- **Introduction:-**

A **computer** is not an acronym and sometimes abbreviated as **comp** or **'puter**. The term "computer" was originally given to humans who performed numerical calculations using mechanical calculators, such as the abacus and slide rule. The term was later given to a mechanical device as they began replacing the human computers. Today's computers are electronic devices that accept data (input), process that data, produce output, and then store (storage) the results.

The **first digital computer** and what most people think of as a computer was called the ENIAC, built during World War II (1943-1946). Early computers like the ENIAC used vacuum tubes and were large (sometimes room size) and only found in businesses, Universities, or governments. Later, computers began utilizing transistors as well as smaller and cheaper parts that allowed the common person to own a computer.

Today, computers help make jobs that used to be complicated much simpler. For example, a user can write letters in a word processor, edit any portion of the letter anytime, spell check the letter, print multiple copies of that letter, and even send that letter to someone across the world in a matter of seconds. All of these activities would have taken someone days, if not months, to do before computers. Also, all of the above is just a small fraction of what computers can do.

Simply Computer parts or Computer Consist of Input unit, Output unit and CPU.

- **What are Input Unit and Input Devices?**

Input Unit is what CPU takes for output is called Input unit. that type of devices are called as Input devices such as Keyboard, Mouse, scanner, web cam, joysticks and barcode reader. These devices all are input devices.

- **What are Output Unit and Output Devices?**

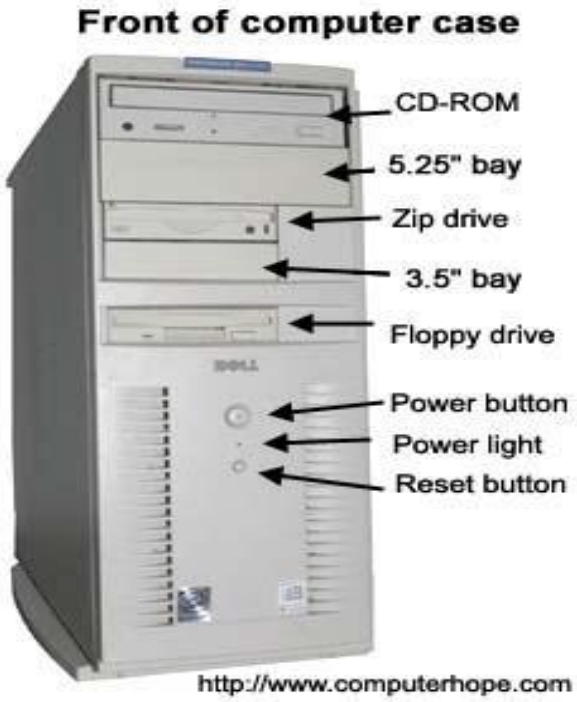
Output is what CPU gives is called Output Unit. Those types of devices are called as Output devices such as monitor, Printers and Speakers. These types of devices are Output devices.

- **What is CPU?**

  CPU stands for Central Processing Unit. CPU is the main part of computer, because CPU takes the input from input devices and gives output to output devices.

  CPU consists of ALU, CU and MU. ALU stands for Arithmetical and Logical Unit, ALU does the operations like Adding, dividing, subtraction, multiplication, and, or operations. CU stands for Control Unit. This is used to control the signals from input and output. MU stands for Memory Unit. This is used to store the data.

- **What components make up a computer?**

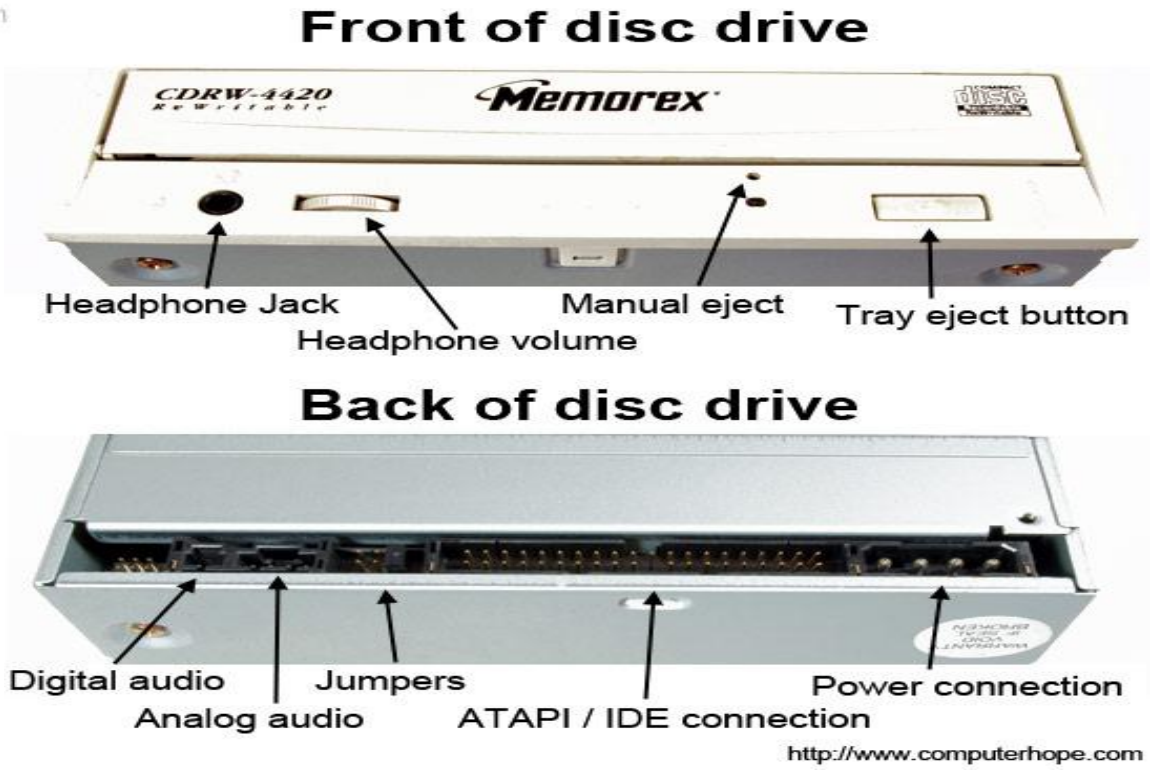


Today's computers have some or all of the below components (hardware). As technology advances, older technologies, such as a floppy disk drive and Zip drive (both shown below), are no longer required or included with computers.

