



Basics of Computer

Input vs. Output Devices



Computers work with data. Input devices send data in, and output devices show the results.

Input Devices

Send data to the computer

Sends data and instructions to the computer for processing.

Converts user-understandable data into machine-readable form (Binary).

User interacts with the computer through these.

Examples



Keyboard



Mouse



Scanner



Microphone



Webcam



OMR



OCR



Joystick



Function



Task



User Interaction



Examples

Output Devices

Show results from the computer

Receives processed data from the computer and presents it to the user.

Converts machine-processed data into user-understandable form (Text, Image, Sound).

Computer communicates the results to the user through these.

Examples



Monitor



Printer



Speakers



Plotter



Projector



Headphones



Input gets it in → Computer processes it → Output shows it!



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Computer Memory: The Hierarchy and Classification



Memory-related questions often ask you to arrange storage types in terms of **speed, cost, or capacity**.

The Memory Hierarchy (Fastest to Slowest)

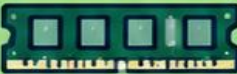
Fastest
& Lowest
Capacity
(Highest Cost)



Slowest
& Highest
Capacity
(Lowest Cost)

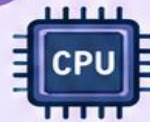

Registers


Cache Memory


Main Memory (RAM)


Secondary Storage (HDD/SSD)

1 Registers



Smallest and fastest memory located inside the CPU.

2 Cache Memory



High-speed storage that sits between the CPU and RAM to speed up data access.

3 Main Memory (RAM)



Primary memory used to store data currently in use.

4 Secondary Storage (HDD/SSD)



Magnetic or flash-based storage for permanent data.



Remember:

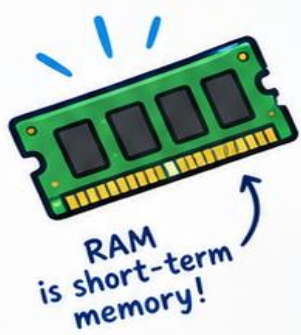
- Higher in the hierarchy → Faster, smaller, higher cost.
- Lower in the hierarchy → Slower, larger, lower cost.

BETTER MEMORY =



BETTER PERFORMANCE

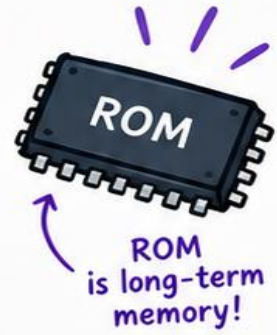
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RAM vs. ROM

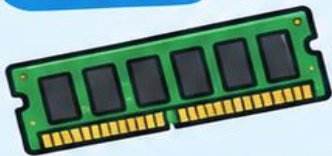
Same Computer • Different Jobs

RAM and ROM are both types of memory, but they work differently!
Here's a quick comparison:



Feature	RAM (Random Access Memory)	ROM (Read Only Memory)
 Nature	Volatile (Data lost when power is off).	Non-volatile (Data remains permanent).
 Function	Temporary “workspace” for the CPU.	Stores “Bootstrapping” or startup instructions.
 Access	Read and Write.	Read-only (under normal conditions).
 Types	SRAM (Static), DRAM (Dynamic).	PROM, EPROM, EEPROM.

RAM



- ✓ Faster access
- ✓ More expensive
- ✓ Smaller capacity (compared to ROM)

Used for running applications and active processes.

ROM

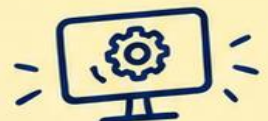


- ✓ Slower access
- ✓ Less expensive
- ✓ Larger capacity (compared to RAM)

Helps the computer start and stay functional.



RAM keeps your computer running.
ROM gets it started!



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