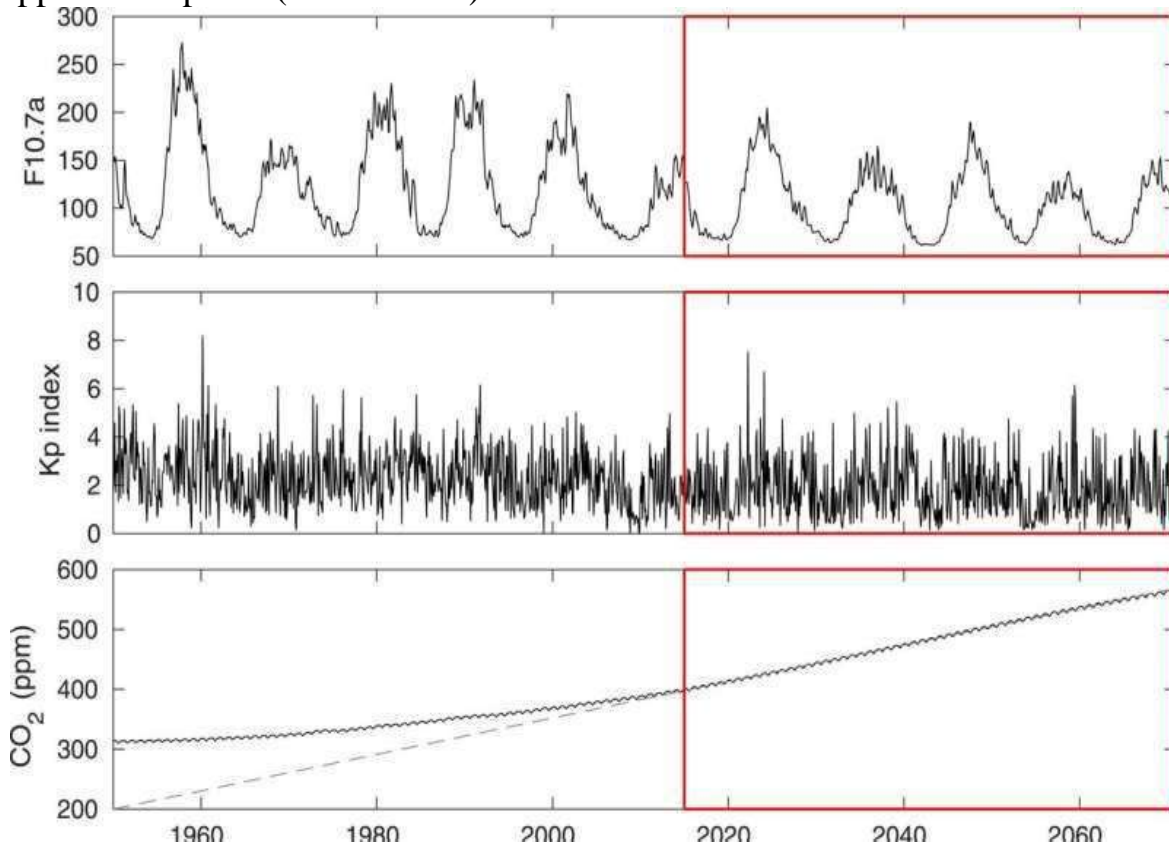
After reviewing this picture, you may be frightened and think that an impenetrable curtain of junk has already formed around the Earth. And yes and no, there is a lot of space trash, this is the fact, but in fact, each piece of this junk is at a great distance from other pieces, and in the photo to depict all objects, the scales of sizes and distances were violated.

In 2009, slammed into each other two satellites Kosmos 2251 and Iridium 33. It was alarmingly loud evidence of the possible onset of Kessler Syndrome. As a result of their collision, we have 2000 pieces of junk bigger than a softball.

In the picture below you can see the collision incident and its impact.



And the next subtopic is how climate change affects Kessler Syndrome. In a recent study, the authors built a realistic climate model of how our atmosphere might change over the next 50 years. Unlike previous similar models, this one focused on the upper atmosphere (90 - 500 km).



Climate change as a result of CO₂ emissions warms the lower layers of the atmosphere, while the upper ones, on the contrary, cool, and because of this, their density decreases. And if the density of the atmosphere decreases, satellites and space debris face less orbital drag and stay in orbit longer. On the one hand, this seems to be good, satellites will work longer, but on the other hand, space debris and broken satellites will also stay longer, and ideally, satellites should not be in orbit for more than 25 years. As a result, the near-Earth orbit could be further cluttered.

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THE «SCHRÖDINGER'S CAT».

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Edwin Schrödinger is a famous person in the rather complex science such as physics. He has achieved great success in life, received the Nobel Prize, was a respected professor, and studied philosophy and biology. But in our modern world, his figure is notable for an interesting and extraordinary experiment, known to everyone as the "Schrödinger's Cat." It happened in 1935.

The essence of this experiment is as follows. The conditional cat that was put in the acid box is both part-dead and part-alive until we open this box and determine what state the cat is in. So, a radioactive atom and a flask with acid were put in a box with a cat, which will break up after the radioactive element breaks down. If the flask breaks up, then the cat will die, but we do not know whether the atom of the radioactive element will disintegrate, and nobody can influence it. So, the cat is both alive and dead at the same time. This phenomenon is called a quantum superposition in physics. And we can determine the state of the creature only when we broach the box, and thus the condition of Schrödinger's cat in the quantum world will determine the fact of this observation. But it is also ought to add that the main problem of this physical

phenomenon is that particles are radioactive and behave differently, so we have no way to affect them either before or after measurement.

Everyone knows that in our nature it is impossible to be in two conditions at one time. But scientists say, if you reduce your body to subatomic sizes, then you can observe almost fantastic things. One of the most mystical things is considered a quantum superposition, suggesting that small particles can be in several states simultaneously. So, recently, Japanese physicists said that they had learned to determine the state of Schrödinger's cat without killing it. They created a method to determine the states of the quantum superposition without directly measuring it. They invented a way to look inside the box without killing him.

Recently, scientists Holger Hofman of the University of Hiroshima and student Kartik Patekar have made a study that allows us to "look into the box with a cat" without causing him any harm. Therefore, they summed up that the truth should be sought not in the measurement of the quantum system itself, but in the methods of analyzing the data obtained during their measurement. They modeled such a situation, that a closed box with a Schrödinger cat needs to be photographed using a camera that is installed outside the box, and can be photographed through the cat's own box. After such a photo, two kinds of information will be stored in the camera: about how the state of the cat's superposition has changed and about whether the cat is alive.

Experiments with Schrödinger's cat are significant for the development of quantum machines. Also, the minimum unit of information in quantum machines and computers, which is called a qubit, is also in a quantum superposition; it represents two values at the same time, unlike a regular bit, which can be either zero or one.

Schrödinger's cat has gradually become a so-called meme. In different books, movies, this paradox is regularly mentioned, although a small number of people remember the main meaning of this experiment.

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MEMORY AND EMOTIONALITY

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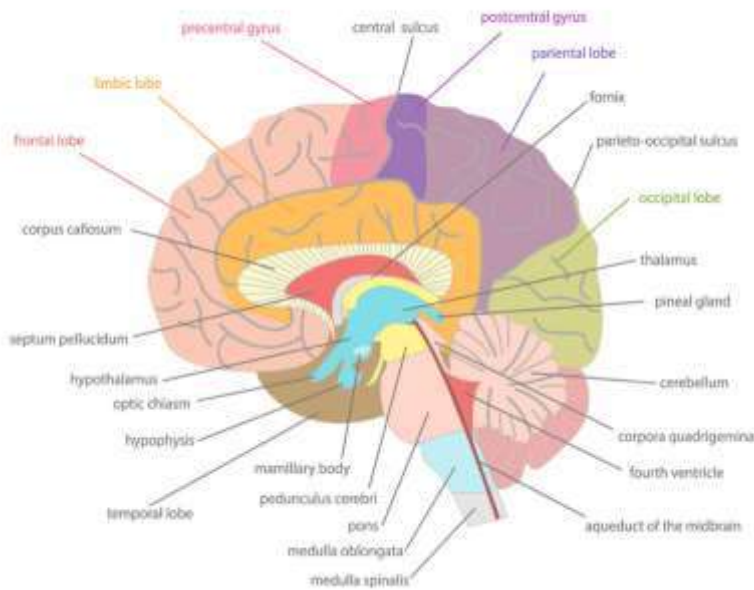
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Memory is not just storing and recalling facts. It covers all kinds of information, events, experiences and contexts - from names to faces and places - and refers to our emotional state at the time.

Areas of the brain involved in memory.

There is no single "memory center". Information is processed, selected for memorization and stored in different parts of the brain. For the memory of an amusement park, for example, what we saw is stored in the visual areas, sounds - in the auditory areas, and so on. They are brought together to remember the whole experience

Parts of the brain and what they are responsible for:



- **Caudate nucleus**
Involved in learning and especially in feedback to modify procedural memory for action

- **Central executive**
Coordinating area that calls up information from other parts and formulates action plans.

- **Cingulate gyrus**
Deals with learning and memory processing. suppresses overly powerful reactions and behaviours

- **Hypothalamus**

Connects the brain with the hormonal system; the center of basic drives, instincts, emotional reactions and feelings.

- **Olfactory bulb**

Pre-processes odors (which are closely associated with emotions) before the olfactory regions

- **Pituitary gland**

Chief hormonal gland; responds to instructions from the hypothalamus, just above

- **Mammillary body**

Processes and helps to recall memories, especially smells. It is also responsible for recognition of sensations.

Types of memory

Modern thinking describes five main types of memory. Working memory is the short-term retention of information, such as a phone number or the position of a door in a room, just long enough to be useful before it quickly fades away. Semantic memory is for isolated facts independent of our personal existence, such as the date of a known historical event.

Episodic memory is recalling episodes and events from our personal perspective, including our feelings and emotions, such as a birthday party. Procedural memory is for learned, well-practiced bodily actions such as walking, riding a bicycle, and tying shoelaces. Implicit memory affects us without our awareness, for example, we are more likely to believe a truth if we have heard it before.

The "emotional brain" is a term often applied to the limbic system, a group of parts located at the top of the brainstem, under and within the dome of the cerebrum. These include the amygdala, thalamus, hypothalamus, vaults, and corpora (see opposite), as well as the inward-facing (medial) areas of the cerebral cortex and the cingulate gyrus, which form a collar around them.

The limbic system takes the lead in the deep-rooted feelings and instinctive reactions we seem to have during times of strong emotion, and which the rational thinking parts of the brain can have a hard time controlling. In particular, the fingertip-sized hypothalamus—almost at the anatomical center of the brain—plays a vital role in powerful basic survival drives such as hunger, thirst, and sex, as well as the strong emotions that can accompany them, such as rage or ecstasy. joy. The hypothalamus sends nerve signals to various parts of the brain, which then transmit their own nerve signals to various muscles, often via the autonomic nervous system.

For example, in response to a sudden fright, the hypothalamus takes control and tells the heart to beat faster, the skeletal muscles to tighten, and the adrenal glands to release adrenaline, ready for sudden action - the "fight or flight" response. The hypothalamus is also connected by a thin stalk to the pituitary gland below it. This gland secretes various hormones and other substances that affect other hormonal glands to complement and enhance the actions of the nervous system.

Several limbic areas are also actively involved in memory formation, especially episodic memory (see opposite). This fact explains why being in a state of strong emotion helps to form strong memories at the time, and why we feel emotions again when we recall such memories.

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RETINOL EFFECT ON HUMAN SKIN

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Retinol, the most popular component in many skincare products such as anti-age and anti-acne treatments, belongs to a grouping of drugs – retinoids, vitamin A derivatives. As vitamin A is well known for its important role in immune and eye health, it is

equally well known for its beneficial impact on the skin, namely stimulating collagen proteins, which improves epidermal thickness (anti-aging effect) and regulating sebaceous gland activity (anti-acne effect). To sum up,

Properties:

- Keratinocytes proliferation
- Collagen proteins proceeding stimulating
- Sebaceous gland activity regulating

There is also many researches that proves the beneficial effects of retinol on skin. So, there was a study that involved 24 women aged 18-65 who were treated with 3% retinol peels at intervals of six weeks, eventually, all of those studied received two to four applications and a supportive home facial care that was used every day to maintain therapeutic effect.

As the result, the 3% retinol peel with the homecare products was well received by many skin types. Skin peeling was observed in many subjects 4 days post-peel and subsided by day 8. Dermatologist grading of wrinkles, pore size, pigmentation, laxity, and photodamage was bettered, collagen production was increased in all subjects.

In conclusion, it was observed, that use of 3% retinol peel was well received by skin, reduced most of common aging and acne problems, reduced photodamage and wrinkles, brought back radiance

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THE COLLISION OF THE MILKY WAY AND ANDROMEDA GALAXIES

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The collision of the Milky Way and the Andromeda Nebula is a predicted collision between the two largest galaxies of the Local Group: the Milky Way and the Andromeda Galaxy (M31), which will happen in about four billion years. The collision of these two galaxies is an obvious fact for all astronomers, but let's figure out how it will happen and what the consequences of this event will be.

