Chapter-2

Input/Output and Storage Divices

Input and output device use for communication between computer and human while storage use for data.

2.1 Storage Devices

The data and programs of computer are stored for present and future use. The devices which store them can be divided into two categories: 1. Primary Storage Medium 2. Secondary Storage Medium

In the primary storage medium data and programs are stored for present use. Memory is the example of primary storage medium. We have already discussed it. In the secondary storage medium those devices are included in which data, program, processed information are stored and secured permanently for present and future use. We are going to study about such devices here.

Floppy Disk

Floppy disk is a platter made of Mylar plastic and is round in shape. Its surface is coated with iron-oxide and like hard disk it has concentric tracks and sectors. Data is stored in these tracks and sectors. For its safety it is kept in a plastic jacket which saves it from rub or scrub. A part of jacket remains open so that read/write head can accept or store data on disk. This open part is called access windows.

There is a hole in the floppy disk and its envelope which is called index hole. When index hole comes under photo sensor it means read/write head is placed on the first sector of the present track. A part of the floppy is cut and it is called 'write protect notch'. This is used to save data from writing or storing in the disk when this notch is open we can read and write data but when this notch is closed with some sticker or tape we can only read and cannot write data.

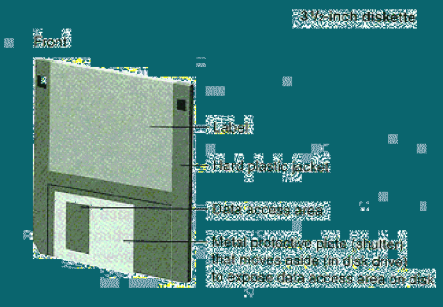


Diagram 2.1 Floppy Disk
Dorsal Surface

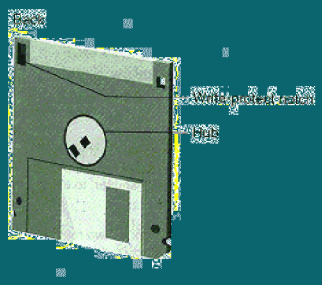


Diagram 2.2 Floppy Disk
Ventral Surface

Floppy Disk have less storage capacity. It can store 1.44 MB data. Floppy can be spoiled with water, excessive temperature, magnetic field, by throwing hard or touching with magnetic thing its data can get spoiled. So caution should be exercised while using them.

Hard Disk

Hard disk is used to store data in mini computer and Micro Computer. This stays inside the system unit. It has enormous storage capacity and for this it is known as mass storage device and because it is inside the system unit it is called online storage device. Nowadays hard disks having 160GB, 500 GB, 1 TB storage capacities are popular.

Hard disk can store numerous information permanently. Operating System, Compiler, Assembler, Database, Application program are also stored in it. So hard disk is most popular, essential and permanent storage device.

Hard disk is a pack of platters made of aluminium or some other metal. Each platter is coated with iron-oxide. On both surfaces of the platter there are concentric tracks and sectors. Data is stored in these tracks and sectors. All the disk platters are arranged in a spindle each platter consists of a read/writer head. All the read/write heads are fitted with an arm in a comb like structure. This arm is called access arm.

Diagram 2.3 Hard Disk

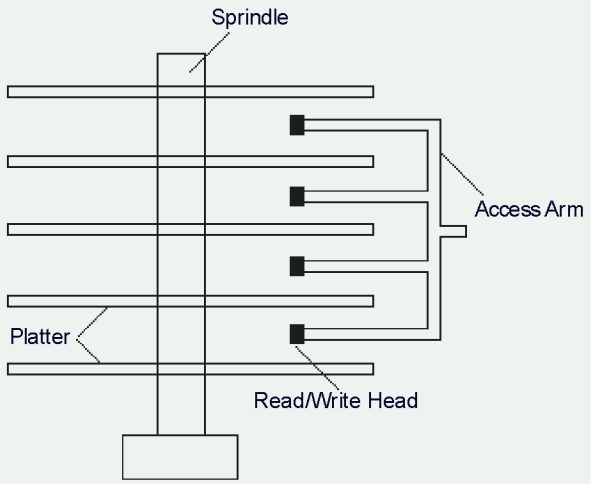


Diagram 2.4 Internal Structure and Working Mechanism of Hard Disk

Each head reaches the right track of the rotating disk. In this way the process of data read/write is straight. Each data location has a disk address. With its help access arm finds data.

