KANHA COMPUTER INSTITUTE

- What is Computer :-

Computer is electronic machine. It can solve Any Arithmetical and logical calculation few in second.

- What is Full from of computer :-
- Computer full name is:-
  - ✓ Common
  - ✓ Operating
  - ✓ Machine
  - ✓ Particularly
  - ✓ Used
  - ✓ Technical
  - ✓ Education
  - ✓ Research

➢ Computer

A computer is an electronic machine that accepts raw data as input, processes it according to a set of instructions (software), stores the data, and produces output (information). It operates at high speeds and with high accuracy to perform

History of Computer :-

calculations, data management, and automation.

A computer is an **electronic machine** that takes in data as input, processes it, stores information, and produces output. **Charles babbage is** considered the father of computers, having designed the first mechanical computer, the "difference engine," in 1822.

विश्व का पहला प्रोग्राम योग्य सामान्य-उद्देश्यीय इलेक्ट्रॉनिक डिजिटल कंप्यूटर **ENIAC (एनियाक)** था, जिसे **1945** में **जॉन प्रेस्पर एकर्ट** और **जॉन मौचली** ने अमेरिका में बनाया था। यह एक विशाल मशीन थी जो एक कमरे के बराबर थी। हालाँकि, कंप्यूटर के वैचारिक जनक **चार्ल्स बैबेज** हैं, जिन्होंने 1837 में पहला मैकेनिकल कंप्यूटर डिज़ाइन किया था।

mother of computer

Ada Lovelace (1815–1852) is widely recognized as the "Mother of Computers" or the "Mother of Programming". An English mathematician, she is considered the first computer programmer for creating the first algorithm intended for processing by Charles Babbage's analytical engine in 1843.

Full Name: Augusta Ada King, Countess of Lovelace.

Key Contributions of Ada Lovelace

First Programmer: She understood that the analytical engine could follow a sequence of instructions (a program).

Visionary Insights: Lovelace realized that computers could do more than just calculate numbers; she foresaw their ability to create art, music, and process information, going beyond Charles Babbage's original vision.

Analytical Engine Notes: Her notes on Babbage's analytical engine detailed a method for calculating Bernoulli numbers with the machine, now considered the first algorithm.

Functioning of the Computer :-

- There are type 4th step of the Computer :-

1st Step Of The Computer :-

In the 1st step of computer give input data by:- keyboard, mouse, scanner, light pen, microphone, webcam, joystick, touch screen, barcode reader, OMR (Optical Mark Reader), OCR (Optical Character Reader), MICR (Magnetic Ink Character Reader), Trackball, Touchpad, Graphics Tablet, Biometric Device, (Fingerprint/Face), Smart Card Reader, Digital Camera, Voice Recognition system, VR Controller

2nd Step Of The Computer :-

In the 2nd step of computer give Storage data by:- Ram, Rom, Hard disk drive(H.D.D) CD (compact disk) DVD (Digital video disk), Solid State Drive (SSD), Pen Drive / USB Flash Drive Memory Card (SD Card), Floppy Disk, Blu-ray Disc, Hybrid Drive (SSHD), Cloud Storage, Cache Memory

Storage Device	Type	Use	Speed
RAM	Primary Storage	Temporary data store	Very Fast
ROM	Primary Storage	Permanent instructions	Fast
Cache Memory	Primary Storage	CPU speed increase	Very Fast
HDD (Hard Disk Drive)	Secondary Storage	Main computer storage	Medium
SSD (Solid State Drive)	Secondary Storage	Fast storage	Fast
NVMe SSD	Secondary Storage	High-speed storage	Very Fast
Pen Drive	Portable Storage	Transfer files	Fast
Memory Card	Portable Storage	Mobile/Camera storage	Medium
CD	Optical Storage	Music/Data storage	Slow
DVD	Optical Storage	Video/Data storage	Medium
Blu-ray Disc	Optical Storage	HD video storage	Medium
Floppy Disk	Magnetic Storage	Old data storage	Very Slow
Magnetic Tape	Magnetic Storage	Backup storage	Slow
External Hard Disk	Portable Storage	Backup & extra storage	Medium
Cloud Storage	Online Storage	Internet data storage	Depends on Internet
NAS	Network Storage	Network file sharing	Fast
Zip Disk	Portable Storage	Old backup device	Slow

Storage Device	Type	Use	Speed
EEPROM	Primary Storage	Rewritable ROM	Fast
Optical Disk	Optical Storage	Laser-based storage	Medium
Hybrid Drive (SSHD)	Secondary Storage	HDD + SSD mix	Fast

3rd Step Of The Computer :-

In the 3rd step of computer give Processing data by:-

Microprocessor, Chipset, BIOS , CPU, ALU, CU, GPU

Processing Device	Full Form	Work
CPU	Central Processing Unit	Main processing device
ALU	Arithmetic Logic Unit	Calculation और logical work
CU	Control Unit	सभी parts को control करना
GPU	Graphics Processing Unit	Graphics और gaming processing
Microprocessor	—	Small CPU chip
Multi-core Processor	—	एक साथ कई tasks process करना
DSP	Digital Signal Processor	Audio/video signal processing
TPU	Tensor Processing Unit	AI और machine learning processing
Coprocessor	—	Main processor की help करना
FPU	Floating Point Unit	Decimal calculations करना

4th Step Of The Computer :-

In the 4th step of computer give Output data by:-

Monitor, Printer, Speaker, Projector, Plotter, Digital Billboard

Output Device	Type	Use
Monitor	Soft Copy	Screen पर output दिखाना
Printer	Hard Copy	Paper पर print करना
Speaker	Audio Output	Sound सुनाना
Headphone	Audio Output	Personal sound output
Projector	Visual Output	बड़ी screen पर display
Plotter	Hard Copy	Maps/design print करना
LED Monitor	Visual Output	LED display output

Output Device	Type	Use
LCD Monitor	Visual Output	Digital screen display
Touch Screen	Input + Output	Touch और display दोनों
Smart TV	Visual Output	Large display output
VR Headset	Virtual Output	Virtual Reality display
3D Printer	Hard Copy	3D object print करना
GPS Device	Navigation Output	Location information देना
Braille Printer	Special Output	Blind users के लिए print
Braille Display	Special Output	Braille output दिखाना
Sound Card	Audio Output	Audio process/output
Graphics Card	Video Output	Graphics display करना
Digital Billboard	Visual Output	Advertisement display
E-Book Reader	Visual Output	Digital book reading
Haptic Device	Touch Feedback	Vibration/touch output

Components of the Computer :-

Input Device:-

What is key board:-

Keyboard is an input device of the Computer. It is used to enter data, text, numbers and instructions into the computer.

Definition :-"A keyboard is an electronic input device used to type letters, numbers, symbols and commands into a computer."

1. Keyboard

Types of Keyboard

- Wired Keyboard
- Wireless Keyboard
- Mechanical Keyboard
- Multimedia Keyboard
- Gaming Keyboard
- Virtual Keyboard

➢ Mechanical Keyboard

➢ Wireless Keyboard

➢ Gaming Keyboard

Virtual Keyboard

Shortcut Key	Function
Ctrl + A	Select All
Ctrl + B	Bold Text
Ctrl + C	Copy
Ctrl + D	Bookmark / Font Dialog
Ctrl + E	Center Align
Ctrl + F	Find
Ctrl + G	Go To
Ctrl + H	Replace / History
Ctrl + I	Italic Text
Ctrl + J	Justify Text
Ctrl + K	Insert Link
Ctrl + L	Select Address Bar/ lift Align
Ctrl + M	New Slide / Indent
Ctrl + N	New File
Ctrl + O	Open File
Ctrl + P	Print
Ctrl + Q	Remove Paragraph Format
Ctrl + R	Refresh / Right Align
Ctrl + S	Save
Ctrl + T	New Tab
Ctrl + U	Underline
Ctrl + V	Paste
Ctrl + W	Close Tab
Ctrl + X	Cut
Ctrl + Y	Redo
Ctrl + Z	Undo

Shortcut Key	Function
Alt + Tab	Switch Windows
Alt + F4	Close Program
Windows + E	Open File Explorer
Windows + L	Lock Computer
Windows + R	Open Run Command
Ctrl + Shift + Esc	Open Task Manager
Ctrl + Alt + Delete	Security Options

Shortcut Key	Function
Ctrl + Home	Top of document
Ctrl + End	End of document
Ctrl + Backspace	Delete whole word
Ctrl + Delete	Delete next word
Shift + Delete	Permanent delete
Ctrl + Shift + T	Reopen closed tab
Ctrl + Tab	Next tab
Ctrl + Shift + Tab	Previous tab
F1	Help
F2	Rename file/folder
F3	Search
F5	Refresh
F11	Full screen
Esc	Cancel operation
Tab	Next option
Caps Lock	Capital letters on/off
Num Lock	Numeric keypad on/off
PrtSc	Screenshot
Windows + D	Show desktop
Windows + Tab	Task view
Windows + Shift + S	Screenshot tool
Windows + I	Open Settings
Windows + M	Minimize all windows
Windows + Shift + M	Restore minimized windows
Windows + Arrow Keys	Window positioning
Alt + Enter	Properties
Alt + Space	Window menu
Ctrl + Esc	Open Start menu
Ctrl + Mouse Wheel	Zoom in/out
Shift + Arrow Keys	Select text

Shortcut Key	Function
Ctrl + T	New tab
Ctrl + N	New window
Ctrl + H	History
Ctrl + J	Downloads
Ctrl + D	Bookmark page
Ctrl + +	Zoom in
Ctrl + -	Zoom out
Ctrl + 0	Reset zoom

What is Mouse:-

Mouse is an input device of the computer.

It is used to control the pointer (cursor) on the computer screen.

Definition:-

“A mouse is a pointing input device used to move the cursor and select items on a computer screen.”