- Bay ,Case or Chassis ,Case Fan
- Optical drive: Blu-ray, CD-ROM, CD-R, CD-RW, or DVD
- CPU (processor) ,Floppy disk drive , Hard drive
- Keyboard ,Memory (RAM), Microphone
- Monitor, LCD, or other display device
- Motherboard ,Mouse ,Network card
- Power Supply, Printer ,Sound card
- Speakers, Video card

CD-ROM

Short for **Compact Disc-Read Only Memory**, a **CD-ROM** (shown right) is an optical disc which contains audio or software data whose memory is read only. A **CD-ROM Drive** or **optical drive** is the device used to read them. CD-ROM drives have speeds ranging from 1x all the way up to 72 xs, meaning it reads the CD roughly 72 times faster than the 1x version. As you would imagine, these drives are capable playing audio CDs and reading data CDs. Below is a picture of the front and back of a standard CD-ROM drive



- **Interfaces**

Below are the different interfaces that allow a CD-ROM and other disc drives to connect to a computer.

- **IDE/ATA** - One of the most commonly used interfaces for disc drives.
- **Panasonic** - Older proprietary interface.
- **Parallel** - Interface used with old external CD-ROM drives.
- **PCMCIA (PC Card)** - Interface sometimes used to connect external disc drives to laptop computers.
- **SATA** - Replacing IDE as the new standard to connect disc drives.
- **SCSI** - Another common interface used with disk and disc drives.
- **USB** - Interface most commonly used to connect external disc drives.

- **DVD**

Short for **Digital Versatile Disc** or **Digital Video Disc**, a **DVD** or **DVD-ROM**, is a disc capable of storing large amounts of data on one disc the size of a standard Compact Disc. **CD/DVD drives** were first sold in 1997, today 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 software DVD player. The picture is an example of what a DVD movie may look like, in this example it is a picture of the Matrix movie.

How much data can a DVD hold?

There are several capacities a single DVD disc is capable of holding. Below is a listing of the different types of DVD's and each of their total capacity.

- One of the most common DVD's is the single-sided, single-layer disc, capable of holding **4.7 GB**.
- The single-sided, double-layer disc is capable of holding between **8.5-8.7 GB**.
- The double-sided, single-layer disc is capable of holding **9.4 GB**.
- Although rare, the double-sided, double-layer disc is capable of holding up to**17.08 GB**.

What is the difference between a DVD and a CD?

Physically, a DVD and CD look the same. Both discs are the same size and typically have one side with a label and the other side that the laser reads unless

it is a double-sided DVD. However, the technology that makes up a DVD allows for the same size disc to hold a lot more data than a CD.

What DVD player should I get to play DVD movies?

We recommend VLC, it's free and open-source media player that works on Windows, Mac, and Linux.

Can DVD drives read CDs?

Yes, all DVD drives are CD/DVD drives which means they can read both CD and DVDs. If you have a DVD burner, it will be capable of reading and writing CDs, DVDs, CD-Rs, CD-RWs, and writable DVDs.

What was the first DVD?

The movie Twister became the first feature film put on DVD on March 25, 1996.

The future of DVD

DVD's are still very popular and widely used. However, more recent technologies like Blu-ray discs and streaming services like Netflix and other cloud services DVD sales and usage have been on a steep decline.

- **BD**

Short for **Blu-ray Disc**, **BD** or **BD-ROM**, is an optical disc format developed by thirteen consumer electronics and PC companies. These companies include Dell, Hitachi, Hewlett-Packard, LG ,Mitsubishi, Panasonic, Sony, and TDK. Blu-ray was first introduced at the CES on January 4, 2006 and can store up to 25 GB single-layer disc and 50 GB on a dual-layer disc, each disc being the same size as a standard CD. The picture shows a blue laser in a Blu-ray disc player.

Today, Blu-ray was first backed by Apple, Dell, Philips, Pioneer, Sony, Sun, TDK, and other companies mentioned above. On February 19, 2008 Blu-ray beat out HD DVD in the high-definition disc format wars on after HD DVD called it quits.

- **FDD**

A **Floppy Disk Drive**, also called **FDD** or **FD** for short, is a computer disk drive that enables a user to save data to removable diskettes. Although 8" disk drives were first made available in 1971, the first real disk drives used were the 5 1/4" floppy disk drives, which were later replaced with the 3 1/2" floppy disk drives.

A 5 1/4"floppy disk was capable of storing between 360KB and 1.2MB of data, and the 3 1/2" floppy disk was capable of storing between 360KB and 1.44MB of data. For both sizes of floppy disk, the amount of data that could be stored was dependent on whether the disk was single or double sided and whether the disk was regular or high density.

Today, due to their extremely limited capacity, computers no longer come equipped with floppy disk drives. This technology has largely been replaced with CD-R, DVD-R, and flash drives.