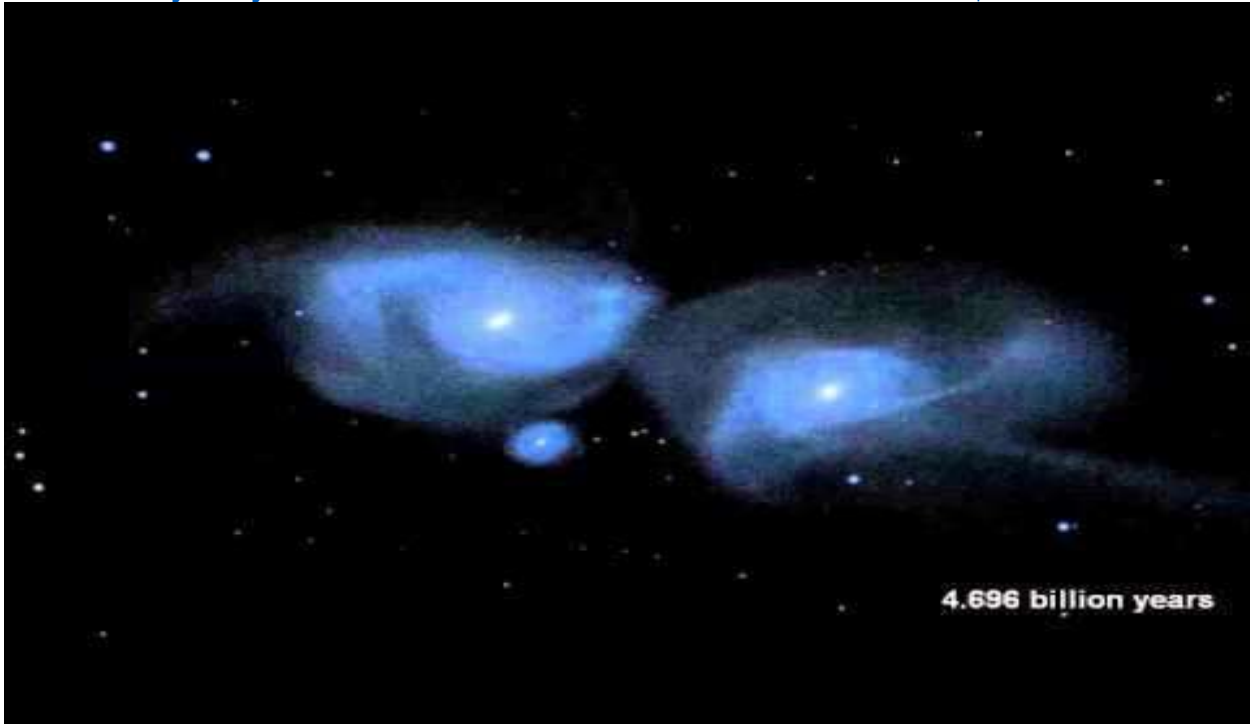
Andromeda is moving toward our galaxy at a speed of about 111 km/h. Scientists have calculated that there are 4.5 billion years left before the galaxy merges. It is unlikely that humanity will survive until that time, but let's imagine that it is so, what will be our fate, what will happen to the solar system?

In fact, the humanity of the future has nothing to worry about, because the distance between objects in galaxies is enormous, so any collision is very improbable.

UKRAINIAN AND FOREIGN SCIENCE: YESTERDAY, TODAY, TOMORROW

For example, let's compare the distance to the nearest star system with the length of the solar system: the largest orbit of Eris (one of the more massive objects farthest from the solar system) is nearly 100 astronomical units, or nearly 15 billion kilometers, and the distance to the closest star system, Alpha Centauri, is 4.35 light-years, or 41 trillion kilometers. The difference is huge.

[Milky Way and Andromeda Galaxies Collision Simulated | Video](#)



Because our galaxy is about half the size of Andromeda, we're probably going to be swallowed up. However, our galaxies are more likely to merge, resulting in a new elliptical galaxy, because of size. But remember that in the centers of the most massive galaxies there is a supermassive black hole, whose merger is inevitable. The fusion of the black holes will be accompanied by massive emissions of gravity waves, which will make us feel it. Due to the increased gravity, the gas containing both galaxies will be directed toward the center and will be absorbed by the new black hole, which may form a quasar that will release as much energy as 100 million supernova explosions. A lot of stars will either be destroyed or expelled from the new galaxy.

Another feature of the merger of galaxies is the active formation of new stars. When two galaxies merge, new stars form, due to the fact that enormous clouds of hydrogen gather and compress under the influence of gravity.

Therefore, considering all the facts and research, we conclude that harm to humanity in the future is unlikely.

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THERMONUCLEAR ENERGY

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Energy is the fundamental currency of our universe, perhaps one of the most crucial nowadays. It is a huge part of what makes our life. We have enough sources to get it from: combustion, nuclear fission, or sunlight-striking photovoltaics. But there's a downside to everything. Evaporations from combustion are extremely toxic, fission results in high-level waste, and solar panels are not yet so effective on cloudy days. But the Sun seems to produce a potentially limitless amount of energy. So why not use its principle and build a prototype of the Sun on Earth to generate energy from it?

Stars emit light due to internal nuclear fusion. In short, fusion is a thermonuclear process that is accompanied by extremely high temperatures such that the electrons are no longer attached to the atoms, which results in a plasma matter in which the nuclei and electrons move freely. And because of the positive charge, nuclei repel each other. To bypass this behavior, the particles have to move incredibly fast and thus raise the temperature to millions of degrees. Speaking of stars, they are so massive that the enormous pressure inside forces them to join the nuclei together until they collapse, releasing energy. It is this release of energy that scientists hope to leverage at the core of the fusion reactor.

We cannot recreate such conditions for creating fusion on Earth, but we can use the principle of the stars. And scientists, having shown ingenuity, found a way out. To date, two ways of making plasmas hot enough to fuse were invented: magnetic confinement and inertial confinement. The former is based on the use of a magnetic field to confine the plasma in a doughnut-shaped toroid vessel, considered the most effective. In these reactors such as the I.T.E.R. reactor in France, the field is produced by superconducting electromagnets, cooled down to absolute zero, that surround the vacuum vessel.

The latter attempts to compress a tiny pellet of fuel to tremendous density and temperature, briefly making the fuel hot and dense enough to fuse. The compression is accompanied by focusing a super-powered laser beam upon the small pellet (Britannica, 2022). This method is used for fusion experiments at the National Ignition Facility in the U.S., where they use the most powerful lasers in the world. Essentially, these experiments are just experiments. Scientists are still elaborating and improving the technology, and although they can achieve fusion, energy losses still exceed the amount of produced energy.

Anyway, there are still lots of studies before the technology becomes viable, or may not. But if eventually, it gets there, it will be so efficient that supplying a single glass of water could produce as much energy as burning a barrel of oil. This is because the reactor would use hydrogen from water molecules as fuel. But it turns out that not any hydrogen can be used. Only specific isotopes called Deuterium and Tritium are needed in combination to react in a proper way (Britannica, 2022). It is not difficult to obtain Deuterium since it is stable and can be found in abundance in water. Getting

Tritium is a bit trickier since it is extremely expensive to produce. Therefore, we need another reagent along with Deuterium instead of Tritium. As studies show, Helium-3, a stable and nonradioactive isotope of Helium, might be a good substitute. Unfortunately, it is also rare on our planet. But the Moon can help us here. Unlike Earth, which is protected by its magnetic field, the Moon has been exposed to massive amounts of Helium-3 by the solar wind. So theoretically we can mine it there. Apollo geologist Harrison Schmidt has repeatedly argued for Helium-3 mining, whilst Gerald Kulcinski at the University of Wisconsin-Madison is another proponent (The European Space Agency, 2022).

It has been said that the construction of thermonuclear reactors could assure energy independence. But what about safety? In fact, the principle of operation of these reactors guarantees safety in relation to other types of reactors since there is no explosion or any catastrophic meltdown if the confinement fails. In this scenario, the plasma would just cool down and the reaction would stop. Theoretically, the leak of radioactivity outside the station could be dangerous. Tritium could combine with oxygen forming radioactive water, which could contaminate the environment by seeping into it. Fortunately, the usage of it is low enough, which ensures fast elimination of the leak.

It seems that we have the ability to generate almost unlimited energy without harming the environment, using simple substances like water as fuel. However, there is one circumstance, where we cannot fully rely on this technology. It is an unproven technology that, in addition, might take billions of dollars to implement. That money could be spent on developing other clean energy that's already proven it. But people still have the enthusiasm to continue evolving this idea, and when in the end the payoff is unlimited clean energy for everyone, it might be worth the time spent.

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FEMALE INFLAMMATORY DISEASES

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Gynecology literally means the science of a woman, since the name comes from a combination of two Greek words: gyne - woman and logos - science. In the medical sense, gynecology should have the subject of its study of the anatomical and biological features that distinguish the female body both in a healthy and in a diseased state,
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obstetrics, physiology and hygiene of a woman, and some areas of other medical disciplines related to the female body. However, due to historically established concepts, this field of science was divided into two large sections. The first section is called the doctrine of obstetrics, while the second section includes all those processes that occur in a woman outside the pregnant state. Thus, in the modern sense, the name “gynecology” means such a medical field that deals with the study and analysis of diseases and pathological processes characteristic of the female body.

It is known that common somatic diseases, such as typhoid and others, can also cause changes in the female genital organ. Diseases of sometimes very distant organs (pituitary gland, thyroid gland) affect the function of the genital organs; a lot of diseases are closely related to birth trauma and inflammatory processes acquired by them during pregnancy and in the postpartum period. From what has been said, it is clear that a general medical education is required from a gynecologist, as well as skills in working with those means that are put into his hands in other medical disciplines.

In gynecological practice, inflammatory diseases of the female genital organs of infectious origin are especially common.

Any infectious disease can be considered as a struggle of an infected organism with the causative agent of the disease. For the occurrence of an infectious disease, it is not enough for one or another microbe to enter the body. Mandatory is a number of conditions that contribute to the occurrence of the inflammatory process. For example, many cases are known when in puerperas with a normal course of the postpartum period, streptococci were found in the secretions, and yet no inflammatory processes occurred.

These cases allow us to recognize that, firstly, the development of infection mainly depends on the state of the defenses of the infected organism, and only, secondly, on the biological characteristics of the pathogen.

Speaking about the reaction of an infected organism, we should understand by this the total amount of various processes occurring in the body in response to an irritating infection.

As you know, these processes are complex. They consist of various local processes that occur at the site of infection and of reflex changes in the state of nerve centers, in particular centers that regulate body temperature, metabolism, heart activity, the reaction of blood vessels, and others. Combining together, these processes are the general reaction of the body in response to changing conditions due to the penetration of infection into the body.

It should be noted that all inflammatory processes observed in the female genital organs are essentially a neurogenic reaction of the body to one or another external influence (infection) and proceeds according to the type of reflex reactions.

The nature and strength of the reactions, as well as the course and outcome of the pathological process, are determined, first of all, by the state of the nervous system of the diseased organism, and then by a number of other conditions, in particular, the virulence and location of the infection, on which the irritation of certain receptors of tissues and organs depends.

Among the many types of bacteria, some are the most common causative agents of gynecological diseases, while others are only occasionally. In the vast majority of

cases, the causative agents of infectious diseases of the female genital organs are the following streptococcus, staphylococcus, gonococcus, escherichia coli and tuberculosis.

However, under certain physiological conditions of the female reproductive apparatus, conditions are created when bacteria from the underlying parts of the genital organs easily enter the cervical canal first, and from there into the uterus, appendages, and even into the abdominal cavity. Such conditions are the period of menstruation and the postpartum period. It is these conditions that are especially favorable for infection to enter the internal genital organs.

That is why the onset of infectious diseases often coincides with these two periods. Finally, trauma to the genital organs is of great importance in the occurrence of inflammatory infectious diseases.

Further, it should be noted that different types of microbes penetrate tissues in absolutely different ways. Indeed, for some microbes, it is necessary to violate the integrity of the integument, for example, for staphylococcus aureus, while for others this is completely optional, since they also penetrate through intact mucous membranes.

The localization of bacteria in certain tissues is also of considerable importance for the development and course of the inflammatory process.

However, the human body's defenses play a crucial role in fighting infection.

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CRYSTALS IN NATURE

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What are crystals? Most people will immediately think of colorful, beautiful, crystalline stones, some of which may be smooth and pleasant to the touch, while others will be something like rock fragments, with sharp and slightly rough edges. For scientists, however, the definition of what a crystal is would be different.

A crystal is a solid whose atoms are arranged in a “highly ordered” repeating pattern. This pattern is also often referred to as the crystal lattice as an auxiliary image for analyzing the structure of a crystal. All these crystal lattices are divided into seven crystal systems according to the principles of spatial symmetry.

In nature, minerals are formed by rock-forming processes. Mineral solutions in the form of hot and molten rocks lie deep underground. As these red-hot rocks are pushed to the earth's surface, they cool down. The substances cool down very slowly.



Minerals form crystals in the form of solids. For example, granite contains the minerals quartz, feldspar, and mica.

Moreover, the size of crystals can be sorely different. All solids are divided into ideal and real. Ideal solids are those with smooth faces, strict long-range order, certain lattice symmetry and other parameters. Real crystals are those found in real life. They may contain impurities that lower the symmetry of the crystal lattice, the smoothness of the facets, and their optical properties. Both types of stones are united by the rule of the arrangement of atoms in the lattice.

Another division criterion divides them into natural and artificial. Natural crystals need natural conditions to grow. Artificial solids are grown in the

laboratory or at home.

Crystals are divided into precious and non-precious stones according to aesthetic and economic criteria. Precious minerals are rare and lovely. These include emerald, diamond, amethyst, ruby, sapphire, tanzanite, opal and many others.

Crystals are widely used in science and technology: semiconductors, prisms and lenses for optical devices, ferromagnetics, high-purity metal monocrystals. Faceted crystals of gemstones, including those grown artificially, are widely used as jewelry.