Main Parts of Mouse

1□Left Button

Select और open करने के लिए

2□Right Button

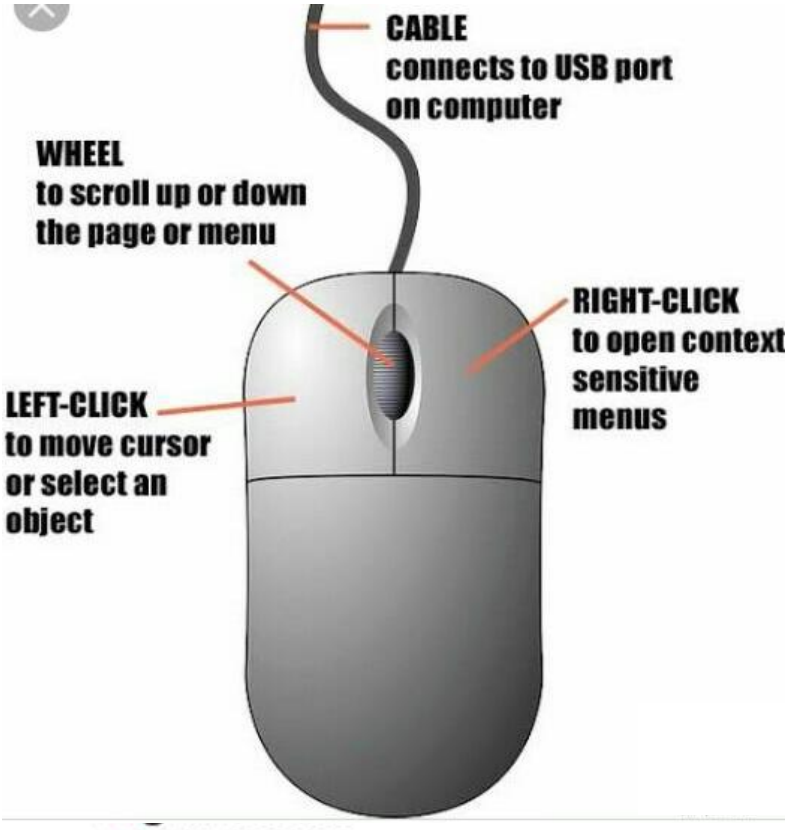
Shortcut menu खोलने के लिए

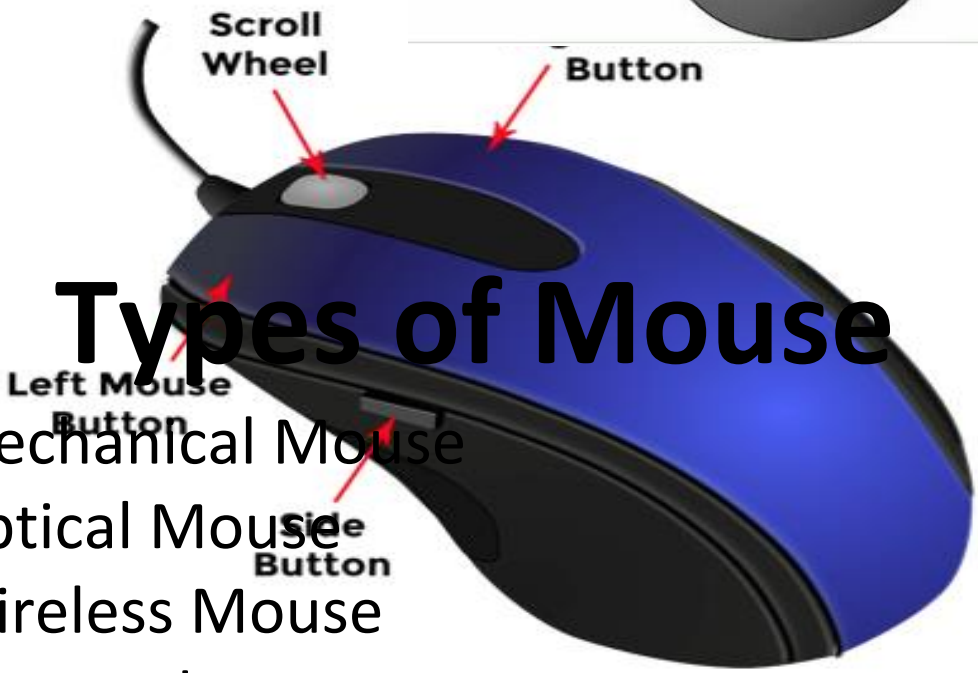
3□Scroll Wheel

Page ऊपर-नीचे करने के लिए

4□Sensor

Mouse movement detect करता है





Types of Mouse

- ✓ Mechanical Mouse
- ✓ Optical Mouse
- ✓ Wireless Mouse
- ✓ Bluetooth Mouse

- ✓ Gaming Mouse
- ✓ Trackball Mouse

What is Scanner:-

Scanner is an input device of the computer.

It is used to Scanning paper documents, photos, and images into digital form.

Definition

“A scanner is an electronic input device that scans documents and converts them into digital format.”

Main Parts of Scanner

1 Glass Surface
Document रखने की जगह

2 Scan Head
Image को read करता है

3 Sensor
Data detect करता है

4 Control Buttons
Scan operation control करते हैं

1 Glass Surface
यह Scanner का ऊपरी काँच वाला भाग होता है। इस पर Document या Photo रखा जाता है जिसे scan करना होता है।

2 Scan Head
यह Scanner का मुख्य भाग होता है। यह Document की image को पढ़ता (read) है और उसे digital form में बदलने में मदद करता है।

3 Sensor
Sensor scanned image की जानकारी detect करता है। यह light और image data को पहचानकर computer तक भेजता है।

4 Control Buttons
इन buttons की मदद से scan operation control किया जाता है।
जैसे — Start, Stop, Copy आदि कार्य किए जाते हैं।

Types of Scanner

1. Flatbed Scanner
2. Handheld Scanner
3. Drum Scanner
4. Sheet-fed Scanner
5. Barcode Scanner
6. 3D Scanner

What is Light Pen:-

Light Pen is an input and sensitive device of the computer.

It is used to draw, select, and point directly on the computer screen.

Definition:-

“A light pen is a pointing input device used to draw and select objects directly on a computer screen.”

Types of Light Pen

1. Wired Light Pen
2. Wireless Light Pen

Graphic Light Pen

TYPES OF LIGHT PEN

1. WIRED LIGHT PEN

- यह Light Pen एक Cable के माध्यम से Computer से जुड़ा होता है।
- Screen को touch करने पर यह position को detect करता है।
- यह पुराने Computer Systems में अधिक उपयोग होता था।

2. WIRELESS LIGHT PEN

- यह Light Pen बिना Cable के काम करता है और Wireless तकनीक से जुड़ा होता है।
- इसमें Battery होती है और यह Radio Frequency (RF) या Bluetooth के द्वारा Computer से communicate करता है।
- यह आधुनिक सिस्टम्स में अधिक उपयोग होता है क्योंकि यह सुविधाजनक और portable होता है।

3. GRAPHIC LIGHT PEN

- यह Light Pen विशेष रूप से Graphics Tablet या Digitizer के साथ उपयोग किया जाता है।
- यह drawing, designing और editing के लिए उपयोगी होता है।
- यह high accuracy देता है और कलाकारों, इंजीनियरों तथा डिजाइनरों के लिए बहुत उपयोगी है।

Light Pen का उपयोग Screen पर किसी भी बिंदु (Point) को select करने या draw करने के लिए किया जाता है।

Microphone

Definition:

A microphone is an input device that converts sound into digital signals and sends it to the computer.

Webcam

Definition:

A webcam is an input device used to capture photos and videos and send them to the computer.

Joystick

Definition:

A joystick is an input device used to control games and simulations.

Touch Screen

Definition:

A touch screen is an input and output device that allows users to give commands by touching the screen.

Barcode Reader

Definition:

A barcode reader is an input device used to scan barcodes and send the information to the computer.

OMR (Optical Mark Reader)

Definition:

OMR is an input device used to read marked answers and symbols on forms and answer sheets.

OCR (Optical Character Reader)

Definition:

OCR is an input device or software that converts printed text into digital text.

MICR (Magnetic Ink Character Reader)

Definition:

MICR is an input device used to read characters printed with magnetic ink, mainly on bank cheques.

Trackball

Definition:

A trackball is a pointing input device in which the cursor is controlled by rotating a ball.

Touchpad

Definition:

A touchpad is a pointing input device used to control the cursor with a finger.

Graphics Tablet

Definition:

A graphics tablet is an input device used for drawing, designing, and creating digital artwork.

Biometric Device (Fingerprint/Face)

Definition:

A biometric device is an input device used to identify and verify a person through fingerprint or face recognition.

Smart Card Reader

Definition:

A smart card reader is an input device used to read information stored on a smart card.

Digital Camera

Definition:

A digital camera is an input device used to capture photos and videos and store them digitally.

Voice Recognition System

Definition:

A voice recognition system is an input technology that recognizes human voice and converts it into commands.

VR Controller

Definition:

A VR controller is an input device used to control actions in a virtual reality environment.

Components of the Computer :-

Storage Device:-

What is Ram:-

Ram is temporally Storage device of the computer. It is store the data temporally of the computer. It is light turn off all data deleted. **RAM is a primary memory of the computer.**

RAM stands for **Random Access Memory**.

Definition:-

“RAM is a temporary memory that stores data and instructions currently used by the computer.”

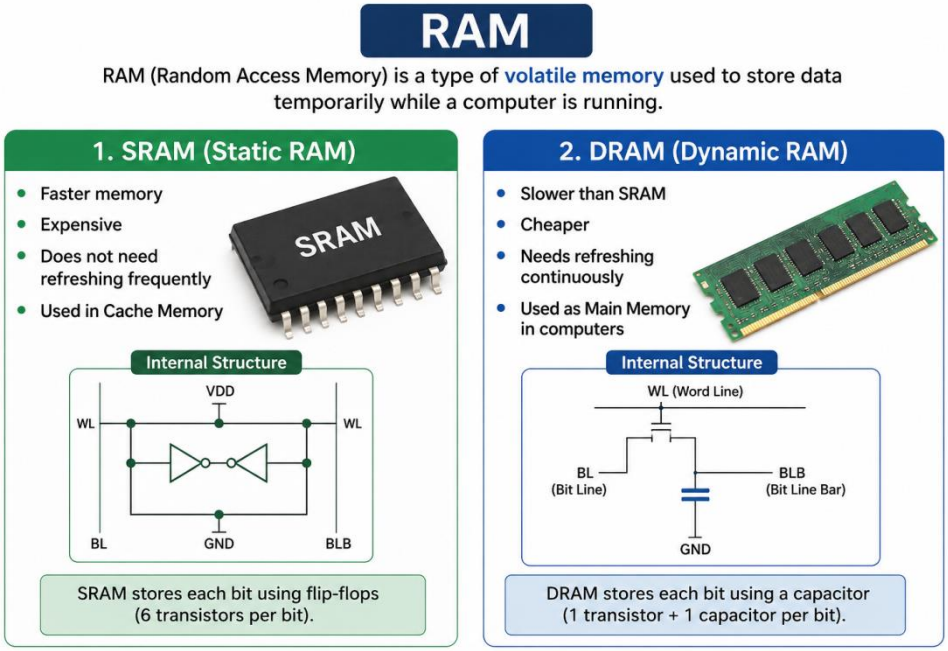
Types of RAM

SRAM (Static RAM)

