

Q1. Briefly describe the characteristic features of input and output devices of a computer system.

Answer-> Characteristic of input and output devices of a computer system:

Input Devices: An input device is hardware of computer system. It allows users to communicate and feed instructions and data to computers for processing, display, storage etc.

Examples of input devices:

1. **Keyboard:** It is an important input device that allows a person to enter symbols like letters and numbers into a computer. The message typed on the keyboard reaches the memory unit of a computer. It's connected to a computer via a cable. Apart from alphabet and numeral keys, it has other function keys for performing different functions.
2. **Mouse:** It's a pointing device. The mouse is rolled over the mouse pad, which controls the movement of the cursor in the screen. We can click, double click or drag the mouse. Most of the mouse has a ball, which rotates when the mouse moves.
3. **Scanner:** Scanners are used to enter information directly in to the computer's memory. This device works like a Xerox machine. The scanner converts any type of printed or written information including photographs into digital pulses, which can be manipulated by the computer.
4. **Light Pen:** This is an input device which is used to draw lines or figures on a computer screen.
5. **Bar Code Reader:** This device reads bar codes and converts them into electric pulses to be processed by a computer. A bar code is nothing but data coded in form of light and dark bars.
6. **Optical Character Rader:** It's a device which detects alpha numeric characters printed or written on a paper. The text which is to be scanned is illuminated by a low frequency light source.
7. **Microphone:** A micro phone is used to convert human speech into electric signals. It allows computer users to input audio into their computers.
8. **Digital Camera:** It converts graphics directly into digital form. It looks like an ordinary camera, but no film is used therein, instead a CCD (changed coupled Divide) Electronic chip in used. When light comes, on the chip though the lens, it converts light waves into electrical waves.

Output Device: An **output device** is any hardware/peripheral that displays output from a computer.

1. **Monitor:** The monitor is computer hardware that displays the video and graphics information generated by the computer through the help of video card. Monitors are very similar to televisions but usually display information at a much higher resolution.
2. **Printer:** A **printer** is an external hardware responsible for taking computer data and generating a hard copy of that data. Printers are commonly used to print text, images, and photos.
3. **Speaker:** The purpose of speakers is to produce audio (output) with the help of sound card that can be heard by the listener which is generated by the computer.
4. **Plotter:** It is a computer hardware device similar to a printer that uses a pen, pencil, marker or other writing tool to make a design. Often these printers are used in flex printing, CAD, and other print jobs.
5. **Projector:** It takes the display of a computer screen and project a large version of it onto a flat surface. Projectors are often used in meetings and presentations to help make sure everyone in the room can view the presentation.

Q. What is Memory?

Memory is an internal storage space in computer that holds the data and information for processing. The CPU accesses the data from the memory in random manner. A memory is just like a human brain. It is used to store data and instructions.

Different types of memory:

- A. **Primary Memory:** Random access memory (RAM) and Read Only Memory (ROM) is known as Primary memory also known as main memory. Every computer comes with a small amount of ROM, which contains the boot firmware (Called BIOS). This holds just enough information so that the computer can check its hardware and load its operating system into RAM.

Types of Primary Memory:

1. **RAM (Random Access Memory):** - The term RAM refers to read and write memory, i.e. you can write data into RAM and read data from RAM. RAM is the place where the computer temporarily stores its operating system, application programs, and current data so that the computer's processor can reach quickly and easily. It is volatile in nature, it means when power is turn off, all will be lost from RAM so it is known as temporary memory.

Different Types of RAM:

SRAM (Static Random Access Memory)

DRAM (Dynamic Random Access Memory)

2. **ROM (Read Only Memory):-**

It stands for Read Only Memory, which contains the boot firmware (Called BIOS). This holds just enough information so that the computer can check its hardware and load its operating system into RAM. It is Non-Volatile in nature it means when power is turn off all data remains in ROM. We cannot write and edit any data of ROM because it is read only.

Ex. PROM, EPROM, EEPROM etc.

- B. **Secondary Memory:** It provides large memory capacity compare to primary memory. Instructions and data stored in this storage device are permanent in nature. The programs & data that are required to be used again & again are kept in secondary memory. It is also known as auxiliary memory.

Example: Hard disk, Floppy disk, Magnetic tapes, Pen Drive, CD, DVD etc.

Cache Memory: Cache memory is a small amount of high-speed memory that is used to hold the most recently accessed data residing on to the CPU. It supplies the most frequently requested data and instructions to the processor. The idea is that frequently accessed data will stay in cache, which allows the CPU to access it more quickly, which means it doesn't have to wait for the data to arrive.

Memory Measurement units:

Unit	Equivalent
1 bit	0 or 1
1byte	8 bits
1024 bytes	1Kilobyte(KB)
1024KB	1 Megabyte (MB)
1024MB	1 Gigabyte (GB)
1024 GB	1 Terabyte (TB)
1024 TB	1Petabyte (PB)

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.

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. Write short notes.

- a. Registers b. Interpreters d. Ethernet e. Server
- f. Graphical User Interface g. Compilers

Answer:

a. Registers: Register are used to quickly accept, store, and transfer data and instructions that are being used immediately by the CPU, there are various types of Registers those are used for various purpose.

b. Interpreters: It is a computer program, which works as like a translator or convertor. Generally it is use to convert high level language to machine level language and vice versa because computer understands only machine level language. It converts instruction line by line so it is slower than other translator.

c. Ethernet: Ethernet is one of the most common computer-networking components, which is use to connect more than one computer with the help of switch/hub.

d. Server: A server is a computer (software and suitable computer hardware) that controls and provides the several services to the computer which is in network. Server performs some tasks on behalf of clients.

e. Graphical User Interface (GUI): It is type of interface that allow user to interact with computer in different ways. A GUI uses windows, icons, and menus to carry out commands such as opening files, deleting files, and moving files.

f. Compilers: It is a program that translates a computer program which is written in High Level Language to Machine Level Language and vice versa. It translates entire instructions at a time so it is faster than interpreter.

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

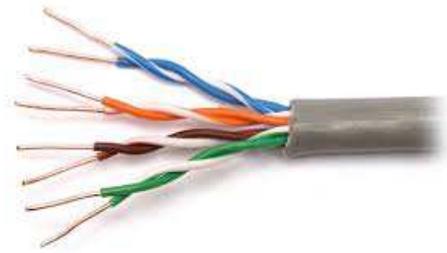
Answer: To exchange the **data** from one device to another device through the help of different media/wire is known as Data Communication Channels. There are two types of media i.e. Cable (twisted-pair wire, coaxial cable, and fiber-optic cable) and Broadcast (satellite, radio, and infrared).

Different types of 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.



Q. What are Window and Windows 95?

Window: window is a rectangular area showing an application, document, contents of a folder or a dialog box when you start computer. You can open several windows at the same time. Example: a Spreadsheet program, Word or Presentation program. A window can be minimized, maximized, resized, closed and moved around the screen. For example, the browser window that you are using to view this web page is a **window**. Windows allow a user to work with multiple programs or view multiple programs at once.

Windows 95 (codenamed Chicago) is a consumer-oriented graphical user interface-based operating system that tells the computer what to do and control the entire computer's performance. It creates an interface between computer hardware and user. It was released on August 24, 1995 by Microsoft Company.