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VITAMIN A

IN SKIN CARE ROUTINE AND WHY YOU SHOULD USE IT

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Dermatologists really often call vitamin A a “gold standard for skin”. You can use it to make your skin clear and get rid of all blemishes. Moreover, you can use it for the rest of your days, even if you don't have acne. So, it's a popular ingredient in skincare that can be good for a big amount of people. But there is a main question: why? That will be discussed in the next lines.

So, firstly we need to know what that vitamin A is. It's a fat-soluble vitamin, so it dissolves in oil or fats. You can find it in a lot of foods and it's really important for

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our health to have it. There are a few varieties of this vitamin that we use for our skin: retinol, retinyl palmitate, retinyl acetate, retinoic acid, tretinoin, tazarotene, adapalene. This means that people can choose from a weaker or stronger, synthetic or natural etc.

There are a lot of forms of this that you can't use without prescription or recommendation from a qualified specialist or doctor. You should go to someone from them and ask if you need to start treatment.

The main question we need to know is the advantages of retinoids above other cosmetic ingredients. Of course people use it even without visible problems, just like a product with a cumulative effect for better appearance of the skin in the future. But the chief preference of vitamin A is solving a huge number of problems.

You can use it to treat acne in any form: inflamed or subcutaneous. It normalizes the work of cells, and in conclusion makes skin healthier, prettier, more youthful. It controls sebum level to help to improve problematic skin and make it less oily and balanced. Vitamin A is a miracle for skin with hyperpigmentation, because it normalizes the synthesis of tyrosinase. Also it prevents breakouts in the future, and makes skin smooth.

Of course, topical retinoids aren't a salvation for every skin. If you have contraindications such as rosacea, eczema, psoriasis, irritated skin, damaged skin barrier, sensitive skin, pregnancy, early age you should avoid vitamin A. And there are a lot of side effects. But these minuses can be temporary, or you can fix it with other products. It may cause itching, burning, redness, irritation, flaking of the skin, drying, sensitivity to sun.

There are a lot of rules in using retinol to minimize or completely avoid these side effects. You should use it only in the evening to lower sun damage and the probability of the product fading in the sun. Retinoids are applied only at fully clean and dry skin, after cleansing and toning, after that retinol covers with a hydration cream. Also you must use products that heal your skin barrier. It's an important step in skin care, because damaged barriers can cause a number of side effects even if you're not using vitamin A. These products should contain centella asiatica, panthenol, glycerin, ceramides, hyaluronic acid, niacinamide. It's better to use a gentle cleanser. Definitely, you must protect your skin with sunscreen all year every day. Only use a tiny amount of product in a pee size. Follow retinoid stairs: use it once a week, then two-three times a week, then every day.

In conclusion, vitamin A is a powerful ingredient in the skin care industry. There are a number of advantages that this product has. You should use it carefully and follow all instructions. But all side effects you can overcome and you could have the skin of your dreams with retinoids and correctly selected systems of skin care.

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EFFECTS OF ELECTROMAGNETIC FIELDS ON NEURODEGENERATIVE DISEASES

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In the scientific community, there are often discussions about the influence of electromagnetic (EM) fields on the nervous system and the body as a whole. They claim that they can have a negative impact, cause disruption of the functions of the nervous system, and even have a correlation between neurodegenerative diseases and EM. EM fields are also considered as a method of therapy for these diseases. Nevertheless, further studies are needed to explain in detail the mechanism of action of the EM field on the central nervous system and the potential connection with neurodegenerative diseases.

Neurodegenerative diseases are a group of pathologies based on the loss of functional properties of the nervous system and the death of neurons. Despite different manifestations, neurodegenerative diseases have common mechanisms of development. Neurodegeneration is based on epigenetic changes, mutations, loss of protein stability, dysfunction of the immune system - all this leads to brain aging and related pathologies (Wyss-Coray, 2016).

Currently, researchers are looking for external factors that are responsible for the development of neurodegenerative diseases. It is considered that exposure to electric and magnetic fields may be associated with an increased risk of neurodegenerative diseases. In the work of Jalilian (2008) the effect of extremely low frequency magnetic fields (ELF-MF), in the frequency range from 3 Hz to 300 Hz, on the development of Alzheimer's disease (AD) was considered and it was indicated that systematic exposure to ELF-MF can increase the risk of AD development. The hypothesis is that exposure to ELF-MF may promote inflammatory processes and thus affect the progression of neurodegenerative diseases (Mattsson, 2012). However, the results should be interpreted with caution. More research is needed to better understand the effect of ELF-MF on the risk of AD. It is noted that among people who are constantly exposed to electromagnetic fields (for example, power plant operators), there is a higher mortality from neurodegenerative diseases than in other professional groups. However, the occurrence of Alzheimer's disease is more strongly related to electric and magnetic fields than Parkinson's disease. There is a higher mortality rate from Alzheimer's disease in men exposed to magnetic fields (Feychting, 2003). In the research (Johansen,

2000) in a huge analysis of 30,631 people, there is no correlation between AD and systematic electromagnetic field exposure. The few works that have specifically investigated neurodegenerative diseases show that exposure effects are either absent or indicate positive effects on neuronal viability and differentiation. Although there are many publications on the relationship between EM fields and neurodegenerative diseases, it is important to note that they are all based on death certificates and medical records. But many external factors can be important for determining the risk of neurodegenerative diseases in different professional groups, such as: the severity of work, physical or mental work, and lifestyle. In *in vivo* and *in vitro* studies conducted in (Mattsson, 2012) it was shown that EM fields can cause mild oxidative stress (the process of damage and death of cells in the human body as a result of oxidation) and are involved in anti-inflammatory processes (decrease in the level of pro-inflammatory cytokines and increase in anti-inflammatory cytokines). Inflammatory processes can lead to the activation of microglia and the intensification of oxidative stress caused by the burst of electrons. Inflammation of the central nervous system often occurs in the case of AD, Parkinson's disease (PD) or in the case of chronic neurological disorders. The growth of inflammation is initiated by microglia and astrocytes of the central nervous system.

Despite the fact that the negative impact of EM fields is currently being actively researched, their positive impact is also noticeable and is used in the therapy of many neurodegenerative diseases.

Magnetotherapy is a set of methods of treating diseases with the help of magnetic fields. This direction in physiotherapy is based on the influence of a variable (permanent) magnetic field of low (high) frequency on the human body. Under the influence of this field, the tissues of the human body are not magnetized, but the constituent elements of biological tissues, such as water and blood cells, can change the magnetic properties (Ostafiichuk, 2016). Its effect on the nervous system consists in improving the metabolism of nerve cells, blood supply to the brain, strengthening synaptic reorganization of processes, reducing muscle tremors, nystagmus, pain, dizziness, and better urinary control is observed. It is important to note that the problem is also the impact on a person of electromagnetic fields near various magnetic therapeutic devices.

A growing body of evidence shows that stimulation with extremely low frequency electromagnetic fields can have some effect on autoimmunity and immune cells. The effectiveness of pulsed ELF-EMF in alleviating the symptoms and progression of multiple sclerosis has been proven, due to their effect on neurotransmission and on the autoimmune mechanisms responsible for demyelination. As for the immune system, exposure to ELF-EMF promotes a general activation of macrophages, which leads to changes in autoimmunity and several immunological reactions, such as: increased formation of reactive oxygen species, increased phagocytic activity and increased production of chemokines. Transcranial electromagnetic brain stimulation (TES) is a new non-invasive technique used to treat various neurodegenerative disorders, including Alzheimer's disease (Guerriero, 2016). The biological basis of the therapeutic effect of TES is the production of endorphins in the brain, as well as an increase in their concentration in the cerebrospinal fluid, brain,

and blood. Course TES therapy promotes the active production of endorphins and does not cause addiction, achieves an analgesic effect, antidepressant, anti-stressor effects, increases the patient's work capacity and normalizes sleep. TES therapy has an effect on immunity, helps to delay the growth of neoplasms, accelerates the healing of body tissues, and regeneration of peripheral nerves (Andreeva, 2012).

Transcranial magnetic stimulation (TMS) is used in the treatment of Parkinson's disease. This method works in such a way that during TMS, an electromagnetic pulse is generated in the coil of the stimulator, as a result of which an alternating electric field is generated in nearby nerve tissues, which leads to the appearance of a pulsed current. Under the influence of a strong magnetic field, the membrane of nerve cells of the cerebral cortex is depolarized, which leads to the appearance and subsequent propagation of an action potential (Kuznecov, 2016). From the standpoint of modern ideas about the organization of motor systems of the central nervous system, TMS carries out neurotransmitter regulation, which determines the use of methods for the treatment of motor disorders of central genesis.

It is still not possible to fully assert that electromagnetic fields cause neurodegenerative diseases. In the case of Parkinson's disease, there is not enough research to say that EM fields affect the disease. However, some scientists believe that EM fields contribute to the formation of oxidative stress in the body and, thus, lead to the occurrence of disease. In the case of Alzheimer's disease, there are many studies that point to the effects of EM fields. Therefore, to explain the statistics among this group of individuals, it is necessary to conduct many serious, objective and detailed further studies. Electromagnetic fields are also widely used as therapeutic methods for various diseases of the central nervous system, including neurodegenerative ones.

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RESEARCH PERSPECTIVES AND GOALS FOR PLANETARY DEFENCE PROGRAM

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The planetary defense program was developed to protect Earth from space threats, and other worlds from threats from Earth, and is currently the guiding principle for the development of any interplanetary mission. Planetary protection is primarily related to the unknown nature of the space environment, as well as the desire of the scientific community to preserve the pristine nature of celestial bodies until they are studied in detail. One of the factors of such space danger is Near-Earth objects.

Near-Earth objects (NEO) are objects of the Solar System that, due to movement in their orbit, can approach the Earth. These include asteroids and short-period comets, which at perihelion approach the Sun at a distance of less than 1.3 a. o. The vast majority of such objects are near-Earth asteroids (as of December 10, 2018, more than 19,000 such asteroids and 107 comets had been discovered). If such objects are larger than 140 m and can approach the Earth at a distance of 0.05 astronomical units (7,500,000 km) or less, then they are considered potentially dangerous. Near-Earth objects also include spacecraft and meteoroids large enough to be tracked in space. NSOs have become objects of increased interest since 1980 due to the growing awareness of the potential danger of some asteroids and comets ("Discovery Statistics - Cumulative Totals. NASA/JPL CNEOS", 2019).

The Double Asteroid Redirection Test (DART) is a NASA space mission whose task is to demonstrate the kinetic effects of a planned collision of an impact probe with the asteroid "65803 Didymus" in order to develop an Earth defense strategy. DART is a joint effort between NASA's Planetary Defense Department and Johns Hopkins University's Applied Physics Laboratory. The probe was originally developed as one of the two missions of the AIDA project, however, the planned launch of the first reconnaissance orbiter, the ESA-led Hera spacecraft, will be launched in 2024 to survey the impact crater.

The device will contain a solar sensor (a navigational tool for determining the location of the Sun), a star tracker (an optical device for measuring their position) and a camera with a 20-centimeter aperture. The movement of the probe will take place thanks to the NEXT ion engine, which will be powered by solar cells with an area of 22 m².

The problem of potential pollution of the Moon and planets was first raised within the VII Congress of the International Astronautical Federation in Rome in 1956.

In 1958, the U.S. National Academy of Sciences was the first to adopt a resolution in which it called for planning lunar and planetary research missions with great caution, so as not to make subsequent studies of other celestial bodies in search of extraterrestrial life impossible due to for terrestrial organisms that could be introduced to them in the course of research. This led to the creation of the Committee on Contamination by Extraterrestrial Exploration (English Committee on Contamination by Extraterrestrial Exploration), which during the year issued a number of recommendations on the sterilization of spacecraft. The organization itself held the opinion that sterilization is a temporary measure, and Mars and Venus should remain uncontaminated only until they are explored by manned spacecraft.

In 1959, the functions of ensuring planetary protection were transferred to the Committee on Space Research, or COSPAR. In 1964, COSPAR issued Order No. 26:

“...affirms that the search for extraterrestrial life is an important objective of space research, that the planet of Mars may offer the only feasible opportunity to conduct this search during the foreseeable future, that contamination of this planet would make such a search far more difficult and possibly even prevent for all time an unequivocal result, that all practical steps should be taken to ensure that Mars be not biologically contaminated until such time as this search can have been satisfactorily carried out, and that cooperation in proper scheduling of experiments and use of adequate spacecraft sterilization techniques is required on the part of all deep space probe launching authorities to avoid such contamination.” (“General Assembly-Nineteenth Session Annexes”, 1964, Annex №10, document A/5785, p.12)

There are two types of interplanetary pollution:

1) Technogenic panspermia by transferring viable organisms from Earth to another celestial body. The main goal of planetary protection in this case is the preservation of pristine natural processes, the prevention of organisms from the Earth.

2) Reverse pollution through the transmission of extraterrestrial organisms, if such exist, into the Earth's biosphere. Here, the main goal of planetary protection is to prevent the spread of alien organisms in the biosphere.

The Outer Space Treaty is an intergovernmental document that is the basis of international space law. By signing the treaty, the states undertook to follow the principle of planetary protection.

On January 27, 1967, the leading space powers signed an agreement on the principles of states' activities in the exploration and use of outer space, including the Moon and other celestial bodies. In the same year, the USA, USSR and Great Britain ratified this treaty, which created the legal basis for planetary protection, the principle of which is described in Article IX of this treaty:

“Article IX: ... States Parties to the Treaty shall pursue studies of outer space, including the Moon and other celestial bodies, and conduct exploration of them so as to avoid their harmful contamination and also adverse changes in the environment of the Earth resulting from the introduction of extraterrestrial matter and, where necessary, shall adopt appropriate measures for this purpose...” (“Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies”, 1967)

As of October 2011, 100 countries are recognized as state parties to the treaty, and 26 more have signed the treaty but have not completed ratification. Among them are all space states, as well as states striving to acquire this status. The basis for today's space research is the principle:

“Any contaminants that can damage the research programs of the State party should be avoided” (“Preventing the Forward Contamination of Mars”, 2015, p. 13).

