

# Computer Fundamentals

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# Contents

- Definition
- Uses/Applications
- Capabilities
- Limitations
- History
- Generation
- Difference between Computer and Calculator
- Block Diagram
- Types of computer
- Type of PC

# Definition

A computer is an electronic machine or device that performs processes, calculations and operations based on instructions provided by a user.

It has the ability to accept data (input), process it, and then produce outputs as desired.

# Uses/Applications of Computer

- Banking
- Education
- Industries
- Entertainments
- Hospitals
- Business
- Defence
- Reservation
- Science and Research
- Data processing

# Capabilities of Computer

- Speed
- Storage capacity
- Accuracy
- Deligency
- Versatility

# Limitations of Computer

- No IQ
- No Brain

# History of Computer

- Abacus (5000 Year before)
- Napier Bones (John Napier 1614)
- Pascaline Machine (Blaise Pascal 1642)
- Difference Engine (Charles Babbage 1822) automatic mechanical computing machine
- Analytical Engine (1833) digital, programmable and automatic computer
- MARK I (Howard Aiken 1937-44) First fully automatic calculating machine
- ENIAC (J. Presper Eckert and John Mauchly 1943-46)
- EDVAC (1946-52) Electronic Discrete Variable Automatic Computer used stored program
- EDSAC (1947-49) Electronic Delay Storage Automatic Calculator
- UNIVAC (1951) First digital Computer

# Generation of Computer

On the basis of technology used computer is divided in to generations.

- First Generation (1946-1954) Vacuum Tubes
- Second Generation (1955-1964) Transistors
- Third Generation (1965-1974) Integrated Circuits
- Fourth Generation (1975-1990) VLSI (Microprocessor), PC, semiconductor replaced magnetic core memories, Networking, DOS, Unix, Windows, Apple OS
- Fifth Generation (1991-now) ULSI, Portable PC, CD-ROM, Internet



# Difference between Computer and Calculator

The main difference between Computer and Calculator is that the Computer is a simple general-purpose device for performing arithmetic or logical operations and Calculator is a electronic device used to perform arithmetic operations only.

# Block Diagram of Computer

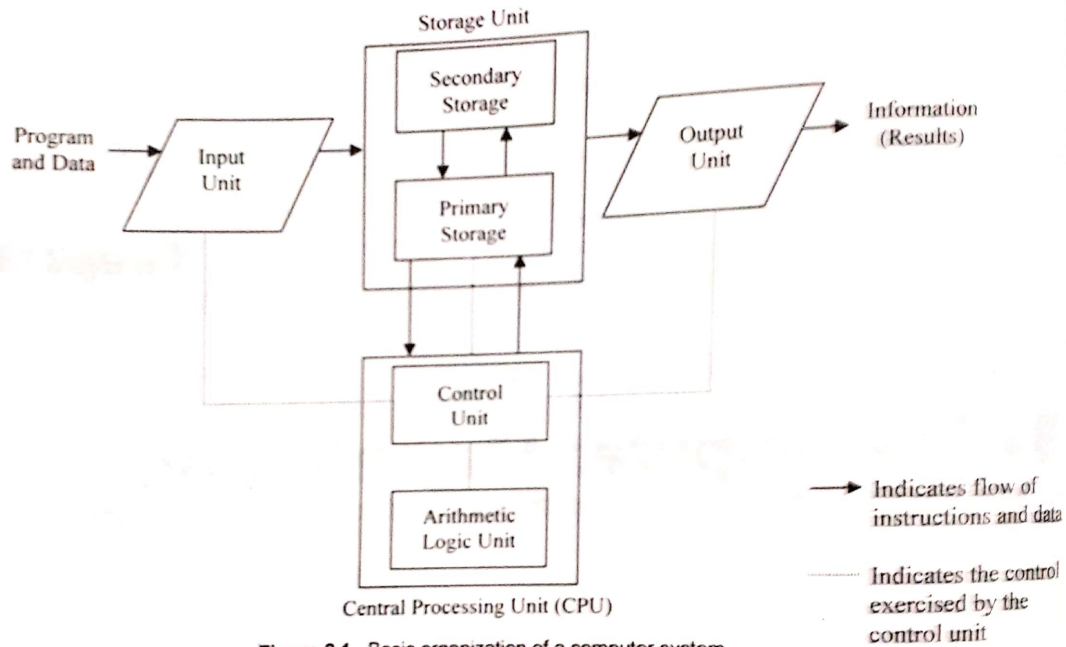


Figure 2.1. Basic organization of a computer system.

- Hardware
- Software
- Firmware

# Type of computer

- On the basis of operating principles
  - ✓ Digital computer
  - ✓ Analog Computer
  - ✓ Hybrid Computer
- On the basis of applications
  - ✓ General purpose computer
  - ✓ Special purpose computer
- On the basis of size and capability
  - ✓ Micro computer
  - ✓ Mini computer
  - ✓ Mainframe computer
  - ✓ Super computer

# Personal Computer (PC)

- A PC can be defined as a small, relatively inexpensive micro computer designed for an individual user.
- PCs are based on the microprocessor technology that enables manufacturers to put an entire CPU on one chip.
- PC is made by IBM.
- Home and office use

# Types of PC

- PC
- PC-XT (8087-88, 256 kb RAM, 10-40 MB HDD, 1-2 FDD, Monochrome monitor, 135 watts power supply, 1 serial & 1 parallel port)
- PC-AT (80286-486, 4-128 mb RAM, 80-640 MB HDD, 1-2 FDD, CD, 14/20 inch CGA/SVGA monitor, 2 serial & 1 parallel port)
- Pentium (petium, 256-512mb RAM, 584 MB-13 GB HDD, 1 FDD, CD, color monitor, multimedia support)

# PGDCA-101

## Unit-I

- Computer system: characteristics and capabilities.
- Computer Hardware and Software
- Block Diagram of a Computer
- Different Data Processing: Data, Data Processing System, Storing Data, Processing Data.
- Types of Computers: Analogue, Digital, Hybrid, General and Special Purpose Computers.
- Generation of Computers