

## Input and Output Devices

Q1 What are input devices?

Ans: – Those devices through which we can input data inside computer system are called input devices. These devices first accept or obtain data from user then convert that data into computer understandable language (high level language into machine level language such technique known as Encoding) then input that data inside computer system.

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Q2 Explain the different input devices.

Ans: – Following are some of the important input devices which are used in a computer –

- 1) **Keyboard:** – Keyboard is the most common and very popular input device which helps to input text or numeric type data to the computer. The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing additional functions. Keyboards are of two sizes 84 keys or 101/102 keys, but now keyboards with 104 keys or 108 keys are also available.
- 2) **Mouse:** – Mouse is the most popular pointing input device. It is a very famous cursor-control device, which senses the movement of the mouse and sends corresponding signals to the CPU when the mouse buttons are pressed. Generally, it has two buttons called the left and the right button and a wheel is present between the buttons. A mouse can be used to control the position of the cursor on the screen.
- 3) **Joy Stick:** – Joystick is pointing device, which is used to move the cursor position on a monitor screen. It is mainly used in Computer Aided Designing (CAD) and playing computer games.
- 4) **Light Pen:** – Light pen is a pointing device similar to a pen. It is used to select a displayed menu item or draw pictures on the monitor screen.

When the tip of a light pen is moved over the monitor screen and the pen button is pressed, its photocell sensing element detects the screen location and sends the corresponding signal to the CPU.

- 5) **Track Ball:** – Track ball is an input device that is mostly used in notebook or laptop computer, instead of a mouse.
- 6) **Scanner:** – Scanner is an input device, which works more like a photocopy machine. It is used when some information is available on paper and it is to be transferred to the hard disk of the computer for further manipulation.
- 7) **Digitizer:** – Digitizer is an input device which converts analog information into digital form. Digitizer can convert a signal from the television or camera into a series of numbers that could be stored in a computer. Digitizer is also known as Pen Tablet or Graphics Tablet.
- 8) **Microphone:** – Microphone is an input device to input sound. The microphone is used for various applications such as adding sound to a multimedia presentation or for mixing music.
- 9) **Magnetic Ink Character Reader (MICR):** – MICR input device is generally used in banks as there are large number of cheques to be processed every day. The bank's code number and cheque number are printed on the cheques with a special type of ink that contains particles of magnetic material that are machine readable.
- 10) **Optical Character Reader (OCR):** – OCR scans the text optically, character by character, converts them into a machine readable code, and stores the text on the system memory.
- 11) **Bar Code Reader:** – Bar Code Reader is a device used for reading bar coded data (data in the form of light and dark lines). Bar Code Reader scans a bar code image, converts it into an alphanumeric value, which is then input inside computer that the bar code reader is connected to.
- 12) **Optical Mark Reader (OMR):** – OMR is a special type of optical scanner used to recognize the type of mark made by pen or pencil. It is used where one out of a few alternatives is to be selected and marked. It is specially used for checking the answer sheets of examinations having multiple choice questions.

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Q3 Name the different pointing input devices.

Ans: – Mouse, Light Pen, Joy Stick

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Q4 What are output devices?

Ans: – Those devices through which we can obtain result from computer system are called output devices. These devices first accept or obtain data from computer system then convert that data into human understandable language (machine level language into high level language such as technique known as Decoding) then provide that result to the user.

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Q5 Explain the different output devices.

Ans: – Following are some of the important output devices which are used in a computer –

- 1) **Monitor:** – Monitor commonly called as Visual Display Unit (VDU). It is the most commonly used output device used to display results of processing. 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. It provides softcopy output.
- 2) **Printer:** – Printers are used to produce hard copy output. They print processing results on paper. Printers are divided into two main categories –
  - i) Impact Printer
  - ii) Non-Impact Printer
- 3) **Speaker and Headsets:** – Speakers and headsets produce sound output. We can listen recorded voices, sounds or music with the help of speaker or headset. Speaker produces sound output with the help of sound card.
- 4) **Plotter:** – A plotter is an output device used to produce image-quality graphics in a variety of colors. Plotters are used to print large maps, architectural drawings, graphs and charts.
- 5) **Multimedia Projector:** – Multimedia projector is used to produce computer output on a big screen. These are used in meeting rooms or in classrooms of educational institutes.

