What is 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 popular computer peripherals and are commonly used to print text and photos.

There are two type of printer:-

1. **Impact printer.** It Produces text and images when tiny wire pins on print head strike the ink ribbon by physically contacting the paper. Dot matrix is an example of Impact Printer. A dot-matrix printer contains a print head of small pins that strike an inked ribbon, forming characters or images. Print heads are available with 9, 18, or 24 pins; the 24-pin head offers the best print quality.

   Example: Dot Matrix Printers and Daisy Wheel etc.

2. **Nonimpact printer:** It is faster and quieter than impact printers because they have fewer moving parts. Nonimpact printers form characters and images without direct physical contact between the printing mechanism and the paper.

   Example: Laser Printer, Ink Jet Printer, Plotters etc.

Q. Give the classification of computers.

Classification of Computer:

Computers are classified according to their structure, data processing speed and memory size etc. computers are classified into following four main groups.

1. **Super Computer. 2. Mainframe Computer 3.Mini Computer 4.Micro Computer**.

1. Supercomputer: It is the most powerful, fastest, very expensive and big computer. Generally, it is use to process large amount of data and to solve the complicated scientific problems. It can perform more than one trillion calculations per second. It has large number of main memory, secondary memory and processors. In a single supercomputer thousands of users can be connected at the same time and the supercomputer handles the work of each user separately. India's first Supercomputer was PARAM 8000 was introduced in 1991. Generally it is used in weather forecasting, designing, aircrafts, design of drugs and modeling etc

2. Mainframe Computers: It is also powerful computer and process large amount of data. It has less memory and processor compare to supercomputer. The mainframe computers are specially used as servers on the World Wide Web. The mainframe computers are used in large organizations such as Airlines, Universities, Banks, insurance company's process large number of transactions on-line. These are a few manufacturers of mainframes (e.g., IBM and Hitachi). These computers are much bigger and faster than microcomputer and minicomputer.

3. Minicomputers: These computers are small in size and provide less processing speed compare to mainframe and super computer. These computers are also known as midrange computers because it is cheaper compare to other computer. The minicomputers are used in business, education and many other government departments. Minicomputers are commonly used as servers in network environment and hundreds of personal computers can be connected to the network with a minicomputer acting as server like mainframes, minicomputers are used as web servers.

4. Microcomputer: The microcomputers are also known as personal computers or simply PCs. Microprocessor is used in this type of computer. These are very small in size and cheaper than other computer. These computers are generally divided into desktop models and laptop models. The IBM's first microcomputer was designed in 1981 and was named as IBM-PC.

Types of Computer:
1. **Digital computers:** The Digital computers work on the principle of binary digit "0" and "1". Each one is called a bit. These systems are more accurate and faster than other. Digital computers are suitable for complex computation and have higher processing speeds. Generally it is used in the field of design, research and data processing.

2. **Analog computer:** Analog Computer is a computing device that works on continuous range of data such as voltage, air pressure, temperature, speed etc. Analog computer calculates the result by measuring the continuous changes in these quantities. Analog computers do not require any storage capability because they measure and compare quantities in a single operation.
   Examples : Speed meter, air pressure measurement devices, rain gauge etc.
   Speedometer of a car measure speed in terms of km/h and the change in temperature is measured by a thermometer in degrees.

3. **Hybrid computers:** A hybrid computer combines the desirable features of analog and digital computers. It is mostly used for automatic operations of complicated physical processes and machines. Now-a-days analog-to-digital and digital-to-analog converters are used for transforming the data into suitable form. Hybrid computers are mainly used for specialized tasks i.e Weather forecasting, Air Defense, Radar Controlling systems and Digital petrol pump etc.

Q. What is the Concept of data processing?

Answer: Manipulation of input to obtain desired output as an audio/video, graphic, numeric, or text data file is known as data processing. For example, a production system accepts raw material as input and produces finished goods as output. Similarly, a data processing system can be viewed as a system that uses data as input and processes this data to produce information as output.

INPUT → PROCESSING → OUTPUT
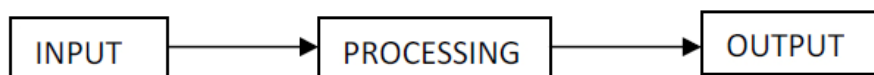
Q. What do you mean by Data Communication Channels? Discuss different channels with their features.

To exchange the **data** from one device to another device through the help of different media/wire is known as Data Communication Channels. There are two types of media i.e. Cable (twisted-pair wire, coaxial cable, and fiber - optic cable) and Broadcast (satellite, radio, and infrared).

COAXIAL CABLE
braided shield, foil shield, center conductor, outer jacket, dielectric

Different types of Communication channels:

1. **Coaxial cable**: *Coaxial cable* is the kind of copper cable used by cable TV companies between the antenna and user homes and businesses.

2. **Twisted-pair wire:** Generally it is use in network to connect more than one computer. There are two types of twisted –pair wire i.e. STP (Shielded **Twisted Pair)** and UTP(Unshielded **Twisted Pair)**
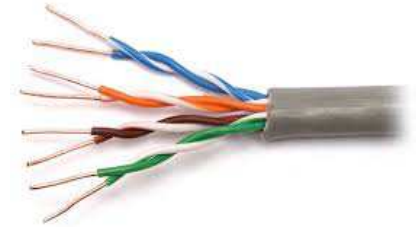
3. **Fiber-optic cable:** A **fiber optic cable** is cable that contains optical fibers (usually glass) coated in plastic which are used to send data by pulses of   light. The coating helps protect the fibers from heat, cold, electromagnetic interference from other types of wiring, as well as some protection from ultraviolet rays from the sun. Fiber optics allow for a much faster data transmission than standard copper wires, due to the fact that they have a much higher bandwidth. They are common amongst corporate networks or world-wide networks such as Internet backbones because of the capabilities of the cable.