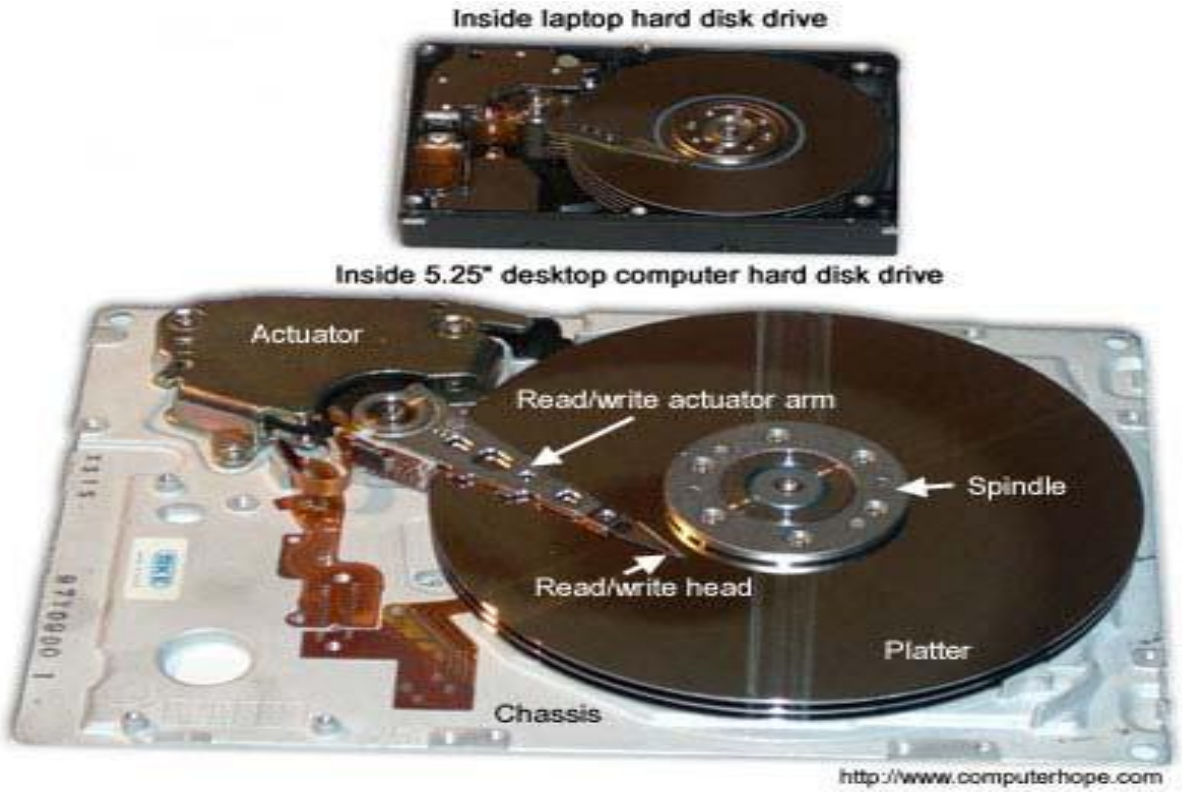
Above is an example of each of the different floppy drives. As can be seen, the sizes of the floppy drive and the diskettes they use have decreased over time.

- **Hard drive**

A **hard disk drive** (sometimes abbreviated as **Hard drive**, **HD**, or **HDD**) is a device used to permanently store and also retrieve information. There are many variations, but their sizes are generally 3.5" and 2.5" for desktop and laptop computers respectively. A hard drive consists of one or more platters to which data is written using a magnetic head, all inside of an air-sealed casing. Internal hard disks reside in a drive bay, connect to the motherboard using an ATA, SCSI, or SATA cable, and are powered by a connection to the PSU (power supply unit). The images below show the components of a hard drive inside of both desktop and laptop computers.

Tip: The hard disk was first introduced on September 13, 1956.

Hard drive components



As can be seen in the above picture, the desktop hard drive consists of the following components: the head actuator, read/write actuator arm, read/write head, spindle, and platter. On the back of a hard drive is a circuit board called the disk controller.

Tip: New users often confuse memory (RAM) with disk drive space. See our memory definition for a comparison between memory and storage.

How is data read and stored on a hard drive?

Data sent to and from the hard drive is interpreted by the disk controller, which tells the hard drive what to do and how to move the components within the drive. When the operating system needs to read or write information, it examines the hard drive's File Allocation Table (FAT) to determine file location and available write areas. Once they have been determined, the disk controller instructs the actuator to move the read/write arm and align the read/write head. Because files are often scattered throughout the platter, the head needs to move to different locations to access all information.

All information stored on a traditional hard drive, like the above example, is done magnetically. After completing the above steps, if the computer needs to read information from the hard drive, it would read the magnetic polarities on the platter. One side of the magnetic polarity is 0, and the other is 1. Reading this as binary data, the computer can understand what the data is on the platter. For the computer to write information to the platter, the read/write head aligns the magnetic polarities, writing 0's and 1's that can be read later.

External and Internal hard drives

Although most hard drives are internal, there are also stand-alone devices called **external hard drives**, which can backup data on computers and expand the available disk space. External drives are often stored in an enclosure that

helps protect the drive and allows it to interface with the computer, usually over USB or eSATA. A great example of an external backup device that supports multiple hard drives is the Drobo.

External hard drives come in many shapes and sizes. Some are large, about the size of a book while others are about the size of a cell phone. External hard drives can be very useful since they usually offer more space than a jump drive and are still portable. The picture to the right is an example of a laptop hard disk drive enclosure from Adaptec. The user may install any size of laptop hard drive they desire into the enclosure and connect via USB port to the computer.

