Transcript

Optical Character Reader (OCR)

Scanners are used for inputting text documents, that may be typed or handwritten but they do have limitations. Since the scanned documents are stored as images instead of text, it is not possible to edit the document. and the storage space required to store a document as image is more than that required to store a text file. OCR technology overcomes these limitations.

OCR scanners are equipped with character recognition software which is also called as OCR Software which converts bitmap images of characters to its equivalent ASCII Code.
i.e. the scanner first creates the bitmap image of the document and then OCR software translates the array of grid points into ASCII text that the computer can interpret as letters, numbers or special characters.

Working of OCR Software

To translate bitmaps of characters into its equivalent text,
First, the OCR software examines the bitmap of each character and compares it with the preprogrammed set of characters which the machine can recognize.
The Character pattern that matches is considered as the input character.
If Scanned character does not match with any stored pattern, the OCR software rejects it.

Advantages of OCR

1. Data accuracy i.e. since the data is automatically entered, it results in less errors and inaccuracies. As there is no manpower involved, the issues such as keying in wrong information can be eliminated.
2. Since OCR converts data to text format, it can be easily edited. It helps when there are scanned contents which have to be regularly updated or changed.

Limitations of OCR

As there are unlimited number of fonts and typefaces, it is difficult to make computer to recognize all. hence the OCR softwares enables them to recognize texts written using Standard type fonts.
If the documents contains italics or bold face letters or fonts other than standard fonts, the OCR software may not recognize it.

Optical Mark Reader (OMR)

OMR is a scanner which recognize a pre-specified type of mark made by pencil or pen.
for eg. In objective type test exams, the applicants mark the answers on special preprinted scoring sheet by darkening the areas. This sheets are then fed to the OMR device for grading with a computer automatically.
To recognize the marks on the document, the OMR device focuses a light beam on the document and it detects the reflected light pattern from the marks. Pencil marks or Pen marks reflects the light, which allows the OMR device to determine the marked responses.

Advantages of OMR

1. This technology have good processing speed as in limited information is marked that makes it easy to analyze.
2. Since only a single response sheet is used to obtain the response of a particular candidate that helps in overall cost reduction of conducting an examination.

Limitations for OMR

The input data found may not be accurate if the answers are not properly marked by the applicant. and if so there may be need to check the answer sheets manually.

Output Devices

Output Devices are electronic or electromechanical device connected to a computer that accepts data from Computer and translates them into form suitable for use by users. In other words, it is a system that provides the data processed by the computer and translated into a format that users can understand, appreciate and work with. For e.g. video, text, and image format

The Output generated by output devices are of two types:

1. **Soft Copy Output** -

It is temporary in nature as it does not appear on a paper or a material which can be seen when the user is not using the computer.
for eg. the contents displayed on terminal screen.

2. **Hard Copy Output** -

It is permanent in nature as it appears on paper or a material which can be used when the user is not using the computer.
for eg. output produced on paper by printers and plotters

Output Devices are mainly categorized into 3 which are: Monitors, Printers and Plotters.

1. **Monitor**

Monitor is an output device that visually conveys text, graphics, and video information. they are also known as Softcopy Output Devices as the information displayed exists electronically and is displayed for a temporary period of time.

Monitors are Categorized into two :

1. **Cathode Ray Tube (CRT)**
2. **Flat - Panel Display (LCD, LED)**

1. Cathode Ray Tube (CRT)

It consists of an electron gun that shoots against phosphor particles to create a picture and are used with non-portable computer system.

2. **Flat Panel Display** (Like LCD's , LED's)

Flat panel monitors are made up of two plates of glass separated by a layer of a substance in which light is manipulated. they are thinner, lighter and are used commonly with portable and non portable computer system. They consume less power.