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## **Type of computers**

According to purpose, computers are either general purpose or specific purpose. **General purpose computers** are designed to perform a range of tasks. They have the ability to store numerous programs, but lack in speed and efficiency. Specific purpose computers are designed to handle a specific problem or to perform a specific task. A set of instructions is built into the machine.

According to data handling, computers are analog, digital or hybrid. Analog computers work on the principle of measuring, in which the measurements obtained are translated into data. Modern analog computers usually employ electrical parameters, such as voltages, resistances or currents, to represent the quantities being manipulated. Such computers do not deal directly with the numbers. They measure continuous physical magnitudes. Digital computers are those that operate with **information**, numerical or otherwise, represented in a digital form. Such computers process data into a digital value (in 0s and 1s). They give the results with more accuracy and at a faster rate. **Hybrid computers** incorporate the measuring feature of an **analog computer** and counting feature of a **digital computer**. For computational purposes, these computers use analog components and for storage, digital memories are used.

According to functionality, **Type of computers** are classified as :

### **Digital Computer**

A computer that performs calculations and logical operations with quantities represented as digits, usually in the binary number system.

### **Analog Computer**

An analog computer (spelt analogue in British English) is a form of computer that uses *continuous* physical phenomena such as electrical, mechanical, or hydraulic quantities to model the problem being solved.

## Hybrid Computer (Analog + Digital)

A combination of computers those are capable of inputting and outputting in both digital and **analog signals**. A hybrid computer system setup offers a cost effective method of performing complex simulations.

## General purpose Computers

### PC (Personal Computer)

A PC can be defined as a small, relatively inexpensive computer designed for an individual user. PCs 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 playing games and surfing the Internet.



Although personal computers are designed as single-user systems, these systems are normally linked together to form a network. In terms of power, now-a-days 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 Dell.

## Turnkey Systems

A computer system that has been customized for a particular application. The term derives from the idea that the end user can just turn a key and the system is ready to go. Turnkey systems include all the hardware and software necessary for the particular application. They are usually developed by *OEMs* (*original equipment manufacturers*) who buy a computer from another company and then add software and devices themselves.

## On the basis of Size: Type of Computer

### Micro-computer or Personal Computer

The micro-computer widely used & fastest growing computer. These computers are the cheapest among the other three types of computers. The micro computers are specially designed for general usages like entertainment, education and work purposes. Well known manufacturers of micro-computer are Dell, Apple, Samsung, Sony, Toshiba.

- **Desktop Computer:** a personal or micro-mini computer sufficient to fit on a desk.
- **Laptop Computer:** a portable computer complete with an integrated screen and keyboard. It is generally smaller in size than a desktop computer and larger than a notebook computer.
- **Palmtop Computer/Digital Diary /Notebook /PDAs:** a hand-sized computer. Palmtops have no keyboard but the screen serves both as an input and [output device](#).

### Super Computer

The fastest and most powerful type of computer Supercomputers are very expensive and are employed for specialized applications that require immense amounts of mathematical calculations. For example, weather forecasting requires a [supercomputer](#). Other uses of supercomputers include animated graphics, fluid dynamic calculations, nuclear energy research, and petroleum exploration.



The chief difference between a supercomputer and a **mainframe** is that a supercomputer channels all its power into executing a few programs as fast as possible, whereas a mainframe uses its power to execute many programs concurrently.

### **Mainframe Computer**

A very large and expensive computer capable of supporting hundreds, or even thousands, of users simultaneously. In the hierarchy that starts with a simple **microprocessor** (in watches, for example) at the bottom and moves to supercomputers at the top, mainframes are just below supercomputers. In some ways, mainframes are more powerful than supercomputers because they support more simultaneous programs. But supercomputers can execute a single program faster than a mainframe.



### **Mini Computer**

A midsize computer. In size and power, minicomputers lie between *workstations* and *mainframes*. In the past decade, the distinction between large minicomputers and small mainframes has blurred, however, as has the distinction between small minicomputers and workstations. But in general, a minicomputer is a multiprocessing system capable of supporting from 4 to about 200 users simultaneously.



## Workstations

Workstation is a computer used for engineering applications (CAD/CAM), desktop publishing, software development, and other such types of applications which require a moderate amount of computing power and relatively high quality graphics capabilities. Workstations generally come with a large, high-resolution graphics screen, large amount of RAM, inbuilt network support, and a graphical user interface. Most workstations also have mass storage device such as a disk drive, but a special type of workstation, called diskless workstation, comes without a disk drive.



Common operating systems for workstations are UNIX and Windows NT. Like PC, workstations are also single-user computers like PC but are typically linked together to form a local-area network, although they can also be used as stand-alone systems.