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HOW THERMAL ENVIRONMENT AFFECTS SLEEP

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The process of sleep is a major way to recover and restore human beings, and it openly affects not only day performance, but also some regulating systems that may cause problems with obesity, hormone synthesis and even higher mortality. There are a number of factors that influence sleep, but the key one is the thermal environment, because of its strong link to human mechanisms regulating sleep (Gilbert, 2004).

It is a well-known fact that humans have a 24-hour cycle sleep-wake rhythm, that is controlled by sleep regulation and circadian rhythm. All day long, body temperature fluctuates in a specific way, and it decreases during the period of night sleep, and turns back during the wake phase. As a result, sleep is more likely to occur while body temperature is decreased, and less probably occurs on normal or higher body temperature (Kryger, 2005).

Studies were conducted on laboratory mice and rats, and then some summarization was suggested, which then was tested on humans. The results were splitted on 2 categories: heat exposure effects and cold exposure effects.

Heat exposure affects (and, to say briefly, causes damage) 2 phases of sleep: slow wave and rapid eye movement phases. Furthermore, one factor that increases heat damage on sleep is the humidity, because it increases wakefulness, decreases rapid eye movement phase and slow wave sleep more, and, last but not the least, suppresses the decrease in body temperature, not affecting body sweat loss at the same time (Okamoto-Mizuno, 1999, p. 767).

Cold exposure, on the other hand, has no impact on any sleep stages, only the cardiac autonomic response could be influenced. Major advantage is that cold exposure stress does not interact with behavioral thermoregulation to control body temperature, which does not disturb any sleep processes (Okamoto-Mizuno, 2012, p. 14).

To summarize, it is clear that the impact of cold exposure may be greater, or not so damaging as the ones of heat, however, further studies should be conducted to consider the effects of other physiological parameters such as clothes, beddings etc.

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STRUCTURE AND CLASSIFICATION OF NUCLEIC ACIDS.

THEIR MEANING IN NATURE

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Nucleic acids are a class of organic compounds, the main function representatives of which consists in ensuring storage, regulation, implementation genetic information, as well as its transmission between generations of cells. Nucleic acids are the information bank that implicates them all knowledge about the composition, progress and all processes in living systems. Nucleic acids in eukaryotic cells are located in the nucleus as DNA and RNA, in the cytoplasm as RNA, in mitochondria and chloroplasts as mitochondrial DNA and chloroplast DNA, respectively.

Being the material basis of heredity, they perform important functions informational functions that determine the phenotype of the organism and its functioning. Chemically, nucleic acids are complex multimolecular polymers formed from nucleosides (nitrate base and carbohydrate), interconnected by phosphodiester

bonds. Nitrate base → pentose → orthophosphate acid (Gonskyi & Maksymchuk, 2001, p. 436).

According to the structure, they can be divided into two large classes - deoxyribonucleic acid (DNA) and ribonucleic acid (RNA). They differ among themselves in the nature of the carbohydrate. It is part of DNA nucleoside deoxyribose is included, and ribose is part of RNA. There are also differences in the set nitrate bases - adenine, guanine and cytosine are common to both forms nucleic acids, while thymine belongs to the DNA molecule, uracil to RNA (Dombrovsky & Naidan, 1992, p. 489).

Nucleic acids are biopolymers which are built from nucleoside chains connected by phosphodiester bonds. Nucleosides are ribose or deoxyribose glycosides with purine ($C_5H_4N_4$) or pyrimidine ($C_4N_2H_4$) bases.

Structural organization of DNA: DNA is formed by two strands that connected by hydrogen bonds. These bonds occur between the nitrate bases of nucleotides exactly in accordance with the rule — the adenine residue of the nucleotide of one chain combines with the thymine residue nucleotide of another chain, making three bonds, and the guanine residue – with cytosine residue, forming two bonds. Such a regularity named the principle, or rule, of complementarity.

There are three levels of structural organization of DNA: The primary structure of DNA is a specific sequence of connections mononucleotides into a polynucleotide chain due to formation phosphodiester bond. Moreover, the remains of pentose and orthophosphate acid are located on the periphery of the two chains, and the nitrate bases are located inside. The secondary structure of DNA is the combination of two strands that form a right-handed helix into which both polynucleotide chains twisted around one axis. Tertiary structure, or superhelix, is a compact dense structure that is formed as a result of further spiralization of the secondary structure. Superspiralization of the molecule occurs due to the formation of hydrogen bonds between nitrate bases in one double-helix chain with the formation of balls, rods and complexes with proteins. It exists due to the interaction of DNA and special proteins in the chromosomes of eukaryotes. The quantitative content of nucleotides in DNA can be calculated according to Chargaff's rule: $A+G=T+C$. It is in DNA that there are genes, which are the units of heredity (Zimenovskyi, Muzychenko, Nizhenkovska, & Sirova, 2022, p. 222).

Structural organization of RNA: Ribonucleic acids play the role of mediators in the transfer of hereditary information from DNA to the cytoplasm. The relationship between DNA, RNA and proteins can be represented in the form of a scheme of DNA → RNA → protein. The RNA molecule, with the exception of some viruses, is single-stranded.

Like DNA, RNA has three levels of structural organization: The primary structure of RNA is polynucleotide chains of various lengths, where diphosphoester bonds are characteristic between nucleotide residues, as is the case with DNA. They are characterized by basically the same regularity in nucleotide ratios as for DNA. However, the sum of purine bases is not always equal to the sum of pyrimidine bases, and the molecule contains uracil instead of thymine from nitrate bases. The secondary structure of RNA was named "leaf clover". It arises on the basis of spiraling between individual sections of molecules. Among polymeric ribonucleic acids, tRNA has the

most characteristic spatial structure. In tRNA, single-stranded regions alternate with double-stranded, stabilized hydrogen bonds between complementary nitrogenous bases. The tertiary structure of a protein – L – is a structure that arises on the basis of the elements of the secondary structure, which is formed with the help of hydrogen bonds inside one molecule. The "clover leaf" bends to resemble the Latin letter L based on conformational phenomena (Zimenovskyi, Muzychenko, Nizhenkovska, & Sirova, 2022, p. 225).

Characteristics of DNA: DNA is a filamentous chain of genes necessary for the growth, development, survival and reproduction of all known living organisms and most viruses. A gene is a section of a DNA molecule that encodes information about the structure of a certain protein or nucleic acid. Two types of DNA genes are distinguished by their functional features. Structural genes are those that encode the structure of proteins and ribonucleic acids, they carry hereditary information. Regulatory genes - those that do not have hereditary information, but perform other functions - control and direct the activity of structural genes - serve as a place for the attachment of enzymes and other biologically active compounds that affect the activity of structural genes and participate in the processes of DNA replication and transcription.

The main function of DNA is the transmission of hereditary information. During cell division, self-replication of DNA occurs. As a result of the DNA replication process, two double-stranded DNA molecules are formed, each of which includes one chain of the parent molecule and one daughter chain. These two molecules are absolutely identical (Gubsky, 2018, p. 249).

Characteristics of RNA: ribonucleic acids are organic biopolymers that are part of all living cells and consist of numerous ribonucleotides connected to each other by phosphodiester bonds. RNA molecules, as a rule, are built from one polynucleotide chain; only the RNA of some viruses have a double-stranded structure. Ribonucleic acids in the cell perform functions related to the copying and implementation of genetic information.

In accordance with the features of the structure and the performed functions, RNA is divided into several classes: Informational RNA is a copy of the basic sequence of a section of DNA obtained as a result of transcription. Messenger RNA serves as an intermediary between DNA and ribosomes - cell organelles that accept amino acids from transport RNA and use them to build a polypeptide chain.

Transport RNA (tRNA) activates the reading of hereditary data from matrix RNA, as a result of which the process of translation of ribonucleic acid - protein synthesis - is launched. It also transports the necessary amino acids to the site of protein synthesis.

Ribosomal RNA (rRNA) is the main building block of ribosomes. It binds the matrix ribonucleotide in a certain place where it is possible to count its information, thereby starting the broadcast process.

MicroRNA is a class of RNA molecules involved in regulation of translation and degradation of mRNA.

Small interfering RNAs (siRNAs) interact with the matrix RNA of the gene targets by reducing gene expression.

The biological role of nucleic acids: their main function is participation in protein synthesis. In the process of vital activity, proteins are constantly spent. For the normal functioning of the body, their restoration is necessary and occurs regularly. This regulation is reproduced with the participation of nucleic acids. Nucleic acids keep and transmit genetic information from ancestors to posterity. The functions of nucleic acids are extremely important for life in general and for each cell in particular. Almost all functions which are carried out by the cell, are regulated by proteins synthesized with the help of RNA and DNA. The nucleic acid of the virus contains all the necessary, important information for the formation of new viral particles. Enzymes, protein products, catalyze all vital processes: respiration, digestion, all types of metabolism.

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RESEARCH PERSPECTIVES FOR STEM CELL THERAPY

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Stem cells are immature precursor cells for all body tissues. They can become any mature cell, so they are actively used in various fields of medicine. Therapy is gaining popularity in all branches of medicine. Since stem cells can differentiate into any type of tissue, they help in regeneration. Human stem cells began to be actively harvested, there are special banks in many countries. After childbirth, you can save cord blood with cells for the future baby. The child may need the use of stem cells, or he may become a donor for another person. Progenitor cells are used in diseases of the nervous system, circulatory system. They are used for leukemia, lymphomas, leukemia, and even for mental disorders in a child - autism.

There are 3 types of stem cells: Embryonic stem cells, Fetal stem cells, Mesenchymal stem cells. Embryonic stem cells provide after fertilization and supply "building material" for the future organism. Such cells are called pluripotent. They can

turn into almost any cell in the body. Fetal stem cells are also isolated, which are produced at 5-9 weeks of fetal development. Stem cells are present in many tissues and organs. Mesenchymal cells, found in bone marrow, adipose tissue, etc., are considered particularly interesting. They have anti-inflammatory and immunomodulatory effects. Scientists hope that in the future, transplantation of mesenchymal cells will help restore various types of damaged tissues. Embryonic stem cells are obtained from 3–5-day old embryos created artificially in the laboratory. Such embryos are called "blastocysts" and consist of approximately 150 cells. Fetal cells can only be obtained from a fetus after a planned abortion. Embryonic and fetal stem cells are considered very promising for medicine and scientific research, but there are sometimes disputes in the world about the ethics of their use. Adult stem cells are isolated from bone marrow, adipose tissue and other "sources". Then the resulting cells are grown "in a test tube" for about another month in order to get enough of them for treatment or research. In addition, umbilical cord blood and umbilical cord, which remain after the birth of a child, are rich in stem cells. They are given in the process of donation or stored in banks of umbilical cord blood, tissues and human cells. Today, this method is widely used and developed. Bone marrow transplantation is the most common method of stem cell treatment in the world. It helps in the case of diseases of the immune and nervous systems, oncohematological and orthopedic diseases. Because blood cells are formed in the bone marrow, a bone marrow transplant is an effective way to restore the circulatory system after certain types of cancer have been treated. For transplantation, stem cells from the bone marrow of donors, as well as umbilical cord and peripheral blood (from blood vessels) are used. Scientists are investigating the possibility of stem cells to treat various diseases in the future. For example, their transplantation helped restore 80% of the skin that was covered with ulcers in a seven-year-old boy. Currently, their ability to restore the heart after a myocardial infarction is also being tested.

Stem cells can prevent skeletal muscle loss due to disease or aging, replace damaged neurons in Parkinson's disease, help recover from spinal cord injury, and improve diabetes. In addition, stem cells could become a "factory" to produce blood needed for transfusion. On the one hand, this is a direction that needs to be developed, as it is able to extend life expectancy and make life easier for people with serious diseases. But on the other hand, there is the question of the ethics of these studies and possible adverse reactions. First, the transplanted cells must reach their goal and work exactly as scientists intended. Second, they should not be attacked by the patient's immune system. Third, there is a risk that the stem cells will grow and differentiate uncontrollably, leading to cancer.

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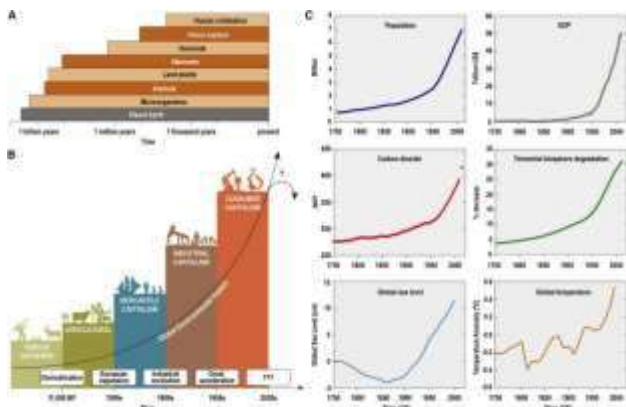
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HOW CAN INVENTIONS INFLUENCE ON OUR NATURE OR EVEN PLANET

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It is difficult to imagine what life would be like without technology. From computers to cars and smartphones, tech is an essential part of nearly every aspect of life: communication, production, means of transportation, medicine, entertainment, education and so on. But all technologies have their pros and cons in terms of the environment.

On the one hand, there are several positive advantages in using technology.