Hard disk and read/write head are all fitted in the airtight chamber and they don't catch dust. This chamber looks like a lunch box in its external view.

C.D. Rom or Compact Disk

CD Rom is an optical storage device. The data stored in it can only be read, that is why it is called read only memory (ROM). Data can be read or written with laser beam. This disk is made up of resin like material- poly carbonate. Its surface is covered with aluminium compounds with which the disk reflects light. During the process of data storage on the reflected surface of CD Rom high power (25 megawatt) laser beam is aimed. The beam causes a small pit. This pit represents binary '0'. The place on the surface without pit is called land and it represents '1' of binary code.

Diagram 2.5 CD

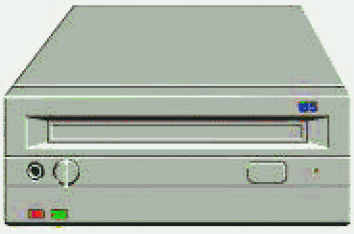


Diagram 2.6 CD Rom Drive

To read data in disk less intensity beams are aimed on the surface of CD Rom. Reflected laser beams are tested with photo detector. The beams reflected from lands don't lose their intensity but they spread in many directions exposing the exact position of pits. The difference of the reflected light is converted into binary codes 0 and 1 bits and data is clear to us.

In CD Rom tracks are used for data storage. These tracks are divided into sectors. But the tracks of CD Rom are not closed like those of floppy or hard disk but they are continuous and their length is 5 Kilometers. They are fixed in a spiral form. CD Rom has a high storage capacity. The memory of CD Rom is 650 MB. The rate of data transfer of CD Rom is high. CD Rom is used in multi media, computer games etc, nowadays CD Rom is used for different educational information, graphic collection etc.

Digital Video Disk

Digital video disk (DVD) is similar to compact disk (CD) but both are different. DVD can store 7.5 times more data than CD. one normal DVD can store approx 4.7 G.B. some DVD can store upto 17 G.B. The diameter of DVD is 4.7 inch. Similar to CD the data is stored on tracks. Tracks are divided into number of sectors but pits of DVD and distance between tracks are very small compare to C.D. Due to this capacity of DVD increases than CD. One more characteritics of DVD is that it can read data of different similar layers by changing focus of read layer. Data is written in two surfaces of DVD. Now storage capacity has increases.

The life of DVD is 10 years similar to CD to read or write DVD there is a need of DVD drive. DVD drive can read or write CD also. Humidity, temperature like environmental factors does not affect DVD similar to CD. but need to profect from scratches. Scratches can damage the whole DVD. Dust also create problems to read DVD so therefore need to kept DVD in cover.

Diagram 2.7 DVD Drive

Flash/Pen Drive

This new device has very surprising characterstions to store and transfer data. Data transfer & store using the devices like floppy, zip, disk, CD have some individual problems specially in those computer where peripheral devices are different. But intelligent stick can be used with any computer.

Diagram 2.8 Flash/Pen Drive

This is fixed on the USB Port of computer. The size of this is very small and can be put into pocket and purse easily. The size and capacity available in various range.

Zip Drive

Zip drive is second surprise in the word on magnetic media after floppy disk. Zip drive was very popular backup device, prior to CD writer. Zip drive is very cheaper than CD writer. In Zip drive zip cartridge is very reliable for movable use from one place to another. Zip cartridge can store up to 100 MB data. The size of it is 4 sq inch and thickness is approx double of floppy drive. One limitation with Zip drive is that now a day's operating system does not support zip drive.

