THE HISTORY OF COMPUTER INVENTION

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A computer is a universal device designed to process information. It receives data, processes it according to the specified rules, and produces the result in a form that is understandable to humans. The first computer in history is considered Blaise Pascal's calculating machine, invented in 1642. It was the first primitive calculator that helped to add and subtract. Pascal's invention was improved in 1671. The German mathematician Gustav Leibniz invented an arithmetic calculator that performed four actions instead of two (Хто винайшов комп'ютер?, 2020).

The English mathematician Charles Babbage developed a device that not only performed arithmetic, but also printed the results immediately. In 1832, a tenfold smaller model was built from two thousand brass parts, weighing three tons, but capable of performing arithmetic operations to the sixth decimal place and calculating second-order derivatives. This computer became the prototype of modern computers; it was called a differential machine. Mathematician and mechanic P. L. Chebyshov created the summing machine with continuous transmission of tens. This device

automated all arithmetic operations (Поповський, 2024).

At the end of the 19th century, the United States conducted another census. To process the results, a Herman Hollerith tabulator, a device for processing punch cards, was used. The era of these primitive and ancient computers is interrupted by the first computers (electronic computers), which began to be created in the 1930s. One of the main disadvantages of tube computers was the lamps themselves. There were about 15-30 thousand of them in one device (Хто винайшов комп'ютер?, 2020).

At the end of 1943, the English special-purpose computer Colossus was launched. The machine worked on deciphering the secret codes of Nazi Germany. In 1944, Konrad Zuse developed an even faster Z4 computer. 1946 was the year of creation the first universal electronic digital computer ENIAC. In 1950, under the leadership of Academician S.O. Lebediev, the first computer in continental Europe, the MEOM, was created in Kyiv (Малиновський, 2012). In 1959, the Americans Jack St. Clair Kilby and Robert N. Noyce independently invented the integrated circuit, a set of thousands of transistors placed on a single silicon crystal inside a chip (Малиновський, 2012). In the 1960s, the transistor was invented, the first semiconductor to replace the electronic tube. The size of computers was significantly reduced, and their memory was several tens of thousands of words. The invention of the transistor contributed to a surge in the development of computers (Хто винайшов комп'ютер?, 2020). In 1965, the first minicomputer PDP-8 was released, which was the size of a refrigerator and cost 20 thousand US dollars. The PDP-8 was the first computer of the DEC PDP series to be mass-produced. In 1971, scientists from Federico Faggini's group working for Intel created the first single-chip microprocessor Intel 4004 (4-bit data bit), which was used in microcalculators. In 1974, Micro Instrumentation and Telemetry Systems (MITS) developed the first microcomputer, the Altair 8800, based on the Intel 8080 8-bit microprocessor. This computer became the first commercially successful personal computer. In the 1970s, computers finally became personal and affordable. This became possible because in 1972 an 8-bit microprocessor was created and used in computers (Історія появи

комп'ютерів, 2024). The Apple II is one of the first personal computers released by Apple in 1977. It was revolutionary for its capabilities, including color graphics and sound support (Apple II, 2023). In August 1981, a new computer called the IBM PC, officially shown to the public, quickly gained great popularity among users (Історія появи комп'ютерів, 2024). In 1992, one of the first laptops in the ThinkPad series, the IBM ThinkPad 700C, was introduced. It was equipped with an IBM 486 SLC processor and 4 MB of RAM. It came with a 120 MB hard disk (ThinkPad, 2023).

Since the late 1960s to the late 1970s, the history of the computer belongs to the era of integrated circuits. Back then, the computer came close to the PC we have today. In the second half of the 1970s, creating a computer that was affordable to everyone was no longer a problem. Two students, Steven Jobs and Steve Wozniak, an American with Ukrainian roots, created the Homebrew Computer Club in their garage, which would later become Apple Computer. It was the first computer aimed at ordinary consumers. You did not have to assemble a PC yourself; it was sold ready to use. The idea of a personal computer became super successful, and the product became popular. (Хто винайшов комп'ютер?, 2020).

Thus, the achievements of technical sciences are the basis of scientific and technological progress, a necessary condition for social progress. Computers are one of the most significant achievements of human thought, the impact of which on the development of scientific and technological progress can hardly be overestimated. The fields of computer application are constantly expanding. The history of computer development is still waiting for new inventions (Коли виник перший комп'ютер, 2017).

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