

Printer

A printer is the primary output device used to get the printed copy or hard copy of work on paper, slides, clothes etc. It is used to prepare lasting documents.

Types of printer

Printers are mainly divided into three groups.

- 1. Serial Printers (Character Printers):** Serial printers print one character at a time moving across the paper, its speeds ranging from 200 to 400 characters per second (cps), which is about 90 to 180 lines per minute (lpm).
- 2. Line Printers:** Line printers print approximately 400 to 2,000 lines per minute (lpm) at a time, and are commonly used in data centers and industrial environments.
- 3. Page Printers:** Page printers print more than 800 pages per minute (ppm) at a time. It is able to print large data.

Printers are of two types according to the manner of printing

(a) Impact Printer: Impact printing devices transfer the image on paper by striking a paper, ribbon and character together. They include dot-matrix printers and daisy-wheel printers.

(i) Dot-matrix Printer: The term dot matrix refers to the process of placing dots to form an image, the quality of the image being determined by the dots per inch (dpi). A dot matrix printer is a type of printer with a print head that runs to and fro, or up and down, on the page and prints by striking an ink-soaked ribbon against the paper. Dot-matrix printers are relatively expensive and do not produce high-quality output. Quality of output is poor because characters are formed by dots. Printing speed ranges from 180cps to, 240cps, 260cps, 300cps and 360 cps.

(ii) Daisy-wheel Printer: It is a printer that uses a printing element, called a daisy wheel or print wheel that consists of a disk with a plastic or metal hub with spokes at the place of the print head. At the end of each spoke is the carved image of a type character. The wheel rotates until the correct character faces the paper, and an image is formed by a hammer striking the character against the paper through an ink-coated ribbon. The

mechanism is then moved to the next location. Daisy-wheel printers are relatively slow. Its printing speed ranges from 180cps to 280cps. Daisy-wheel printers cannot print graphics and images and in general they are noisy and slow.

(b) Non-impact Printer: It is a type of printer that does not operate by striking a head against a ribbon. The term non-impact is important primarily in that it distinguishes quiet printers from noisy (impact) printers. Examples of non-impact printers include laser and ink-jet printers.

(i) Ink jet Printer: It is a non impact character printer for home computer users that prints by spraying streams of quick-drying ink on paper. There are two types of ink jet printer called mono and color. The ink is stored in disposable ink cartridges. Often a separate cartridge is used for each of the major colors. These colors are usually Black, Red/Magenta, Green /Cyan, and Yellow. A jet of special ink is ejected from a fine nozzle and produces images and characters. Although ink jet printers are often relatively inexpensive, the ink cartridges used in the printers increase the overall cost of the printer and also increase the printing cost. The print quality is good and printing speed ranges from 360 dpi to 600 dpi.

(ii) Laser Printer: Laser printer is a fast speed page printer. It is a type of printer that utilizes a laser beam to produce an image on a drum. The light of the laser alters the electrical charge on the drum wherever it hits. The drum is then rolled through a reservoir of toner, which is picked up by the charged portions of the drum. Finally, the toner is transferred to the paper through a combination of heat and pressure. Thus we get the print. There are two types of laser printer e.g. mono and color. Its printing speed and quality is better than those of other printers. Its printing speed ranges from 12 to 20 pages per minute.

(iii) Thermal Printer (Electro Thermal Printer): A thermal printer is a type of printer that uses heated pins to burn images onto coated thermo-chromic paper or thermal paper. When the paper passes over the thermal print head the coating turns black in the areas where it is heated producing an image. These types of printers are commonly used in calculators and fax machines. They produce noiseless high resolution print jobs.