First, the development of technologies provides us with new important technical knowledge. Technologies are fundamentally changing our attitude to the way we live, work, treat each other and the outside world. Now the emergence of new technologies can change environmental protection. The search for new intelligent ways to support our development and improve our social situation has always been the main reason for technological progress. Today, technology can play a decisive role in the development and degradation of the environment.

Secondly, thanks to technology, humanity finds new types of energy, for example, renewable energy sources. Renewable energy is energy that is harvested from renewable natural resources such as sunlight, wind, rain, tides, waves, and geothermal heat. Modern environmental technologies have allowed us to capture this natural energy and convert it into electricity or useful heat through devices such as solar panels, windmills and water turbines, demonstrating the positive impact of technology on the environment.

Also, a great advantage of technologies is that they contribute to the discovery of new types of ecological fuel. Technologies contribute to the development of environmentally friendly automotive fuel, which allows you to avoid the burning of fossil fuels. A clear example is electric cars, which demonstrate the positive impact of technology on the environment, as they do not produce carbon emissions, that contribute to the "greenhouse effect" and lead to global warming. In addition, they do not pollute the air, that is, they are cleaner and less harmful to human health, animals, plants and water.

On the other hand, there are also many arguments against using technology. One of the most significant negative environmental side effects of technology is the pollution it creates. Our household technologies do not emit emissions, but it consumes

electricity, which, when generated, emits emissions. Most energy comes from fossil fuels, so the more energy we use, the more emissions we cause.

Another drawback of the technique is the depletion of resources. A lot of natural resources are used to create our gadgets. All technological materials come from somewhere, so their excessive use by people can lead to the depletion of the world's natural resources. In this way, technology destroys our environment to some extent.

Hazardous waste is also a negative factor. New electronics come out frequently, which leads to users disposing of their old ones to buy the newest editions. That's all well and good if they recycle them properly, but that's not the case a lot of the time.

To sum up, there are clearly strong arguments for and against using technology. Personally, I think that humanity should develop technology, but already now think globally about how to reduce their negative impact on nature. Technologists and environmentalists must collaborate for projects to teach people about the conscious rational use of technologies and their processing into waste that is as safe as possible for nature.

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THE IMPACT OF THE INTERNAL COMBUSTION ENGINE ON THE ENVIRONMENT

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A few years ago, people felt an urgent need to pay attention to the environmental friendliness of our lives. This need arose due to increasingly frequent acid rain, global climate change, deteriorating air quality and other environmental problems. Therefore, people have become more conscious and started sorting garbage, reduced the use of plastic. Now research has concluded that the internal combustion engine is extremely harmful to the environment.

The internal combustion engine works on the basis that it converts heat energy into mechanical energy. This engine works in a cycle of four strokes and at the end of

the cycle, it pushes all the exhaust gases into the environment. These gases are a mixture of about two hundred harmful substances and all these substances enter the atmosphere (Table 1). (Wikipedia, 2022)

	Gasoline engines	Diesels
Nitrogen N ₂ , vol.	74—77	76—78
Oxygen O ₂ , vol. %	0,3—8,0	2,0—18,0
Water H ₂ O (steam), vol. %	3,0—5,5	0,5—4,0
Carbon dioxide CO ₂ , vol.	0,0—16,0	1,0—10,0
Carbon monoxide CO*, vol. %	0,1—5,0	0,01—0,5
Nitrogen oxides NO _x *, vol. %	0,0—0,8	0,0002—0,5
Hydrocarbons C _n H _m *, vol. %	0,2—3,0	0,09—0,5
Aldehydes*, vol.	0,0—0,2	0,001—0,009
Carbon black C**, g/m ³	0,0—0,04	0,01—1,10
Benzopyrene-3,4**, g/m ³	10—20× 10 ⁻⁶	10× 10 ⁻⁶

Table 1. Composition of exhaust gases of internal combustion engines

Due to dust and soot in the air, the weather changes significantly, fog and rain are formed. In addition, because of all other small particles that enter the atmosphere during fuel combustion, the greenhouse effect is formed, because of which our planet suffers from global climate change. Also in these exhaust gases from the internal combustion engine there are substances that cause acid rain.

Some countries have already started to fight against internal combustion engines, especially diesel engines. One of the first countries to fight pollution was Germany. In such cities as Berlin, Stuttgart, Frankfurt, Darmstadt, Essen, Mainz, Cologne, Dusseldorf, Hamburg and Munich have already started to carry out clean center projects. This project consists in the fact that at first, cars that meet the requirements of Euro 4 will be able to enter the city center, then over time only cars that meet the requirements of Euro 5, and then Euro 6. (ADAC, 2021)

In Amsterdam, in 2022, a ban on the entry of buses with internal combustion engines into the city center was introduced, and in their plans from 2030 to ban driving around the city on any transport with an internal combustion engine.

In Ireland, Sweden, Israel, Denmark, from 2030 there will be a ban on the sale of cars with internal combustion engines. Also in Denmark, they want to ban the sale of hybrid cars from 2035, and by 2050, their authorities want to completely switch to renewable energy sources.

Norway has chosen the path of not banning, but encouraging car owners to buy electric cars.

If we talk about Ukraine, the share of electric vehicles in our market is so small that there is no need to be afraid of bans on the entry of cars with internal combustion engines into cities.

So, you need to buy electric cars to protect nature and not worry that it will become irrelevant or banned.

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THE PROBLEM OF WASTEWATER POLLUTION AND ITS SOLUTION

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Today, the higher the society reaches in technological development, the more danger human activity poses to nature. First of all, reservoirs are suffering due to serious problems, which are primarily related to their pollution, so the number of clean water sources is decreasing every day, and the need for their use is increasing.

Let us consider the most common types of pollution of water bodies and rivers.

Pollution by radioactive substances. This species is dangerous for humans because radioactive waste can persist in the environment for thousands of years, which makes its disposal a serious problem for the world. Radioactive substances are produced not only from the operation of nuclear power plants, as everyone thought, but also from the production and testing of military weapons, and from the fact that universities and hospitals use radioactive materials for research and medical purposes.

Agricultural pollution. International organizations recognize that the agricultural sector uses about 70% of the Earth's surface water reserves, which is a serious water polluter as a result. For example: when people throw away animal waste, factories throw out toxic substances, as a result, reservoirs are filled with viruses, bacteria and various fungi that harm the environment and people. It is this type of pollution caused by toxic algal blooms that is a widespread problem around the world.

Oil pollution. This type of pollution applies not only to large oil spills in rivers, seas and oceans, but to all other bodies of water. This also includes pollution "from people" who use gasoline and diesel cars every day. To date, it has been proven that almost 1 million tons of oil enter the marine environment annually, not from tanker spills, but from land-based sources such as factories, farms, and cities.

Pollution from sewage and sewage. This type of pollution includes any water that has previously been used by households and from commercial, industrial and agricultural activities. Also included here is runoff from rain, as water flows from downpours carry road salts, oil, grease, chemicals, and debris from impervious surfaces into waterways.

The consequences of sewage pollution are a decrease in the amount of oxygen. The amount of algae in rivers increases, which in turn displaces animals and fish. This causes a change in the habitat of fish and other marine inhabitants, but many species simply die. Dirty river water is poorly cleaned before entering the water supply system. It is used as a drinking vessel. As a result, the number of people getting sick because they drank untreated water is increasing. Regular use of contaminated water contributes to the emergence of some infectious and chronic diseases. Sometimes, some people may not know that the cause of health problems is dirty water (Korogod, 2021).

There are several ways to solve these problems.

1. It is necessary to use as few chemicals as possible when cleaning the house. This can make a big difference. The use of such toxic agents is not only harmful to water resources and people, but there is simply no need for them. Thanks to natural means, it is also possible to effectively take care of the household, but they do not harm the environment and water resources of the planet.

2. Never flush the medication down the drain. Medicines are primarily made from substances that can be harmful to the environment. If you have expired medicines, take them to the waste collection point, and then you will be doing a good thing for nature.

3. Do not flush garbage down the drain. If you flush items such as diapers, wet wipes, paper down the toilet, you can create problems with the sewage system. In addition, these objects will clog rivers, reservoirs and so on, and it can also kill fish and other river and sea inhabitants. Instead of flushing such items down the toilet, simply throw them in the trash.

4. Save as much water as possible, because it is very important at the moment. Saving is also important for preserving the water resources of the planet. Some good habits that will help you save water:

- Do not flood the lawn. Turn off automatic watering on rainy days.
- Take a shower instead of a bath, as a bath requires more water.
- Water the vegetable garden before sunrise or after sunset to avoid evaporation, which leads to inefficient use of water.
- Turn off faucets when you are not using water, such as when brushing your teeth (Svitalinskyi, 2020).

As a conclusion, we can say that if the problem of river pollution persists, many water bodies may cease to self-purify and exist. We believe that cleaning measures for water bodies should be carried out at the state level in all countries, installing various cleaning systems, carrying out special measures to clean water. If every person follows simple rules regarding the preservation of water bodies, then nature will be more purified.

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ECOLOGICAL CRISIS

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The issue of climate change has been well known for decades, but it seems that it has unleashed only in 2018, starting with Greta Thunberg's first sit-ins in front of the Swedish parliament. Since then, more and more people, especially students, started to awaken the consciences of adults, administrators, and politicians so that they put in place concrete political-economic initiatives consistent with the alarms sounded by science on the state of the Planet and especially on climate change. The ecological crisis is totally due to the activities carried out by human beings in the past century. Since the 20th century, the extinction rate of living species has increased 100-fold. This means that in a little more than 100 years the species that will disappear on Earth will be equal to those that have gone extinct throughout the entire course of our history and civilization (Barry, 2005). This is an improbable amount, and the most serious fact is that virtually nothing is being done to reverse this trend. Governments all talk, but never make any serious decisions; on the contrary, they row against looking at the subsidies they provide for the exploitation of fossil fuels by unscrupulous multinational corporations.

A few of the main points are to define the terms 'ecology' and 'environment' more in depth and make the government takes severe measures for the sake of the planet Earth.

There are several ways to help fight the ecological crisis. For starters eating healthily and sustainably by opting for a varied and balanced diet based on the consumption of plant-based, seasonal, and environmentally friendly foods, and being careful to avoid waste. Also, it is fundamental to save energy by reducing consumption for lighting, air conditioning, and heating, and eliminating waste in the home and work environments, for example, by avoiding stand-by appliances and unplugging them whenever possible. There is a need to shift the tax burden from labor to resource consumption and pollution, and to transform environmentally harmful subsidies within the state budget into environmentally favorable subsidies. What is needed is a process of "greening" the budgets of public institutions and publicly owned companies.

Right now, it is fundamental to try to raise the ambition to the target of cutting climate-altering emissions from 55 percent to 65 percent by 2030. The 2015 Paris Agreement, which later merged into the United Nations 2030 Agenda, set an important and ambitious goal: to limit the average increase in the Planet's temperature to 1.5°, this is an achievable goal only through the joint global efforts of businesses and institutions (Kish, 2019).

Having appropriate training regarding ecological issues and the rational use of resources, moving obligatorily in the wake of what is defined by the laws of nature and ecology. Here, recomposing such a cultural framework is an underlying goal that must continuously accompany all actions and activities that move toward a horizon of sustainability.

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SAVING STARTS WITH YOU

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Energy consumption is one of the most urgent problems of modern society. More than 40 countries, including Ukraine, at the climate conference in Glasgow agreed to stop using fossil coal, the most wasteful source of fuel. This conference has been called a turning point for combating climate change. According to the International Energy Agency, the use of coal is one of the biggest causes of greenhouse gas emissions. Many environmental problems associated with obtaining energy, namely the "greenhouse effect". This effect disrupts the natural temperature balance on the planet and causes general warming and climate change. Warming threatens the creation of eternal glaciers, if they melt, the seas may break their banks and much land will become unfit for human life. Already today, we must think about the future of our planet and start saving it now.

There are several ways to rationally use energy.

Take it as a rule, leaving the room of hospitable light. Do you still use incandescent light bulbs? And did you know that energy-saving lamps will serve you 6 times longer.

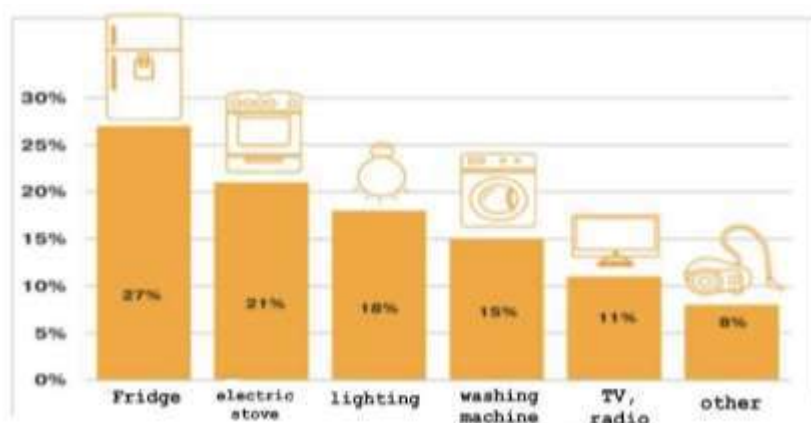
Do you maintain a healthy lifestyle? A steamer will help you, it consumes 5-6 times less electricity than an electric stove, and is even more useful. Still overheated at 40 degrees?

Use washing at 30 degrees, thus saving clothes and up to 40% of electricity. Load the washing machine to full capacity and save 15% of electricity.

Do not install the refrigerator next to a gas stove or battery. You ask why? This consumes energy up to 20-30%.

Doubts about buying a microwave oven? It saves up to 5% of energy.

When buying household appliances, pay attention to the sticker with the energy efficiency class. Class "A" means that the device is very economical.



