Brain of computer- **CPU**
CPU is made up of semiconductor devices which makes it extremely fast due to the metal used
Purpose= execute stuff
Processor executes instructions one by one.

Hard Disk Drive used for storing stuff
Magnetic Technology = relatively slow speed as compared to others in nature
Hard Disks are relatively slower than processors

Hard disk drive and CPU should be connected in order to take the instructions and execute them. They are connected with a set of wires known as **Bus**.
Bus wires carry instructions or information from one unit to another.

Efficiency reduces because the hard disk's speed is slow and CPU speed is fast. Mismatching of speeds reduces the efficiency of the system.

Due to this issue we don't directly connect the hard disk and cpu.
Therefore, we have another memory unit or device located between hard disk and cpu which is fast and helps in sending instructions to cpu. **-RAM**
RAM is made up of semiconductor technology devices therefore is faster then hard disk.
Compact in size as compared to hard disk.

RAM is fast so it sends instructions fastly to the cpu so the cpu doesn't have to wait for other instructions to arrive and gives the output immediately.

MAJOR DISADVANTAGE OF RAM:
It is a volatile device.
It requires continuous power supply for the data to be stored
If power is lost even for a fraction of second, the entire data gets lost.

Hard disks are non volatile. Do not require continuous power supply.
If we want to store something permanently we have to store it in the hard disk.
SAVING= transferring copy of data from ram to hard disk to save it permanently.
LOADING= transferring copy of data from hard disk to ram for further execution

REGISTER= a small space in the processor/cpu where it takes the data and stores it there and then executes it.

BYTE= a space where data is loaded from hard disk and is stored until further execution

FILE= storage space in hard disk

SSD= alternative of hard disk= solid state drive
Advanced and enhanced version of hard disk

CACHE MEMORY: when same or similar instructions come to the processor it stores it in the cache memory and then retrieves it as and when required.
Closer to the processor
Makes process even more efficient and faster

RAM is also known as **PRIMARY MEMORY** bcoz its connected to the processor directly.
Hard disk is known as **SECONDARY MEMORY** since its not directly connected to the processor.

Data in the hard disk is stored permanently.