Diagram 2.8 Zip Drive

Blue-Ray-Disk

Blue Ray Disk is an optical medium similar to CD & DVD. The physical characteristics are similar to CD and DVD. Blue ray disk can store 25 GB per single layer and 50 GB per dual layer. Blue violet laser is used to read Blue ray disk. Due to this it is known as Blue Ray Disk. The main use of it is for high definition video, video games, and data storing.

Diagram 2.9 Blue-Ray-Disk

2.2 Input Devices

With the help of input devices user feeds data, information and instructions in computer. These devices convert human language into machine language of computer. They translate character, number and other symbols into the language of computer that is 0 and 1 bits. After that the processing of data is possible. In this way Input devices execute two objectives.

1. To carry data and information to computer.

2. To convert instructions into machine language.

Input devices are as old as the computer itself but changes have taken place in them with the passage of time. Nowadays Keyboard, mouse, scanner, joystick, light pens, optical mark reader, optical character reader etc devices are in popular use some of these devices are being discussed in detail here.

Keyboard:

This is the most important input device. In a way it is an improved version of typewriter. In this device the number of keys is more than that of typewriter. Generally the number of keys is from 101 to 108. There are characters, number and other symbols on the keys by which the data is put in.

Diagram 2.10 Key-board

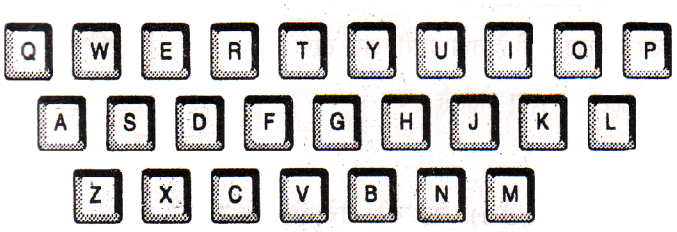
Keyboard is connected to the system with a cable. The plug of the cable is put in the socket behind the system.

There is a keyboard encoder which converts the data to 8 bit code when some key is pressed.

The keyboard keys are more easily pressed than those of the typewriter, the finger has to be lifted immediately after having pressed the key. If the key is pressed for more than 0.5 second then keyboard will keep on entering the signals of the same character again and again. The same character will get displayed on the screen repeatedly. This thing is called typematic. This activity happens at the rate of ten times in a second.

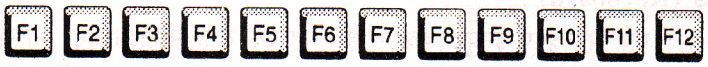
The keys can be classified in the following manner:

1. **Alphabet keys:** Like typewriter there are keys for all the 26 letters of the alphabet on the keyboard. These keys form the main part of the keyboard. They have a fixed serial number. The key bearing some letter can be pressed and it can be seen on the screen of the monitor. Today the boards with keys in other languages than English are also available.



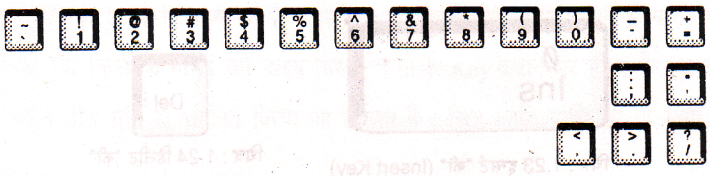
2. **Numeric keys:** These keys are fixed on the upper part of the board and they are from 0 to 9. They are fixed in the following format.

3. **Function keys:** These keys are fixed on the top part of the board and they are from F_1 to F_{12}. They perform special functions. They assign commands and display menu on the screen in the software programs. In different software function keys have different functions.



4. **Arrow keys or Cursor Control keys:** They are on the right bottom part of the board. There are arrows marked on them. Cursor is moved up, down, right and left with them. Cursor is a special character or mark to show where user is working and the user knows whatever he types will be written at this place.