Now you can see the distribution of electrical appliances by the volume of electricity consumption in the apartment. The most energy-intensive the appliance is a fridge.

Of course, we are not all superheroes and cannot be the virus of the global problems of water damage and inefficient use of resources. However, small steps, multiplied by thousands of citizens, are important.

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REGENERATION IN LIVING ORGANISMS

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Regeneration is the ability of living organisms to repair their damaged or lost structures. Regenerative processes, which occur under physiological (maintenance) and pathological (reparative) conditions, are a fundamental part of life and vary considerably among species, individuals and tissues.

Regenerative properties of different groups of living organisms differ from each other. In most cases, increasing the level of organization and complexity of the organism's structure impairs its ability to regenerate. The peculiarities of the biology of some groups significantly impair the regeneration capabilities of the organisms that

belong to them. For example, nematodes and rotifers are practically incapable of regeneration, while more complex crustaceans regenerate very effectively.

A good ability to regenerate is inherent in many representatives of stinging (intestinal), flat and ringworms, echinoderms and some other groups. But the best can be considered the ability to regenerate in sponges. Representatives of this group are able to restore the whole organism from a bunch of individual cells into which it was divided by squeezing through the mesh tissue.

Forms of regeneration

There are two forms of regeneration - intracellular and cellular. Intracellular regeneration occurs inside the cells due to molecular mechanisms. The result of this form of regeneration is the restoration of organelles and molecular structures necessary for the cell. Chloroplasts, mitochondria, Golgi complex, endoplasmic reticulum, ribosomes, vacuoles, etc. can be restored.

Cellular regeneration occurs at the level of the organism due to cell division, which allows to fully or partially restore tissues and organs. Thus, regeneration becomes necessary after injuries, diseases, death of some cells due to poisoning, etc. Depending on the tasks that the regeneration process solves in the human body, there are physiological and reparative regeneration.

Physiological regeneration

Physiological regeneration is designed to restore body structures that are damaged during normal physiological processes. This type of regeneration in many living organisms (including humans) occurs throughout life. For example, due to physiological regeneration, there is a constant change of the intestinal tract epithelium and the integumentary epithelium; the same process is the basis for the renewal of red blood cells, the existence of which is quite limited due to the lack of a nucleus in the cell, etc.

But there are structures in which renewal by cell division is impossible. For example, highly specialized cells such as neurons. In these cases, regeneration occurs by gradual replacement of organelles (intracellular).

Reparative regeneration

Reparative regeneration is initiated in case of damage or death of body structures that are not the result of normal physiological processes. Such damage occurs as a result of diseases or injuries. In this case, normal physiological regeneration is significantly enhanced and becomes reparative.

Reparative regeneration can be complete and incomplete. In case of complete regeneration, the damaged tissue is completely replaced by a new one and the damage disappears without a trace. In the case of incomplete regeneration, the restoration of functions occurs at the expense of the surrounding tissues, and the site of damage is filled with connective tissue, which forms a scar.

Pathological regeneration

In some cases, in the process of regeneration, the structure and functions of the body are restored with disorders. Such regeneration is called pathological. It can occur if the conditions under which regeneration takes place are not normal. For example, the body does not receive enough nutrients, there are violations of hormone levels or nervous regulation, suppressed immune reactions, hypovitaminosis, etc.

In case of pathological regeneration, recovery may be delayed. The occurrence of ulcers, false joints, colloidal scars, etc. is observed.

From the above considerations it is clear that regenerative mechanisms and the degree of regeneration in different tissues vary widely. However, some general points are obvious. Modification of inflammatory processes and consequently inhibitory extracellular matrices after injury is likely to be important for improving clinical outcomes in all tissues.

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EXPERIMENTS ON ANIMALS

IN THE COSMETIC FIELD AND ITS PREVENTION

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Terrible torture for the sake of human whim. Every year, approximately 100 million animals around the world become victims of cosmetic testing. In my opinion, this is a really important and relevant topic in society today. Most experiments are extremely cruel and fatal for most animals. For example, the Draize test for testing the irritant properties of substances, according to which various liquids are injected into the eyes of an immobilized animal and the reaction is observed. This test is mainly performed on albino rabbits, but other species are also used. In addition, when testing perfume-aerosol products, animals are placed in a glass pressure chamber filled with steam. Over time, toxic vapors burn the lungs of the test subjects, most of them die. In general, animals are bought or specially bred for experiments. Millions of animal lives were sacrificed for science and for the sake of new discoveries in the cosmetic field, which is very sad. Testing cosmetics on animals is currently prohibited in many countries and is severely punished by law, and I believe that this is quite correct, because with the advent of this law, the majority of animals that were subjected to experiments will no longer participate in them.

Many testing facilities now follow the 3R principles: replacement, reduction and improvement. Substitution refers to the use of inanimate methods instead of animal testing when the same scientific goals can be achieved. Reduction refers to methods that allow researchers to obtain comparable levels of information from fewer animals

or more information from the same number of animals. Enhancement refers to methods that reduce or minimize potential pain, suffering or stress and improve the welfare of animals used for testing.

Animal testing can be significantly reduced, if it is not done naturally, but modern technologies do not stand still and something new is constantly appearing. Computer and holographic models can be used, and different drugs can be tested on them, based on early experiments that were done on live animals. It is also possible to hire volunteers who will allow testing cosmetics on small parts of the body, observing whether there will be irritations and allergies. Also, based on a chemical reaction, it is possible to create components that, according to early records, reacted normally with each other and also test them on small areas of human skin. If you look at it this way, in my opinion, it would be much easier if scientists used skin and eye prototypes and tested decorative and care cosmetics on them (Hrushak, 2021).

All in all, this issue is a very painful topic nowadays, but also many scientists find alternatives to solve this issue, which is quite positive for the animals and the people who protect them, but there are many companies that refuse to do this.

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THE GREAT RED SPOT OF JUPITER

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Donato Creti (1671-1749)
Moon and Jupiter, 1711

It is not very pleasant and even intimidating to have some spots of unknown nature on your body, isn't it? Nobody knows what illness you have. So can you imagine Jupiter has had the same problem for many years? But how many?

The first picture of the Great Red Spot was drawn by Giovanni Domenico Cassini in 1665, where it seemed small and dark. There was a second picture of the Great Red Spot in 1711 by Italian painter Donato Creti. It was a colourful picture as astronomers, by that time, had figured out that the spot was a big swirling gas storm. The first good photoset of Jupiter was made by Voyager 1 and Voyager 2.

Many scientists were convinced that the Red Spot was something with a hard surface till that Voyager expedition. Also, Voyagers discovered that winds have a speed two times higher than the most terrible hurricane ever on Earth.

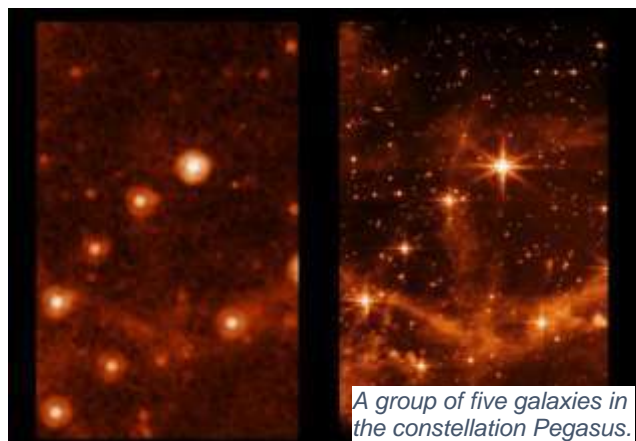
Nowadays, nobody can explain why the spot is red. The most popular hypothesis is that the red color is caused by chemical transformations of phosphor.

So now scientists know that The Great Red Spot is a gas accumulation. However, they are still in suspense if it is dangerous for Jupiter. Nobody can answer this question, so a new exploration was made by the University of the Basque Country (UPV). The main idea was that the Great whirlwind is renewed by a big count of the smaller whirlwinds. (University of the Basque Country, 2016)

Scientists from NASA have access to the Hubble telescope, so they noticed that the speed of winds in the borders of the spot increased and, in the middle, became slower from 2009 to 2020. Currently, the spot surpasses Earth, and the vortex has a speed above 64 kilometres per hour.

Amy Simon (from NASA Goddard Space Flight Center in Greenbelt) explains that since we do not have a storm chaser plane at Jupiter, we can not continuously measure the winds on-site; and the Hubble is the only telescope equipped with the kind of temporal coverage, and spatial resolution can capture Jupiter winds in this detail. (Nasa, 2020)

NASA launched a new telescope named in honor of its second director James Edwin Webb. This telescope has much better features than Hubble. So we may hope that JWST will provide us with more information about the Great Spot and Jupiter and will change our thoughts and theories about space. Businessman Elon Mask also has plans for Jupiter. His SpaceX has landed a NASA launch contract for a mission to Jupiter satellite Europa. And we can be sure he will continue at this point since SpaceX mentioned the Red Spot a few times.



No doubt that, in a few decades, we will learn the secret of the Red Spot, its age, and its chemical composition. Also, with new technologies, we will discover if it is dangerous for Jupiter, Earth, and humanity.

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MEDIEVAL MEDICINE

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What were the chances of surviving a medieval person who was injured or fell ill with another ailment? If we are talking about infectious diseases, in particular bubonic plague, then the answer is obvious. In other cases, it is necessary to take into account where and when this person lived. When reading popular science literature, you will surely come across comparisons of a medieval hospital with a place where no one was left alive, and stories about terrible treatment in the "dark ages".

Their main mistake is the spread of a generalized view of the state of medicine throughout the Middle Ages. After all, it is quite obvious that the chances of recovery for many people were completely unequal (Vashchuk, 2018).

Despite the fact that medieval medicine was more dogmatic, it relied on witchcraft. There was quite a bit of natural selection. The strongest with good immunity survived. As statistics show, in 1500 there were no more than 500,000 inhabitants of the planet Earth.

All dissertations that were written at that time were reduced to such essays, which we can simply laugh at today. For example, one of the dissertations of the French Academy determined that mice start in rags that are thrown into the garbage.

It was believed that all diseases come from blood contamination. And in order to avoid this infection, suppuration must be provoked. If it comes out, then the blood is purified. There was an unpleasant smell in the hospitals, because there were suppurating people everywhere. The result of the treatment was 50/50.

There was a panacea when people thought that one medicine could cure all diseases. There is an example with a parable of how doctors treated. At one point, the groom fell ill. They called the doctor and asked what his wish would be.

The patient replied that he would eat a soup cooked on the bone with a lot of beans. The doctor thought: "This kind of food will also kill the harvester." The groom was already healthy on the second day.

A year later, the tailor fell ill. Without hesitation, the doctor gave him soup on the bone with beans. And the doctor wrote that what cured the groom killed the tailor. Later, they began to think that there is no one medicine for all people. This is how the tendency towards the progress of medicine gradually grew. Learned about various diseases and how to treat them.

There is no doubt that the state of medicine in the Middle Ages left little chance for a person during complex injuries or epidemics of infectious diseases. However, let's remember the conditions of operations in the field of soldiers during the First and Second World Wars, often without anesthesia and antiseptics.

Or deaths among the civilian population from dysentery, typhus, during childbirth. This makes one wonder whether the medicine of the beginning of the 20th century was so strong for the average person was different from our idea of treatment in the "dark ages".

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PERSPECTIVE AND PROBLEMS OF ANTICANCER PEPTIDES IN CLINICAL APPLICATIONS

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A set of illnesses known as cancer involve abnormal cell proliferation and can affect or spread to many bodily organs. Cancer is the second biggest cause of death worldwide, measured by the number of deaths each year. Surgery and radiotherapy are the two major ways to treat it, but neither is very effective, especially for people with advanced cancer. Because of this, researchers are currently working to identify novel solutions to this issue, one of which is the usage of anticancer peptides (ACPs)

Therapeutic peptides are a specific class of pharmaceutical medication that are composed of a sequence of well-ordered amino acids and typically have molecular weights between 500 and 5000 Da¹. Therapeutic peptides frequently have the same effects as hormones, growth factors, neurotransmitters, ion channel ligands, and antibiotics. They attach to cell surface receptors and trigger biological responses. Medicines used in immunotherapy do not directly attack tumor cells; instead, they alter the patient's immune system and target immunological checkpoints to kill tumor cells. (L. Wang, N.Wang, 2022,p.1).

In order to deliver cancer-specific medication without harming healthy tissue, cancer drug therapy has evolved from chemotherapy and radiotherapy to molecular targeting therapy paired with a "guiding missile." The cell membrane is a difference between healthy and abnormal cells. Numerous anticancer peptides destroy cancer cells by causing membrane lysis or pore creation, as well as apoptosis and necrosis. (W.Chianjon, S. Chutipongtanate, 2020, p.679) Healthy cell has a higher level of

membrane cholesterol, which influence lytic activity. Moreover, cancer cells have a negative charge, unlike healthy ones that are neutral, which causes destabilization and cell lysis after interacting with ACPs. This difference helps to indicate cancer cells and “program the right way” for anticancer peptides.

