

Computer Components

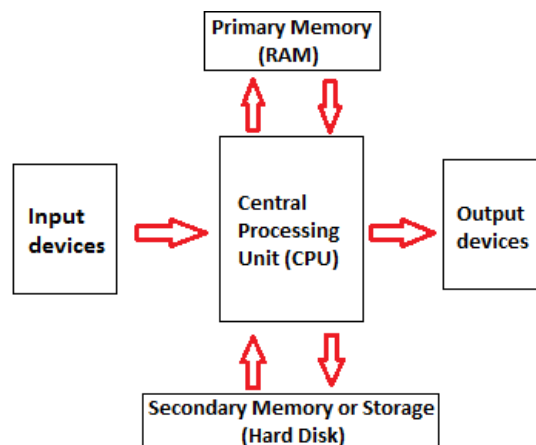
1. Introduction

A computer is an electronic device that processes data into meaningful information. To perform this function, it consists of several interconnected components. Understanding these components is essential to grasp how computers work, from simple input to complex processing and output.

2. Computer Portions

The computer can be divided into **three main portions**:

1. **Input Unit** – Devices that allow users to enter data (keyboard, mouse, scanner).
2. **Processing Unit** – The **CPU (Central Processing Unit)** which controls all operations.
3. **Output Unit** – Devices that display or produce results (monitor, printer, speakers).



3. Hardware Parts

Computer hardware refers to the **physical components** of the system. Examples include:

- **Motherboard:** Main circuit board connecting all components.
- **CPU:** The brain of the computer.
- **RAM:** Temporary storage for active programs.
- **Hard Drive/SSD:** Permanent storage.
- **Power Supply Unit (PSU):** Provides electrical power.
- **Peripheral Devices:** Printers, scanners, etc.

4. Input/Output (I/O) Units

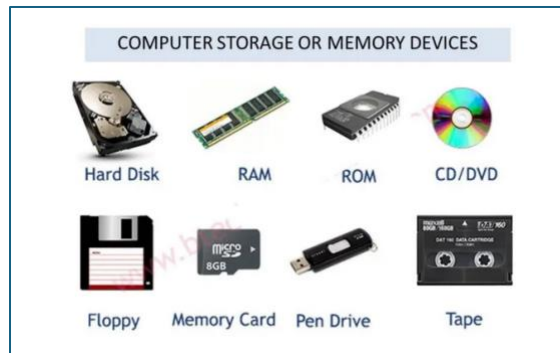
- **Input Units:** Keyboard, mouse, microphone, camera, touch screen.
- **Output Units:** Monitor, printer, projector, speakers.
- Some devices are **I/O combined**, such as a touchscreen (input + output).

5. Memory Types

Memory in a computer is divided into two categories:

- **Primary Memory**
 - **RAM (Random Access Memory):** Volatile memory used for temporary data storage.

- **ROM (Read Only Memory):** Non-volatile memory with permanent instructions.
- **Secondary Memory**
 - Hard Disk Drives (HDD), Solid-State Drives (SSD), Optical Discs (CD/DVD).



- **Cache Memory**
 - High-speed memory inside CPU for quick access.
- **Flash Memory**
 - USB drives, memory cards.

6. Basic Computer Components

The five basic components of a computer system are:

1. **Input Unit**
2. **Output Unit**
3. **Storage (Memory)**
4. **Control Unit (CU)**

5. Arithmetic Logic Unit (ALU)

Together, CU + ALU form the CPU.

7. Computer Ports

Ports are interfaces that allow external devices to connect. Examples include:

- **USB (Universal Serial Bus)** – for general peripherals.
- **HDMI** – for video and audio output.
- **Ethernet** – for networking.
- **Audio Jack** – for headphones and microphones.
- **Thunderbolt/Type-C** – high-speed data transfer.

8. Personal Computer (PC)

A **Personal Computer** is a general-purpose device designed for individual use. PCs are widely used in education, business, research, and entertainment.

Features of PCs:

- Relatively low cost.
- User-friendly interface.
- Flexibility to run multiple applications.
- Connectivity through the internet and networks.

Types of Personal Computers:

1. **Desktop Computers** – Fixed and powerful.
2. **Laptops/Notebooks** – Portable PCs.
3. **Tablets** – Touch-based portable devices.
4. **Workstations** – High-performance PCs for technical tasks.
5. **Gaming PCs** – Designed for high-graphics processing.