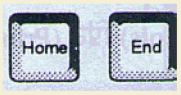
5. **Character keys:** These keys are used to write special characters or marks like- ~, !, @, #, $,%, ^, &, *, ( ), _, +, ‘, /, :, “, ”, < >, ?, etc.



6. **Special keys:** There are some special keys on the board. Their names and functions are given below:

* **Return/Enter keys:** This is the most often used keys on the board. After having written some word, sentence or instruction, this key is pressed and that goes to the memory.

* **End key:** This key moves cursor to the end of the document or line on the screen.



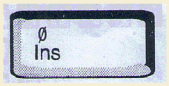
* **Home key:** This key moves the cursor to the starting of the document being made on the screen.

* **Backspace key:** It is used to move the cursor one space back deleting the character back to the cursor.

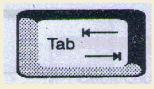
* **Spacebar key:** This is the largest key on the board. It is used to type a blank space between two words or figures.

* **Delete key:** This key deletes one character to the right side of the cursor.

* **Insert key:** This key is used for insert a character between any word.



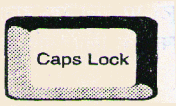
* **Tab key:** This key takes the currsor to the predetermine statement in one line or in the next line.



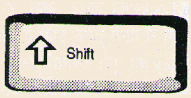
* **Esc key:** This key is located on the left top side of the board. This is used to cancel any command or entry or to go to the earlier command or entry.

* **Pause key:** This key is used to stop temporarily some processing in progress in the computer.

* **Caps Lock:** The caps lock key is used to lock the alphabetic keys in capital letters mode. You can unlock it to type in the lower case by pressing this key again. When this key gets activated caps lock indicator is lit.



* **Shift key:** Some keys have two characters on them when a key is pressed the lower character is typed to type the upper letter the shift key is pressed and then the key is pressed. It is also used to type capital letters.



* **Print Screen key:** This key is used to print the contents appearing on the screen.

* **Scroll Lock key:** This key is used to move screen up, down, left, right.

* **Page Up & Page Down Key :** The page up key is used to move to the preceding page of the document. Page down key is used to move to the next page.

7. Numeric key pad

This pad is a set of calculator like keys. There are 17 keys, there are keys form 0 to 9, there are arrows showing directions on four keys. The other keys of this pad are Num Lock, Home, Pg Up, Pg Dn, End, Ins, Del, Enter, /, *, - and + when data consist of only digits and to feed data with fast speed numeric key pad is used. Nowadays for using Internet and multimedia Internet key board and multimedia key board are becoming popular. By using these many tasks related to them can by completed by pressing the related key. Today's cordless keyboard is also in popular use.

Wireless keyboard

These type of keyboard does not use wire for connect the computer system. These required a receiver system which can use for connect the CPU.

Diagram 2.11 Wireless keyboard

Mouse

Mouse is a handy electronic input device to operate a computer. When we see the operating systems of today we feel that a computer can not be operated without a mouse. It is a small device and shaped like a mouse so it is called a mouse.

Mouse is put on a pad which is placed on a flat surface and it is moved to and fro with hand. It has two to three buttons on its top which are pressed with finger and this is knows as click. When the mouse is moved on a mouse pad the mouse pointer (Mark) is visible on the monitor and it also moves relatively. This is also called cursor.

Diagram 2.12 Mouse

Mouse is a very useful input device with its use the feeding of instructions has become easier and faster. It is very useful in graphics. Mouse is generally used in the following ways:

* **Single Click:** Single click of left button selects an object or option on the screen.

* **Double Click:** Double click of left button executes or opens an object.

* **Right Click:** Single click of right button invokes a context menu on the screen.

* **Drag and Drop:** When an object is selected by single click of left button the mouse is dragged over mouse pad by pressing left button, it moves the selected object from its original position to a new position on the screen.