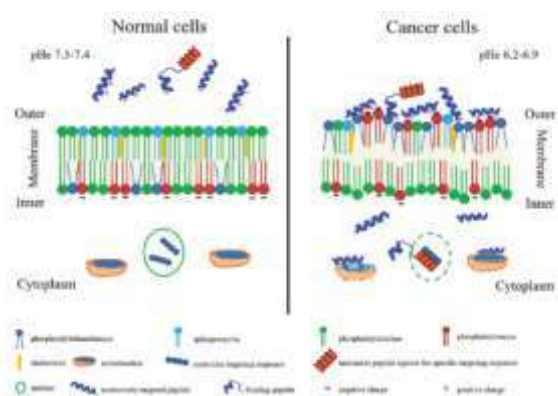
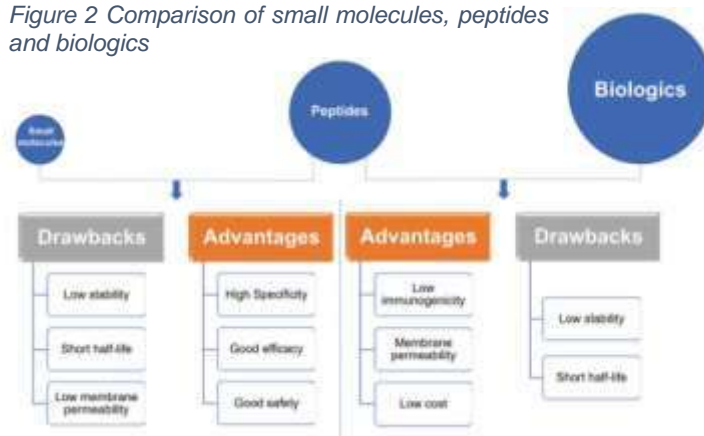


Figure 1 Differences between normal(left) and cancer cell(right)

ACRs have a high potential for treating cancer because of their potential, specificity, and low toxicity. Their most notable advantage is the protein-protein interaction with a target, thus overcoming limitations via designing peptide modifications and conjugation to improve affinity, stability, and selectivity (W.Chianjon, S. Chutipongtanate, 2020, p.688)

The main disadvantages of this therapy are short plasma half-life and poor in vivo stability. Without any defense, the amide connections are quickly hydrolyzed or broken down by enzymes in healthy cells when exposed to the environment. Due to their fundamental chemical characteristics, peptides are physically and chemically unstable, have a limited half-life, and are quickly destroyed in vivo. (L. Wang, N.Wang, 2022,p.4) Another drawback is weak membrane permeability through which ACPs can't reach intramolecular targets. These factors slow down the pace of the development of therapeutic peptides.

Figure 2 Comparison of small molecules, peptides and biologics



Now several vaccines and drugs are tested during clinical trials, like mifamurtide for osteosarcoma and carfilzomib for multiple myeloma. Therapeutic peptides for lung and gastric cancer are still ongoing. (L. Wang, N.Wang, 2022,p.17) The perspective of ACPs is enormous, but the key is to find more target receptors that are characterized to cancer cells to improve to eliminate cancer cells directly or by affecting the anticancer immune responses. As a result, the development of anticancer peptides could reduce the number of deaths and emerging cases in the future.

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PERCEPTION AND ANALYZATION OF EMOTIONAL BODY LANGUAGE

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We live in a World with a great variety of different sounds, objects, movements and experienced emotions (emotional body language, or EBL) of living creatures, that play an important role in human life. Through our facial expressions, body language and even voice tone we can easily express our emotional state and share it with others.

The main question is: “How do we understand motions of another person and how our brain analyses and interprets it into our reactions and actions?”. The main goal of this article is to review theories and experiments that bring us closer to understanding of the person’s perception of EBL and state the main perspectives of researches in this field.

This paper presents an analytical overview of the articles and publications on such topics: neurobiological mechanisms of perception of EBL, brain substances that take an essential part in forming our reaction to them, mirror neurons and behavior and understanding of action.

One of the first scientists that mentioned the relationship between emotion and behavior was Darwin (Darwin, 1872), but mostly facial expressions have been the object of investigation so far. Yet this is not completely right, because EBL (as nonverbal component of communication) shares some properties with casual language. Moreover, EBL signals are complex and that means that we have a lot of combinations with which we can express our feelings and thoughts. What is even more interesting is how does human creature percept, analyze signals and produce reactions to them. There are a lot of different studies that overview this problem and the main ones are going to be represented in this article.

First of all, let’s look at the emotions themselves and the brain substances responsible for their formation. Current studies (Zald et al., 2003, Adolphs et al., 2002) pay lots of attention to the amygdala as the leading structure of emotional brain structures, involving the orbitofrontal cortex, anterior cingulate cortex, premotor cortex and somatosensory cortex. The amygdala impacts the work of predominantly

subcortical and cortical structures. The first circuit forms automatic reflex-like emotional behavior and the second recognizes the EBL and causes action.

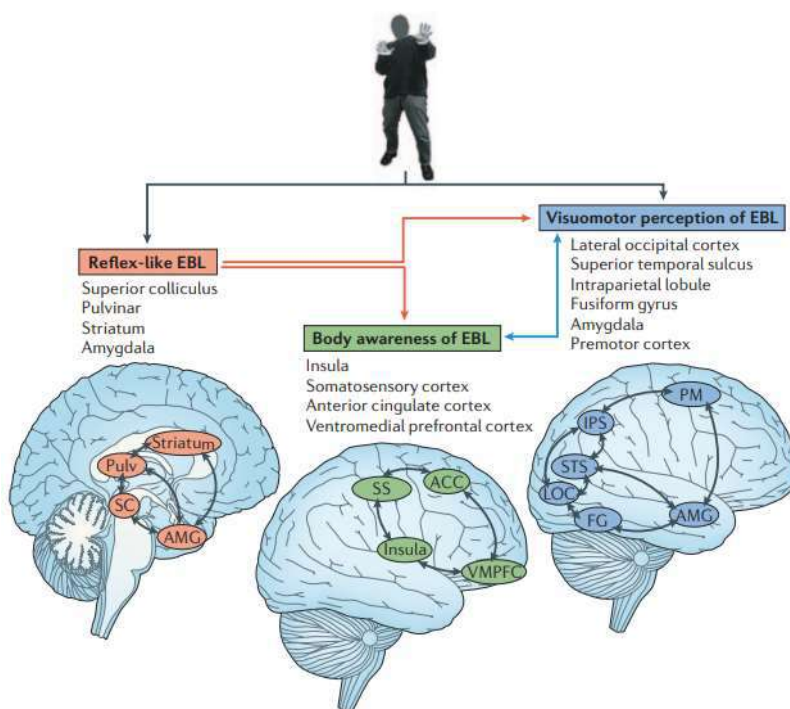
As it was mentioned earlier, it is already known that human brain can analyze facial expression with different brain parts, but is there a specific area that activates when we observe movement? It's obvious that we do react to the body movements and now we are going to look at this problem through the prism of experiments that were performed.

First brain imaging studies of EBL used fearful, happy and neutral with the blurred faces EBL images. Fearful bodies activated the areas that are responsible for reacting to fearful facial expressions — the amygdala and the right middle fusiform gyrus (Hadjikhani et al., 2003). Other researchers used body images that produced the N170 (an electroencephalogram waveform with negative amplitude that peaks about 170 ms after stimulus was observed), which were originally considered as the first temporal marker of face-specific processing (Stekelenburg et al., 2004, Meeren et al., 2005). It turned out that facial and body image might be quiet similar (Meeren et al., 2005, Bentin et al., 2002).

Here comes the statement that emotions are “contagious”, but how does this phenomenon work? It has always been known that emotions are connected with motor activity, but the direction of the connection has been a mystery till the moment of mirror neurons discovery in

the ventral premotor cortex (area F5) of macaque monkeys (Rizzolatti et al., 2001) and its homologue in humans. This showed that mirror neurons may be the basis of social cognition (Gallese et al., 2004). But there is another “two-systems” theory that states that observed fear and the response to it are similar, about which we are going to talk more now (de Gelder et al., 2006.).

Perception of any fear stimulus triggers the direct activation of a motor program that is encoded in subcortical circuitry, which means that fear reactions and contagion don't involve the cortical action circuit in which mirror neurons play a role. Visual data from EBL enters in parallel trough a subcortical (red) and a cortical (blue) systems (Figure



Reflex-like EBL (orange) consists of the superior colliculus, pulvinar, striatum and amygdala; b) Body awareness of EBL (green) involves the insula, somatosensory cortex, anterior cingulate cortex and ventromedial prefrontal cortex; c) Visuomotor perception of EBL (blue) includes the lateral occipital complex, superior temporal sulcus, intraparietal sulcus, fusiform gyrus, amygdala and premotor cortex (de Gelder et al., 2006.).

1). Then from the subcortical system it goes to cortical system and body awareness system (green) and might provoke observer's physical reactions to the stimuli.

Finally, what are the main perspectives of these researches? The main problem of theories and experiments is that they are all based on the fear emotion and to understand the connection between them better it is important to use different emotions. It's also important to experiment with body language more. It may be interesting to refer to EBL as to the casual language. Why can't we approach to overview EBL as a language with primitives and syntax? Connections between EBL elements can possibly help us with understanding of perception of biological motions better (Casile et al., 2005).

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ENERGY SAVING

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A year ago, the topic of energy saving was mostly spoken during eco-debates, presentations and discussions. Meanwhile now, energy saving is a definition of the word 'surviving' for Ukraine. Due to the energy deficit, the vast majority of Ukrainians are now familiar with all the importance of energy as a heart of civilization.

To begin with, what is energy itself? According to Wikipedia, the most popular information source nowadays, "energy is the quantitative property that is transferred to a body or to a physical system, recognizable in the performance of work and in the form of heat and life". In the general sense while saying 'energy' we usually mean 'electricity'. To be short, electricity is the required element of modern life, as it has been told a while ago. We strongly depend on energy. It is our food supplies, safety, convenience, the ability to stay in touch with any person all around the world, the possibility of life-saving vehicles to be applied and so forth. So, it is reasonable to admit that such a valuable resource should be used wisely.

Then, another question is the origin of energy. There are multiple ways to create energy in the form of electricity. They are nuclear power plants, thermal power plants, hydroelectric power stations, windmills and solar panels. Talking about Ukraine, the most popular way of energy production is the usage of nuclear power plants. This method is eco-destructive as pounds of toxic substances are emitted in the air and soil. And that's where the need for energy saving appears. On the one hand, it is an ecology-based reason for energy saving.

On the other hand, energy saving allows us to preserve funds. Moreover, it reduces the deterioration of power stations. There are key reasons to employ energy saving in your everyday life.

Next rational move is the selection of the main issues of energy saving. First and foremost, people usually experience difficulties saving electricity on account of their psychological boundaries. This factor, indeed, is hard to overcome as it means that we should go against our habituation. The thing is we have grown up in an environment where we have always had access to electricity and other benefits of civilization. This played its role in the process of our comfort zone formation. So, it feels normal to switch on the lighting of the whole house, a television, a computer, an electric kettle and a washing machine at the same time. This is because some of us have never faced the electricity deficit, although it is quite real. It is obligatory to start changing our electricity habits now for the purpose of avoiding the electricity deficit in the future.

What can we do to improve the energy situation? Well, to start with, humanity should switch on the alternative sources of energy such as windmills and solar panels. Such an approach would be beneficial as it is eco-friendly and does not use any of the non-renewable resources. Then, we should purchase and establish LED-lamps all over our homes. Also, we should switch off all the lightning when it is unnecessary. Last but not least, pay attention to the energy efficiency class of the electrical appliances.

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MONOCLONAL ANTIBODIES IN CANCER THERAPY

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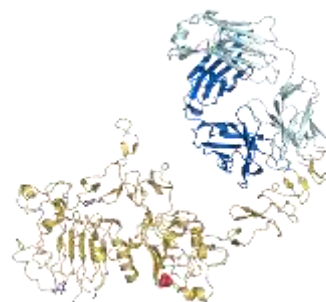
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Cancer is one of the major causes of death, according to WHO in 2020 around 10 million people died from cancer. Breast Cancer is one of the most common terms of new cases, about 2.27 million people got breast cancer worldwide. In recent years, methods of cancer therapy have developed in different ways. One of the most successful methods of treating is monoclonal antibodies therapy.

Monoclonal antibodies are antibodies, which are made by cloning a white blood cell. They can be used in different spheres of treating diseases, but the most sponsored developments are in oncology methods. The main point of all monoclonal antibodies is to deliver an active component of a drug right to the cancer cell. After reaching the cell, an antibody, attached to a molecule on the surface of the cancer cell, can block its growth or just deliver needed drugs. The antibodies are very specific, which means that one antibody can attach to only one target. That feature makes such antibodies exactly for one patient, which increases the chance of recovery. In laboratories antibodies can be duplicated numerous times, which makes studies easier.

As an example of a drug which is based on monoclonal antibodies, trastuzumab deruxtecan is one of the newest and the best shown one. Its main target is HER2 receptor positive protein which is encoded by the human body. In recent years the drug showed outstanding results in treating breast cancer. In hormone-receptor positive disease group(494 patients), where patients decided to be treated with Transtuzumad deruxtecan, average progression-free survival was 10.1 month, while in another group, where patients decided to be treated medical treatments, that were chosen by their physicians, was only 5.4 month.



In conclusion, the main advantage of monoclonal antibodies is their limited targets, which makes them perfect for specific patients. The method has shown a huge advantage both in survival and treatment of patients and in production of drugs. The method has a huge future in oncology treatment and other diseases.

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AI TECHNOLOGY IN EARTH SCIENCE

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Nowadays, artificial intelligence develops very quickly and gives as many opportunities as possible for man. As people try to develop rapidly in all spheres of industry, artificial intelligence also develops rapidly. In my opinion, artificial intelligence is very common in an all-around robot. For me, it is often the use of maps and everything related to them. For example, in applications where you can find different maps for travel and so on, very noticeably used AI.

