


EXPANSION BY HARDWARE

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1/ LIST TYPES OF INPUT DEVICES(MOUSE, KEYBOARD AND POINTING DEVICES)

Input Devices

The devices which are used to give data and instructions to the computer.

MOUSE

- Mechanical mouse
- Optical mouse
- Infrared (IR) or radio frequency cordless mouse
- Trackball mouse



KEYBOARD

- Ergonomic keyboards
- ADB (Apple Desktop Bus)
- XT
- Multimedia keyboard
- Internet keyboard
- Wireless keyboard
- Gaming keyboard



POINTING DEVICES

- Mouse
- Touch-pad
- Pointing stick
- Touch screen
- Stylus



2/ DISCUSS CHARACTERISTICS OF (MOUSE, KEYBOARD AND POINTING DEVICES)

Mouse

- **Mechanical mouse:** requires cleaning of the rubber ball from time to time.
- **Optical mouse:** uses LED and a sensor
- **Infrared (IR) :** uses Infrared to connect to the computer
- **Trackball mouse:** Similar to a mouse but has the rolling ball on the top side and movement is controlled by using the rolling ball.

KEYBOARD

- **Ergonomic keyboards:** mostly used by people who often work with the keyboard as it creates less stress for the wrist)
- **ADB (Apple Desktop Bus):** Can be connected only to ADB jack enabled computers (Apple computers).
- **XT:** Supports older computers such as IBM. Larger than modern computers.
- **Multimedia keyboard:** contains additional keys for the multimedia purposes.
- **Internet keyboard:** includes special keys such as e-mail launch key and browser launch key.

KEYBOARD

- **Wireless keyboard:** require batteries to provide the electricity.
- **Gaming keyboard:** has features such as: key lightening, programmable keys and/or extra controls of volume and brightness.

POINTING DEVICES

- **Mouse:** A small device with two buttons for clicking commands and/or a scroll wheel on top.
- **Touch-pad:** Touch-sensitive device that you drag your finger over to control the pointer. Usually seen on laptops.
- **Pointing stick:** A small device that looks like a pencil eraser embedded among the typing keys that you push up, down, left, or right.
- **Touch screen:** A touch-sensitive screen on some devices that allows you to use your finger to control the pointer.

3/ LIST FACTORS THAT DETERMINE A MONITOR'S QUALITY


- **The resolution of the monitor (density of pixels)**
- **The bandwidth (range of signal frequencies)**
- **Refresh rate (at least 72 Hz per second)**
- **Dot pitch (space between the pixels)**
- **Convergence (the clarity and sharpness of pixels)**

4/ DISCUSS THE 2 MAJOR TYPES OF PRINTERS

1/ IMPACT PRINTERS

An **impact printer** makes contact with the paper. It usually forms the print image by pressing an inked ribbon against the paper using a hammer or pins.

EXAMPLES

- Dot-Matrix Printers
 - Daisy Wheel printers
 - Line printers
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2/ NON-IMPACT PRINTERS

Non-impact printers do not use a striking device to produce characters on the paper; and because these printers do not hammer against the paper they are much quieter.

EXAMPLES

- Ink-jet printers
- Laser printers

5/ TALK ABOUT THE DIS/ADVANTAGES OF THE 2 MAJOR TYPES OF PRINTERS

IMPACT

NON-IMPACT

Advantages	Disadvantages	Advantages	Disadvantages
Less expensive	Slow	Fast	More expensive
Can print multipart forms	Low Quality	High Quality	Cannot print multipart forms
	Too noisy	Quieter	
	Limited colors	Strong, Clear colors	

6/ WHAT IS THE DIFFERENCE BETWEEN 'MEMORY' AND 'STORAGE'

Memory

The term memory refers to the component within your computer that allows you to access data that is stored for a short term.

All the data stored in memory will be lost once the power is off (volatile).

Storage

Storage is the component of your computer that allows you to store and access data on a long-term basis. Storage allows you to store data for an indefinite period of time.

All the data stored in storage will NOT be lost once the power is off (non-volatile).

7/ DISCUSS HOW STORAGE MEDIA AND DEVICES ARE CATEGORIZED

Storage media devices are categorized according to **two** primary storage technologies:

MAGNETIC

- Floppy disks
- Disk cartridges
- Hard disks
- Magnetic tape



OPTICAL

- Compact Disk Read-Only Memory (CD-ROM).
- Digital Video Disk Read-Only Memory (DVD-ROM)
- CD-Recordable (CD-R)
- CD-Rewritable (CD-RW)



HOW DOES IT WORK?

MAGNETIC STORAGE

A magnetic disk's medium contains iron particles which could be given a magnetic charge in one of two directions. (each direction represents a 1 or 0)

OPTICAL STORAGE

To store data, the disk's metal surface is covered with tiny dents (pits) and flat spots (lands), which cause light to be reflected differently. It also uses reflected light to read data.

8/ HOW DATA IS STORED ON HARD-DRIVE

Hard disk stores information in the form of **magnetic fields**. Data is stored digitally in the form of tiny **magnetized regions** on the platter where each region represents a **bit**. To write data on the hard disk, a magnetic field is placed on the tiny field in one of these two polarities: N-S – If North Pole arrives before the south pole and S-N – if the south pole arrives before the north pole while the field is accessed. An orientation in the one direction (like N-S) can represent the '**1**' while the opposite orientation (S-N) represents "**0**". This polarity is sensed by integrated controllers built within the hard disk.

9/ LIST FACTORS THAT AFFECT HARD-DISK PERFORMANCE

- **Actual Capacity**
- **Transfer Rate**
- **Rotational Speed**
- **Cache**
- **Average Access Time**
- **Interface Type**

10/ COMPARE VARIOUS OPTICAL STORAGE MEDIA

Type	Diameter	Max. Capacity	Wavelength color
Compact Disk(CD)	12cm	700MB	Red
Digital Versatile/Video Disk	12cm	4.7GB /8.5GB	Red
High-Definition DVD	12cm	15GB/ 30GB	Blue
Blu-ray	12cm	25GB/ 50GB	Blue

THANK YOU FOR WATCHING 😊

**This work has been done by: Fahed Ben Omran
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