- Faster memory
- Expensive

DRAM (Dynamic RAM)

- **Slower than SRAM**
- **Commonly used**



RAM Type	Speed	Voltage	Pins	Use
DDR1	200–400 MHz	2.5V	184 Pins	Old Computers
DDR2	400–1066 MHz	1.8V	240 Pins	Old PCs
DDR3	800–2133 MHz	1.5V	240 Pins	Desktop/Laptop
DDR4	2133–3200 MHz	1.2V	288 Pins	Modern Computers
DDR5	4800 MHz+	1.1V	288 Pins	Latest High-Speed PCs

ROM

What is Rom:-

Ram is permanently Storage device of the computer. It is store the data permanently of the computer. It is light turn off does not all data deleted.

or

What is ROM:-

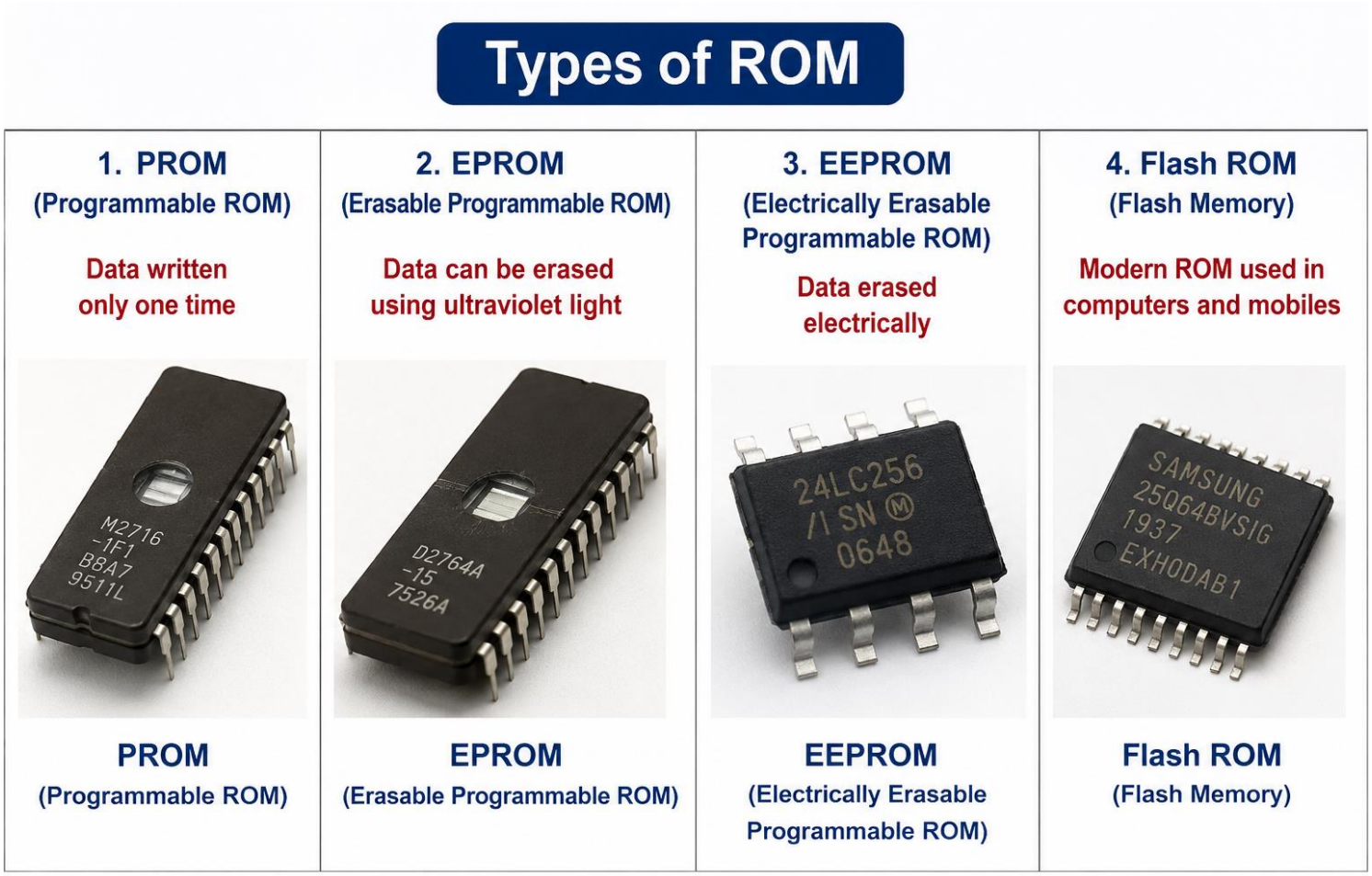
ROM is a primary memory of the computer.

ROM stands for **Read Only Memory**.

It is used to store permanent data and instructions in the computer.

Definition:-

“ROM is a permanent memory that stores important instructions required to start the computer.”



Types of ROM

1. PROM (Programmable Read Only Memory)

- Data can be written only one time.

2. EPROM (Erasable Programmable Read Only Memory)

- Data can be erased using ultraviolet light.

3. EEPROM (Electrically Erasable Programmable Read Only Memory)

- Data can be erased electrically and rewritten.

4. Flash ROM

- Faster type of EEPROM
- Used in USB drives and modern devices.

HARD DISK

- What is hard dish:-

Hard disk is permanently magnetic Storage device of the Computer. it is store the data permanently form. We can store data 162 to 1 TB.

What is Hard Disk:-

Hard Disk is a secondary storage device of the computer.

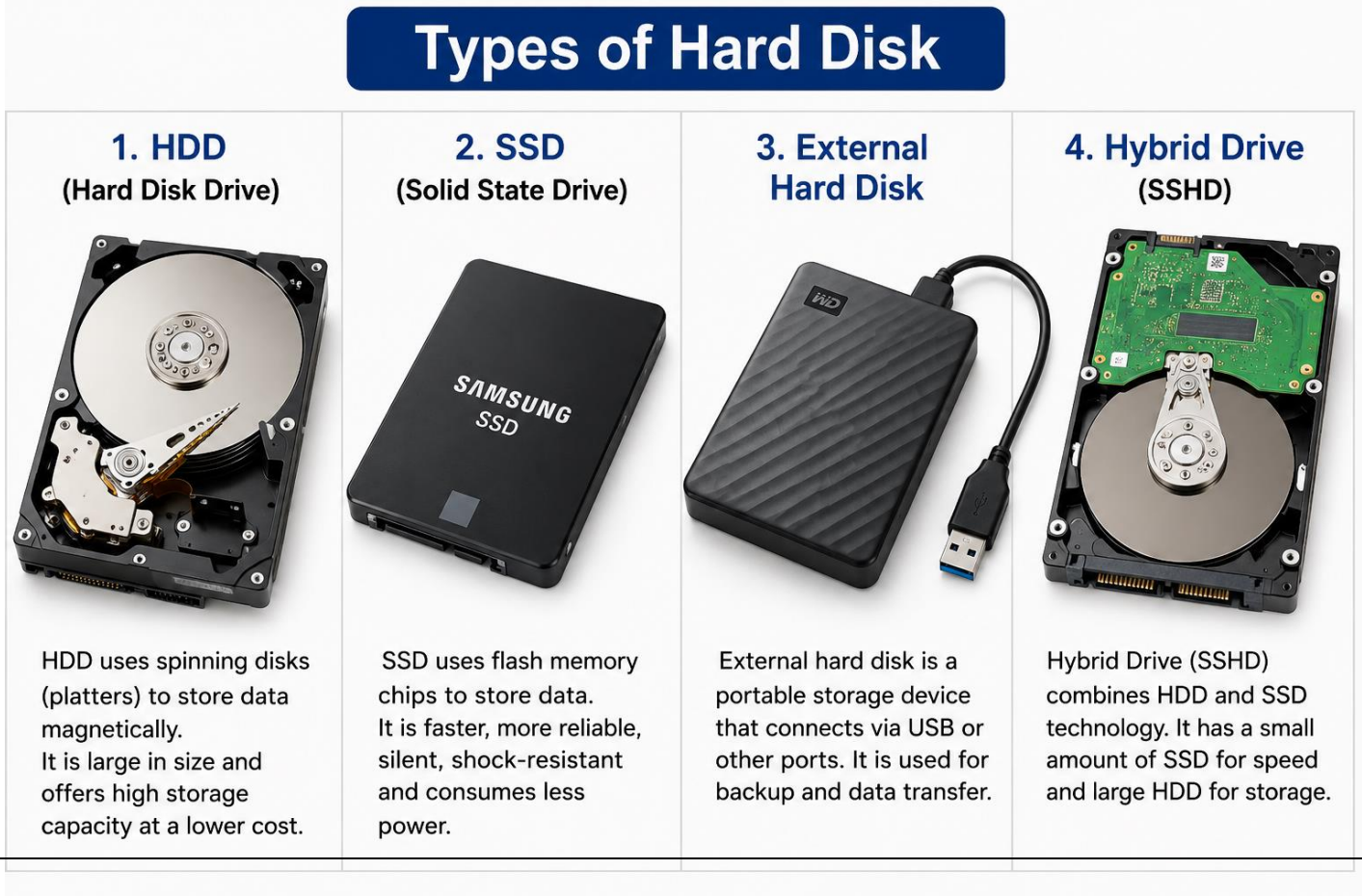
It is used to store data, programs, files, and operating systems permanently.

Definition :-

“A hard disk is a storage device used to store large amounts of data permanently in a computer.”

Types of Hard Disk

- HDD (Hard Disk Drive)
- SSD (Solid State Drive)
- External Hard Disk
- Hybrid Drive (SSHD)



SSD (Solid State Drive)

What is SSD :-

SSD is a secondary storage device of the computer.

SSD stands for **Solid State Drive**.

It stores data using flash **memory** chips and works faster than HDD.

External Hard Disk

What is External Hard Disk?

External Hard Disk is a portable storage device.

It is connected to the computer using USB cable.

Hybrid Drive (SSHD)

What is Hybrid Drive?

Hybrid Drive is a combination of HDD and SSD.

SSHD stands for **Solid State Hybrid Drive**.

CD (COMPACT DISK)

- What is CD :-

CD is permanently storage device of the computer.

It is store the data permanently. We can store the data 700 MB

CD (Compact Disc)

What is CD :-

CD is an optical storage device of the computer.

CD stands for **Compact Disc**.

It is used to store data, music, videos, and software.

