



# Input, Output and Storage Devices

**Lecture # 04**

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INPUT DEVICES



OUTPUT DEVICES



STORAGE DEVICES



# Input Devices

- Input devices take data from the 'outside world' (i.e. outside of the computer) and send it to the Central Processing Unit for processing
- An input device is any hardware device which enables the user to enter data and instructions into a computer.
- These devices can help us enter data into the computer.
- Examples of input devices include keyboard and mouse, microphone, webcam, image scanner, Microphone, pointing device, touch screens, graphics table, Optical character reader (OCR), joystick etc.

# Input Devices





# Output Devices

- **An output device** is any hardware component that use received data from a computer to perform a task
- Every computer system will need to have a way of displaying information or printing information out so that it is useful to humans.
- The data received by the output device can be text, graphic, tactile, audio or video.
- Three most commonly used output devices are a printer, a monitor and speakers.

# Output Devices





# Storage Devices

- Storage devices are the computer hardware used to remember/store data.
- Storage devices will store data, even when the power to the computer is switched off.
- When the power is switched on again, the data can be retrieved. For this reason, storage devices are known as '**non-volatile**' devices
- Storage involves two processes:
  1. Writing or recording the data so it can be found later for use
  2. Reading the stored data

There are two types of computer's memory, primary and secondary memory. Now we will discuss the devices used for each type

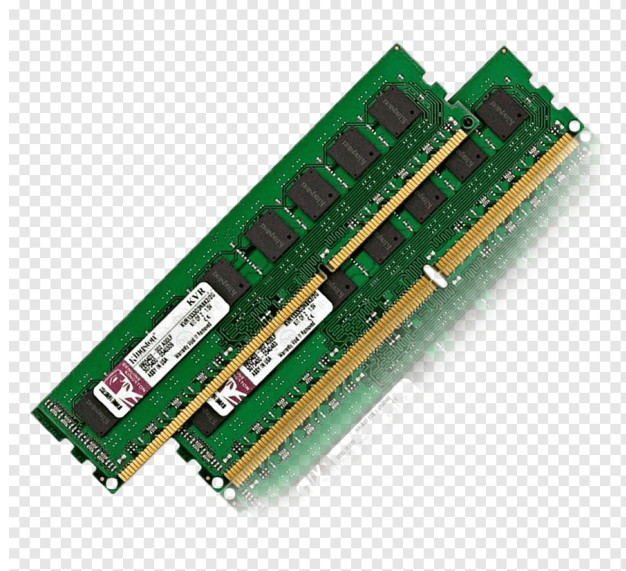
# Primary Storage

- Types of primary storage are RAM (random access memory) and ROM (read only memory)

## 1. RAM

Random access memory (RAM) is a type of data storage used in computers that are generally located on the motherboard.

This type of memory is **volatile** and all information that was stored in **RAM is lost** when the computer is **turned off**



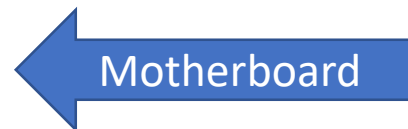


# Primary Storage

## 2. ROM

Read-only memory (ROM) is a type of storage medium that permanently stores data on personal computers (PCs) and other electronic devices.

Because ROM is read-only, it cannot be changed; it is **permanent** and **non-volatile**, meaning it also holds its memory even when power is removed.



# Secondary Storage

## 1. Magnetic Tape

- Magnetic tape is one of the oldest technologies for electronic data storage
- It is well-suited for archiving (storing) because of its high capacity, low cost, and long durability (ability to last)



## 2. Hard-Disk

A hard disk drive, hard disk, hard drive, or fixed disk is an electro-mechanical data storage device that uses magnetic storage to store and retrieve digital data using one or more rigid rapidly rotating platters coated with magnetic material.

- The first hard disk drives were able to store megabytes of data, while today they are in the terabyte (TB) range. (Terabyte is 1,000,000 times bigger than a Megabyte or 1000 times bigger than a Gigabyte)



### 3. CD (Compact Disk)

- A compact disc is a portable storage medium that can be used to record, store and playback audio, video and other data in digital form.
- A standard compact disc measure 4.7 inches, or 120 millimeters (mm), across, is 1.2 mm thick, weighs between 15 grams and 20 grams, and has a capacity of 80 minutes of audio, or 650 megabytes (MB) to 700 MB of data.



## 4. DVD (Digital Versatile Disk)

- DVD is an optical disc technology with a 4.7-gigabyte storage capacity on a single-sided, one-layered disk, which is enough for a 133-minute movie.
- They are widely used for storing and viewing movies and other data.
- To play DVDs on a computer, you must have a DVD drive and a software DVD player.



*END*

Success cannot be achieved by accident. It can only be achieved through meticulous hard work and perseverance

