# computer

A programmable machine. The two principal characteristics of a computer are:

1. It responds to a specific set of instructions in a well-defined manner.
2. It can execute a prerecorded list of instructions (a program).

Modern computers are electronic and digital. The actual machinery -- wires, transistors, and circuits -- is called hardware; the instructions and data are called software.

All general-purpose computers require the following hardware components:

- memory : Enables a computer to store, at least temporarily, data and programs.
- mass storage device : Allows a computer to permanently retain large amounts of data. Common mass storage devices include disk drives and tape drives.
- input device : Usually a keyboard and mouse, the input device is the conduit through which data and instructions enter a computer.
- output device : A display screen, printer, or other device that lets you see what the computer has accomplished.
- central processing unit (CPU): The heart of the computer, this is the component that actually executes instructions.
- In addition to these components, many others make it possible for the basic components to work together efficiently. For example, every computer requires a bus that transmits data from one part of the computer to another.

Computers can be generally classified by size and power as follows, though there is considerable overlap:

- personal computer : A small, single-user computer based on a microprocessor. In addition to the microprocessor, a personal computer has a keyboard for entering data, a monitor for displaying information, and a storage device for saving data.
- workstation : A powerful, single-user computer. A workstation is like a personal computer, but it has a more powerful microprocessor and a higher-quality monitor.
- minicomputer : A multi-user computer capable of supporting from 10 to hundreds of users simultaneously.
- mainframe : A powerful multi-user computer capable of supporting many hundreds or thousands of users simultaneously.
- supercomputer : An extremely fast computer that can perform hundreds of millions of instructions per second.

# personal computer

A small, relatively inexpensive computer designed for an individual user. In price, personal computers range anywhere from a few hundred dollars to over five thousand dollars. All are based on the microprocessor technology that enables manufacturers to put an entire CPU on one chip. Businesses use personal computers for word processing, accounting, desktop publishing, and for running spreadsheet and database management applications. At home, the most popular use for personal computers is for playing games.

Personal computers first appeared in the late 1970s. One of the first and most popular personal computers was the Apple II, introduced in 1977 by Apple Computer. During the late 1970s and early 1980s, new models and competing operating systems seemed to appear daily. Then, in 1981, IBM entered the fray with its first personal computer, known as the IBM PC. The IBM PC quickly became the personal computer of choice, and most other personal computer manufacturers fell by the wayside. One of the few companies to survive IBM's onslaught was Apple Computer, which remains a major player in the personal computer marketplace.

Other companies adjusted to IBM's dominance by building IBM clones, computers that were internally almost the same as the IBM PC, but that cost less. Because IBM clones used the same microprocessors as IBM PCs, they were capable of running the same software. Over the years, IBM has lost much of its influence in directing the evolution of PCs. Many of its innovations, such as the MCA expansion bus and the OS/2 operating system, have not been accepted by the industry or the marketplace.

Today, the world of personal computers is basically divided between Apple Macintoshes and PCs. The principal characteristics of personal computers are that they are single-user systems and are based on microprocessors. However, although personal computers are designed as single-user systems, it is common to link them together to form a network. In terms of power, there is great variety. At the high end, the distinction between personal computers and workstations has faded. High-end models of the Macintosh and PC offer the same computing power and graphics capability as low-end workstations by Sun Microsystems, Hewlett-Packard, and DEC.

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