

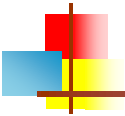
# IT WORKSHOP I



## Peripheral Devices

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## Peripheral Devices

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- A peripheral device is any **connected device that provides a computer with additional functionality**.
- Peripherals are connected to the system unit using **cables or wireless technologies**.
- A peripheral device is also called a peripheral, computer peripheral, auxiliary device, input-output device, or I/O device.
- Peripheral devices fall into three main categories:
  - **Input devices**, which send data to the computer.
  - **Output devices**, which receive data from the computer.
  - **Input/output devices**, such as storage devices.
- Peripheral devices connect with a computer through several I/O interfaces, such as communications (**COM**), Universal Serial Bus (**USB**) and serial ports such as serial advanced technology attachment (**SATA**) ones.

## Peripheral unit

- Peripheral devices include the following:
  - Mouse
  - Keyboard
  - Printer
  - Monitor
  - Webcam
  - Scanner
  - Speakers
  - External Drive
  - USB Flash Drive
  - CD-ROM

3

## Keyboard

- The keyboard is the primary input device for the computer system.
- The user enters letters, numbers, and other symbols to give the computer with information and instruction.
- Using a keyboard to enter a lot of information is called **typing**.
- The most common typing key arrangement is called **QWERTY** after the first six keys.



4

# Keyboard

- The board is divided into a number of sections:
  - **Typing keys:** This section contains the letter and number keys. The shift keys, spacebar, return key etc. are also included in this section.
  - **Numeric keypad:** These keys are arranged as on a calculator and are used in Banks etc. They allow numeric data to be entered much more quickly than using the numbers at the top of the typing keys.
  - **Function keys:** These are programmable keys used by software for special functions. E.g. - F1 is always used for help.
  - **Control keys:** The control keys are used for screen and cursor control. The arrow keys control the cursor. The Home, End, Page up etc. keys control cursor in software applications.

5

# Keyboard



- Typewriter keys
- Function keys
- Enter keys
- System keys
- Numeric keypad
- Other
- Application key
- Cursor control keys



QWERTY



QWERTZ

AZERTY

6

## Mouse

- A mouse is an input device that uses "point and click" technology to interact with a computer.
- Modern mice usually have two buttons, the left button and right button, with a scroll wheel in between the two.
- Mouse are two main types:
  - **Ball mouse:** This uses a ball to roll across the surface and move rollers attached to sensors inside the mouse that reflect the ball movement as cursor movement.
  - **Optical mouse:** This kind work by using an optoelectronic sensor. This uses a camera to take thousands of images per second and sent them for digital processing.
    - The red LED lights up the surface for the camera. The digital processor compares images and can sense the movement of the mouse. This movement is reflected on the screen as cursor movement.

7

## Mouse



8



## Webcam

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- Webcams are the input devices, for video/image data, that connect to a computer.
- They can be external or built-in.
- Webcams are most often used to enable people to see each other when communicating over the internet, or for recording video blogs, or other videos.

9



## Printers

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- Printers are output devices which provide a hardcopy (permanent and readable) of computer data.
- They can print onto paper, transparency sheets, photographic paper, card etc.
- The first electronic printer to be invented was the EP-101, released by the Japanese company Epson in 1968.
- They can be classified into two categories that are 2D and 3D printers.
  - The 2D printers are used to print text and graphics on a paper,
  - 3D printers are used to create three dimensional physical objects.

10

## Printers

- The various types of printers is given below:

- Inkjet Printers
- Laser Printers
- 3D Printers
- LED Printers
- Dot Matrix Printers
- Thermal printer



11

## Printers



12

## Monitor

- The most common output device, monitors enable users to **interact with a computer** more easily.
- The monitor essentially displays a signal sent by the computer in a **visual format**.
- Monitors nowadays, are almost exclusively **LCD** (Liquid Crystal Display).
- **CRT** (Cathode Ray Tube) monitors are rare and are now as expensive as LCD monitors.



13

## Monitor

1920 x 1080

- The aspect ratio of a computer monitor is the ratio between the width and height of the screen. The aspect ratios are:
  - **Standard monitor**: 4:3
  - **Widescreen monitor**: 16:9
- The screen size of a computer is measured diagonally in inches.
- They vary in size from 15 inch to 24 inch although the 19 inch in standard and widescreen is the most common with new computer systems.



Learn What is dot pitch, pixel....!!

14



## The Booting Process

- Booting (also known as **booting up**) is the initial set of operations that a computer system performs when electrical power is switched on.
- In order for a computer to successfully boot, its **BIOS, operating system and hardware components** must all be working properly; failure of any one of these three elements will likely result in a failed boot sequence.



## The Booting Process

- When the computer's power is first turned on, the **CPU initializes itself**.
- Look to the system's **ROM BIOS for its first instruction** in the startup program to run the power-on self-test (POST).
- POST begins by **checking the BIOS chip and then tests CMOS RAM**
- If the POST is fine, it then continues to initialize the CPU, **checking the inventoried hardware devices**, to ensure they are functioning properly.
- Once the POST has determined that all components are functioning properly and the CPU has successfully initialized, **the BIOS looks for an OS to load**.
- The BIOS typically looks **to find the OS**, and in most PCs, the **OS loads from the C drive on the hard drive (MBR)**

The **Master Boot Record (MBR)** is the information in the first sector of a hard disk or a removable drive. **It identifies how and where the system's operating system (OS) is located**





## The Booting Process

- even though the BIOS has the capability to load the OS from a floppy disk, CD or ZIP drive.
- Looking to the appropriate boot drive, the BIOS will first encounter the boot record, which tells it where to find the beginning of the OS and the subsequent program file that will initialize the OS.
- Once the OS initializes, the BIOS copies its files into memory and the OS basically takes over control of the boot process.
- Now in control, the OS performs another inventory of the system's memory and memory availability and loads the device drivers that it needs to control the peripheral devices, such as a printer, scanner, optical drive, mouse and keyboard.
- This is the final stage in the boot process, after which the user can access the system's applications to perform tasks.



## Self-Learn

- What is??
  - Soft / Warm Boot
  - Hard / Cold Boot

Which OS preferred???



End