PRINTERS TYPES OF PRINTERS AND WORKING PART 2

1. A printer is a hardware output device
2. It is used to generate hard copy and print any document
3. The document may be a text file, characteristics and image
4. It accepts input command given by users on a computer
5. It can take order from remote devices as well

HOW PRINTERS WORKS

1. Printers work by converting digital images and text into physical copies
2. They uses a driver or specialized software that designed to convert the source file into a language that the printer can understand
3. The image or text is then recreated on to the page using a series of miniscule dots or spray pattern
4. In one time one line is created and then then the next line is printed
5. The speed is very fast like couple of seconds
6. Then the printed object make dried by passing little heat or hot air
7. Printing time is depends on the type of printer and data

Printers can be classified into two categories as per given below:

2D Printers

3D printers

The 2D printers are used to print text and graphics on a paper

The 3D printers are used to create three dimensional physical objects

TYPES OF 2D PRINTER

1. **Impact**
   2. Non-impact

Impact:

In this the inked ribbon is physically pressed by mechanism against the page. The mechanism create hammering in manner that the shape of character or image is plotted on the page. These printers create sound because of their structure and function.

Example: Dot Matrix Printer, Line Printer

Non-impact:

These printers don't use inked ribbon or any pressing mechanism. It uses laser techniques, ink sprays, xerographic processes and electrostatic methods to produce an image on paper.

Example: Laser Printer, Inkjet Printer, Electrostatic Printer, Plotter

TYPES OF NON IMPACT PRINTER

1. Inkjet printer
2. Thermal printer
3. Laser printer

INKJET PRINTERS

1. Inkjet printer is non impact character printer.
2. It uses the dot matrix approach to print to print text and graphics.
3. However the dots are formed by tiny droplets of ink.
4. They print characters by spraying small drops of ink onto paper.
5. For spraying drops nozzles are used.
6. Special type of ink having high iron content is used for forming drops.
7. Droplets of ink are electrically charged after leaving a nozzle when it passes through a valve.
8. The droplets are then guided to the proper position on the paper by electrically charged horizontally and vertically deflection plates.
9. These printers can print 40-300 CPS (character/sec.) and can produce multi-color printouts.

Advantages of Ink jet Printers

1. High quality text and graphics.
2. Produces no noise

Disadvantages of Thermal Printers

1. Its speed is slow than other impact printer and no- impact printers.
2. Its image quality is also lower than other printer [low dpi (dot per inch) , bout 180 dpi].

3. Ink cartridge is costly.

THERMAL PRINTER

1. The printer that produces images by pushing electrically heated pins against special heat – sensitive paper, is known as thermal printer.
2. This type of printer uses a special heat sensitive paper.
3. These papers have a special heat sensitive coating.
4. When a spot on the special paper is heated, it becomes dark.
5. A character is printed with a matrix of dots.
6. The heating element is heated by electric current.
7. We can also say the heat sensitive paper ass chemically treated paper. In this type of printer neither the ink nor the ribbon in involved.
8. To print a character the printing head is moved first to the correct character position. Then the heating elements of desired character are turned on. After a short time they are turned off.
9. There after the print head is moved to the next character. Such printers have a speed of about 200 characters per second.

Advantages of Thermal Printers

1. Low noise
2. Can produce high quality color output.

Disadvantages of Thermal Printers

1. Expensive
2. Slow Speed
3. Required special paper

LASER PRINTERS

1. They print one page at a time thus laser printer is also referred as Page Printer.
2. A laser printer uses electronics, lasers, xerography and other techniques, which is called electro photographic technique.
3. A laser beam is directed across the surface of a light or photosensitive drum.
4. An image is produced, with the use of raster scan principal, in the form of tiny dots.

5. The laser exposed areas attract toner (or ink power).
6. There after the drum transfers the toner to the paper.
7. The paper then moves to a fusing station where the toner is permanently fused on the paper with heat or pressure.
8. After this the drum is discharged and cleaned and ready for processing the next page.

Advantages of Laser Printers

1. Very high speed .
2. Low noise level
3. Low maintenance requirement.
4. Very high quality output on ordinary paper.
5. Good graphics quality (300 dpi to 1200 dpi) and excellent graphics capabilities.
6. Supports many fonts and different character size.
7. Color printing possible

Disadvantages of Laser Printers

1. Very Expensive.
2. Require periodic maintenance.