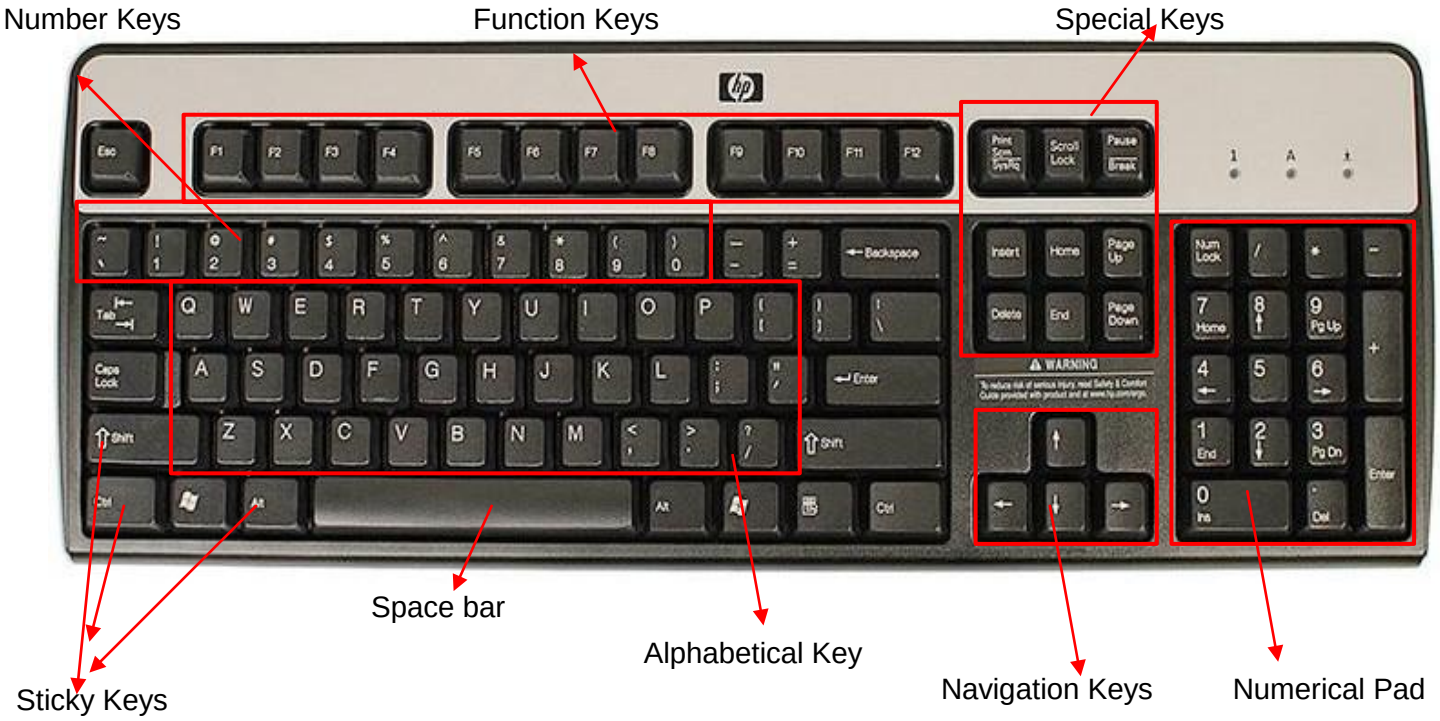
Chapter 2 Input Device

A computer **keyboard** is an input device that allows a person to enter letters, numbers, and other symbols (these are called characters in a **keyboard**) into a computer. It is one of the most used input devices for computers. Using a **keyboard** to enter lots of data is called typing.



Q.1 How many keys are on a keyboard?
Desktop computer keyboards, such as the **101**-key US traditional keyboards or the 104-key Windows keyboards, include alphabetic characters, punctuation symbols, numbers and a variety of function keys.

Types of keyboards

1. **Flexible Keyboard** -These keyboards work just the same as standard keyboards but are meant for people on the move. They are typically made of silicon, which is water and dust-resistant and don't require constant cleaning.

Ergonomic Keyboard - The ergonomic keyboard is designed to reduce the strain of constant typing on the wrist and other problems that stem from that.

3. Gaming Keyboard - Gaming keyboards are created for use for long periods of time, often adopting ergonomic designs for comfort and also lighted keys for playing in the night.

4. Wireless Keyboard - The wireless keyboard is exactly what it's called; a keyboard without a wire. It is connected to your computer with infrared, 2.4 GHz WiFi or more often through Bluetooth.

5. Multimedia/Internet Keyboard - Both multimedia and internet keyboards are just regular keyboards with a few extra options. For multimedia designers, the keyboards feature volume control and media application launch buttons.

