Computers

History of computers

At all times and in any weather, man did not possess special diligence in the prevailing mass of mankind. Attempts to automate a wide variety of work were constantly being made. The field of intellectual work was the first to be simplified - the first automating devices were various counting boards, adding machines and a slide rule.

The next stage was the appearance of a semi-automatic loom, which used punched cards and was able to apply various patterns to the fabric.

However, until the beginning of the twentieth century, attempts were made to create only mechanical computers. In the twentieth century, the era of wars began, when not just two peoples clashed, but different systems. Conflicts have grown from the category of local and regional to international ones. When the life of an entire nation was at stake, all means were used, including computers that were used to decipher the enemy's plans.

After World War II, computers were primarily used by scientists to speed up large calculations, by large companies to keep financial records, and by the military to ensure national security (in particular, computers were actively used in air defense).

Everything was changed by the invention of the transistor, before which electronic lamps were used. A computer powered by electronic lamps, as a rule, had impressive dimensions - from a room to a small cottage. The invention of the transistor made it possible to significantly reduce the size of computers to the size of outdoor soda machines - this is how the era of slot machines began.

However, it did not take much time and work of two geniuses to connect a TV and keyboard to a programmable board and think about the prospects - this is how the era of the Apple company and personal computers began.

Computers in our time

Now computers are used everywhere. Not only televisions have their own processors, but also vacuum cleaners, refrigerators,

radios, even simple lamps! And all this reacts to your voice and fingerprint.

All this is accompanied by appropriate technologies. Any child knows about technologies such as bluetooth and wi-fi, and almost everything has acquired the first of them: from a kettle to keys and flashlights.

Now you just connect to your radio and turn on not only what the local radio station broadcasts, but anything. You don't even need a cassette or vinyl record for this. You can set up the kettle so that when it boils, it sends you the appropriate message. Yes, that's it! The thing that any modern person has - a smartphone - replaces dozens of things for you. A radio, a flashlight, a clock, an alarm clock, a stopwatch, a camera, a calculator, a lot of games, music and old photos, your phone book, phone and anything else can fit in one device.

Internet — history

However, it is impossible to imagine the twenty-first century without such a scourge as the Internet. What is the Internet? This is a network of computers. That's how it originally appeared. The first computer networks were information exchange systems in various government departments. As already mentioned - scientists, military and large companies.

For example, in the Soviet Union, the military networked various missile and air defense installations. In addition, Soviet airlines and railway companies had their own computer systems for reserving seats, and the latter still use the Soviet system. Advanced Soviet institutions were also united in special networks. The USA also used computer networks in the scientific environment. As a result of the common space program, the USSR and the USA combined their scientific computer networks - so the Internet appeared.

Hackers and cybersecurity

Of course, at the dawn of the Internet, security was practically at zero. As a result, various people began to appear who abused it - hackers. For example, in 1983, a group of teenagers, calling themselves Group 414, was arrested in the United States, who hacked into the computers of the Los Alamos laboratory, which was engaged in the development of nuclear weapons.

However, perhaps the most famous hacker is Kevin Mitnick. He was born in 1963 and after a classmate introduced him to phone tricks at the age of 12, he became very interested in them. By the age of 16, he could call for free and had special devices for this, but once he was almost caught transporting such a thing, which prompted a change of activity.

After getting to know the school computer in 1980, Kevin hacked into the school computer network and could easily change his grades, but he did not do this. After three months in a penal colony, Mitnick became an absolute virtuoso of telephony and could do whatever he wanted.

After that, he was arrested again for one year in a non-strict regime prison and six months of treatment at the alcoholics Anonymous club for computer addiction. After Mitnik's release from prison, all the money disappeared from the judge's account, his prison guard's number was blocked, and the records of his arrest and sentence were erased from the register.

In 1994, Kevin very cleverly hacked into the computer of a leading computer security specialist and copied hundreds of classified files.

Social problems of information society

However, the large-scale development of the Internet has also created many problems. With the development of social networks, communication becomes faster and faster, but only the transmission of information is accelerated, and not real feelings and meanings.

Due to the availability of the Internet, people began to communicate less, because the necessary information can be found from the Internet. People began to visit less, because you can call almost any inhabited corner of the Earth without delay.

In the raging flow of information, due to the fact that people began to communicate less, the effect of understatement and lack of listening began to arise. This is how websites began to appear where everyone can express their opinion on the condition of anonymity. As practice shows, a significant number of people have several accounts on social networks - one official, and the second personal, so that they have the opportunity to express their thoughts without fear of any misunderstandings with their friends.

Computer intelligence

Why don't people resort to using a computer in such areas? In modern conditions of artificial intelligence development, the latter is still quite inferior to humans.

Take chess computers, for example. Not so long ago, one of them beat the world champion. But this does not show the superiority of the computer. It just shows that a few chess players with a computer can beat a lone genius. Although a computer can perform millions of operations per second, it cannot generalize. A person who has learned to play chess is able to apply chess strategies in other situations - a chess computer is not capable.

In general, if we talk about artificial intelligence, it is rather an achievement of mathematicians who were able to come up with a model similar to the human brain, although on a much smaller scale. However, the mathematical potential of the invention has been exhausted - it's up to the programmers.

Programming

Let's talk about programming languages - programmers need to write their code in something. Now there are three concepts of programming languages: compiled, like C, interpreted, like Python, and all together - with a virtual machine, like Java.

The computer does not know how to think for itself - what you tell it, it will do, therefore, in order for the computer to understand what a person wants from it, a set of basic commands was created for it - machine code. Of course, computers of different models can have different machine code - this is one of the problems of programming.

Let's talk about compiled programming languages. The source code of programs in such languages is immediately translated into machine code by a special compiler program. The programs work incredibly fast, but each computer model needs its own program.

Interpreted programming languages differ significantly from them. The source code of such programming languages is run directly in a special interpreter program.

And the third type combines the first two. The source code is first translated by a program called a translator into an intermediate

code called a byte code, which does not depend on the computer model, and then runs in a virtual machine.

One of the most popular modern programming languages is Python. He is about thirty years old. It supports most modern programming concepts and is easy to learn, which is why it has gained great popularity among beginners, data analysis and scientists. It is an interpreted programming language. It has an abundance of libraries, which makes it an almost universal tool, but it has a low speed of operation.

Java is another popular programming language. This is a programming language with a virtual machine, and another programming language, kotlin, uses its virtual machine. Java has a large cross-platform capability and is supported on the vast majority of mobile phones, which makes it virtually a standard. Processors that support Java bytecode execution directly are even being developed now.