CHAPTER - 2

INPUT DEVICES

The devices which are used to enter data and program instructions into a computer for storage or processing are called input devices.

VARIOUS INPUT DEVICES : -

1. Keyboard:

Key board is the most common and very popular input device which helps in inputting data to the computer. In the keyboard the keys or buttons are arranged in matrix form having rows and columns. As soon as a key is pressed, the microprocessor scans all the keys for the key press and detects which key is pressed. Then corresponding code to the key is sent. The keys in the key board are grouped into the following categories:

i. **Alphabetic keys** : Three keys include the letter keys A to Z.

ii. **Numeric or number key**: These are 10 keys from 0 to 9

iii. **Direction key** : These are 4 arrow keys. Left (   ), right (   ), up (   ), down (   )

iv. **Function keys** : There are generally 12 function keys F1 to F12.

v. <u>Control keys</u>: These keys like home, end, insert, delete, page down, page up, control, Alt, Esc provide screen control etc.

vi. <u>Special Purpose keys</u>: These keys like caps lock, tab, pause, back space, space bar, enter, shift, print screen etc. which are used for special purposes.
Alphabetic keys and numeric keys because the corresponding characters appear on the monitor screen, but the other keys do not have specific on the monitor screen, but the other keys do not have specific alphabet or numerals associate with that. These keys are used to perform some action and functions as defined by the software or user.

2. <u>Mouse</u>:

i. Mouse is most popular painting device.

ii. It is an input device which is used to interact in windows environment.

iii. Mouse was inverted by Douglas Engelbart of Stansford Research Centre in 1963 and pioneered by Xerox in the 1970s.

iv. It is a small object which can roll along a hard, Flat surface.

v. Its name is derived from its shape, which looks a bit like a mouse.

vi. Its connecting wire that one can imagine to be the mouse's tail and the fact that one must make it scurry along a surface.

vii. It controls the movement of the cursor or pointer on a display screen.

viii. Using left button of mouse, different operations like selection, dragging, moving and pasting can be done.

ix. With the right button we can open a context menu for an item, if it is applicable.

There are following types of mouse.

a. Mechanical Mouse

b. Opto-mechanical mouse

c. Optical Mouse

d. Wireless Mouse

3. **Joystick:**

i. It is an input device consisting of a stick that pivots on a base and translates its angle or direction as data.

ii. Joysticks are often used to control inputs in video games.

4. **Light Pen:**

i. It is a light sensitive stylus attached to a video terminal to draw

pictures or to select menu options.

5. **Track ball:**

i. A Trackball is an input device i.e. Mostly

used in notebook, laptop computer, instead of a mouse.

ii. The operation of a trackball are similar to a mouse.

iii. Since it is a static device, on the top is moved by using fingers, thumbs and palms.

iv. The main advantage of a track ball is that it requires less desk space than a mouse.

v. A track ball comes in various shapes like a ball, a button, and a square.

6. **Touch Screen:**

i. This device allows interacting with the computer without any intermediate device.

ii. You may see it at KIOSKs installed in various public places.

7. **Graphics Tablet (Digitizer):**

i. This device is used to inter data using a stylus.

ii. Most commonly it is used to enter digital signatures.

8. **Microphone:**

i. It is used to input audio data into the computer.

ii. They are mainly used for sound recording.

9. **OCR (Optical Character Reader/**

Recognition):

i. It is used to convert images of text into machine editable text.

ii. It is widely used to convert books and documents into electronic files, to computerize a record keeping system in an office or to publish the text on a website.

10. OMR (Optical Mark Reader/ Recognition):

i. Optical Mark Recognition is a technology of electronically extracting data from the marked fields such as check boxes, ovals and other shapes on printed forms.

ii. OMR technology scans a printed form and reads predefined positions and records where marks are made on the form.

iii. This technology is useful for applications in which large numbers of hand filled forms need to be processed quickly and with great accuracy such as checking of multiple choice questions (MCQ), surveys, reply cards and question pries etc.

11. BCR (Bar Code Reader):

i. This device read the bar code as input data.

ii. It consists of a light source, a lens and a

light sensor which translate optical impulses into electrical signals.

iii. Also it contains decoder circuitry which analyzes the barcode's image data and sends the bar code's content to the scanners output port.

12. **MICR (Magnetic Ink Character Reader/Recognition):-**

i. MICR is the common machine language specification for the paper based payment transfer system.

ii. It consists of magnetic ink printed characters of a special design which can be recognized by high speed magnetic recognition equipment.

iii. This process excludes any markings like human signatures or bank seals etc on the cheques.

iv. MICR is generally used in banks because of a large number of cheques to be processes every day.

13. **Scanner:**

i. It is a device that optically scans images, printed text or an object and converts it to a digital image.

ii. The scanned text can also be edited.

Scanners are of following types:-

a. Flat bed scanner

b. Drum scanner

c. Slide scanner
d. Hand-held scanner

14. SCR (Smart Card Reader):

i. It is used to access the microprocessor of a smart card.
ii. There are two broad categories of smart cards i.e Memory Cards and Microprocessor Cards.
iii. Memory cards contain only non-volatile memory storage components and some specific security logic.
iv. Microprocessor cards contain volatile memory and microprocessor components.
v. The card is made of plastic, generally PVC (Poly Vinyl chloride).
vi. Smart cards are used in large companies and organisations for strong security.

15. Biometric sensor:-

i. It is used to recognize individuals based on physical or behavioural traits.
ii. Biometric sensor is used to mark attendance of employees or students in organisation or institutions.
iii. It is also popular as a security device to provide restricted entry for secured areas.

16. Web camera:-

i. A web-camera is short for web camera.

ii. A web cam is an input device because it captures a video image of the scene in front of it.

iii. It is either built into the computer (eg-laptop) or it is connected through on USB cable.

iv. This also captures video as data for computer with reasonably good quality.

v. It is commonly used for web-chats.