كلية علوم الحاسوب وتكنولوجيا المعلومات
قسم علوم الحاسوب
المرحلة الاولى

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Storage Devices

Definition

A hardware device, which can used to store digital data and applications. It may be in the form of images, video, audio, etc.

What is a storage location?

When saving anything on a computer, it may ask for a storage location, which is the saved information location.

Are storage devices input or output devices?

Storage devices do not directly get input from the user and do not display output to the user. Therefore, a storage device is not an I/O device.

Types of Computer Storage Devices

1- Primary Storage Devices

2- Magnetic Storage Devices

3- Flash memory Devices

4- Optical Storage Devices

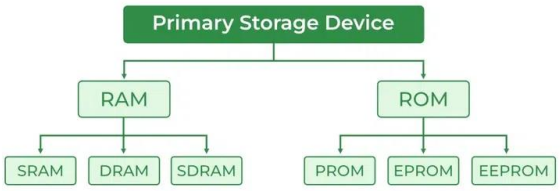
5- Cloud and Virtual Storage

Primary Storage Devices

Is a type of data storage that is actively used or processed by the computer's central processing unit (CPU).

Example:

RAM , ROM



Magnetic Storage Devices

Floppy disk, hard disk

A magnetic field created when the device attached to the computer and with the help of the two magnetic polarities, the device is able to read the binary language and store the information. Such devices called magnetic storage devices.

Flash memory Devices

Is a non-volatile memory chip used for storage and for transferring data between a personal computer (PC) and digital devices. It often found in USB flash drives, MP3 players, and digital cameras.

Optical Storage Devices

CD - DVD

Is any storage type in which data is written and read with a laser.

DVD (digital versatile disc)

Is a type of optical disc used for data storage. It can used on personal computers to store large quantities of almost any kind of data. The DVD represents the second generation of compact disc (CD). DVD drive uses a laser to read digitized (binary) data.

* There are three common types of DVDs:
DVD-5, DVD-9, and DVD-10.

DVD-5 is a single layer DVD that holds up to 4.7GB of data

DVD-9 is a dual layer single sided DVD that holds up to 8.5GB of data. This DVD is comprised of a solid layer and a semi-transparent layer that allows for almost twice the data of a DVD-5 and often used to retain a higher bitrate (quality) that may not be feasible on a DVD-5.

DVD-10 is a 2-sided DVD that holds up to 9.4GBs of data.

Cloud and Virtual Storage

Is a data deposit model in which digital information such as documents, photos, videos and other forms of media are stored on virtual or cloud servers. It allows you to transfer data on an offsite storage system and access them whenever needed.

Secondary Storage Device

Refers to any non-volatile storage device that is internal or external to the computer.
NOTE: Secondary storage can be removable, internal, or external.

What is Secondary Storage Devices benefit?

To keep software, programs and data and save your work on the storage devices before shutting down your computer.

Alternative name of secondary storage

Digital storage external memory, secondary memory, storage media, storage medium.

Difference between RAM and CASH memory

Feature	RAM	CASHE
Usage	Used to hold the programs and related data that are currently executed by the CPU.	Used to store the data which are frequently used by the CPU.
Size	The size of RAM is greater.	The size of cache memory is less.
Cost	expensive	Not much expensive.
Speed	Not as fast	Faster

Comparison between memory and storage

Memory	Storage
It is usually referred as Random Access Memory (RAM).	It usually referred as Solid State Drive (SSD).
Stores the data and information for a short-term basis.	Stores the data and information for a long-term basis.
It is a volatile memory.	It is a non-volatile memory.
Faster than storage (SSD).	Slower than the memory (RAM).
It is a component which accesses the data instantly.	It cannot modify or access the data as fast as memory.
When the system or device loses power, the data or information is lost.	The data and information will remain when the system or device loses power.
The size of memory devices is not large.	The size of storage devices is larger than memory devices.