

Computer Science Project

# COMPUTER MEMORY

CLASS - 11 A COMPUTER SCIENCE PROJECT ON MEMORY

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OF CLASS 11 A

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# ACKNOWLEDGEMENT

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Secondly, I would also like to thank my parents and friends who helped me a lot in finalizing this project within the limited time frame

THE STRUCTURE OF MY TALK

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**DEFINE MEMORY**

I

**TYPES OF MEMORY**

II

**PRIMARY MEMORY**

III

**SECONDARY MEMORY**

IV



LET'S DEEP DIVE  
INTO IT



# WHAT IS COMPUTER MEMORY ??

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Memory is storage part in computer. It is store the data, information, programs during processing in computer. It stores data either temporarily or permanent basis. Memory used to important role in saving and retrieving data.



# TYPES OF MEMORY

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There are generally two types of memory, primary memory and secondary memory.



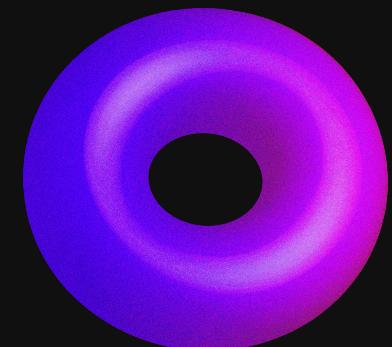
# PRIMARY MEMORY

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Primary memory holds only those data and instructions on which the computer is currently working. It has a limited capacity and data is lost when power is switched off. It is generally made up of semiconductor device. These memories are not as fast as registers. The data and instruction required to be processed resides in the main memory. It is divided into two subcategories RAM and ROM.

# CHARACTERISTICS OF PRIMARY MEMORY

- These are semiconductor memories.
- It is known as the main memory.
- Usually volatile memory.
- Data is lost in case power is switched off.
- It is the working memory of the computer.
- Faster than secondary memories.
- A computer cannot run without the primary memory.

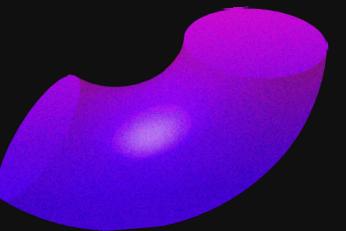


NOW LET'S LEARN ABOUT SUB-PARTS OF PRIMARY MEMORY THAT IS RAM AND ROM



# RAM

It stands for Random Access Memory. RAM is known as read /writes memory. It generally refereed as main memory of the computer system. It is a temporary memory. The information stored in this memory is lost as the power supply to the computer is switched off. That's why RAM is also called “Volatile Memory”. There are basically two kinds of RAMs first **static ram** second **Dynamic ram**



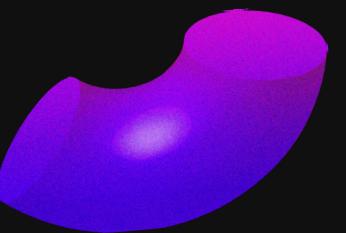
# STATIC RAM & DYNAMIC RAM

Static RAM also known as SRAM, retain stored information as long as the power supply is ON. SRAM are of higher cost and consume more power. They have higher speed than Dynamic RAM.

Dynamic RAM also known as DRAM, its stored information in a very short time (a few milliseconds) even though the power supply is ON. The Dynamic RAM are cheaper and moderate speed and also they consume less power.

# ROM

It stands for Read Only Memory. ROM is a Permanent Type memory. Its content are not lost when power supply is switched off. Content of ROM is decided by the computer manufacturer and permanently stored at the time of manufacturing. ROM cannot be overwritten by the computer. It is also called “Non-Volatile Memory”. ROMs are basically three types, **PROM (Programmable Read Only Memory),EPROM (Erasable Programmable Read Only Memory)** and **EEPROM (Electrically Erasable Programmable Read Only Memory)**



# PROM, EPROM & EEPROM

PROM chip is programmable ROM.it is PROM chips to write data once and read many.once chip has been programmed ,the recorded information cannot be changed. PROM is also nonvolatile memory.

EPROM chip can be programmed time and again by erasing the information stored earlier in it. Information stored in EPROM exposing the chip for some time ultraviolet light .

The EEPROM is programmed and erased by special electrical waves in millisecond. A single byte of a data or the entire contents of device can be erased.

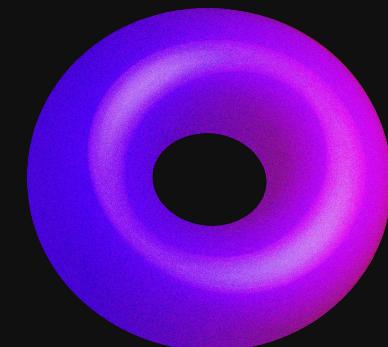
# SECONDARY MEMORY

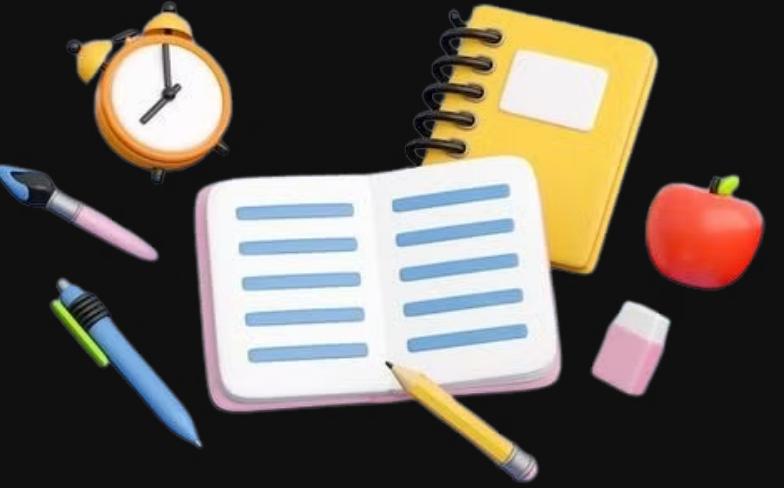
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This type of memory is also known as external memory or non-volatile. It is slower than the main memory. These are used for storing data/information permanently. CPU directly does not access these memories, instead they are accessed via input-output routines. The contents of secondary memories are first transferred to the main memory, and then the CPU can access it. For example, disk, CD-ROM, DVD, etc.