Definition :-

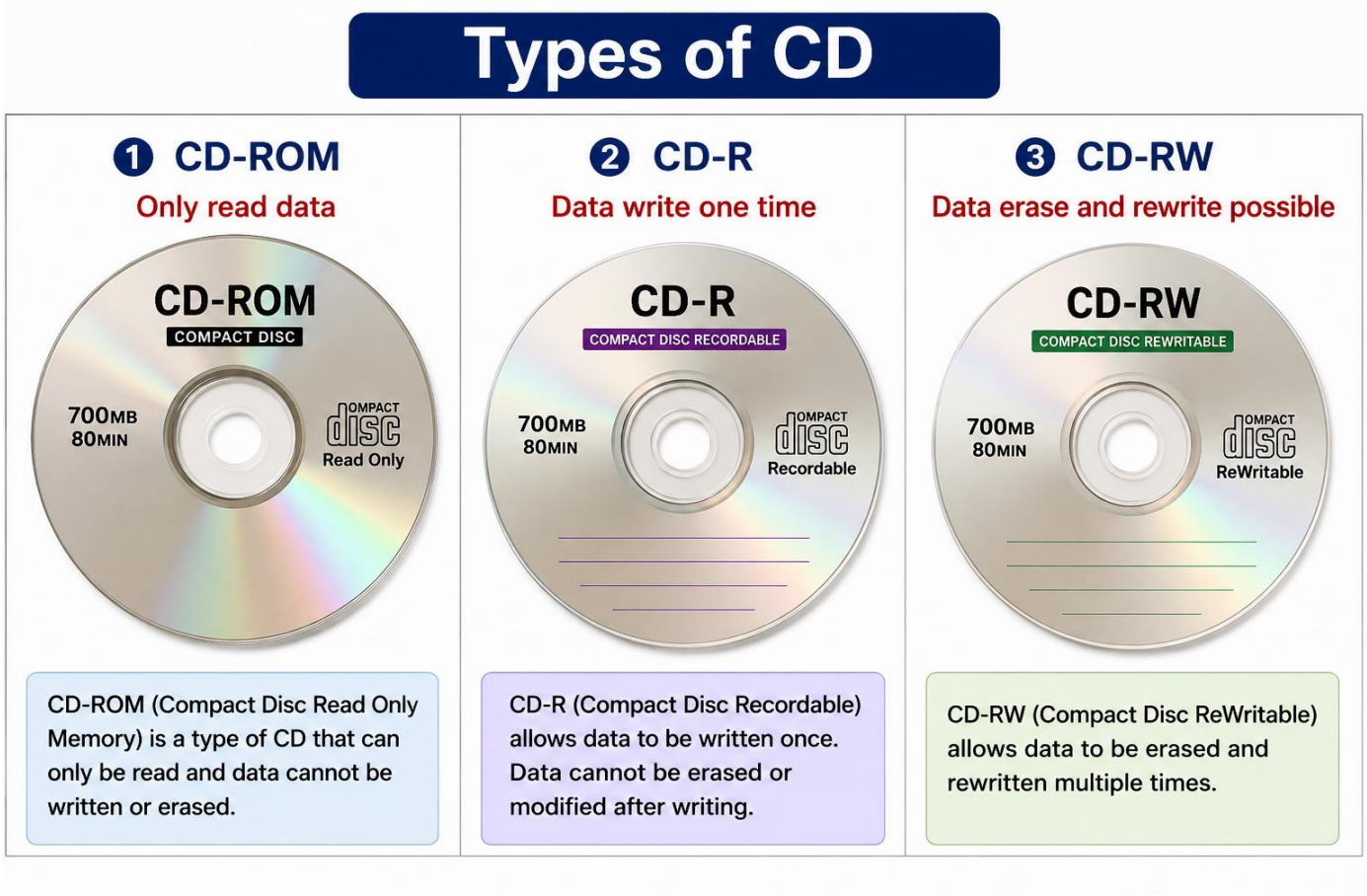
“A CD is an optical disc used to store digital data using laser technology.”

Types of CD

1.CD-ROM Data write one time

2. CD-R Only read data

3.CD-RW Data erase and rewrite possible



DVD (DIGITAL VIDEO DISK)

- What is DVD :-

DVD is permanently storage device of the computer.

It is store the data permanently. We can store the data 4.7GB

What is DVD :-

DVD is an optical storage device of the computer.

DVD stands for **Digital Versatile Disc** (or Digital Video Disc).

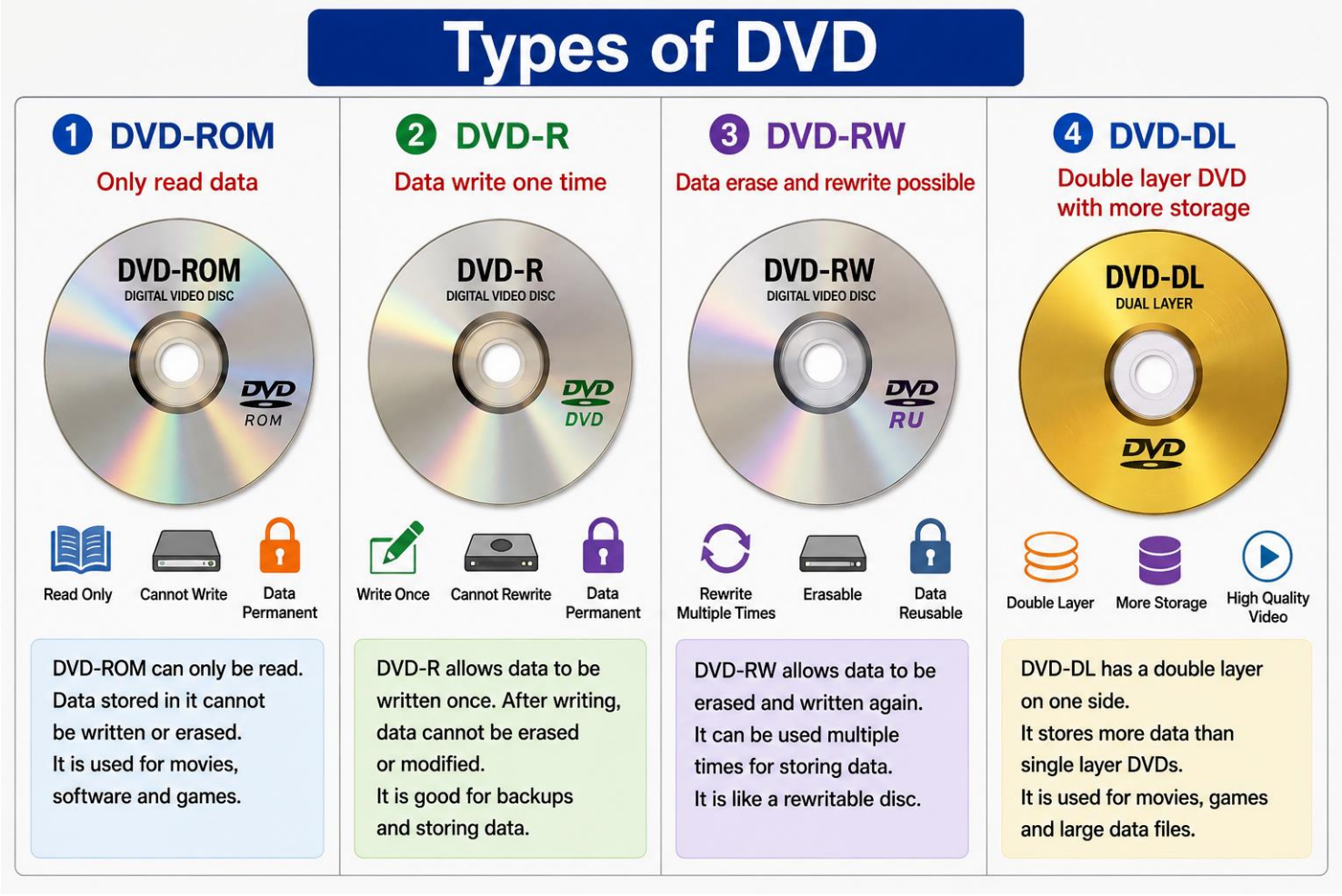
It is used to store videos, movies, software, and data.

Definition :-

“A DVD is an optical disc used to store large amounts of digital data using laser technology.”

Types of DVD

1.DVD-ROM
Only read data
2. DVD-R
Data write one time
3.DVD-RW
Data erase and rewrite possible
4.DVD-DL
Double layer DVD with more storage



Pen Drive / USB Flash Drive

Definition :-

Pen Drive is a portable storage device used to store and transfer data through a USB port.

Pen Drive / USB Flash Drive

Definition

Pen Drive is a portable storage device used to store and transfer data through a USB port.

Hindi Meaning

Pen Drive एक portable storage device है जिसका उपगोग data store और transfer करने के लिए किया जाता है।

Uses

- Storing files, documents, photos, videos
- Data backup
- Transferring data from one computer to another
- Used in schools, offices, and homes
- Carrying important data easily

Features

- Portable and small in size
- Connects through USB port
- Available in different storage capacities (4GB, 8GB, 16GB, 32GB, 64GB, 128GB, etc.)
- Easy to use (Plug and Play)
- Can store all types of files and folders

Note:

Pen Drive is also called USB Flash Drive.

Memory Card (SD Card)

Definition:-

Memory Card is a small storage device used in mobile phones, cameras, and other digital devices to store data.

Memory Card (SD Card)

Small in size, high in storage capacity.

Definition

Memory Card (SD Card) is a small storage device used in mobile phones, cameras, tablets and other digital devices to store data.

Hindi Meaning

Memory Card एक छोटा storage device है जो mobile phones, cameras और अन्य digital devices में data store करने के लिए उपयोग होता है।

Uses

- Storing photos, videos, music and documents
- Increasing storage capacity in devices
- Data backup and transfer
- Used in cameras, mobiles, drones, tablets, etc.

Features

- Small, lightweight and portable
- Available in different storage capacities (2GB, 4GB, 8GB, 16GB, 32GB, 64GB, 128GB, 256GB, 512GB, 1TB, etc.)
- Easy to use
- Works with many devices

Types of SD Cards

Standard Capacity	High Capacity	eXtended Capacity	Micro SD	Micro SD HC	Micro SD XC

Note: SD Card stands for Secure Digital Card.

Floppy Disk

Definition:-

Floppy Disk is an old magnetic storage device used to store small amounts of data. Blu-ray Disc. We can store the data 3 MB

Definition:-

Blu-ray Disc is an optical storage device used to store high-definition video and large amounts of data.