HDD being replaced by SSD

Solid State Drives (SSDs) have started to replace hard disk drives (HDDs) because of the distinct performance advantages they have over HDD, including faster access times and lower latency. While SSD is becoming more and more popular, HDD will continue to be in desktop computers with SSD because of the available capacity and value per dollar that HDD offers over SSD.

- **Keyboard**

Computer **keyboard** is one of the primary input devices used with a computer that looks similar to those found on electric typewriters, but with some additional keys. Keyboards allow you to input letters, numbers, and other symbols into a computer that often function as commands. The following image shows a Saitek keyboard with indicators pointing to each of the major key sections of a keyboard.

- **Different Types of Computer Keyboards**

A normal computer keyboard is composed of around 110 keys. Although on the basis of key arrangements there are four major keyboard layouts being used worldwide, QWERTY, AZERTY, QWERTZ and HCESAR, but they can be classified in many more different categories depending on types of computer connector, size, number of keys etc. Among the various types listed below, keyboards can be based on multiple types. For instance, an ergonomic keyboard can have a PS2 interface and be an internet keyboard too.

- **Ergonomic Keyboard**

The artifact of this keyboard is slightly broader and different in shape, when compared with the normal keyboard. In this key board certain space will be existing between the two sets of keys and the countered shape of this key board allow the users to place their hands in the natural position to type. These key boards are mostly used by the people who often work with the key board as their usage is easier and is less stressful for the wrist. The following figure: Ergonomic keyboard shows how the set of keys are separated with gaps in between.

- **ADB (Apple Desktop Bus)**

ADB refers to a special type of port which is enabled in some computers such as Apple computers. The ADB key boards can be connected only to the ADB jack enabled computers, but with the use of the adapter, the ADB key boards can also be inserted over a USB port.

- **XT**

An obsolete type, these keyboards only support the older computers such as IBM 8086/8088, XT-286. Not supported by present computers, keyboards are much larger than the modern keyboards and the "Enter" key is backward-"L" shaped.

- **Personal Systems (PS/2)**

In the late 1990, most of the computers are integrated with standard PS/2 connector, rather than USB ports, there by the keyboards used for these computers are usually round pin that fits into the PS/2 keyboard jack. For this reason these keyboards are named as PS/2 keyboards.

- **MINI PS/2**

The MINI PS/2 keyboards are very small in size and are compatible with the PS/2 computers. This keyboard resembles the laptop keyboard and it is square in shape. This keyboard is composed of fewer key and do not have detach numeric keypad.

- **Multimedia**

The multimedia keyboard is specially designed for the people who are much into multimedia designing. This keyboard is just like the standard key board, but composed of additional keys for the multimedia purposes such as multimedia application launch, volume control and mute button.

- **Internet**

The Internet keyboards are designed for wider range of multimedia applications, these keyboards are specially designed for the intense Internet user. The special keys included in this keyboard are the home key, back and forward key, e-mail launch key, and browser launch key etc. these keys carry out the same functionality as of the buttons on the webpage. In order use these extra keys the computer must be embedded with right operating system.

- **Wireless**

A wireless keyboard, the name itself doles the meaning that this keyboard can be operated without addressing a wired connection to the processor. The wireless keyboards are also referred as Cordless keyboards; these keyboards require batteries to provide the electricity which usually delivered through a PS/2 or USB cable. “AA” or “AAA” batteries are most widely used standard batteries for wireless keyboards. Apple Macs are known to revolutionize the wireless keyboard by making them thinner than the wired ones. These keyboards usually work at 2.4 GHz frequency and come with a dongle that connects and makes them communicate with the computer.

- **Gaming**

As the name suggest, gaming keyboards are those who are into gaming and need easy access to the keys that are usually utilized in gaming. These keyboards are composed of particular gaming-oriented features such as key lighting, programmable keys, and/or extra controls of volume and brightness. These keyboards are available in wired and wireless, in case if wired, it usually supports the USB port.

- **Membrane**

Membrane keyboards are one of the keyboard types, which are used very rarely. The keys integrated in this keyboard are non-moving pressure-sensitive keys. The keys in this keyboard are so close, so that there is no scope for spilling liquids into the keyboard. Such keyboard types are also used in mobile phones and old landline phones.

Keyboards are slowly being incorporated into touch screens that are being widely incorporated in various phones and tablet computers. Named as touch screen keyboards, these are virtual keyboard units have a QWERTY and numeric appearance so that message typing and number calling are quite easy. Also, gaming consoles that provide social networking such as the PlayStation 3 have an on-screen keyboard which can be accessed by user joystick.

- **Keyboard types and its functions**

Keyboard is a standard input device. It is an important component of computer. Because without keyboard, system won't start.

- **Keyboards are two types**

1. Normal Keyboards or Standard keyboards
2. Multi-media keyboards

1. **Normal Keyboards:**

Normal Keyboards are also called as 101 standard keyboards. It has 101 keys. These are old model keyboards. Now all are using multimedia keyboards. Keys are Function keys, alphanumeric keys, Arrow keys, calculator keys and Control keys.

2. **Multimedia Keyboards:**

Multimedia keyboards are latest keyboards; it has 102 to 125 keys. They are Function keys, alphanumeric keys, Arrow keys, calculator keys, control keys and multimedia keys.

In this image, keys are Multimedia keys, B keys are Function keys, C keys are alphanumeric keys, D keys are control keys, E keys are Arrow keys and F keys are calculator keys.

Keyboards interfaces are two types; one is PS/2 and second is USB.

