

Topic: Hardware Components of the Computer System

Lesson Objectives

By the end of this lesson, students should be able to:

- Define **hardware** and the **system unit**
 - Identify the **types of computer hardware**
 - Classify hardware as **input, output, processing, or storage devices**
 - Recognize **peripheral devices** and their functions
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1. What is Computer Hardware?

Definition:

Computer Hardware refers to all the **physical, touchable parts of a computer system**.

If you can **see it, touch it, or carry it**, then it is **hardware**.

Examples of Hardware:

- **System Unit** (Central Processing Unit, motherboard)
 - **Input Devices:** Keyboard, Mouse
 - **Output Devices:** Monitor, Printer
 - **Storage Devices:** Hard Disk, Flash Drive, Memory Card
 - **Peripherals:** Scanner, Webcam, Joystick
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2. What is the System Unit?

Definition:

The **System Unit** is the **main part of a computer** that contains the key components needed for processing.

It is usually the **box-like structure** that houses the **brain of the computer (CPU)** and other vital parts.

Parts of the System Unit:

Part	Function
Motherboard	The main circuit board that connects all parts of the computer
CPU (Central Processing Unit)	The brain of the computer ; performs calculations and executes commands
RAM (Random Access Memory)	Temporary memory for currently running programs
ROM (Read Only Memory)	Contains permanent startup instructions
Hard Drive / SSD	Stores data and files permanently
Power Supply Unit (PSU)	Supplies electrical power to all components
Cooling Fans	Prevent overheating by reducing temperature
Expansion Slots	For graphics cards, sound cards, etc.

Functions of the System Unit:

- Processes **input data**
 - Controls the flow of information
 - Performs **calculations and logic operations**
 - Manages connections with **input/output devices**
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3. Classification of Computer Hardware

Computer hardware can be grouped into **four main categories**:

Category	Meaning
Input Devices	Used to send data into the computer
Output Devices	Used to display or output the result of processing

Category	Meaning
Processing Devices	Carry out instructions and process data
Storage Devices	Store data and information

4. Input Devices

These are devices that **enter data into the computer**.

Examples of Input Devices:

Device	Function
Keyboard	For typing letters, numbers, and commands
Mouse	For clicking, pointing, and selecting
Scanner	Converts paper documents into digital format
Microphone	Captures sound
Joystick/Gamepad	Used in gaming for control
Webcam	Captures images and video input
Light Pen	Used to draw directly on a monitor
Touchscreen	Accepts input by touch

5. Output Devices

These are devices that **show the result of computer processing**.

Examples of Output Devices:

Device	Function
Monitor (VDU)	Displays text, images, and videos
Printer	Produces hard copies of documents

Device	Function
Speakers	Produce sound output
Projector	Displays computer content on large screens
Headphones	Provide sound output privately

6. Processing Device

Central Processing Unit (CPU)

- Known as the **brain of the computer**
- Performs **all calculations** and executes instructions

Parts of CPU:

Part	Function
ALU (Arithmetic and Logic Unit)	Performs all arithmetic and logic operations
CU (Control Unit)	Directs all operations in the computer
Registers	Small storage locations in CPU for quick data access

7. Storage Devices

These are used to **store data and information**.

a) Primary Storage (Main Memory)

Type	Function
RAM (Random Access Memory)	Stores data temporarily while programs are running
ROM (Read Only Memory)	Contains permanent system startup instructions

b) Secondary Storage (Long-term Storage)

Device	Function
Hard Disk Drive (HDD)	Stores files, applications, and data
Solid-State Drive (SSD)	Faster version of HDD
Flash Drive (Pen Drive)	Portable data storage
Memory Card (SD Card)	Used in phones, cameras, computers
CD/DVD	Optical storage media for audio, video, and software
External Hard Drive	Used for backup storage

8. Peripheral Devices

Definition:

Peripheral devices are **external hardware components** that connect to the system unit to provide extra functions.

Types of Peripherals:

Type	Examples
Input Peripherals	Keyboard, Mouse, Scanner
Output Peripherals	Printer, Monitor, Speaker
Input/Output Peripherals	Touchscreen, External Storage (USB Drive), Modem

9. Diagram of Computer Hardware Components

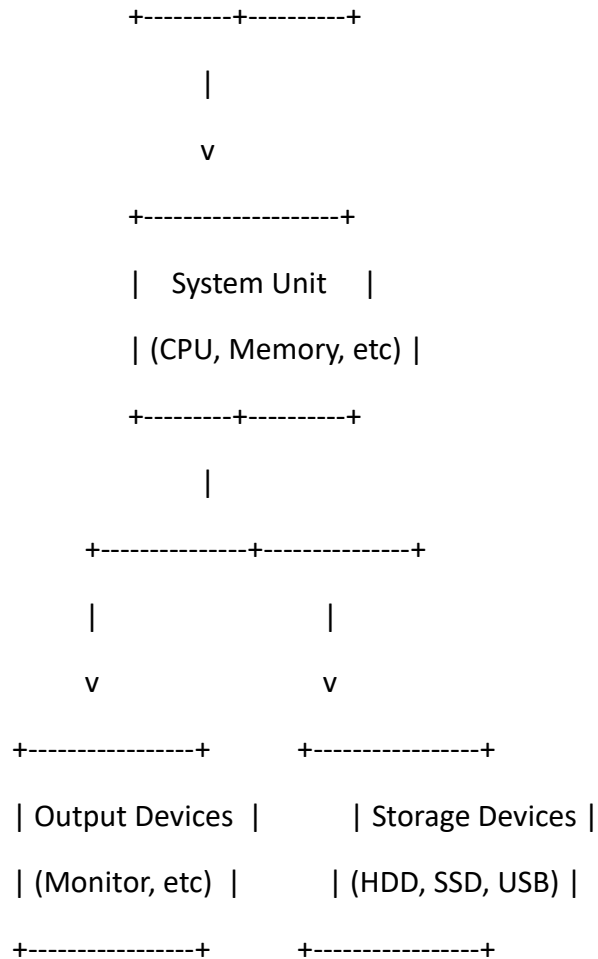
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| Input Devices |
| (Keyboard, Mouse) |

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10. Comparison Table: Input, Output, Processing, Storage

Hardware Type	Examples	Function
Input Devices	Keyboard, Mouse, Scanner	Enter data
Output Devices	Monitor, Printer, Speakers	Display results
Processing Devices	CPU, ALU, CU	Process data
Storage Devices	HDD, SSD, Flash Drive	Save data

11. Summary of Key Points

- **Hardware** = Physical components of a computer

- **System Unit** = Contains CPU, memory, storage, and controls the system
 - **Input Devices** = Bring data into the computer
 - **Output Devices** = Display the processed data
 - **Storage Devices** = Save data temporarily or permanently
 - **Peripherals** = External devices connected to the system unit
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12. Real-Life Examples

Scenario	Hardware Used
Typing an assignment	Keyboard (Input), Monitor (Output), CPU (Processing), Hard Disk (Storage)
Printing a document	Printer (Output)
Scanning a photo	Scanner (Input)
Playing music	Speakers (Output), Hard Disk (Storage)
Playing a video game	Gamepad (Input), Monitor (Output), CPU (Processing)