Optical Mouse

This mouse is very much useful now a days. In this a ray of light emitted from the bottom on the basis of reflection it measures the speed and direction of object.

Wireless Mouse

This mouse works on frequency. It has transmitter & receiver. This provides the information of click and speed of mouse in the form of electron magnetic signals.

Diagram 2.13 Wireless Mouse

Joystick

Modern age is fast and it is age of very real looking 3D games. The people having the most suitable means can enjoy it to the full. In the beginning the games were played on computer with the help of keyboard and mouse. But nowadays many devices like joystick are available.

In a joystick a lever or handle is attached to the tracking ball which can rotate and move graphics on the screen. There is a button which is used to fire in the games.

Diagram 2.14 Joystick

Scanner

Scanner is an input device. We can take data and figures with the help of scanner into the computer. It can save photo and data of book in the form of image. we can change hard copy into soft copy with the help of scanner.

Diagram 2.15 Scanner

Web Camera

Web camera is online input device. With the help of web camera we can see the live pictures. Web camera is use in online video chatting. Video conferencing, offices, departmental stores and other places to watch the activities.

Diagram 2.16 Web Camera

Digtal Camera

The photo captured by Digital Camera is converted into digital data. Digital camera is working principal is similar to other usual cameras. In this the photo which we want to capture is focused with the help of lens. This is an offline input device. It is used to capture and store the photo. It has one screen on which we can see the captured photo, we can also move it from one place to another place easily.

Diagram 2.17 Digital Camera

Light Pen

Light pen is pen shaped and good conductor of light and it is connected to computer with a cable. It is used for writing directly on the screen. It is used mainly for graphical work, i.e. Computer aided designing. For using light pen special kind of software is required.

Diagram 2.18 Light Pen

Digitizer

Digitizing tablet is a drawing surface. One pen or mouse is attached with it. This tablet has net of thin wires. when we write by pen the signals are transmitted to computer. One scanning head is on the top of its. It is used to get the graphical position of character. With the help of of it we can draw the graph therefore it is called graph table.

Diagram 2.19 Digitizer

Micro Phone

Micro phone is an input divice which convert voice into digital form and transmitt it to the computer. It is mainly used in offices and call centres.

Diagram 2.20 Micro phone

2.3 Output Devices

The function of output device is to display the result for the user after having processed data, information and instructions. These devices translate the 0, 1 bit languages of computer into the human language and display the result on the monitor. Monitor, Speaker, Printer, Plotter etc. is the example of output devices.

The results received from computer are of mainly two types:

* **Soft Copy:** If the result can be viewed on the screen or received in the form of sound it is called soft copy. If these results are stored in Floppy, Compact Disk or Micro Film they are also called soft copy.

* **Hard Copy:** When the received results are printed on page via Printer or Plotter it is called hard copy. It is the permanent copy of result. Monitor, Speakers, Printers, Plotters etc are the examples of output device. We are going to discuss in detail about printer and monitor.

Monitor

The computer monitor is the most commonly used output device. The user interacts with a computer through monitor. It is Television shaped and is also called visual Display Unit (VDU).

There are mainly two types of monitors in a Micro Computer:

1. CRT Monitor 2. FPD Monitor

Cathode Ray Tube Monitor (CRT)

This monitor is mainly used in most of the computers. It is like a television used at home. This monitor consists of Cathode Ray Tube (CRT). Its screen is coated with phosphor. When CRT sends electrons on the screen it starts shining.

