Subject: Computers

Topic: Storage devices

Grade: VI

Storage Devices

- Computer memory

- Types of memory

- Data storage devices

Computer have storage space to save data and retrieve it as and when required.

Storage Devices

- The devices where a computer stores data, information and instructions to be processed.
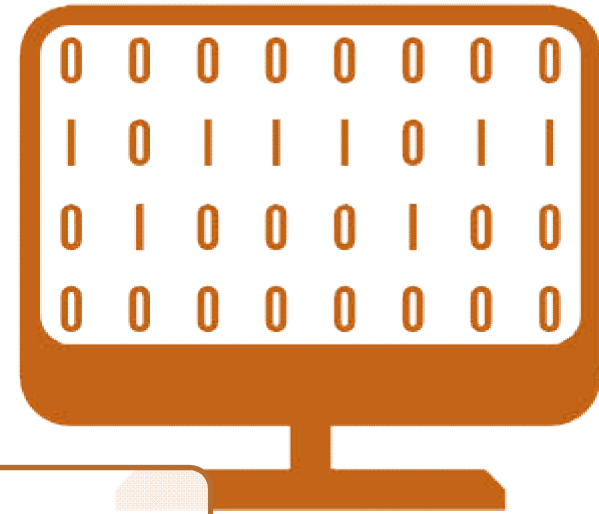
- It act as the memory of the computer.

Memory Units

- Computer understand **binary language (0,1)**

- The smallest unit of storage is **bit**.

- 8 bits make 1 byte

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(0000   0000   0000   0000   1111   1111   1111   1111)
(0000   0000   1111   1111   0000   0000   1111   1111)
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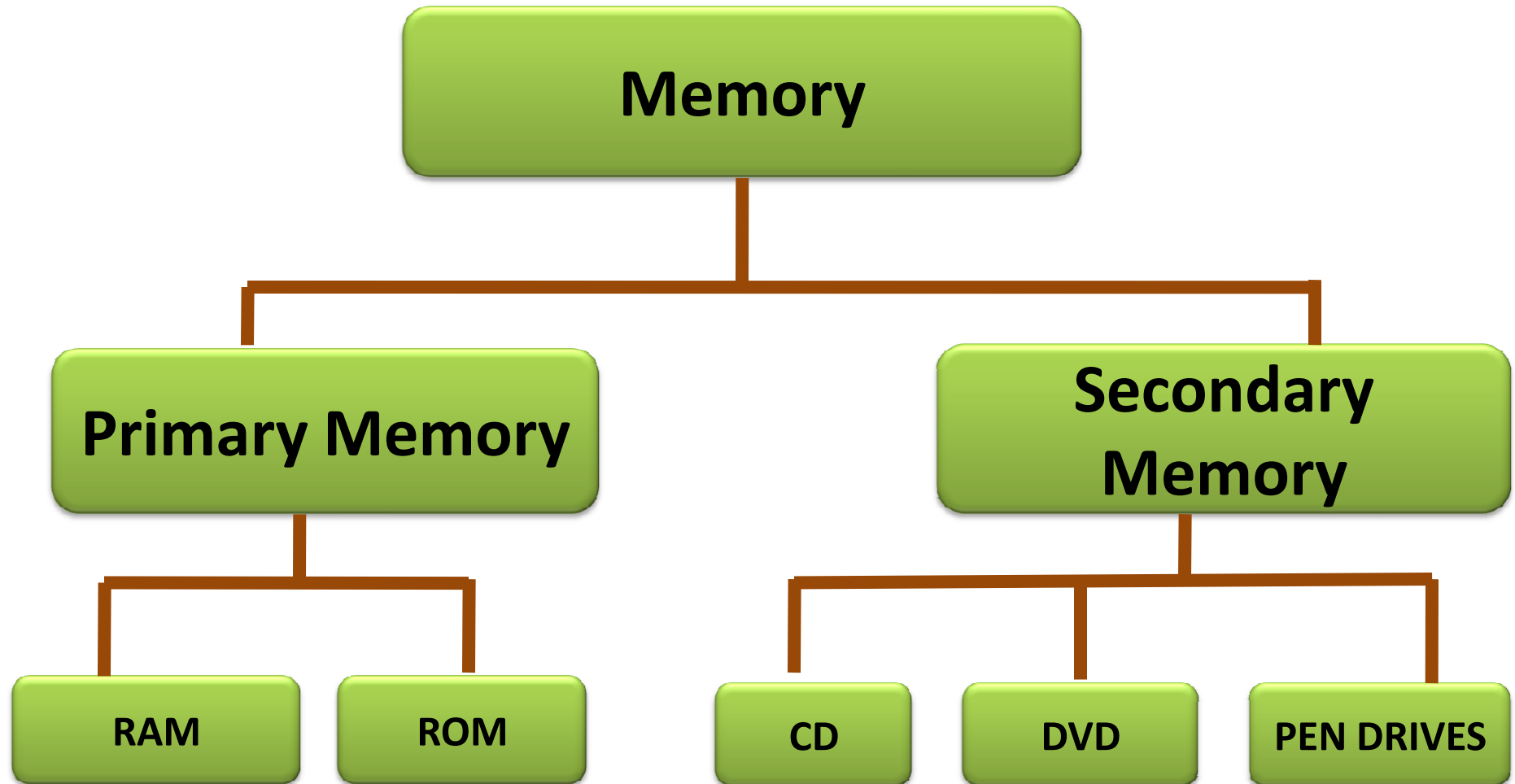
Memory Chart

