Classification of Computers

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By Type
- Analog
- Digital
- Hybrid

By Size
- Micro
- Mini
- Mainframe
- Super

By Purpose
- General Purpose
- Special Purpose

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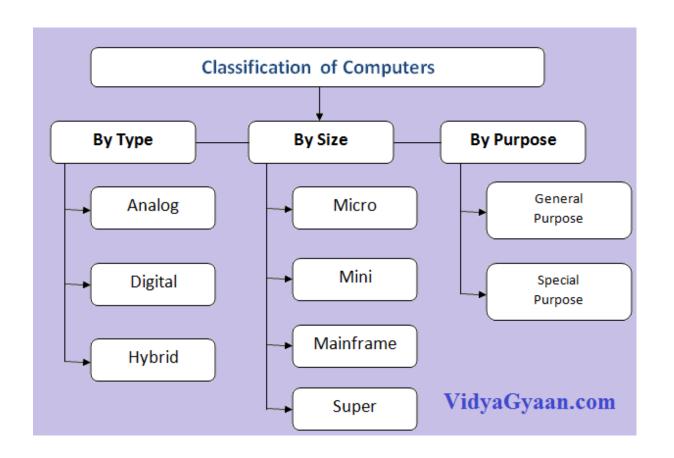
- **Analog Computer**

- 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.

- **Digital Computer**

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

- **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.

- **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 mid sized computer. In size and power, minicomputers lie between *workstation* and *mainframe*. 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.

- **Micro Computer or Personal Computer**

- • **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.

- 1. **General Purpose**

- General computers can do various **everyday tasks** such as writing a word processing letter, Document preparation, recording, financial analysis, Printing documents, creating databases, and calculations with accuracy and consistency.

- The size, storage capacity, and cost of such computers are mainly less. The ability of these computers is limited in performing specialized tasks. Still, it has **versatility and useful** for serving people's basic needs at home or in the workplace in the environment.

- Examples:

- Desktops, laptops, smartphones, and tablets are used on daily basis for general purposes.

▶ 2. **Special Purpose**

▶ These computers are designed to perform a particular or specialized task. The size, storage capacity, and cost of such computers mainly depend on the nature and size of the work. The function of these computers is consistent with any particular task.

▶ The special computer **needs specific and input and devices** as well as a compatible motherboard with the processor to conduct work efficiently.

▶ These computers are used for special purposes in *weather forecasting, space research, agriculture, engineering, meteorology, satellite operation, traffic control, and research in chemical sciences.*

- Examples:
- Automatic teller machines (ATM),
- Washing machines,
- Surveillance equipment,
- Weather-forecasting simulators,
- Traffic-control computers,
- Defense-oriented applications,
- Oil-exploration systems,
- Military planes controlling computers.

Thank you