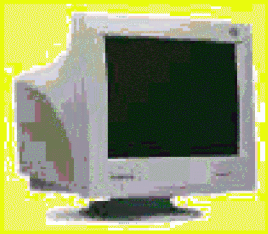


Diagram 2.21 CRT Monitor

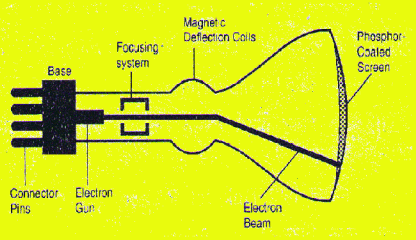


Diagram 2.22 Cathode Ray Tube

Any image on the screen is made up of tiny dots called pixels. Every pixel shines with a beam of electrons. These pixels shine and darken repeatedly and this is known as Refresh. Refresh rate is 30 times a second. When the refresh rate is low the picture keeps on moving and waving because phosphor molecules lose their glow rapidly. The shine of every pixel depends on the intensity of the electron beams and its intensity depends on the voltage of electron gun.

In a monochrome, i.e. black and white monitor, there is a single electron gun while there are three electron guns in a colored monitor to scan dots or stripes of red, green and blue color. On the screen of color CRT system three phosphor molecules coat a pixel. As a result a pixel can produce three colors with a beam of electrons. Besides red, green and blue other colors and their shades are produced by increasing and decreasing the intensity of the beam of electrons. The number of pixels in per square inch of monitor is called resolution of monitor. Resolution signifies the quality of image on the screen. The more the pixels on the screen the better the resolution. In other words the image will be clear and sound.

Diagram 2.23 LCD Monitor

Flat Panel Display Monitor (FPD)

They are based on new technology. In these monitors charged chemicals and gases are stuffed between two specially treated sheets of glass. These thin display devices are called flat panel Display F.P.D. monitors are flat, light in weight and consume less electricity. But they are expensive and have low resolution. They are mainly used in laptop computers.

F.P.D. Monitors are of three types:

1. Liquid Crystal Display Monitors (LCD)

2. Gas Plasma Display Monitor (GPD)

3. Electroluminescent Display Monitor (ELD)

LCD Monitor has low resolution and the display on the screen is of poor quality. GPD and ELD have greater resolution compared to LCD but they are far too expensive.

Printers:

Printer presents output by printing on the page. The copy of printed output on the page is called hard copy. Printer accepts digital information and converts them into human language and prints fast on the page and we can read it.

Printers can be broadly divided into two categories.

1. Impact Printers

2. Non-Impact Printers

Impact Printers

In these printers there is a small metal hammer or print head which strikes ink ribbon when print head strikes the ribbon the characters present on the print head get printed on the paper. The printers in this category are:

Dot matrix Printer (DMP): In DMP, the printer head comprises of several pins called matrix. The pins strike the paper through an inked ribbon and print a pattern of tiny dots and several dots together make a character. In the print head there is vertical set of 7, 9, 14, 18 or 24 pins. The more the number of pins, the better is the print quality. The characters keep on getting printed in a successive manner.

The speed of DMP is from 30 to 600 characters per second. There is no solid font in them and so they can print characters of different sizes, kinds and languages. Graphics, Charts etc can also be prepared with them. But the clarity of printing is less than that of solid font printers. These printers can print from left to right and from right to left. The printing cost is low so they are mostly used in printing.

Diagram 2.24 Dot Matrix Printer

Daisy Wheel Printers: This printer gives a cleaner output than that of Dot Matrix Printer. It is a printer with solid font. Its print head is made up of plastic and is wheel shaped. Its print head resembles a daisy flower and hence the printer is called daisy-wheel printer. The wheel has many spokes like the petals of flower. On each spoke the solid font of each character appears.

The hub rotates at a high speed horizontally and a hammer strikes the appropriate character when it is in position the font is printed on the page. There is a ribbon between the hub and the paper. Daisy wheel printer is a slow speed printer. Its speed is 90 characters per second. But the output quality is of high class. So it is used in typing letters and this printer is called letter quality printer. With this printer only those characters can be printed which are available on its printer head. It cannot print graphics etc. its cost of printing per page is comparatively high.

