Classification of Computer

Analog Computer

- Analog Computer – a computer that operates with numbers represented by directly measurable quantities (as voltages or rotations) – compare digital computer and hybrid computer. Analog computer is used to process analog data. Analog data is of continuous nature and which is not separate. Such type of data includes temperature, pressure, speed, weight, voltage, depth etc.
- Examples of Analog computer are Speedometer of a car, Thermometer etc. Analog computers are faster than other computers.

Analog Computers

Digital computer

Digital computer is the most commonly used computer and used to process information with quantities using digits, usually using the binary number system. Ex – MacBook. A digital computer as its name implies works with digits to represent numerals, letters or other special symbols.

Digital Computer

A digital computer cont…

- A digital computer is used to process digital data. It is a discrete data and having only two possible values (0,1)
- Digital computer provide accurate result but they are slower than analog computer.
- Analog computer has lack of memory whereas digital computers store information.

Classification on size

- **Supercomputer** Super computer is the fastest computer. Supercomputers are very expensive and are employed for specialized application that require immense amounts of calculations

Supercomputer

AI Supercomputer

NASA Moon-Landing Supercomputer

Classification on size

- **Mainframe computer** – A mainframe computer is a very large computer capable of handling and processing very large amounts of data quickly.
- They are used by large institutions, such as government agencies and large corporations.

Mainframe Computer

IBM Z900 computer

Classification on size

- **Mini Computer** – A computer with processing and storage capabilities smaller than those of a mainframe but larger than those of a micro computer.

Minicomputer

- A **minicomputer** is a type of **computer** that possesses most of the features and capabilities of a large **computer** but is smaller in physical size. A **minicomputer** fills the space between the mainframe and microcomputer, and is smaller than the former but larger than the latter.

Classification on size

- **Micro computer** - A micro computer is a complete computer on a smaller scale and is generally a synonym for the more common term, personal computer or PC, a computer designed for an Individual.
- Personal computer - A personal computer (PC) is a small, relatively inexpensive computer designed for an individual user.
- Every PC is based on microprocessor technology , which allows PC makers to set the entire central processing unit (CPU) on a single chip.

Micro Computer

A **microcomputer** is a small, relatively inexpensive **computer** with a microprocessor as its central processing unit (CPU). ... Microcomputers became popular in the 1970s and 1980s with the advent of increasingly powerful microprocessors.

Hybrid Computer

- Hybrid Computer – A computer that combines the characteristics of a digital computer and an analog computer by its capacity to accept input and provide output in either digital or analog from and to process information digitally.

Hybrid Computer

- **Hybrid computers** are **computers** that exhibit features of analog **computers** and digital **computers**. The digital component normally serves as the controller and provides logical and numerical operations, while the analog component often serves as a solver of differential equations and other mathematically complex equations.

Features of hybrid computer and analog

A hybrid computer and analog computer are combines the best features of both types of computers.

- For example a petrol pump contains a processor that converts fuel flow measurement into quantity and price
- Hybrid computer is used in hospitals to measure the heartbeat of the patient.
- Hybrid Computers are also used in processes of scientific applications or controlling industrial process.