1 Byte = 8 bits

1 Kilobyte (KB) = 1024 B
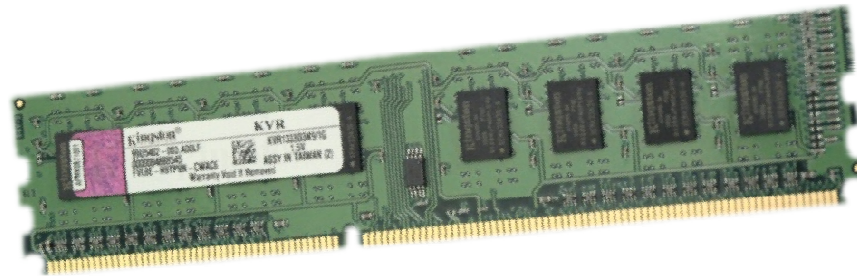
1 Megabyte (MB) = 1024 KB

1 Gigabyte (GB) = 1024 MB

1 Terabyte = 1024 GB

Computer Memory Chart

Memory

Primary Memory

Secondary Memory

RAM

ROM

CD

DVD

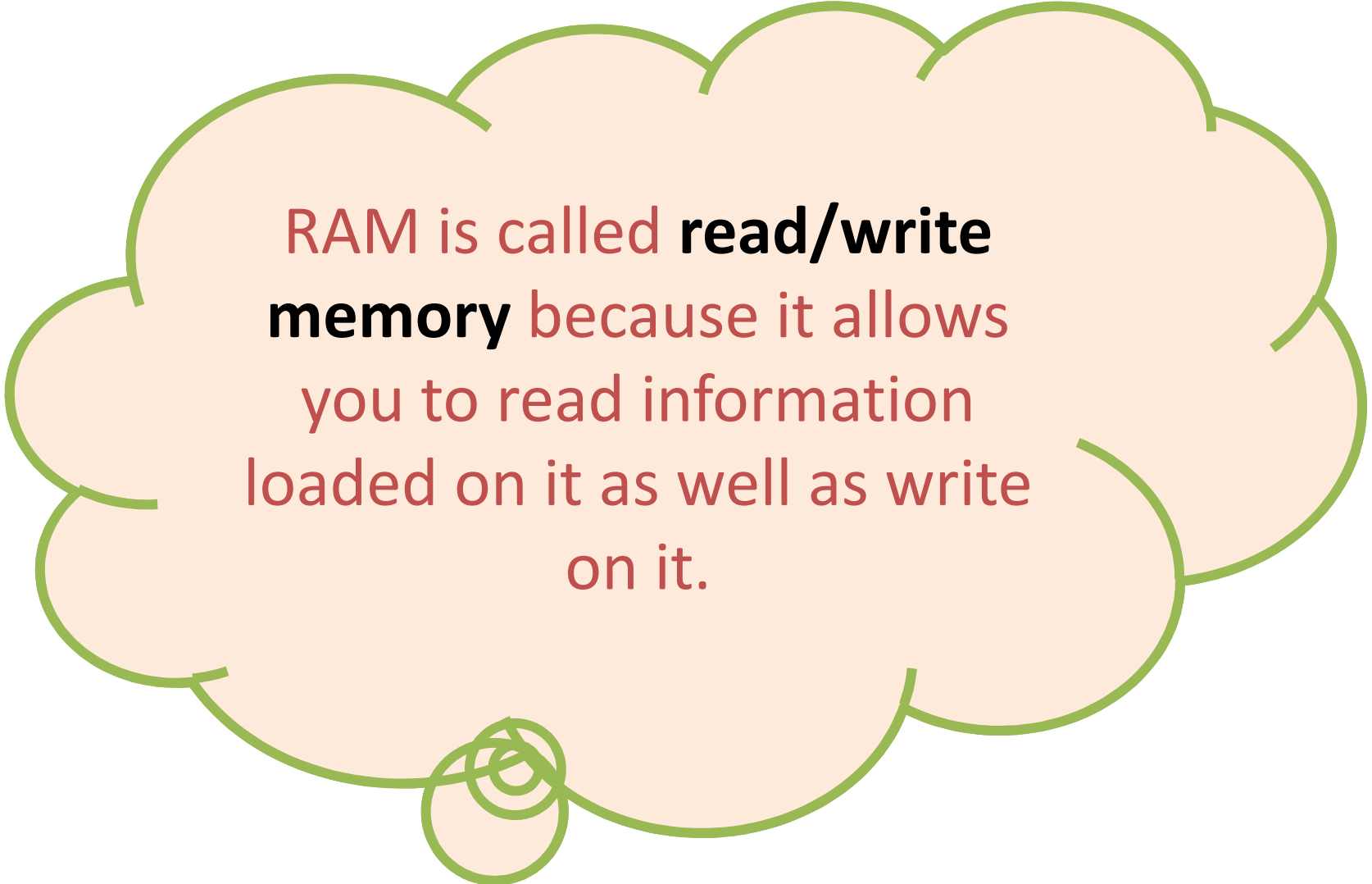PEN DRIVES

RAM (Random Access Memory)

- Currently processed data and instruction gets stored here.

- It has a **volatile** memory.

- Measured – **Megabytes or Gigabytes**

Once the power is switched off data gets erased from RAM.

So, you have to save your data explicitly in Hard Disks or in any other secondary storage devices.
