

COMPUTER SYSTEM

A computer system is a collection of components that work together to process data. The purpose of a computer system is to make it as easy as possible for you to use a computer to solve problems. A functioning computer system combines hardware elements with software elements. The hardware elements are the mechanical devices in the system, the machinery and the electronics that perform physical functions. The software elements are the programs written for the system; these programs perform logical and mathematical operations and provide a means for you to control the system. Documentation includes the manuals and listings that tell you how to use the hardware and software. Collectively these components provide a complete computer system: system hardware + system software + system documentation = computer system. Usually, a computer system requires three basic hardware items: the computer, which performs all data processing; a terminal device, used like a typewriter for two-way communication between the user and the system; and a storage medium for storing programs and data. These three devices—the computer, the terminal and the storage medium—are the required hardware components of any computer system.

Optional peripheral devices are added to a computer system according to the specific needs of the system users. For example, computer systems that are used primarily for program development may have extra storage devices and a high-speed printing device. Computer systems used in a laboratory may have graphics display hardware, an oscilloscope device, and an analog-to-digital converter. Computer systems that provide (or use) information in conjunction with another kind of computer system usually have a magtape device, because magtape device is an industry-standard storage device.

Peripheral devices are categorized as input/output (I/O) devices since the functions they perform provide information (input) to the computer, accept information (output) from the computer, or do both. Line printers are output devices because they perform only output operations. Terminals and storage devices are input/output devices because they perform both input and output operations.

System software is an organized set of supplied programs that effectively transform the system hardware components into usable tools. These programs include operations, functions, and routines that make it easier for you to use the hardware to solve problems and produce results. For example, some system programs store and retrieve data among the various peripheral devices. Others perform difficult or lengthy mathematical calculations. Some programs allow you to create, edit, and process application programs of your own. System software always includes an operating system, which is the "intelligence" of the computer system. Usually the system software includes one or several language processors.

Vocabulary:

Item - элемент, единица, отдельный элемент;

in conjunction with - вместе с, в сочетании с;

industry-standard - промышленный, выпускаемый промышленными предприятиями.

I. Give the Russian equivalents:

Computer system, machinery, hardware, software, data processing, two-way communication, storage medium, peripheral devices, program development, analog-to-digital converter, input/output devices, line printer, routine, operating system, listing, system software.

II. Answer the questions:

1. What does a computer system consist of?
2. What are the hardware elements?
3. What are the software elements?
4. What are the software elements?