- **Mouse**

Originally referred to as an **X-Y Position Indicator** for a Display System, a **mouse** is a hardware input device that was invented by Douglas Engel Bart in1963 while working at Xerox PARC. The mouse allows an individual to control a pointer in a graphical user interface (GUI) and manipulate on-screen objects such as icons, files, and folders.

- **Types of computer mice**

- Cordless (Wireless) ,Foot mouse ,IntelliMouse (Wheel mouse)
- J mouse Joystick ,Mechanical ,Optical
- Touchpad (Glide point) ,Trackball
- TrackPoint

- **Computer mouse ports**
  - Bluetooth
  - Infrared
  - PS/2 Port
  - Serial Port
  - USB

Logitech Freedom 2.4 Joystick

http://www.computerhope.com

Microsoft IntelliMouse

http://www.computerhope.com

http://www.computerhope.com

Mechanical mouse

http://www.computerhope.com

Optical-mechanical and Optical computer mouse

http://www.computerhope.com

Touchpad

http://www.computerhope.com

TrackPoint

http://www.computerhope.com

A. Bus Mouse

The first type of mouse was connected to the PC by the use of a **bus**, so it was actually being referred to as the bus mouse. It was used in the early days of the IBM-compatible personal computers.

It connected to the PC through a specialized bus interface implemented via an **ISA add-in card**. It was superseded by the serial mouse.

A mouse ISA mouse adapter for connecting the bus mouse. Serial port used by the serial mouse.

B. Serial Mouse

The serial mouse was connected to the computer via the **serial port**. A serial port is a physical communication interface through which information is transferred in and out of the computer bit by bit.

The serial port is a D-type 9 pin male port (**DB9M**) at the back of the motherboard. Its corresponding connector must then be a female connector for them to mate correctly. The serial mouse is obsolete.

C. PS/2 Mouse

The **PS/2 mouse** is connected on the PS/2 port (green in colour).The PS/2 mouse connector is a **6-pin mini-din** connector designed in**1987**.

PS/2 Ports, green for mouse and purple for keyboard

D. USB Mouse

The physical shape and appearance of the **USB mouse** is similar to the others. The only difference is the connector that connects to a USB port on the back of your PC. The **Universal Serial Bus** has to come to replace the PS/2 ports

E. Wireless Mouse

This is the latest type of mouse that does not use a cable to connect to the back of your computer. It is a neat type of mouse to use because it eliminates the clutter of cables on your desktop. Some of the wireless mouse can connect via a **USB receiver** while others make use of **Bluetooth connection**. The mouse is powered by a pair of batteries, usually AA type.

- **Scanners**

With hardware a **scanner** or **optical scanner** is a hardware input device. Scanners allow a user to take an image or text and convert it into a digital file, so that a computer can read or display the file. A **scanner** can be connected to a computer using USB, Fire wire, Parallel, or a SCSI port. The picture shows an example of a flatbed photo scanner, the Epson V300. The four common scanner types are: Flatbed, Sheet-fed, Handheld, and Drum scanners.

1. Flatbed Scanners

Flatbed scanners are some of the most commonly used scanners as it has both home and office functions. The way they scan documents is

that a mechanism rolls under the document to obtain the image. For businesses that have a need for high processing abilities, the flatbed scanner can scan any number of documents with a click of a button.

2. Sheet-Fed Scanners

Sheet-fed scanners cost between $300 and $800. This type of scanner works like a flatbed scanner except that the image is fed through the scanner and moves along the beam to be read rather than the beam moving. This type is not useful for books, but only single sheets.

The aforementioned scanner types are the most common types of scanners used in homes and small offices.

3. Integrated Scanners

Integrated scanners are becoming one of the most modern types of scanners when it comes to obtaining images. ATMs feature this type of built-in scanner for check-processing and approval.

4. Drum Scanners

These types of scanners are used mainly for capturing a picture and producing at a very high resolution rate. There are only a few companies that make these scanners, considering the high cost of producing a scanner such as this. It is considered a tremendous upgrade to a regular flatbed scanner.

5. Portable Scanners

Portable scanner is designed to capture text and other data while you are on the go. The scanner is powered by batteries and once you scan the text, the content is stored on the portable scanner. Once you get home, you can transfer the content to a computer. Transferring to your computer is done by using a cable or a wireless connection.

6. Handheld scanner

Scanner that scans information by holding the scanner and dragging it over a page you want to scan.

7. Card scanner

Scanner designed to scan business cards.

- **Modem**

Modem is a device that modulates an analog signal to encode into the digital signals and also demodulates it to transmit the information. Modems can be used over any means of transmitting analog signals, from light emitting diodes to radio. The most familiar example is a voice band modem that turns the digital data of a personal computer into modulated electrical signals in the voice frequency range of a telephone channel. These signals can be transmitted over telephone lines and demodulated by another modem at the receiver side to recover the digital data. The modems are of various types.

Internal Modem:

Internal Modem is the device installed in the desktop or laptop computer to communicate over a network with other connected computers. These are cheaper than external modems as they do not require a power supply or a chassis. There are two types of internal modems: dial-up and Wi-Fi (wireless). Dial up works on the telephone cables and requires a network access phone number and log on credentials to make a connection and Wi-Fi modem comments to the network without filling these credentials

1. **External Modem:**

External modems are the simplest type of the modem to install this kind of modem you didn't open the computer. The telephone line plugs into a socket on the rear panel of the modem. As external modems have their own power supply you can turn off the modem quickly to break the connection. The examples of these modems are the DSL modems which are used in the broadband connections.