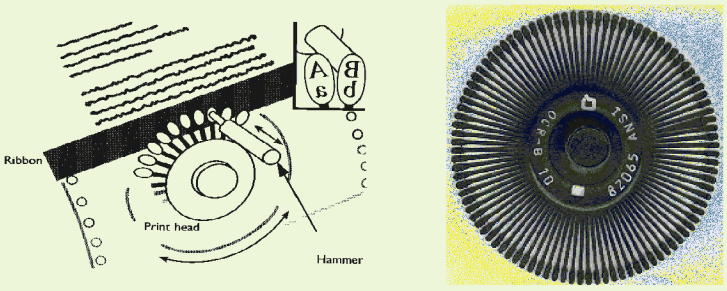


Diagram 2.25 Daisy Wheel Printer

Chain Printer: This printer consists of a chain made of metal which rotates at a fixed speed and it is called print chain. There are characters on chain. There is a font of character in each link of chain.

This chain rotates horizontally and the paper moves vertically to chain. The hammer strikes and the character gets printed on the page with this printer the entire line is printed at the same time. It is a high quality printer. Its printing speed is 300 to 3000 lines per minute.

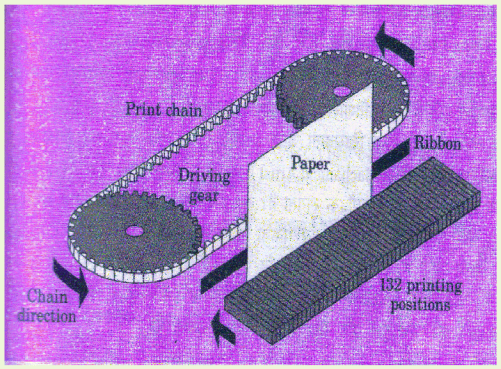


Diagram 2.26 Chain Printer

Drum Printer: This printer consists of a cylindrical drum on which characters are embossed. The drum moves fast and the hammer strikes the character and it gets printed

on the page. With one rotation of the drum a line is printed. This is also a printer with a high quality.

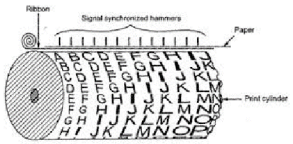


Diagram 2.27 Drum Printer

Non-Impact Printers

Non-impact printers use chemical, thermal or electronic technologies to form characters. There is no contact between printer head and paper. The quality of printing by these printers is very high. But these printers can print only one copy at a time and special and expensive software is required for this. Non-impact printers are of various types. Here three types of Non-impact printers are being discussed.

Inkjet Printer:

This printer consists of a printer head which contains of a nozzle with tiny holes and liquid ink is sprayed with nozzle on to paper and characters and images are printed on the paper. In this printer high density ink is used and it is stored in a special pack called cartridge. That the ink droplets fall on the right place on paper for this nozzle is instructed with electrode. The output of this printer gives out a clear and high quality print out because a character is made up of several dots. The print quality is 300 to 600 dots per inch (DPI). Nowadays inkjet printers with more than one printing heads are available with which printing in different colours can be done.

Diagram 2.28 Ink Jet Printer

In the beginning inkjet printers were highly expensive but nowadays their costs have come down. Their main problem is ink clogging of nozzles. Their printing cost is also comparatively high.

Laser Printer

This is the most developed computer of today. It is based on laser beam. To print a character laser beam is put on it. Toner, a special ink powder, is used to print a character. Laser printers are expensive but they are capable of performing high quality printing at a fast speed and they are the most popular nowadays. Colored laser printers give a high quality colored output. They consist of toner which has particles of different colors. These printers can print output on some plastic sheet or any other sheet.

Diagram 2.29 Laser Printer

Plotter

Plotter is used to print large map, chart, three dimensional line diagram, Design and electronic circuits. It is an output device by which we can print the graphics. It is used to make Banner, Poster.

Generally Plotter are two types. Drum Pen Plotter and Flat Bed Plotter.

Diagram 2.30 Plotter

Speaker

Speaker is an output device which converts digital signals received from computer into voice signals. Speaker is very much useful for multimedia applications. It is very useful for distribution of voice. It is mainly used in seminar and Meetings.