# CHARACTERISTICS OF SECONDARY MEMORY

- These are magnetic and optical memories.
- It is known as the backup memory.
- It is a non-volatile memory.
- Data is permanently stored even if power is switched off.
- It is used for storage of data in a computer.
- Computer may run without the secondary memory.
- Slower than primary memories.





NOW LET'S LEARN ABOUT SUB-PARTS OF SECONDARY MEMORY THAT IS DISK, CD, DVD ETC.



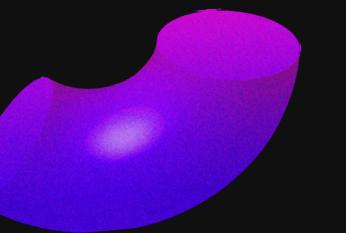


# HARD DISK DRIVE



Hard disk drive is made up of a series of circular disks called platters arranged one over the other almost  $\frac{1}{2}$  inches apart around a spindle. Disks are made of non-magnetic material like aluminum alloy and coated with 10-20 nm of magnetic material.

Standard diameter of these disks is 14 inches and they rotate with speeds varying from 4200 rpm (rotations per minute) for personal computers to 15000 rpm for servers. Data is stored by magnetizing or demagnetizing the magnetic coating. A magnetic reader arm is used to read data from and write data to the disks. A typical modern HDD has capacity in terabytes (TB).





# CD DRIVE

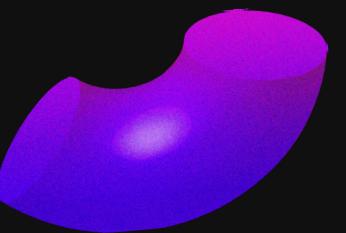


CD stands for **Compact Disk**. CDs are circular disks that use optical rays, usually lasers, to read and write data. They are very cheap as you can get 700 MB of storage space for less than a dollar. CDs are inserted in CD drives built into CPU cabinet. They are portable as you can eject the drive, remove the CD and carry it with you.



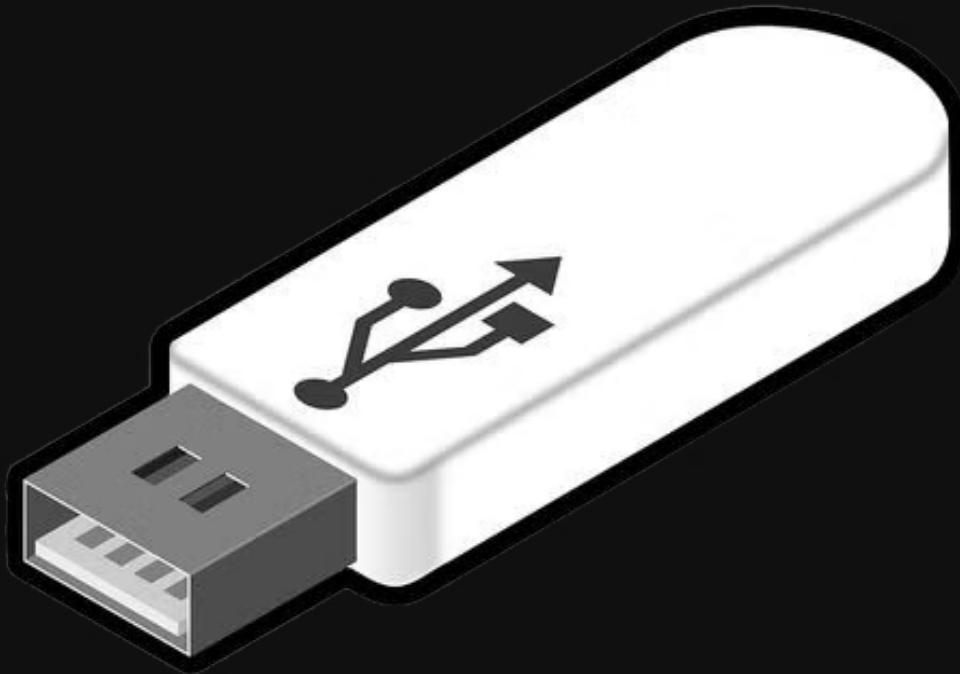
# DVD DRIVE

DVD stands for **Digital Video Display**. DVD are optical devices that can store 15 times the data held by CDs. They are usually used to store rich multimedia files that need high storage capacity. DVDs also come in three varieties – read only, recordable and rewritable.

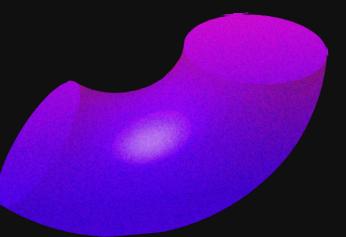




# PEN DRIVE



Pen drive is a portable memory device that uses solid state memory rather than magnetic fields or lasers to record data. It uses a technology similar to RAM, except that it is nonvolatile. It is also called USB drive, key drive or flash memory.





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