Cloud Storage

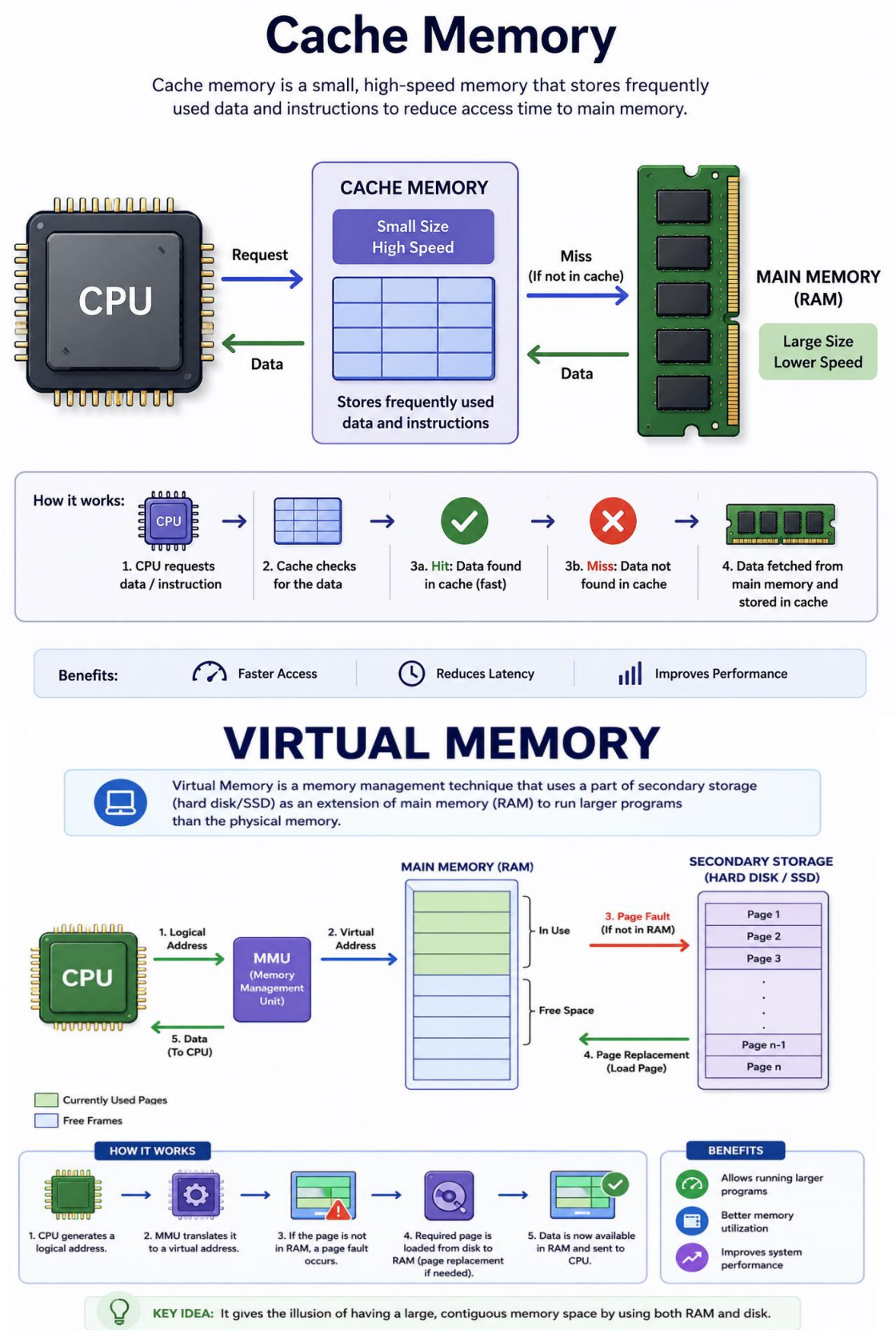
Definition:-

Cloud Storage is an online storage service used to store and access data through the internet.

Cache Memory

Definition:-

Cache Memory is a very fast memory used to store frequently used data for quick CPU access.



Components of the Computer :-

Processing Device:-

What is microprocessor:-

Microprocessor is processing device of the computer.
It is process the data of the computer

Microprocessor

What is Microprocessor:-

Microprocessor is a processing device of the computer.

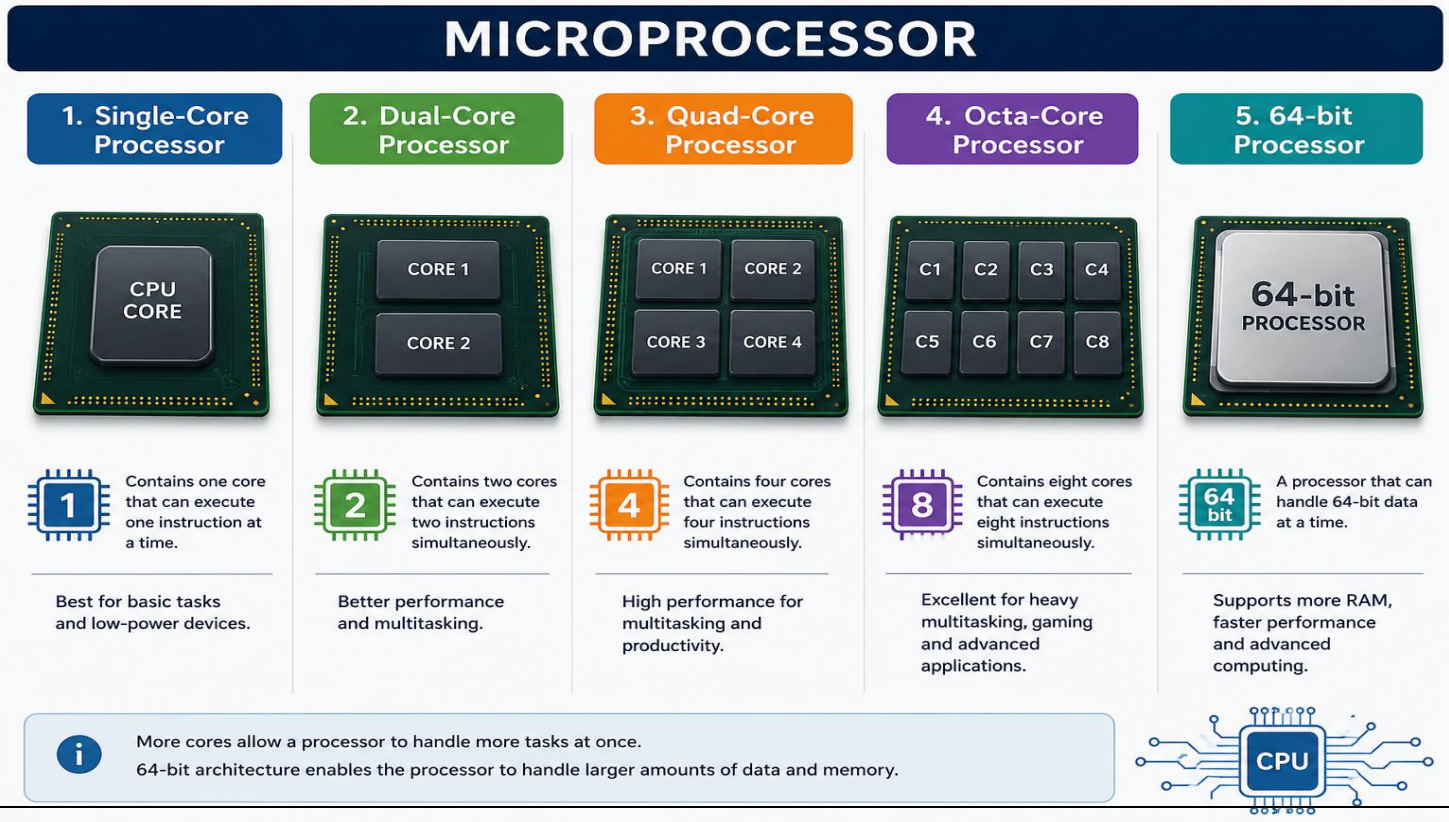
It is a small electronic chip that works as the brain of the computer and processes data and instructions.

Definition:-

“A microprocessor is a programmable electronic chip that performs calculations and controls computer operations.”

Types of Microprocessor

1. Single-Core Processor
2. Dual-Core Processor
3. Quad-CoreProcessor
4. Octa-Core Processor
5. 64-bit Processor



What is Chipset:-

Chipset is processing device of the computer.
It is processing device and all date set in the Computer.