6. Membrane Keyboard - Unlike the majority of keyboards, membrane keyboards don't have space between the individual keys. These keys are pressure sensitive and are divided by an outline for each symbol, letter or number. The keys lay flat on a flexible surface.

7. Mechanical Keyboard - These robust keyboards are relatively cheap, long-lasting and are seen as somewhat primitive in the keyboard space. This old school keyboard gives you that feel of real typing because the keys lay on physical mechanical buttons. These keyboards are also a lot louder than the alternatives.

8. Virtual Keyboard - A virtual keyboard is essentially just software that allows you to type without the need for actual physical keys. The way you to use this keyboard is with the use of a touch screen featured in newer laptop releases and tablet computers.

9. Laptop Keyboard - Laptop keyboards have what we call “chiclet style” keys, which are sleeker than traditional keys to fit in thinner design laptops.

10. Projection Keyboard Finally, probably the coolest keyboard of the lot is the projection keyboard. This is a device that can be connected through Bluetooth to your mini PC, tablet computer or even smartphone.

A computer **mouse** is a handheld hardware input device that controls a cursor in a GUI and can move and select text, icons, files, and folders.

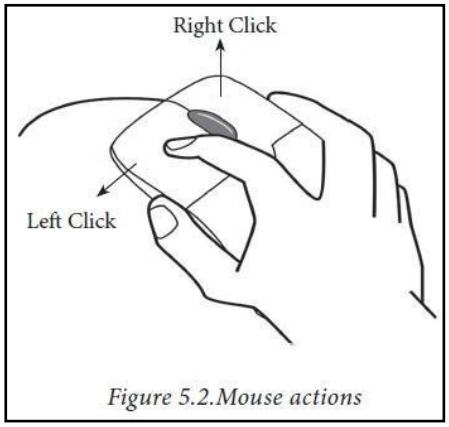
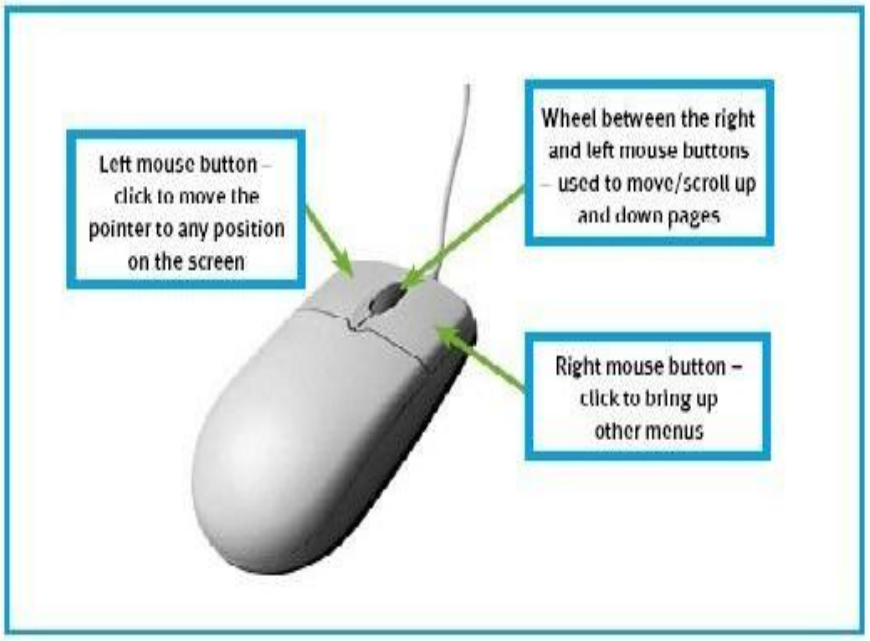


Figure 5.2.Mouse actions



MECHANICAL MOUSE: is a device integrated with an internal metal or rubber ball, which can spin in all directions (left, right, up and down). Thus, the display cursor moves as the mouse detects the direction. The ball in the mechanical mouse spins when it comes in contact with surface on which it is placed.

TRACKBALL MOUSE: is a pointing device.It consists of a ball held by a socket containing sensors to detect a rotation of the ball. The user rolls the ball with the thumb, fingers, or the palm of the hand to move a pointer.

OPTICAL MOUSE: is an computer pointing device that uses a light-emitting diode an optical sensor, and digital signal processing (DSP).This mouse doesn't have mouse ball and electromechanical transducer. Movement is detected by sensing changes in reflected light, instead of interpreting the motion of a rolling sphere.