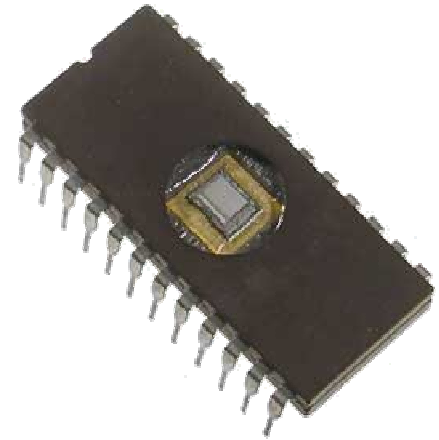
DISCUSS

RAM is called **read/write memory** because it allows you to read information loaded on it as well as write on it.

ROM (Read Only Memory)

o Holds instructions which is required to run the computer when it is switched on.

o It comprises of BIOS (Basic Input/ Output System)

- **Once the power is switched off data does not gets erased from ROM.**

- It has a **non - volatile** memory.

- You cam **only** read information from RAM.
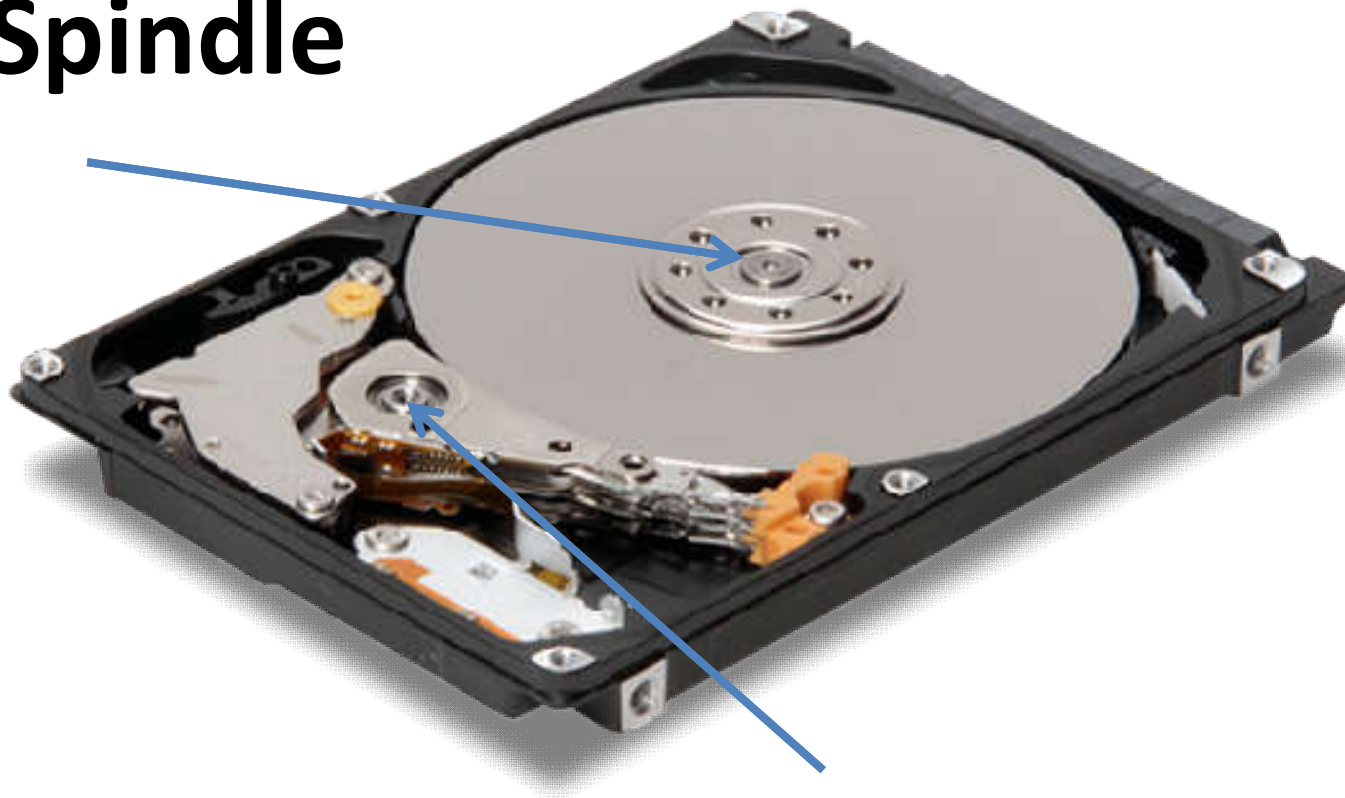
Secondary Devices