2. **PC Card Modem**:

These modems, designed for portable computers, are the size of a credit card and fit into the PC Card slot on notebook and handheld computers. These modems are removed when the modem is not needed. Except for their size, PC Card modems are like a combination of external and internal modems. These devices are plugged directly into an external slot in the portable computer. So no cable is required other than the telephone line connection. The cards are powered by the computer, which is fine unless the computer is battery-operated. Running a PC Card modem while the portable computer is operating on battery power drastically decreases the life of your batteries.

- **Monitor**

  It is a standard output devices. This shows the output information. Monitor is also one of the important parts of computer, because without monitor, system can't work. So that this is the standard output device.

- **Monitors are three types:**

1. CRT Monitors 2. LCD Monitors 3. LED Monitors

1. **CRT Monitors:**

CRT stands for Cathode Ray Tube. These are all old model monitors. main disadvantages are heavy weight, occupy more place, high power consumption, high radiation and supports low resolution. These are all main reasons to prefer LCD or LED monitors.

2. **LCD Monitors:**

LCD stands for Liquid Crystal Display. The main advantage of LCDs are light weighty, occupy less place, 12v power consumption, and low radiation and supports high resolutions.

3. **LED Monitors:**

LED stands for Light Emitting Diode. Actually there are no differences between LCD and LED monitors, but better picture quality in LED monitors. so now all are prefer LED monitors than LCD monitors.

- **Three types of Hard Disk Drives**

Hard disk drive is a main storage device of computer. its a non-violated drives and stores the data permanently, so that this is permanently storage device and it's a secondary memory of a computer.

Hard disk drives are three types.

1. IDE Hard drives
2. SATA Hard drives
3. SCSI Hard drives

1. IDE Hard Drives:

IDE Stands for Integrated Device Electronics. These drives are also called as PATA (parallel Advanced Technology Attachment) hard drives. Hard drives have 40pin data interface and 4 pin power connector and Jumper setting to change drive setting to connect motherboard. These drives have low speed and low capacity than SATA and SCSI hard drives. ATA cables are used to connect hard drives to motherboard. These drives capacities are 10GB, 20GB, 40GB, 80GB, 120GB, 160GB, 250GB and 320GB.

2. SATA Hard Drives:

SATA stands for Serial Advanced Technology Attachment. These drives have 4pin data interface and 7 pin power interface to work and no jumper pins, because no need to change drive setting. These drives have high speed and high capacity than IDE hard drives and Low speed and low capacity than SCSI hard drives. 4pin SATA cables are used to connect hard drives to motherboard. These drives capacities are 80GB, 120GB, 160GB, 250GB, 320GB, 500GB, 1TB and 2TB.

3. SCSI Hard Drives:

SCSI stands for Small Computer System Interface. These drives have generally 50 to 68 pins. These drives are very high capacity and high speed than both IDE and SATA drives. 50 to 68 pin SCSI data cables are used to connect these hard drives. Generally these drives are used in servers. Capacities are 160GB, 250GB, 320GB, 500GB, 1TB, 2TB, 5TB and 10TB.

- **SMPS**

SMPS full form is Switching Mode Power Supply. It is a main power supply to power the each and every component of computer or it converts the main power supply 230volts to 12volts, 5volts, and 3volts and distribute to all components of computer.

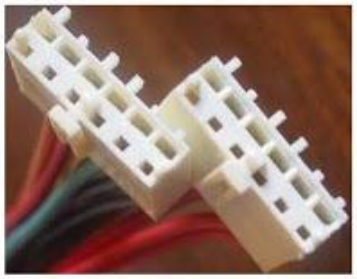
SMPSs are three types.

1. AT SMPS

2. ATX SMPS
3. BTX SMPS

1. **AT SMPS:**

AT stands for Advanced Technology. These are all old SMPSs. They had 12pin power connector; this is called as AT power connector. They were used in Pentium-I, Pentium-MMX, Pentium-II and Pentium-III CPUs.



2. **ATX SMPS**:

ATX stands for Advanced Technology extended. They had 20pin Power connector; this is called as ATX power connector. They were used in Pentium-III, Pentium-IV and AMD CPUs.

3. **BTX SMPS:**

BTX stands for Balanced Technology extended. They have 24pin Power connector; this is also called as ATX power connector. It has 15pin SATA power connectors. They are used in Dual core, core2duo, Quad core, i3, i5, i7 and latest AMD CPUs.

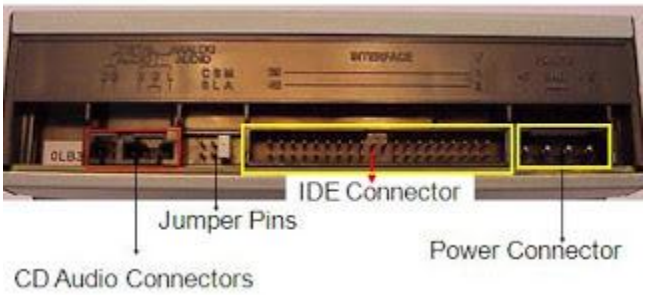
- **DVD RW**

  DVD RW stands for Digital Video Disk Read and Write. It can not only read DVDs and write the DVDs. DVD RW means CD ROM, CD Writer, DVD ROM and DVD Writer. It reads and Writers all the Disks (CDs and DVDs).