Diagram 2.31 Speaker

Multimedia Projector

Multimedia projector is used to show the computer screen figures and activities on large screen. So group of people can see easily.

It is used for multimedia presentation. Nowadays it is mainly using in field of education.

Diagram 2.32 Multi Media Projector

Important Points

1. Input devices are used by the user to feed data, information and instructions in the computer.
2. Key-board is the most widely used device. It is the improved version of typewriter.
3. Mouse is one of the most important devices to operate and control computer. Mouse is shaped like a mouse hence called mouse.
4. Mouse pointer or cursor is an arrow like device to show the monitoring of computer.
5. Joystick is used to move graphics or diagrams on screen. It is mainly used in computer games.

6. Light pen is used to directly write on the computer screen. It is used to draw graphics and for computer aided designs.
7. Output devices are those means which present the result to the user after processing the data,information and instructions from the user.
8. Monitors are of two types: 1. CRT Monitor 2. FPD Monitor
9. Printers are generally of two types: 1. Impact Printers 2. Non-Impact Printers
10. The examples of Non-Impact Printers are: 1. Dot-Matrix Printer 2. Daisy Wheel Printer 3. Chain Printer 4. Band Printer 5. Drum Printer
11. The examples of Non-impact Printers are: 1. Thermal Printer 2. Inkjet Printer 3. Laser Printer
12. Data, information, programs etc are stored for present and future use.
13. Memory is primary storage device.
14. Magnetic tape, Magnetic Disk, Hard Disk, Floppy Disk, CD Rom are secondary storage devices.

Exercise

Multiple choice questions

1. Numeric key pad is mainly used for-

   (A) Text processing (B) Graphic work

   (C) Banking works (D) All of the above

2. Mouse is:

   (A) Input device (B) Output device

   (C) Storage device (D) None of the above

3. Typematic rate is:

   (A) 20 times per second (B) 10 times per second

   (C) 5 times per second (D) 1 time per second

4. Output printed on some page is called:

   (A) Hard copy (B) Soft copy

   (C) Micro copy (D) Floppy

5. The interior surface of CRT is coated with:

   (A) Calcium material (B) Phosphor material

   (C) Crystal material (D) Iron-oxide

6. The technique of computer similar to that of type writer is:

(A) Typematic printing (B) Impact printing

(C) Non-Impact printing (D) Laser printing

7. Drum printer is a:

(A) Character printer (B) Line printer

(C) CD Rom (D) Magnetic tape

8. Primary storage medium is:

(A) Hard disk (B) Memory

(C) CD Rom (D) Magnetic Tape

9. Optical technology is used in:

(A) Hard disk (B) Floppy disk

(C) Inkjet printer (D) CD Rom

10. General storage capacity of micro floppy is:

(A) 1.2 MB (B) 650 MB

(C) 1.44 MB (D) 2.8 MB

Very short type questions

1. Who reads and writes data on disk?
2. What are the small dots on the screen of monitor called?
3. What type of printer does Dot Matrix represent?
4. What is the hole in floppy disk and its envelope called?
5. What is the radius of micro floppy?
6. How many type of memory?
7. What is the work of Monitor?
8. Write the name of two input and two output devices.
9. Which principal is used in laser printing?
10. What is the use of projector?

Short type questions

1. Explain the differences between hard copy and soft copy.
2. What is the technique of laser printer?
3. Explain the differences between Impact printers and Non-impact printers.
4. What are the different uses of mouse?
5. Write the functions of Joystick and Light pen.
6. How many type of Plotter? Give names.

Essay type questions

1. Illustrate the functioning of Dot Matrix printers with the help of a diagram.
2. What are the different types of monitors? Illustrate each with help of diagram.
3. Illustrate the structure and functioning of Hard Disk with a diagram.
4. What is CD Rom? Describe its functioning and uses.
5. Explain the types of Printer and working principal of each.