GSTICK MOUSE: These mice are Wireless and pocket-sized. It looks like a pencil. gStick mouse is like a pencil. It can be used for web browsing, office work or whatever you do with your traditional mouse, with more comfort. It also features a scroll wheel that can be manipulated with a finger or thumb a button on either side of the wheel.

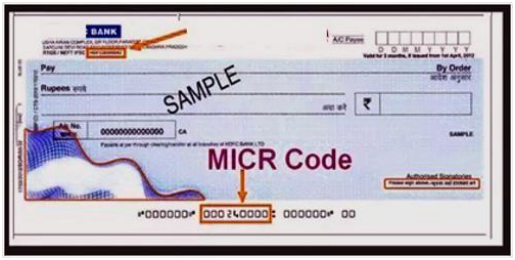
WIRELESS MOUSE: The Mouse without wire or cord is called wireless mouse or cordless mouse. Most wireless mice use radiofrequency (RF) technology to communicate information to your computer.

In computers, a **joystick** is a cursor control device used in computer games and assistive technology . The **joystick**, which got **its** name from the control stick used by a pilot to control the ailerons and elevators of an airplane

A **light pen** is a **light**-sensitive pointing input device commonly used to select or otherwise modify text or data on a screen. Used with a CRT monitor, these devices were an early form of manipulating and highlighting data on the screen.

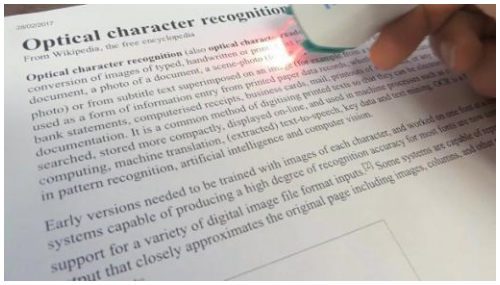
Microphone (**Mic**) is an input device that converts sound into electrical signal. The early abbreviation for **microphone**,

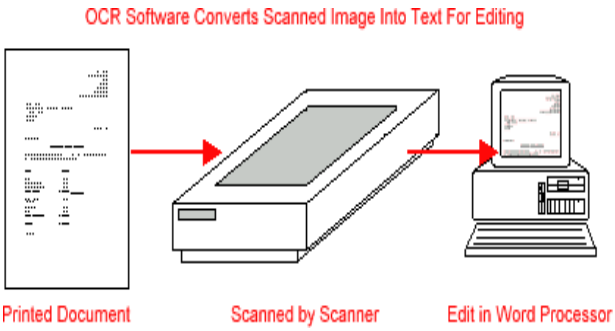
MICR (magnetic ink character recognition) is a technology **used** to verify the originality of paper documents, especially checks. Special ink, which is sensitive to magnetic fields, is **used** in the printing of certain characters on the original documents.



A **barcode reader** (or **barcode** scanner) is an optical scanner that can read printed **barcodes**, decode the data contained in the **barcode** and send the data to a computer.

OCR Stands for "Optical Character Recognition." OCR is a technology that recognizes text within a digital image. It is commonly used to recognize text in scanned documents, but it serves many other purposes as well ..... OCR technology can be used to convert a hard copy of a document into an electronic version (or soft copy.





Optical mark recognition (also called optical mark reading and **OMR**) is the process of capturing human-marked data from document forms such as surveys and tests. They are used to read questionnaires, multiple choice examination paper in the form of lines or shaded areas.

Fig: OMR Machine

Scanner. A **scanner** is an input device that scans documents such as photographs and pages of text. ... This creates an electronic version of the document that can be viewed and edited on a **computer**.

A **webcam** is a video camera that feeds or streams an image or video in real time to or through a **computer** to a **computer** network, such as the Internet. **Webcams** are typically small cameras that sit on a desk, attach to a user's monitor, or are built into the hardware.

A **digital camera** is a **camera** that stores pictures in electronic memory instead of film. Because of this, a **digital camera** can hold many more pictures than a traditional film **camera .....** Most **digital cameras** can use a USB cable that connects into a **computer** to send pictures that are in the **camera** to the **computer**.

CHAPTER 3 – OUTPUT DEVICE

- **Monitor** - A **monitor** is an electronic visual computer display that includes a screen, circuitry and the case in which that circuitry is enclosed. Older computer **monitors** made use of cathode ray tubes (CRT), which made them large, heavy and inefficient. ... A **monitor** is also known as a screen or a visual display unit (VDU).

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CRT (cathode ray tube) monitors

These monitors employ CRT technology, which was used most commonly in the manufacturing of television screens. With these monitors, a stream of intense high energy electrons is used to form images on a fluorescent screen. A cathode ray tube is basically a vacuum tube containing an electron gun at one end and a fluorescent screen at another end.