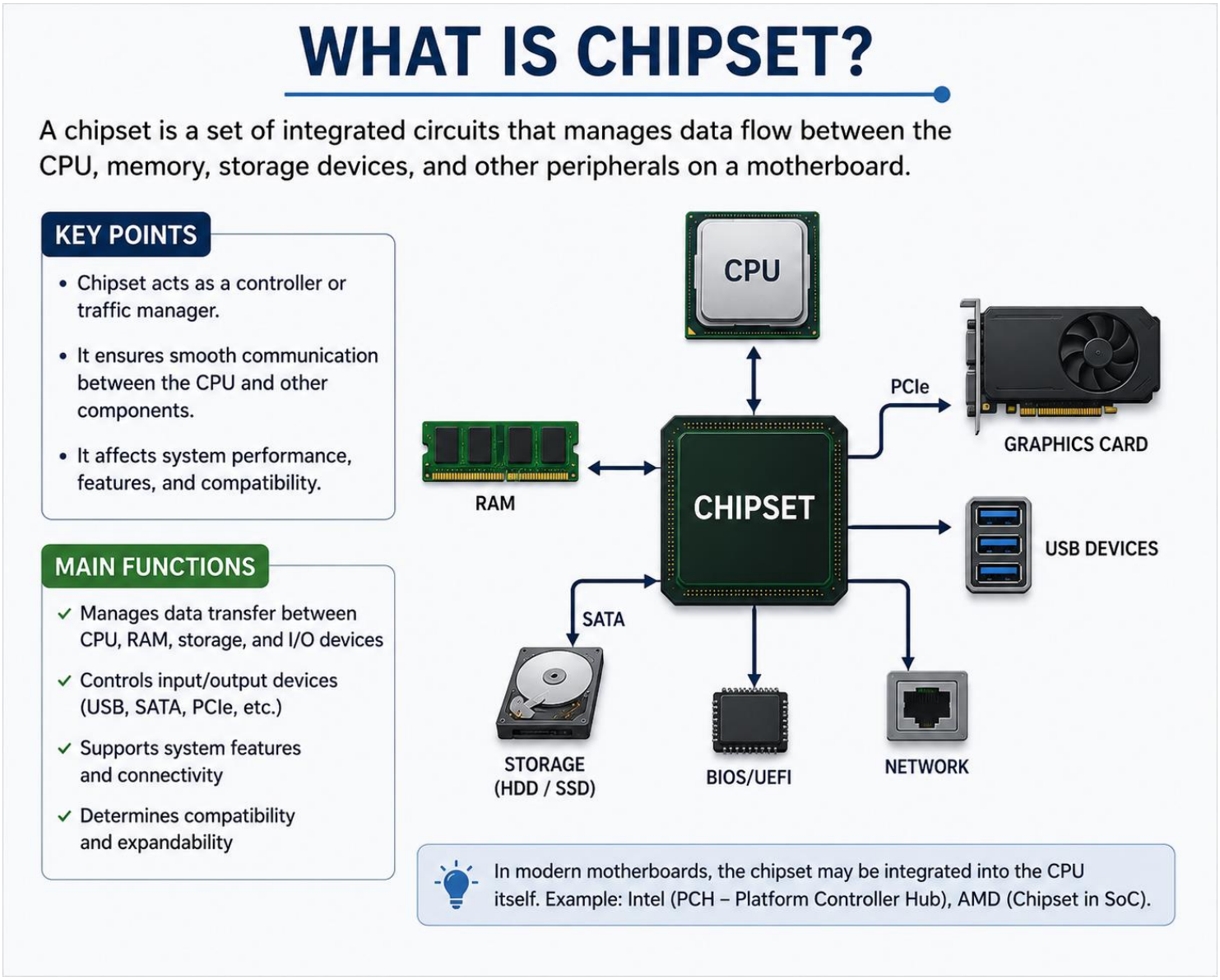
Chipset

What is Chipset:-

Chipset is an important electronic component of the motherboard.
It controls communication between the CPU, RAM, storage devices, and other hardware components.

Definition:-

“A chipset is a group of integrated circuits that manages data flow between the processor and other computer components.”



Types of Chipset

1.Northbridge Chipset

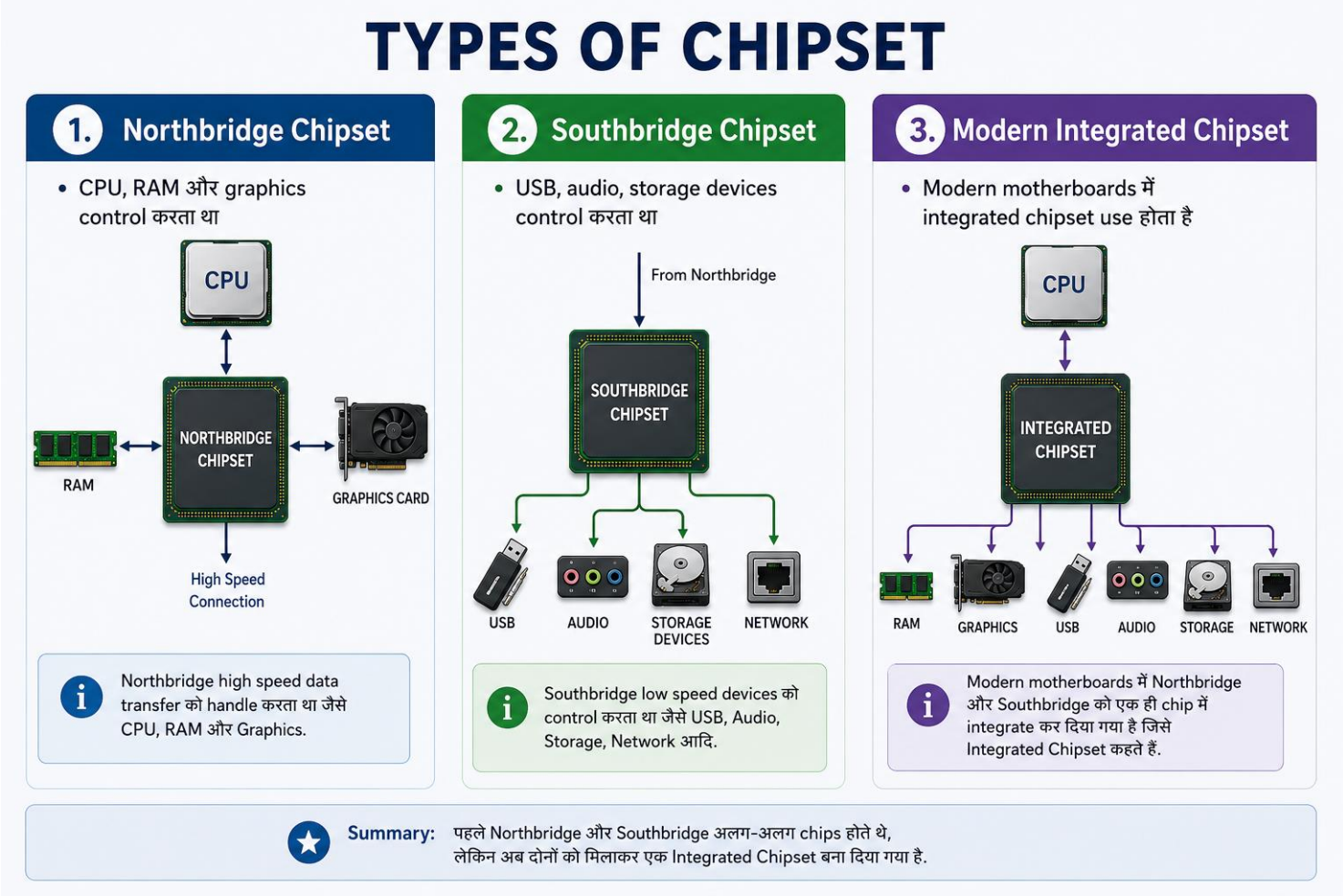
CPU, RAM और graphics control करता था

2. Southbridge Chipset

USB, audio, storage devices control करता था

3.Modern Integrated Chipset

Modern motherboards में integrated chipset use होता है



What is BIOS :-

BIOS(Basic input output system) is processing device of the computer.

What is BIOS:-

BIOS is a firmware program of the computer.

BIOS stands for Basic Input Output System**.**

It is used to start the computer and control basic hardware operations.

Definition:-

“BIOS is a built-in software stored in ROM that initializes and tests computer hardware during startup.”

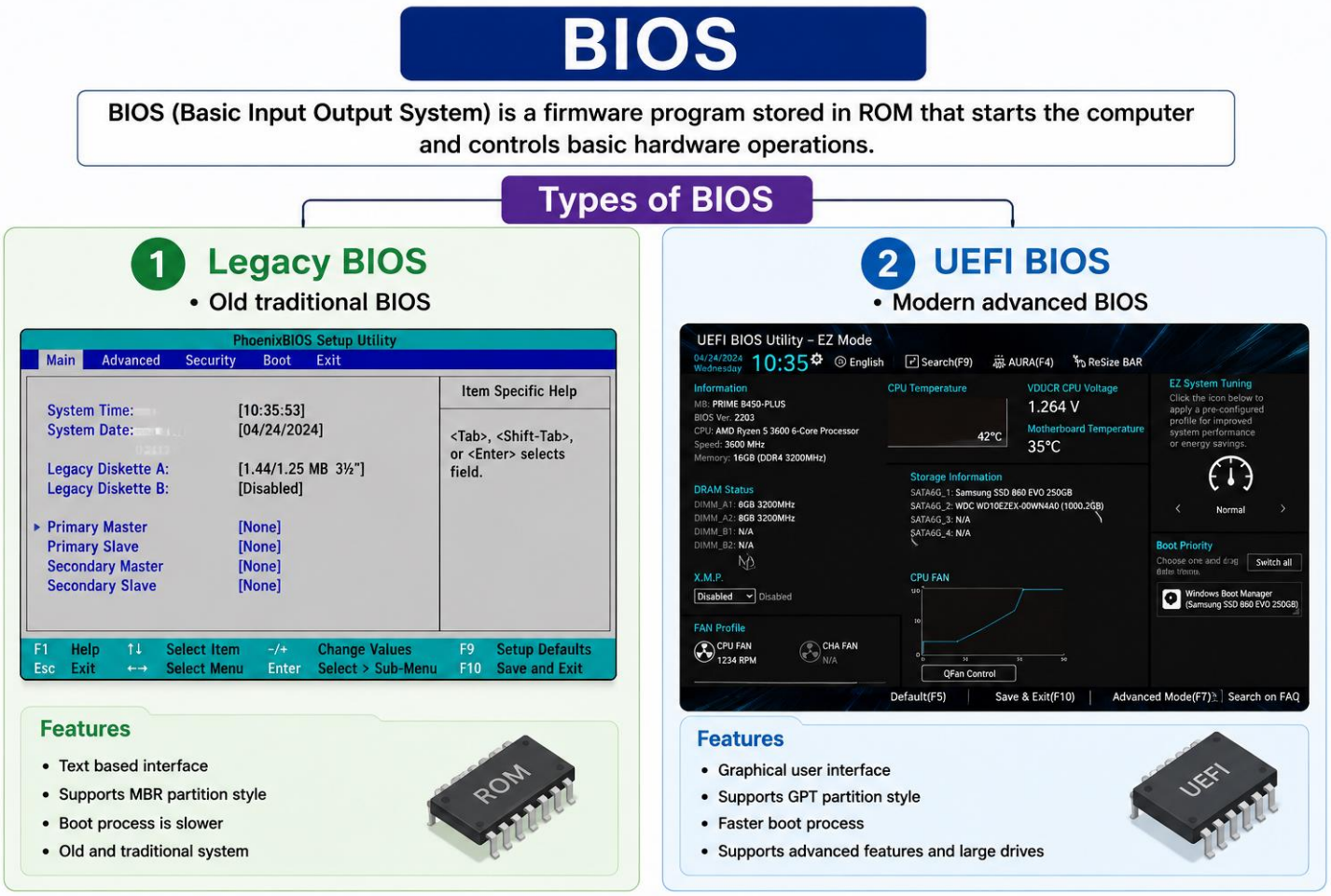
Types of BIOS

1. Legacy BIOS

.Old traditional BIOS

2. UEFI BIOS

. Modern advanced BIOS



What is CPU:-

CPU(central processing unit) is processing device of the computer. It is process the data of the computer.