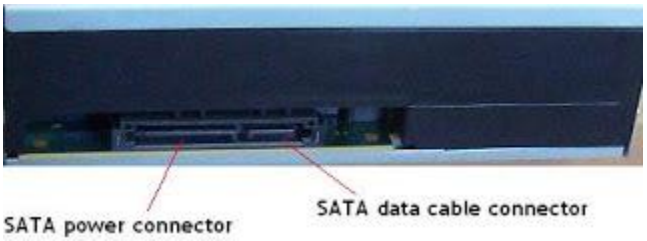
These are the DVD RW drives. Latest DVD RW drives in market are two models. One is IDE DVD writers and SATA DVD writers, depends on your motherboard supporting. Your motherboard doesn't support SATA, and then choose IDE DVD RW; your motherboard doesn't support IDE, and then choose SATA DVD RW.

In front view, we find three logos. DVD recorder, Compact Disk rewritable and RW. Latest drives haven't head phone jack and volume control. Access LED and

Eject buttons are common for all drives. Access LED glows, whenever disk inside the drive is accessed. Eject button is used to eject the disk.



This is the back view or rare view of DVD RW drive. we have learned these connectors in previous posts.

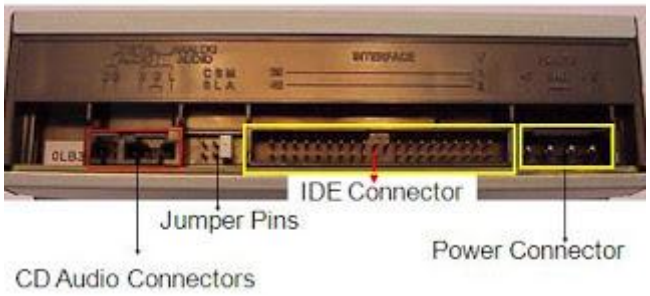


This is the back view or rare view of SATA DVD RW drive. it has only two connectors. One is SATA power connector and SATA data connector.

DVD Combo Drive Identification

DVD Combo is a drive, which reads the CDs and DVDs and Writes CDs only. it can't write DVDs. This drives are released after DVD ROMs and before the DVD writers. But it is the combination of CD writer and DVD ROM.

This is the front view of DVD combo drive. Some specification is found here. Samsung is the vendor's name. Head phone and volume control are used to listen the audio. In this drive three logos on front view. DVD ROM, Compact Disk Rewritable logo and RW combo logo. Access Led, Eject button are common. Eject button is used to eject the disk. LED shows the processor.



These are all the back side connectors of any DVD Combo drive. Jumper settings are used to change the drive settings. IDE connector is connected to motherboard IDE connector. 4 power connector, this is the point from which drive derives power to work.

- **Mouse types and its functions**

Mouse is also one of the input devices. This is also called as pointing device.

- **Three types of mouse:**

1. Ball mouse
2. Optical mouse
3. Wireless mouse.

1.BallMouse:

Ball mouse are old model mouse. There was a ball in this mouse. It works with ball. So this is called as ball mouse.

2.OpticalMouse:

Now all are using optical mouse. There is a LED in these mouse. It works with LED directions. So this is called optical mouse.

3.WirelessMouse:

Wireless mouse are also optical mouse, but there is no wire. There is a receiver; it takes the signals from mouse. So you can operate this types of mouse from anywhere in the room. This is also called as cordless mouse.

Depends on buttons, mouse are three types, they are two button mouse, three button mouse and scroll mouse.

- **Printer**

A **printer** is an external hardware device responsible for taking computer data and generating a hard copy of that data. Printers are one of the most used peripherals on computers and are commonly used to print text, images, and

photos. The picture is the Lexmark Z605 Inkjet, an example of a computer printer.

- ## Types of printers

Below is a list of all the different computer printers. Today, the most common printers used with a computer are Inkjet and Laser printers.

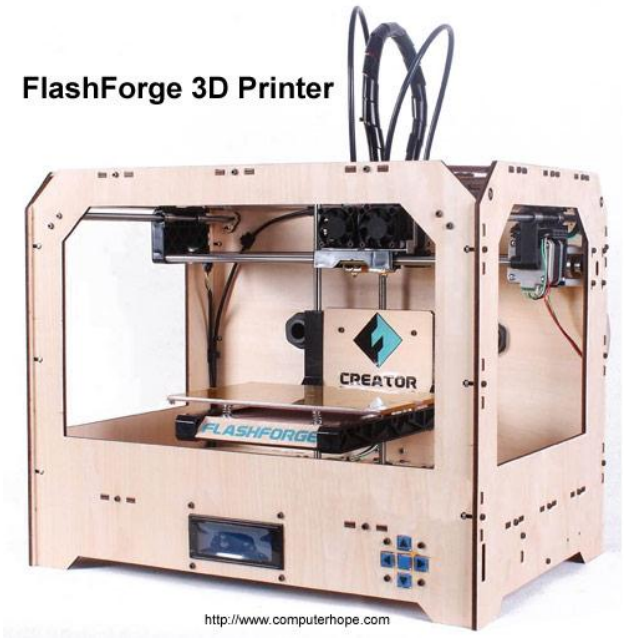
1. 3D printer
2. All-in-one (AIO) printer
3. Dot Matrix printer
4. Inkjet printer
5. Laser printer
6. LED printer
7. Multifunction printer (MFP)
8. Plotter
9. Thermal printer

- ## Printer interfaces

There are different interfaces or ways a printer can connect to the computer. Today, the most common way a printer connects to a computer is using USB.

1. Cat5
2. Fire wire
3. MPP-1150
4. Parallel port
5. SCSI
6. Serial port
7. USB

FlashForge 3D Printer



http://www.computerhope.com

ALL IN ONE

Dot Matrix printer with fan folding paper

http://www.computerhope.com

Lexmark Z605 Inkjet Printer

http://www.computerhope.com

Lexmark C782n laser printer

http://www.computerhope.com

Plotter

http://www.computerhope.com

- **Speaker**

A **speaker** is a term used to describe the user who is giving vocal commands to a software program.A hardware device connected to a computer's sound card that outputs sound generated by the computer. The picture shows the Altec Lansing VS2221 **speakers** with subwoofer and resemble what most computer speakers look like today.

