

You've just completed a project on your computer and want to back it up. You decide to save it on a USB flash drive. Which of the following best describes the storage media in this situation?

- A) The USB port on your computer
- B) The USB flash drive itself
- C) The memory chip inside the USB flash drive
- D) The computer's operating system

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Which of the two images belongs to the storage media?



Storage media



Storage device

CHAPTER 3



A storage device is the hardware that allows you to read from or write to the storage media while the **Storage media** refers to the material or substance that actually holds the data.



Storage media



Storage device

MAGNETIC MEDIA AND MAGNETIC STORAGE DEVICE

MAGNETIC MEDIA AND MAGNETIC STORAGE

MAGNETIC TAPE DRIVES



HARD DISC DRIVE



MAGNETIC TAPE DRIVES

Very tiny strip of plastic coated in a magnetic layer.



Uses of Magnetic tape

- clearing bank cheques
- Utility billing (gas, electricity, water)
- producing pay slip

Advantage

- less expensive (per byte)
- very strong technology
- Huge data storage because it can hold anywhere between 1 to 15 terabytes of data per tape in a compact format.
- Data transfer rate is fast

Disadvantage

- Very slow data access time
- When updating, another tape is needed

Questions:

Cost of Magnetic tape drive?

Expensive or Less Expensive

Magnetic tape has a huge data, provide the data storage size.

1 Megabyte is equal to 1,024 Kilobytes (KB).

Megabyte or Terabyte?

1 Terabyte (TB) = 1,024 Gigabytes (GB) = 1,048,576 Megabytes (MB)

Questions:

When updating a data using magnetic tape drive, do we need to use another tape to update the files or not?

Yes, we need to use another master tape to update the data because that is feature of the device

HARD DISC DRIVES (HDD)

One of the most common methods used to store data on a computer



Uses of Hard Disc Drive (HDD)

- store the operating system, system software and other working data files
- used in real time system - automatic stock control
- used in file server for computer network

Advantages

- Very fast data transfer rate, fast access time to data
- Have very large memory capacity (*range from 500 GB to 20 TB and can have even higher capacities.*)

Note:

- **Magnetic tape drive** - ranging from a few gigabytes (GB) to several terabytes (TB) per tape cartridge.
- **Hard disc drive** - ranging from 500 GB to 20 TB.

Disadvantages

- Fairly easily damage
- Have many moving parts which can affect the overall reliability

OPTICAL MEDIA AND OPTICAL STORAGE DEVICE

1. CD/DVD OPTICAL DISKS

- widely used for data storage, media playback, and distribution before the advent of flash drives, cloud storage, and streaming services, which have largely replaced them in recent years.



OPTICAL MEDIA



OPTICAL STORAGE DEVICE

Uses of CD-R/DVD-R

- home recordnig of music (CD-R)
- used to store data

Advantage

- cheap
- once burned (and finalized) they behave like a ROM

Disadvantage

- can only be recorded once, if an error occurs then the disk has to be thrown away.
- Not editable
- Not all CD/DVD players can read

CD-DVD RW DISC



- Used in CCTV system
- can be use to backup device
- can be written over many times
- but it is expensive

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2. BLU-RAY DISKS

- is a high-capacity optical disc format designed for storing high-definition video, audio, and data.



Uses of BLU-RAY DISC

- Home video console
- Storing and playing back movies
- computer can use it for data storing

Advantage

- very large storage capacity
- very fast data transfer
- data access speed is faster

Disadvantage

- expensive disc
- encryption problem

SOLID STATE MEDIA AND SOLID STATE STORAGE DEVICE

1. SOLID STATE DRIVES (SSD)

- are a type of data storage device that use flash memory to store and retrieve data, providing faster and more reliable performance compared to traditional Hard Disk Drives (HDDs).



Uses of SOLID-STATE DRIVE

- backing storage

Advantage

- more reliable (*likely to fail, lose data, or encounter errors*)
- data access speed is faster
- lower power consumption
- it runs much cooler than HDD
- very thin
- data transfer speed is much faster

Disadvantage

- expensive disc
- encryption problem

2. PEN DRIVES

- are small portable device that make use of solid state technology
- connect it to computer using USB port



Uses of SOLID-STATE DRIVE

- used for security device
- data storage

Advantage

- very compact and portable media
- very robust

Disadvantage

- cannot write protect the data/file by making it read only