While CRT monitors can still be found in some organizations, many offices have stopped using them largely because they are heavy, bulky, and costly to replace should they break. While they are still in use, it would be a good idea to phase these monitors out for cheaper, lighter, and more reliable monitors.

LCD (liquid crystal display) monitors

The LCD monitor incorporates one of the most advanced technologies available today. Typically, it consists of a layer of color or monochrome pixels arranged schematically between a couple of transparent electrodes and two polarizing filters. Optical effect is made possible by polarizing the light in varied amounts and making it pass through the liquid crystal layer.

TFT generates better picture quality and is more secure and reliable. Passive matrix, on the other hand, has a slow response time and is slowly becoming outdated.

The advantages of LCD monitors include their compact size which makes them lightweight. They also don't consume much electricity as CRT monitors, and can be run off of batteries which makes them ideal for laptops.

LED (light-emitting diodes) monitors

LED monitors are the latest types of monitors on the market today. These are flat panel, or slightly curved displays which make use of light-emitting diodes for back-lighting LED monitors are said to use much lesser power than CRT and LCD and are considered far more environmentally friendly.

The advantages of LED monitors are that they produce images with higher contrast, have less negative environmental impact when disposed, are more durable than CRT or LCD monitors, and features a very thin design. They also don't produce much heat while running. The only downside is that they can be more expensive,

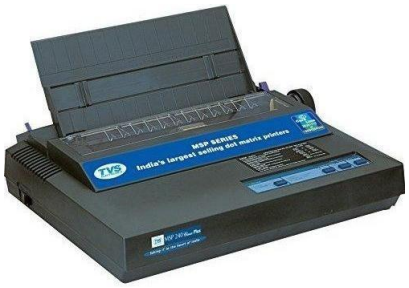

Printer is an peripheral output device , which is generally use for taking printout

There are two types of printers

1. **Impact printers** are printers which works by creating a direct contact between ink ribbon and paper. These printers are noisy yet popular. Impact printers have mechanical moving parts to conduct printing. Examples: **Dot-matrix printers**, **Daisy-wheel printers**, and line printers

(a) **A dot matrix printer** is an impact **printer** that prints using a fixed number of pins or wires. Typically the pins or wires are arranged in one or several vertical columns. The pins strike an ink-coated

ribbon and force contact between the ribbon and the paper, so that each pin makes a small dot on the paper.



(b) **A line printer** is an impact **printer** which makes use of a continuous feed of paper and prints one **line** of text at a time. Although they have been replaced in most instances by high-speed laser **printers**, they are still used in some business as they are low cost and have the ability to print on multi-part forms

(c) A **daisy-wheel printer** works on the same principle as a ball-head typewriter. The **daisy wheel** is a disk made of plastic or metal on which characters stand out in relief along the outer edge. To print a character, the **printer** rotates the disk until the desired letter is facing the paper.

Non-impact printer - **Non-impact printer** does not generate noise during **printing** because it prints images and text without striking the papers. **Non-impact printer's** speed is faster and quality is higher than **impact printer**.

Laser Printer- It makes a **laser** beam scan back and forth across a drum inside the **printer**, building up a pattern of static electricity. The static electricity attracts onto the page a kind of powdered ink called toner. Finally, as in a photocopier, a fuser unit bonds the toner to the paper

Inkjet printing is a type of computer **printing** that recreates a digital image by propelling droplets of **ink** onto paper and plastic substrates. **Inkjet printers** are the most commonly used type of **printer**, and range from small inexpensive consumer models to expensive professional machines.

Plotter is a **output device** is used for translating information from a computer into pictorial form on paper. ... In the past, **plotters** were used in applications such as computer-aided design, though they have generally been replaced with wide-format conventional printers. A **plotter** gives a hard copy of the **output**.

Drum plotter - A type of pen **plotter** that wraps the paper around a **drum** with a pin feed attachment. The **drum** turns to produce one direction of the plot, and the pens move to provide the other. The **plotter** was the first output device to print graphics and large engineering drawings.

A **flatbed plotter** is a computerized **plotter** that works by using an arm that moves a pen over paper rather than having paper move under the arm as with a drum **plotter**.

The **inkjet plotter** creates an image by spraying small droplets of ink on to paper. A popular choice for advertising agencies and graphic designers, **inkjet plotters** are used generally for large outputs, such as banners and billboards and large signs often seen along roadsides.

A **speaker** is a term used to describe the user who is giving vocal commands to a software program. .... A computer **speaker** is an output hardware **device** that connects to a computer to generate sound.

A loudspeaker is an **electro acoustic transducer**; a device which converts an electrical - audio signal into a corresponding sound.