Artificial intelligence technology has become very useful in fields closely related to Earth. Like what you can see on TV: the weather. Just as many scientists with AI detect anomalies that occur on the back, this action is carried out using AI, which is on board the satellite and various identify anomalies. Such processes occur in climate models (Rasp et al. , 2018; Brenowitz and Bretherton, 2019), which provide quick alternatives for representing these processes. A large number of scientists have concluded that the use of AI in earth science has grown very much, but at the same time they warn the rest of the college that if the use of artificial intelligence is careless and not correct, it can lead to bad consequences, Which may lead to the fact that AI will not be used in this field of science. Therefore, because of such warnings, a certain group of scientists decided to create definite approaches to the use of AI.

The scientists who study the earth have a tradition of using methods that are similar or interconnected to use in studying the globe of the Earth. When artificial intelligence appeared, which became for them an additional method for studying the planet, it became new for them. Thus, artificial intelligence united all the methods that had previously aided in this sphere. Just scientists could not get used to the simplicity and speed of development of AI, because earlier in order to make any discovery in any field it was necessary to work very long and hard on all the necessary material that is scattered in different books and so on.

Because AI develops very quickly, it affects the development of the areas with which it is closely connected. Scientists who analyze the robot of artificial intelligence very closely followed its development and work and on this they have made a conclusion. They determined that people who work with the AI and ask him questions, that he would look for them, affect his development, because when people ask inappropriate questions, then the artificial intelligence does a search on demand and

deduces an answer that may not be correct, And during the development period of AI, something may happen that AI will start to work incorrectly. Therefore, scientists have created rules that can work with I. These rules are the following:

1) Lead AI questions

Put questions that AI could really answer, so he could analyze and answer them in a consistent way.

2) Determine which AI is best to ask a leading question (AI on maps, climate, temperature of the Earth and so on)

Scientists who are engaged in the development of AI, recommend before you choose an artificial intelligence to which you will put your question, ask yourself such questions to choose a certain approach to AI.

Questions such as:

- What exactly do I need from artificial intelligence?

- What tools will AI need to answer my question?

- Do I hold on to principles of accessibility (FAIR)?

3) Do not ask questions that could harm AI development

At this point, AI is quite often used in the exploration of the Earth, and quite strongly affects the speed of human development. In the next 10 years, scientists believe that artificial intellect will become an integral component in this sphere of planet escape.

The use of AI in all fields of Earth exploration and the development of artificial intelligence technology will show what is hidden in the plans of the depths of the Earth.

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RESEARCH ON THE IMPACT OF BIOLOGY ON OUR LIVES AND THE CONSEQUENCES OF HUMAN IMPACT ON OUR PLANET

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What would our life be like without biology?

The question itself sounds absurd enough because our life and everything that surrounds us is biology. We are the result of thousands of years of evolutionary changes, our environment, climate, everything living and non-living in this world was created thanks to this natural science. So how did life begin on our planet? There are

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many different versions, starting with microscopic organisms and bacteria, ending with God who created Adam and Eve, or who appeared first, the chicken or the egg? And yet, I support the opinion of the majority of scientists that the world began with small single-celled organisms, which in turn transformed the endless lifeless and endless ocean into continents through a long path of evolution, creating the ground for the further development of new living organisms. Dinosaurs, mammoths, the ice age - you have heard a lot about this since childhood and read it in children's encyclopedias. The "life" of our planet is a long path of radical changes, which caused various global catastrophes, as well as monotonous and long-term processes.

But still, I would like to return to today's issue.

Scientific and technical process, hunger due to overpopulation: all this is our civilization. But our planet is fighting this tsunami, earthquakes, viruses, droughts and even locusts. The earth is like a living person who wants to protect herself and warn us.

It is worth considering that our society during the Middle Ages, when there was practically no scientific knowledge, and the little knowledge that was already there, was not considered important by society. The largest epidemics, such as smallpox, the plague, and even covid, have always occurred in places with the greatest concentration of the population. Progress in the field of health, first of all, is caused by the appearance of vaccinations, the first antibiotics and the improvement of the sanitary system. Changes in the medical field are undoubtedly the result of our understanding of the human body, the development of medicine, and it is impossible without biology.

High-quality food, which is so necessary for our healthy existence, is the result of the development of agriculture, the theoretical basis of which is also precisely biology. In general, the improvement of the environment is connected with the fact that we finally began to realize the consequences of pollution and, of course, now there are a lot of enterprises that are trying to improve the situation on our planet. But could all this have been avoided? To avoid constant smog over China, to avoid earthquakes and tsunamis in Japan, to avoid famine in Africa and food surpluses in America? I think so. It is not surprising that people have always been ruined by the "human factor", namely, greed. Due to greed, the countries of the world have always tried to outdo each other in oil production, in wheat planting, in the construction of megacities: it is this constant "war of the continents for supremacy" that led to what we have now. The planet is capable of purifying itself in the ways I described earlier, and humanity is blindly trying to fight this through the instinct of self-preservation. Therefore, in order to prevent self-cleansing of the planet, it is necessary to treat it with respect and understand what contributions we can make to improve our own lives.

Everything we do has certain consequences.

One of the problems of our planet today is the excess of plastic in the environment. We mindlessly buy a bottle of water every day on the way to the gym, several cups of coffee on the walk, and every time we pick up a new bag at the grocery store instead of using an old one or an eco bag. But, fortunately, the fact that humanity has already realized the consequences of this waste of resources is already good. Researchers from the University of Toulouse and the Carbios company found that the best ability to biodegrade plastic is demonstrated by a bacterial enzyme from leaf

compost, which was discovered in 2012. To improve the enzyme's ability to break down PET, which is used to make beverage bottles. So the improved enzyme was used to destroy a ton of plastic bottles. Imagine, in 10 hours they were split by 90%! After that, the scientists used the obtained material to make new food-grade bottles.

I would also like to raise the topic of beekeeping. The mass death of bees affected not only Ukraine, but the whole world.

Oddly enough, bees play an important role in agriculture, flying from one flower to another they provide the cross-pollination necessary for the reproduction of most flowering plants. That is, without bees, agriculture, or rather most of the food crops we need, may simply not exist

The presence of an apiary near a field or garden significantly increases the yield. In conditions of widespread use of chemical preparations in agriculture and forestry, the problem of protection and protection of bees from poisoning is becoming increasingly acute. Uncontrolled use of pesticides, especially on honey crops, can lead to the mass death of bees and other beneficial insects that are pollinators of these crops. Beekeepers need to become allies with those who produce agricultural products, considering that the beekeeper is not an enemy, but his bee pollinates agricultural crops and gives 30-40% of the productivity.

The issue of the threat to biodiversity, that is, the loss of habitat for a large number, is acute.

Irrational deforestation. Deterioration of forests in the world is currently the biggest ecological and biological disaster for nature. Deforestation and imperfect management of forestry activities lead to a catastrophic decrease in the area of forests. Forests should be cut down very carefully, because this is not just a loss of green space, but also a serious impact on the environment. Deep ravines, destructive landslides and mudslides appear in the deforested areas, photosynthesizing phytomass that performs important ecological functions is destroyed, many plant and animal species disappear, the gas composition of the atmosphere deteriorates, the hydrological regime of water bodies changes, and it also activates erosion processes.

In conclusion, I want to say that it is necessary not only to preserve what we have now, but also to realize as soon as possible what has already been done and destroyed. The Earth is ready to fight, so we need to go not in conflict but with help and support.

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TRAVELING AT A SPEED GREATER THAN THE SPEED OF LIGHT - OUR FUTURE OR AN UNATTAINABLE DREAM?

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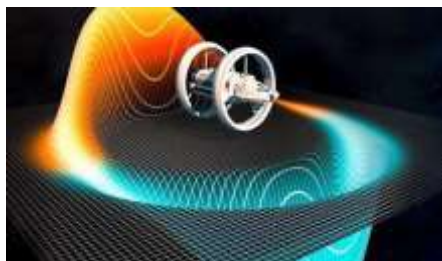
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Mankind has been studying the world around him for a long time. In recent centuries, this study has acquired a remarkable scale and speed, and every person today knows from school days that nothing in our universe can move faster than light. But what if we tell you that the speed of light can be overcome without even breaking the laws of Albert Einstein's general theory of relativity? This can be done even without using wormholes. How? Warp drive is our solution. Let's figure it out.

The main problem according to general relativity is that nothing can move faster than light locally in spacetime. Even approaching the speed of light, your time will be infinitely slowed down, which will lead to undesirable differences in time with those who remained in place, sometimes in the size of hundreds of years. However, what if locally in space it is possible not to move at all, and remembering the possibility of space-time being distorted, make it so that the part of space-time that contains us? There is nothing that would prevent us from doing this, just as there is nothing that prevents space-time from moving faster than light. In addition, we will not get time discrepancies with third-party viewers. It sounds like a utopia, but these concepts are the basis of the warp drive.

How to distort the space around us so that it forces us to move in it? We know that our universe (spacetime) is infinitely expanding, which has been proven and known by us for decades. With this in mind, we even observe galaxies moving away from us (observers). And the farther the galaxy is from us, the faster it moves. Some galaxies are moving away from us faster than light. This is not because galaxies have any speed in space, but because space is expanding. Then maybe there is a way to do the same not on the scale of the universe but on a smaller scale. If you expand the space behind you and compress it in front of you, it will allow you to move as if in a bubble of space. It's called a warp bubble. A bubble of warped spacetime geometry.

So why isn't humanity still flying to the Andromeda galaxy for a vacation? Here



we should deal with the main problem of the warp drive. We expand the space behind us and squeeze it in front. How to compress space? The answer is simple - mass. Turning to the known equation $E = mc^2$ (Einstein, 1905), we see that mass is equivalent to energy. Therefore, to compress the space in front of you, you need to have a sufficient amount of energy, with which

humanity is well acquainted. Then, to stretch the space behind you, you need to have a negative mass, that is, a negative energy, about which humanity does not have the slightest idea yet. This is the main problem of the warp drive.

Among other problems is the amount of energy needed in general. Modern calculations (Evangelos, 2017) show that moving objects similar in size to a modern spacecraft in space using a warp bubble will require energy no less than the energy contained in 30% of our sun. Which is out of reach for humanity shortly at least.

The conclusion is that now and in the next hundred years, humanity will hardly be able to overcome the theoretical problems of warp drive and design an "engine" and a ship that will allow interstellar flights at a speed greater than the speed of light. However, there is no reason why humanity should not reach such heights in the distant future because the concept of the warp engine fits into the theory of relativity and other theories that describe the laws of our universe.

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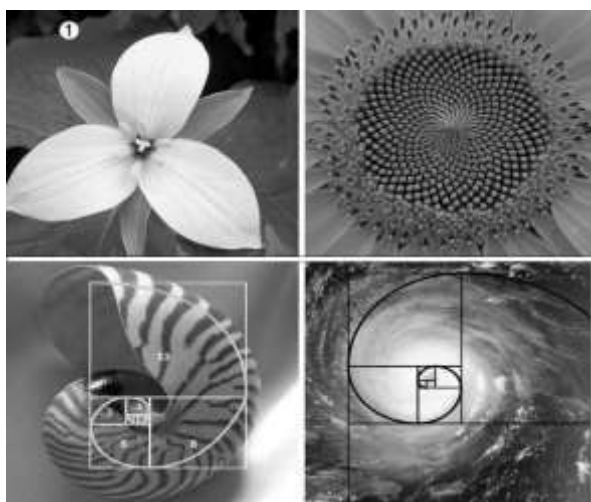
THE SECRETS OF FIBONACCI NUMBERS

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Since ancient times, Fibonacci numbers have fascinated scientists. A number of people believe that the whole world is based on this sequence, and some call it the number of God. Why is this number special?



Fibonacci was discovered by Leonardo Pizano, the first famous mathematician of medieval Europe. During the scientist's experiment, he attempted to understand how many offspring a pair of rabbits could have in a year (Garg et al., 2014, p. 388-391). Each subsequent number in the Fibonacci sequence is the sum of the two before it. Dividing a number by the previous one always gives 1.618 as the result. We find this very meaning and the same sequence in many areas of our lives.

For example, in nature, the Fibonacci sequence can be found in flowers. If you look closely at the number of petals or their location on a flower, you can see that the number of petals is one of the numbers in the mentioned sequence. Among them, it is also worth highlighting the sunflower, the seeds of which are located along the so-

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called golden spiral, which is directly related to the Fibonacci numbers. The rule of the golden ratio can be seen in the trajectory of hurricanes, in elliptical galaxies, in the structure of a snail's shell, or even in the structure of a human ear. It is also worth noting that the value 1.618 itself is observed in the ratio of the size of different parts of the body, in the ratio of the size of branches in trees, etc. (Bortner et al., 2016, p. 42).

Also, the sequence of Fibonacci numbers is widely used and manifested in music and art. These numbers are present in the octave - the basic units of the melody. Some musical instrument makers follow a sequence to create unique instruments. In addition, some famous composers used the golden ratio to better structure their music (Gend, 2014, p. 72–77). At the same time, artists and fashion designers make their calculations, drawings, or sketches based on the entire golden ratio.

Recently, this sequence has attracted the interest of many scientists, applying it to many fields of science, including quantum mechanics, physics, and even coding. It is known that the scientists Raghu and Ravishankar, as well as Raphael and Sundaram, developed an encryption system based on the use of the Fibonacci complex. With this method of cryptography, a security key is selected from a sequence of numbers, which later helps to reliably encrypt messages (Agarwal,P., Agarwal, N. and Saxena, 2015, p 72–77). There is also an article that the Fibonacci sequence can be used in hiding image cryptography. (Mukherjee, Samanta, 2014, p 172-176).

So, Fibonacci numbers have quite a few secrets. They are found in many areas of life, and it can be said that the harmony of the surrounding world is based on them.

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