What is CPU:-

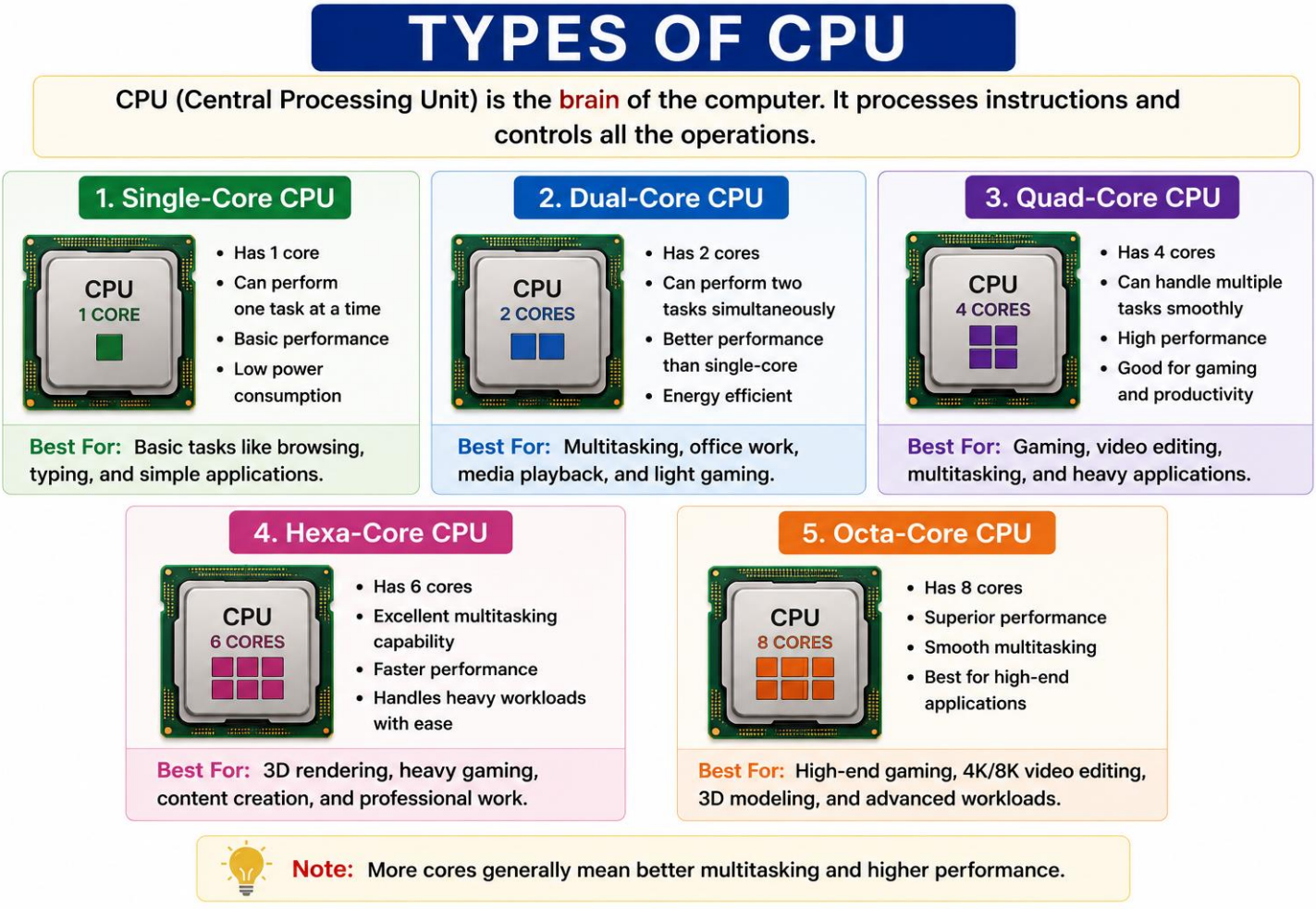
CPU is a processing device of the computer.
CPU stands for Central Processing Unit.
It is called the brain of the computer because it processes all data and instructions

Definition:-

"CPU is the main processing unit of a computer that performs calculations and controls all operations."

Types of CPU

1.Single-Core CPU 2. Dual-Core CPU 3. Quad-Core CPU
4. Hexa-Core CPU 5. Octa-Core CPU



Main Parts of CPU

1.ALU (Arithmetic Logic Unit)

Calculations और logical operations करता है

2. CU (Control Unit)

सभी instructions और operations control करता है

3. Memory Unit

Temporary data store करता है

What is ALU:-

ALU is a part of the CPU of the computer.

ALU stands for **Arithmetic Logic Unit**.

It performs arithmetic calculations and logical operations.

1.Arithmetic Operations

i. Addition (+)
ii. Subtraction (−)
iii. Multiplication (×)
iv. Division (÷)

2.Logical Operations

i. Greater than (>)
ii. Less than (<)
iii. Equal to (=)
iv. AND, OR, NOT operations

3.Main Functions of ALU

Calculation

i.Mathematical calculations करता है

Logic Decision

ii.Data comparison करता है

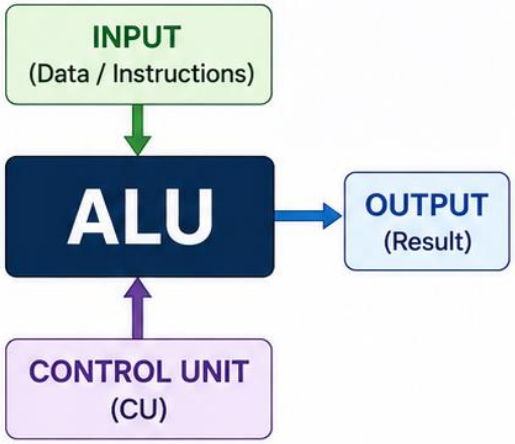
Data Processing

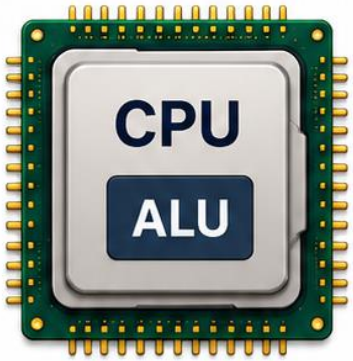
iii.CPU processing में मदद करता है

ALU

(Arithmetic Logic Unit)

ALU is a part of the CPU that performs arithmetic operations and logical operations.





1. ARITHMETIC OPERATIONS

ALU performs basic mathematical operations.

Addition (+)
Adds two numbers.
Example: 5 + 3 = 8

Subtraction (−)
Subtracts one number from another.
Example: 8 − 3 = 5

Multiplication (×)
Multiplies two numbers.
Example: 4 × 3 = 12

Division (÷)
Divides one number by another.
Example: 12 ÷ 3 = 4

2. LOGICAL OPERATIONS

ALU performs logical and comparison operations.

Greater than (>)
Checks if one value is greater than another.
Example: 5 > 3 → True

Less than (<)
Checks if one value is less than another.
Example: 3 < 5 → True

Equal to (=)
Checks if two values are equal.
Example: 5 = 5 → True

AND Operation
True only if both conditions are True.
Example: T AND T → T

OR Operation
True if any one of the conditions is True.
Example: T OR F → T

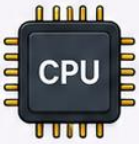
NOT Operation
Gives the opposite (result).
Example: NOT T → F

3. MAIN FUNCTIONS OF ALU

ALU has important functions that help CPU to process data.

1 Calculation
Mathematical calculations करता है।

2 Logic Decision
Data comparison करता है।



3 Data Processing
CPU processing में मदद करता है।

Summary ALU is the brain of the CPU that performs arithmetic calculations, logical operations and helps in data processing.

What is CU :-

CU (Control Unit)

What is CU :-

CU is a part of the CPU of the computer.

CU stands for **Control Unit**.

It controls and manages all operations of the computer.

Definition:-

“Control Unit (CU) is a component of the CPU that controls and coordinates all operations of the computer.”

Main Functions of CU

1 Instruction Control

Instructions को manage करता है

2 Data Flow Control

Data movement control करता है

3 Device Coordination

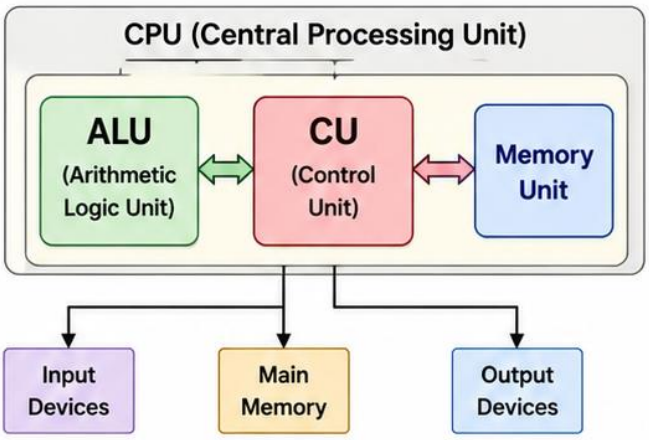
CPU, memory और devices को coordinate करता है

4 Program Execution

Programs run करवाता है

CU (CONTROL UNIT)

CU is a part of the CPU of the computer.
It controls and manages all operations of the computer.



DEFINITION

Control Unit (CU) is a component of the CPU that controls and coordinates all operations of the computer.

USES OF CU

1. Controls computer operations
2. Manages data flow
3. Gives instructions to devices
4. Coordinates input and output devices
5. Controls execution of programs

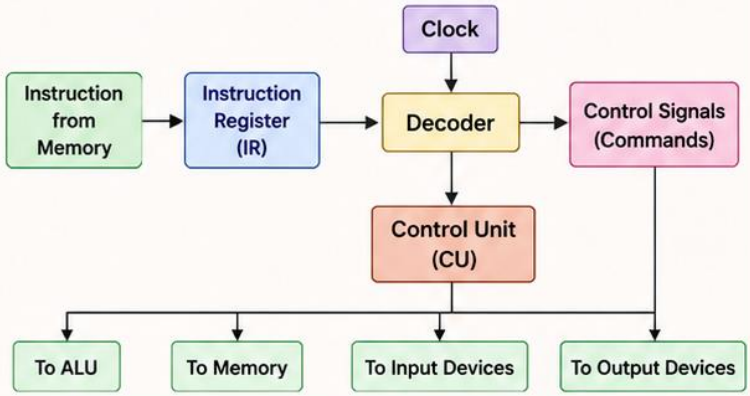
MAIN FUNCTIONS OF CU

- **Instruction Control**
  Instructions को manage करता है।
- **Data Flow Control**
  Data movement control करता है।
- **Device Coordination**
  CPU, memory और devices को coordinate करता है।
- **Program Execution**
  Programs run करवाता है।

WORKING OF CU

1. Instruction receive करता है। (CPU या memory से)
2. Instruction decode करता है। (Instruction को समझता है) 1010 0101
3. सही device को command भेजता है।
4. Processing control करता है। सभी कार्यों की निगरानी करता है।

BLOCK DIAGRAM OF CU



ADVANTAGES OF CU

- Smooth computer operation
- Better coordination between all parts
- Fast instruction handling
- Efficient management of devices

DISADVANTAGES OF CU

- Cannot process calculations directly
- Depends on ALU and memory
- If CU fails, whole system can stop

CONCLUSION

CU (Control Unit) is an important part of the CPU that controls and coordinates all computer operations and devices. It works like the brain's controller in the computer.

