



Lecture 2

الدكتور المهندس محمد سامي محمد

كلية التربية للعلوم الصرفة

قسم علوم الحاسبات

جامعة ديالى

2021-2020

تقنيات وتركيب الحاسوب – المرحلة الاولى



Organization Of the Computer System

- 1- Input Devices or Input Units
- 2- Output Devices or Output Units
- 3- Storage Units (Memory)
- 4- Central Process Unit



OUTPUT DEVICE

The output devices of the computer are used to display results in electronic or paper medium.

Common output devices which produce output that is easily understood are Printers and Monitors.

Hardcopy Output : They are usually on paper and are generally used to produce reports. The devices which are used to produce hardcopy output are printers, graph plotters, computer output microfilm, etc.

Softcopy Output : Such outputs are electronic, thus they are available either on screen or may be stored digitally on some storage device. The softcopy may be directly seen on screen or may be stored on hard disk/ CD/ DVD for further use.

Other output devices used for specific purposes are Projector, Sound card, Speakers and Video card.

Printers

A printer is an output device that prints characters, images and symbols on paper. On the basis of the printing technique used, printers may be classified as impact or non-impact printers.

Differences Between Impact & Non-Impact Printers

Impact Printer



VS

Non Impact Printer



Impact printers

Impact printers are like typewriters, as they use some sort of striking/hammering action to press carbon or fabric ribbon against paper to create a character or a pattern.

These devices are noisy and are not capable of producing high resolution graphics.

The most common impact printers are character printers (e.g. daisy wheel, dot matrix) and line printers (e.g. chain printers, drum printers). Among impact printers, line printers print one line at a time, so, these printers are extremely fast.

Impact printers are ideal to be used for carbon copies.

Dot-matrix Printers

Non-impact printers

Non-impact printers overcome the limitations of impact printers.

They form characters or images without making print heads strike the paper.

They use thermal, electrostatic, chemical or inkjet technology to produce printed output.

They are fast and quiet in operation.

The most common non-impact printers are inkjet printers and laser printers.

These printers can come in two categories, one produces output with only one colour (i.e. black colour) and the other one produces output in multicolour.

Inkjet Printers



Laser Printers

Laser Printers (Non-Impact Printer)

Laser printers produce high quality paper prints at a high speed (with an average speed as 6 to 12 pages per minute).

They are almost noiseless and use dry magnetic ink technology.

Plotter



A plotter (also known as a graph plotter) is an output device, which produces high quality diagrams on paper. Colour pens are used to draw lines on the paper which is placed in the plotter.

Some plotters have a flat area (plotter base) to put the paper on. These are known as flatbed plotters. There is another type of plotters, the roller plotter which uses a large roll of paper mounted on a roller. Usually a plotter is capable of producing prints on very large size paper sheets but have a speed slower than printers. Graph plotters are used for drawing building plans, graphs and three-dimensional drawings. They are often used by architects and engineers designing machines, bridges, etc.



Comparison between Impact printers and Non-Impact printers

Impact Printers

Work like typewriter and use striking/hammering action.

Print in black or single colour.

Are noisy.

High resolution graphics cannot be produced

Examples: Dot Matrix Printer,

Non-Impact Printers

They use thermal, electrostatic chemical and inkjet technologies.

Produce single colour/multicolour output.

Almost noiseless.

High resolution graphics can be produced

Laser and Inkjet

Softcopy Output Display Devices

Video Display System provides a visual link between the user and the computer. The video subsystem of a PC consists of two main components:

- (a) Monitor and
- (b) Video adapter (also called video card or graphic adapter)

monitor is a display device which can produce text and graphic as output.

A monitor may use different display technologies like a Cathode Ray Tube (CRT) and Liquid Crystal Display (LCD).

CRT contains a vacuum tube which is used for display on screen in a computer.

LCD is a technology in which molecules of a liquid crystal line up in such a manner that it creates images on the screen by blocking or transmitting light on the screen.

Audio Response Unit

As a voice recognition system allows the user to talk to a computer, a voice response system permits a computer to talk back to the user. Many organizations use audio response systems to respond to human inquiries that are transmitted over telephone lines to the central computer.

Voice output is useful for people who are partially sighted.

The computer can read word processed documents and communicate by sound output from the computer. Voice output is also useful for those who are physically handicapped and cannot speak.

By typing on a keyboard they are able to communicate using the spoken word. Directory enquiries at Telecom Services use voice output to tell the caller the number that the computer system has found. Voice output is also used in multimedia presentations and provides a valuable means of communication.