When computers were originally released, they had on-board speakers that generated a series of different tones and beeps. As multimedia and games became popular, higher quality computer speakers began to be released that required additional power. Because computer sound cards are not powerful enough to power a nice set of speakers, today's speakers are self-powered, relatively small in size, and contain magnetic shielding.

Rating a speaker

Speakers are rated in Frequency response, Total Harmonic Distortion, and Watts.

- The **Frequency response** is the rate of measurement of the highs and lows of the sounds the speaker produces.
- **Total Harmonic Distortion** (**THD**) is the amount of distortion created by amplifying the signal.
- The **Watts** is the amount of amplification available for the speakers.

- **Microphone**

Sometimes abbreviated as **mic**, a **microphone** is a hardware peripheral originally invented by Emile Berliner in 1877 that allows computer users to input audio into their computers. The picture is an example of Blue Microphones Yeti USB Microphone - Silver Edition and an example of what a high quality computer microphone.

Most microphones connect to the computer using the "mic" port on the computer sound card. See our sound card definition for further information about these ports and an example of what they look like on your computer. Higher quality microphones or microphones with additional features such as the one shown on this page will connect to the USB port.

What is a microphone used for?

Below is a short list of all the different uses a microphone could be used for on a computer.

- VoIP
- Voice recognition
- Computer gaming
- Online chatting
- Recording voice for dictation, singing, and podcasts
- Recording musical instruments

• Projector

Often no larger than a toaster and only weighing a few pounds, a projector is an output device that can take images generated by a computer and reproduce

them on a large, flat (usually lightly colored) surface. For example, **projectors** are used in meetings to help ensure that all participants can view the information being presented. The picture is that of a View Sonic projector.

- **4 Types of Projectors**

1.What are Overhead Projectors?

Overhead projectors typically consist of a large box containing a very bright light-source, a fan for cooling the box, and a large lens that focuses the light. Above the box, typically on a long folding arm, is a mirror that redirects the light forward instead of up. Sheets or rolls of transparent film are placed on top of the lens for display. The light from the lamp travels though the transparency and into the mirror where it is reflected onto a viewing screen. The mirror allows an audience to see the image at the same time, even while the presenter is writing.

Overhead projectors were once a common fixture in most classrooms and business meetings. While they're less popular today, they're still a great, low-tech way to write notes for large groups in classes, conferences or seminars; it's much easier and more convenient to write on a flat transparency than a wall-mounted blackboard. As a result the overhead projector continues to be a popular presentation accessory, and a very economical one as well.

2.What Are Opaque Projectors?

The opaque projector was actually the first projector used as a presentation device, before the overhead projector.

The opaque projector displays non-transparent materials (unlike the overhead projector, which uses transparencies) by shining a bright lamp onto the object

from above. A system of mirrors, prisms and/or lenses is used to focus the image of the object onto a viewing screen. Opaque projectors require brighter lamps and larger lenses than overhead projectors. Moreover, care must be taken that the materials are not damaged by the heat generated from the light source.
Early opaque projectors were produced as low cost novelties for children. They were – and are – also marketed to artists, to project enlarged images onto canvases for tracing. Eventually they came into widespread use for lectures and presentations. Opaque projectors are great for projecting notes, pages from books, photos and artwork, or even thin three-dimensional objects. They come in especially handy for art and science classes or seminars.

3.What Are LCD Projectors?

LCD (liquid crystal display) projectors are as different from overhead and opaque projectors as a spaceship is different from a car. Where overhead and opaque projectors primarily use 19th century technology (electricity and light bulbs), LCD projectors use liquid crystal panels plus the latest computer and optical technology to project both still and moving images in vivid color. Many projectors also have built-in audio speakers, making them all-in-one audiovisual presentation units. in general, because LCD projectors are much more sophisticated than overhead projectors, their price points are usually higher.

4.What Are DLP Projectors?

Just when it seemed that LCD technology had advanced projectors as far as they could go, along came DLP (digital light processing) projectors. Where LCD projectors use liquid crystal panels to display images, DLP uses thousands of microscopically small mirrors, which not only move pixels closer together for higher contrast and greater clarity, but also provide greater brightness than LCD projectors. DLP's high resolution makes it ideal for projecting images or videos in HD (high definition). Like LCD projectors, many DLP projectors also feature audio.

- **Jump drive**

Alternatively referred to as a **USB flash drive**, **data stick**, **pen drive**, **memory unit**, **key chain drive** and **thumb drive**, a **jump drive** is a portable storage device. It is often the size of a human thumb (hence the name) and it connects to a computer via USB port. Today, flash drives are available in sizes such as 256MB, 512MB, 1GB, 5GB, and 16GB and are an easy way to transfer and store information.

The picture is an example of the SanDisk Cruzer Micro 16GB flash drive and a good example of a flash drive. As can be seen in this picture, the drive has a small casing that stores the flash memory connected to a USB connection that is plugged into the USB port on your computer.

Unlike a hard drive the flash drive only contains an integrated circuit memory board capable of storing information and has no movable parts.

How do I use a flash drive?

A flash drive can be used like any drive on your computer. Start by inserting the flash drive into a front or back USB port or to a USB hub. Once connected open My Computer and you should see the drive as "Removable Disk", "Flash drive", or as the manufacturer's name. Once the drive has been determined you can copy any file you want and paste them into the flash drive or drag-and-drop the files to the flash drive icon.