

**Tikrit University**

**College of Computer Sciences & Mathematics**

**Computer Science Department**



***Computer Organization***

***First Stage  
Lecture -7***

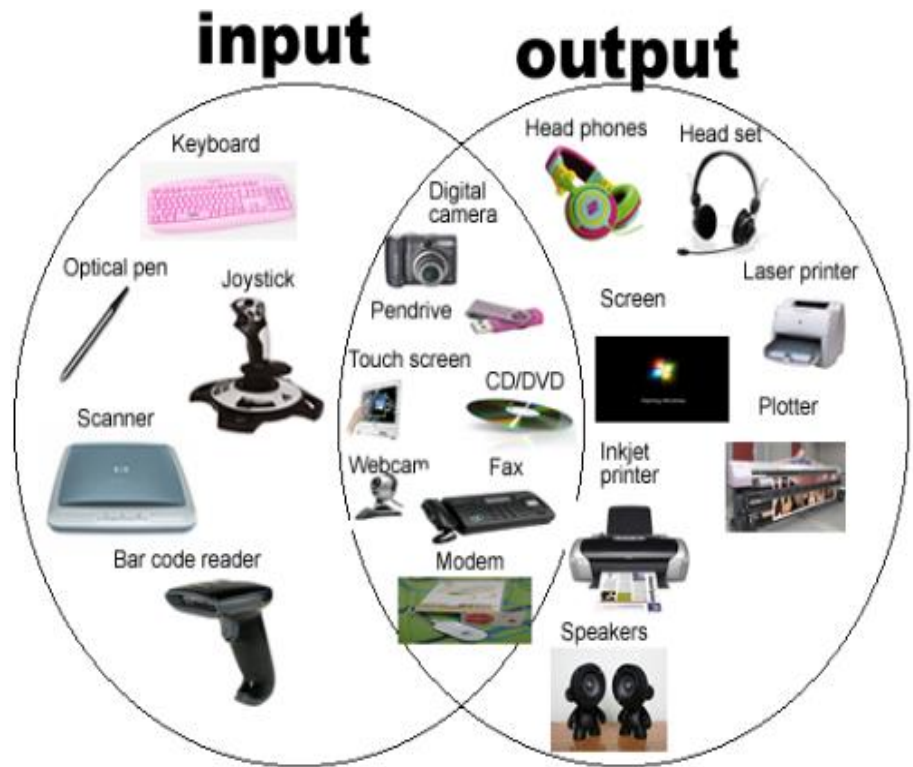
***Lecturer  
Nayif Mohammed***



# External Hardware Computer Components

External computer components connect to a computer system from **OUTSIDE**. They are not necessary for the system to function but make our experiences easier or better. We will discuss the following:

- **Input Devices** : used to get data into a computer.
- **Output Devices** : used to get information out of a computer





# Output Devices

- An **output device** is any peripheral device that receives data from a computer, usually for display, projection, or physical output.
- Following are few of the important output devices which are used in a computer.

➤ **Monitor**



Monitor

➤ **Printer**



Printer

➤ **Projector**



Speakers

➤ **Speakers**

➤ **Head Set (headphone)**



Head Set

➤ **Plotter**



Projector



Plotter



# 1 Monitor

- Monitors, commonly called as Visual Display Unit (VDU), are the main output device of a computer. It forms images from tiny dots, called pixels that are arranged in a rectangular form. The sharpness of the image depends upon the number of pixels .
- There are two kinds of viewing screen used for monitors.
  - **Cathode-Ray Tube (CRT)**
  - **Flat- Panel Display**





# 2 Printer



INKJET PRINTER



PHOTO PRINTER



LASERJET PRINTER



MULTI FUNCTION PRINTER

- A **printer** is an external hardware output device responsible for taking electronic data stored on a computer or computing device and generating a hard copy of that data.
- Printers are one of the most commonly used peripherals on computers and are commonly used to print text and photos.



# 3 Projector

● The projector is an output device that can take images generated by a computer and reproduce them on a large, flat (usually lightly colored) surface.

● For example, you could connect a projector to a computer using an HDMI cable to show a presentation in a meeting so that everyone in the room can see your presentation.





# 4 Speakers

- A **speaker** is a term used to describe the user who is giving vocal commands to a software program.
- A hardware device connected to a computer's sound card that outputs sound generated by the computer.
- Because computer sound cards are not powerful enough to power a nice set of speakers, today's speakers are self-powered and small in size.





# 5 Headphones

- Sometimes referred to as **earphones** or **head set**.
- **Headphones** are a hardware device that either plugs into your computer ( line out ) or your speakers to privately listen to audio without disturbing anyone else.







# 6 Plotter

- ◆ A **plotter** is a computer hardware device much like a printer that is used for high print quality.
- ◆ Instead of toner, plotters use a pen, pencil, marker, or another writing tool to print a very large pictures , maps, etc.
- ◆ Plotters can also produce very large and accurate documents such blueprints (plans) for buildings.