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Q6 What is output? Explain its different types.

Ans: – That result which is obtained through output devices after processing from computer system is known as output. Output may be two types –

- 1) **Softcopy Output:** – That output which can be changed easily whenever required known as Softcopy Output. For example output obtained through Monitor or Projector is known as Softcopy Output.
- 2) **Hardcopy Output:** – That output which can't be changed easily whenever required known as Hardcopy Output. For example output obtained through Printer or Plotter is known as Hardcopy Output.

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Q7 Explain different types of Printers.

Ans: – Printers are of two types –

- 1) **Impact Printer:** – When printing head and paper physically touch each other such types of printers are called Impact Printers. These printers are of two types –
  - a) **Character Printer:** – Character printers are the printers which print one character at a time. These are further divided into two parts –
    - i) **Dot Matrix Printer (DMP):** – In the market, one of the most popular printers is Dot Matrix Printer. These printers are popular because of their ease of printing and economical price. Each character printed is in the form of pattern of dots.
    - ii) **Daisy Wheel Printer:** – Head is lying on a wheel and pins corresponding to characters are like petals of Daisy (flower) that's why it is called Daisy Wheel Printer. These printers are generally used for word-processing in offices.

b) **Line Printer:** – Line printers are the printers which print one line at a time. These printers are also divided into two parts –

i) **Drum Printer:** – This printer is like a drum in shape hence it is called drum printer. The surface of the drum is divided into a number of tracks. Total tracks are equal to the size of the paper. One rotation of drum prints one line. Drum printers are fast in speed and can print 300 to 2000 lines per minute.

ii) **Chain Printer:** – In this printer, a chain of character sets is used; hence it is called Chain Printer. A standard character set may have 48, 64, or 96 characters.

2) **Non-Impact Printer:** – When printing head and paper physically not touches each other such types of printers are called Non-Impact Printers. These printers print a complete page at a time, thus they are also called as Page. These printers are of following types –

a) **Inkjet Printer:** – Inkjet printers are non-impact character printers based on a relatively new technology. They print characters by spraying small drops of ink onto paper. Inkjet printers produce high quality output with presentable features.

b) **Laser Printer:** – These are non-impact page printers. They use laser lights to produce the dots needed to form the characters to be printed on a page. These printers support many fonts and different character size.

c) **Thermal Printer:** – A thermal printer is a printer that makes use of heat in order to produce the image on paper. Due to quality of print, speed, and technological advances it has become increasingly popular and is mostly used in airline, banking, entertainment, retail, grocery, and healthcare industries.

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Q8 Explain different types of Monitors.

Ans: – Monitors are of two types –

1) **Cathode Ray Tube (CRT) Monitor:** – The CRT display is made up of small picture elements called pixels. The smaller the pixels, the better the image clarity or resolution. Most CRT screens are capable of displaying 80 characters of data horizontally and 25 lines vertically.

2) **Flat-Panel Display Monitor:** – The flat-panel display refers to a class of video devices that have reduced volume, weight and power requirement in comparison to the CRT. We can hang them on walls or wear them on our wrists. Current uses of flat-panel displays include calculators, video games, monitors, laptop computer, and graphics display.

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Q9 What is Encoding?

Ans: – Conversion of High Level Language into Low Level Language (Machine Level Language) is known as Encoding. It is performed by Input devices.

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Q10 What is Decoding?

Ans: – Conversion of Low Level Language (Machine Level Language) into High Level Language is known as Decoding. It is performed by Output devices.

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