- Data are stored **permanently** here.

- The information could be accessed instantly.

- They are also called **auxiliary storage devices** as they provide additional storage.

Hard Disk

- It is fitted inside the computer.

- It consist of circular disks coated with magnetic coating. These plates are mounted together one above the other on a spindle.

- The information you save gets stored here.

Spindle

Read-Write Head

External Hard Disks

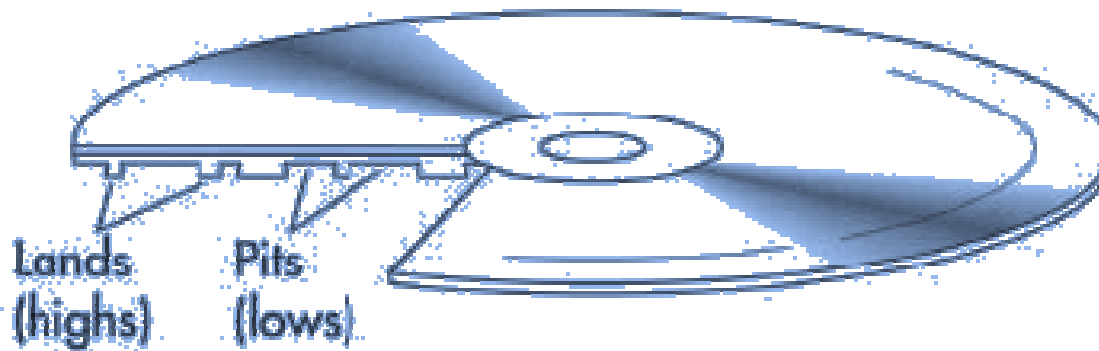These are attached to computers and used as an external storage device.

Optical Discs

Can store texts, music or video.

- They are electronic data storage media.

- It uses low-powered laser beam to perform read-write action on it.

- They encode binary data in the form of 'pits' and 'lands'

A **pit** means the binary value of **'0'** or **OFF.**

A **land** means the binary value of **'1'** or **ON**

Lands (highs) Pits (lows)

How Optical Discs work?

Click on the link:
https://www.youtube.com/watch?v=SMQXD2p3syA

CD-R, CD-RW, DVD-R, DVD-RW, BD 1 are Optical Discs.

CD (Compact Disc)

CD-R (Readable)

Used only for reading.

Capacity: 650 -700MB

E.g.: music CDs, game CDs, educational CDs.

CD –RW

(Re-writable)

Used for both reading and writing.

Capacity: 650 -700MB

Data could be erased on it and again we can write different data on it.

DVD (Digital Versatile Disc)

It can store 15 times more data than a CD.

DVD-R (Readable)

Record data only once.

Capacity: 4.7 – 17 GB

DVD –RW

(Re-writable)

Used for both reading and writing.

Capacity: 4.7 – 17 GB

Data could be re-written 1000 times approx.

BD (Blu –Ray Disc)

- It uses **blue-laser** technology. It needs a blu –ray player.

- Grooves are placed closer unlike CD or DVD.

- Can store up to **25-50** GB of data.

Due to its high quality output, it is widely used for recording high definition movies.

Pen Drive

- It is also known as Flash Drive or USB Drive.

- It is portable.

- Its storage capacity ranges from 256 MB to 1 TB.

- Easy to handle.

MMC Card (Multimedia Card)

- It is a storage device for portable devices like mobile phones, tab, digital camera etc.

- It is small in size.(approx size of postal stamp)

- Storage capacities ranges up to 128 GB.

DISCUSS

Thankyou….