What is GPU

GPU is a processing device of the computer.

GPU stands for Graphics Processing Unit**.**

It is used to process graphics, images, videos, and gaming visuals.

Definition

“GPU is a specialized processor designed to handle graphics and image processing tasks.”

Types of GPU

1 Integrated GPU

CPU के साथ **built-in** होता है

2 Dedicated GPU

अलग **graphics card** के रूप में होता है

Advantages of GPU

- Smooth gaming
- Fast graphics processing
- Better video editing performance
- Supports high-quality visuals

Disadvantages of GPU

- Expensive
- Uses more power
- Can produce heat

Examples of GPU

- NVIDIA GeForce
- AMD Radeon
- Intel Iris Xe

Conclusion

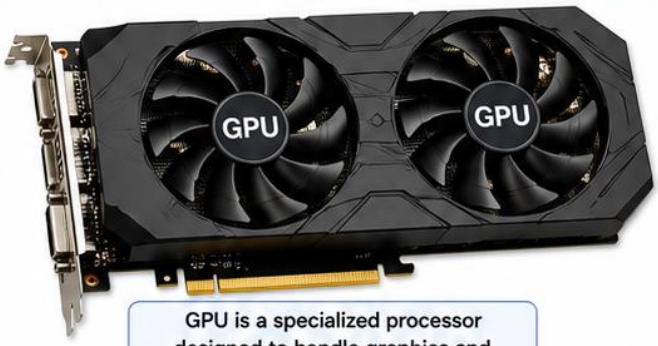
- GPU is an important graphics processor that improves gaming, video editing, and graphic performance in a computer.

GPU
(GRAPHICS PROCESSING UNIT)

WHAT IS GPU?

- GPU is a processing device of the computer.
- GPU stands for **Graphics Processing Unit.**
- It is used to process graphics, images, videos, and gaming visuals.

GPU कंप्यूटर का graphics processing device है जो images, videos और gaming graphics को process करता है।



GPU is a specialized processor designed to handle graphics and image processing tasks.

USES OF GPU

1. Gaming graphics
2. Video editing
3. 3D designing
4. Animation rendering
5. AI and machine learning

MAIN FUNCTIONS OF GPU

1. **Graphics Rendering** — Images और graphics बनाता है।
2. **Video Processing** — Videos process करता है।
3. **3D Processing** — 3D objects और games handle करता है।
4. **Parallel Processing** — Multiple tasks एक साथ process करता है।

TYPES OF GPU

1. Integrated GPU

CPU के साथ built-in होता है।

2. Dedicated GPU

अलग graphics card के रूप में होता है।

Dedicated GPU की performance Integrated GPU से बेहतर होती है।

ADVANTAGES OF GPU

- Smooth gaming
- Fast graphics processing
- Better video editing performance
- Supports high-quality visuals
- Improves overall system performance

DISADVANTAGES OF GPU

- Expensive
- Uses more power
- Can produce heat
- Not necessary for basic tasks

EXAMPLES OF GPU

NVIDIA

NVIDIA GeForce
(RTX 3060, RTX 4060, etc.)

AMD

AMD Radeon
(RX 6600, RX 7600, etc.)

intel

intel. iRIS Xe GRAPHICS

Intel Iris Xe
(Integrated Graphics)

WHERE GPU IS USED?

- Gaming
- Video Editing
- 3D Modeling
- Animation
- AI / Machine Learning
- High Resolution Display (4K)

CONCLUSION

GPU is an important graphics processor that improves gaming, video editing, 3D designing, animation, and other visual performance in a computer.

Components of the Computer :-

Output Device:-

What is Printer :-

Printer is output device. It is print any Document.

As:- Image , Photos, Document

What is Printer:-

Printer is an output device of the computer.

It is used to print text, images, and documents on paper.

Definition:-

“A printer is an output device that produces hard copy of documents and images on paper.”

Types of Printer

What is Monitor :-

Monitor is output device. It is Show data any Document.
This is displaying device.
As:- Image , Photos, Document

What is Monitor :-

Monitor is an output device of the computer.
It is used to display text, images, videos, and other information on the screen.

Definition:-

“A monitor is an electronic output device that displays visual information generated by the computer.”

Types of Monitor

TYPES OF MONITOR

A monitor is an output device of the computer. It is used to display text, images, videos, and other information on the screen.

1 CRT Monitor

Old bulky monitor

Features

- Bulky and heavy
- High power consumption
- Low picture quality
- Old technology
- More space required

2 LCD Monitor

Flat screen display

Features

- Thin and light
- Less power consumption
- Better picture quality
- No radiation
- Wall mount possible

3 LED Monitor

Energy efficient display

Features

- More energy efficient
- Bright and clear display
- Better contrast ratio
- Long life
- Environment friendly

4 OLED Monitor

High-quality color display

Features

- Excellent color quality
- Deep black and high contrast
- Wide viewing angle
- Very thin and light
- Expensive

5 Touch Screen Monitor

Touch से control किया जाता है

Features

- Touch से control किया जाता है
- Easy and interactive
- Used in kiosks, ATMs, schools, offices
- Saves time
- Clean and user friendly

Conclusion:

Monitors are important output devices that display the results of processing. Different types of monitors are used according to our needs and technology.

Quick Comparison Table

Type	Size	Power Consumption	Picture Quality	Best Use
CRT Monitor	Bulky	High	Low	Old systems
LCD Monitor	Thin	Low	Good	General use
LED Monitor	Thin	Very Low	Very Good	Office, Home
OLED Monitor	Very Thin	Low	Excellent	Professional use
Touch Screen Monitor	Thin	Low	Good	Interactive use

What is Projector

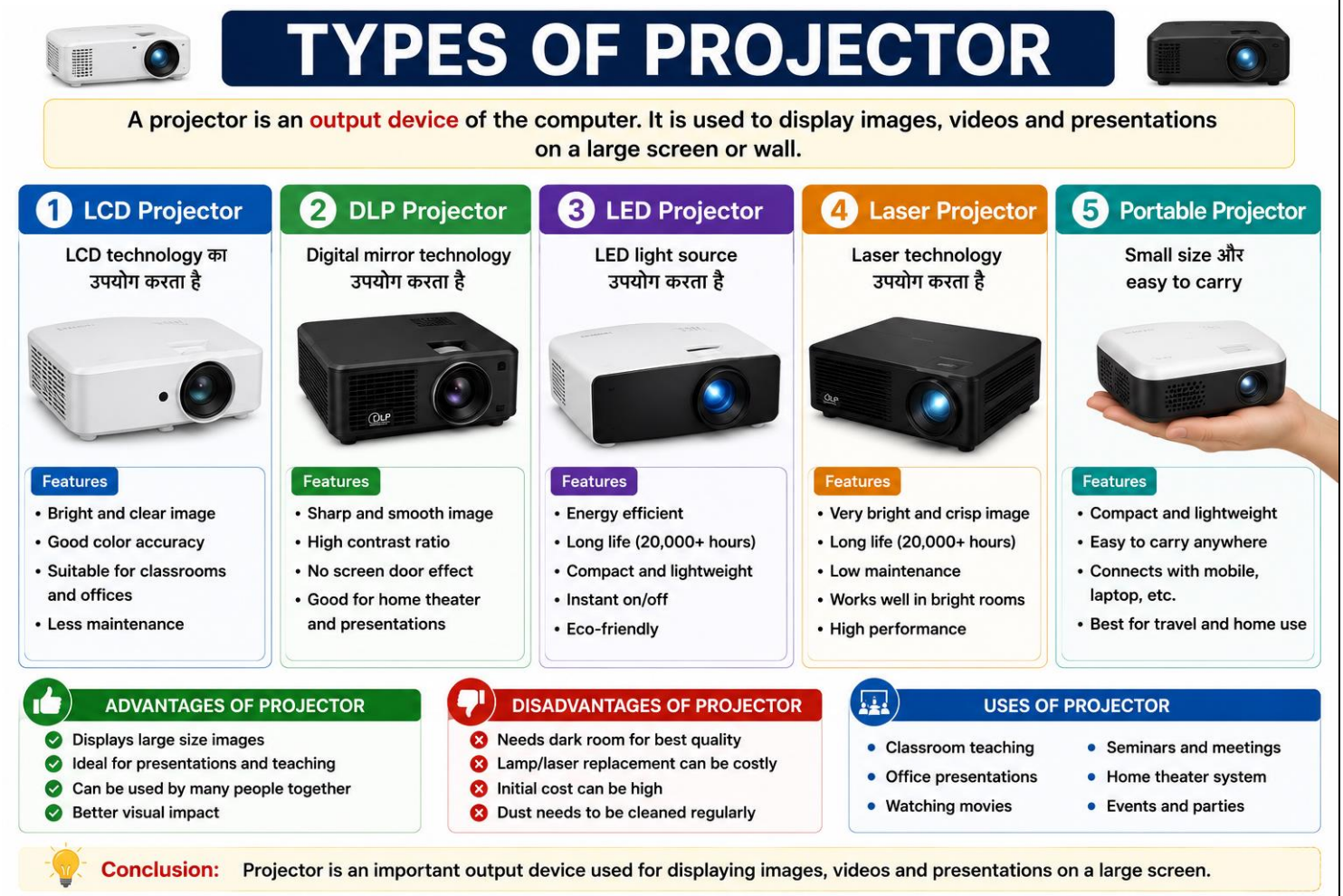
Projector is an output device of the computer.

It is used to display images, videos, and presentations on a large screen or wall.

Definition:-

“A projector is an electronic output device that projects computer images and videos onto a large screen.”

Types of Projector



Digital Billboard

What is Digital Billboard :-

Digital Billboard is an electronic output display device.

It is used to show advertisements, videos, images, and information on a large digital screen.

Definition:-

“A digital billboard is a large electronic display used for showing advertisements and multimedia content.”