

A PRESENTATION ON STORAGE DEVICE



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Introduction

- It is the amount of data that can be stored in the storage unit. A large capacity is desired. As compared to secondary storage units, primary storage units have less storage capacity.
- Any storage unit of a computer system is characterized and evaluated based on following properties – storage capacity, access time, cost per bit of storage, volatile and random access.

Types of storage device

- ❑ Optical storage device- CD
- ❑ Optical storage device- DVD
- ❑ Optical storage device- Blu-Ray
- ❑ Magnetic storage device- Floppy disk
- ❑ Magnetic storage device- Hard disk
- ❑ Solid state device- Flash memory & Memory stick

Optical storage device- CD

- **CD-ROM** : CD Read only memory. When you buy a CD from a store, you can read it, but you can't save any thing on it.
- **CD-RW** : CD Read Write. You can save your data over and over again, like a floppy disk.
- **Advantages :**
 - ✓ Small and portable
 - ✓ Very cheap to produce
 - ✓ Most computers can read CDs. If there is no CD drive, a DVD drive can usually read them
- **Disadvantages :**
 - ✗ Fairly fragile, easy to snap or scratch
 - ✗ Smaller storage capacity than a hard drive or DVD
 - ✗ Slower to access than the hard disk.

Optical storage device- DVD

- **DVD-ROM** : A new type of read only compact disc that can hold a minimum of 4.7GB.
- **DVD-RW** : The data on a DVD-RW disc can be erased and recorded over numerous times without damaging the medium.
- **Advantages** :
 - ✓ Very large storage capacity
 - ✓ DVD players can read CDs
 - ✓ DVDs are now mass produced so they are relatively cheap
- **Disadvantages** :
 - ✗ DVDs do not work in CD drives
 - ✗ There is no single standard of DVD
 - ✗ They can be easily damaged by breaking or scratching

Optical storage device- Blu-Ray

- **Blu-ray** : medium designed to supersede the standard DDVD format. Its main uses are for storing high-definition video, PlayStation 3 video games, and other data, with up to 25 GB per single layered, and 50 GB per dual layered disc. The disc has the same physical dimensions as standard DVDs and CDs.
- Advantage :
 - ✓ Huge storage capacity
 - ✓ Mandatory Managed Copy
 - ✓ Backwards compatibility
- Disadvantage :
 - ✗ Very expensive
 - ✗ The cost of film
 - ✗ Presently greater number of movie titles are available on DVD's

Magnetic storage device- Floppy disk

- **Floppy disk** : It can only store up 1.44Mb of data. All disks must be formatted before data can be written to the disk. Formatting divides the disk up into sections or sectors onto which data files are stored.
- **Advantage** :
 - ✓ Small & light – easy to carry
 - ✓ Cheap
 - ✓ Useful for transferring small files
- **Disadvantage** :
 - ✗ Easy to be damage
 - ✗ Small storage capacity
 - ✗ Many new computer don't have floppy disk drives

Magnetic storage device- Hard disk

- ❑ **Hard disk** : the main storage device in computer. It is a bit like a filing cabinet: all of your data files and applications software are stored on it. It contains a number of metal platters which have been coated with a special magnetic material. The data is stored in this magnetic material.
- ❑ **Fixed hard discs** : Used to store operating systems, software and working data. Any application which requires very fast access to data for both reading and writing to. Not for applications which need portability. Used for online and real time processes requiring direct access. Used in file servers for computer networks.
- ❑ **Portable hard discs** : Any application which requires extremely large storage capacity where speed of access is not an issue. Uses serial access for reading and writing. Used for backups of file servers for computer networks. Used in a variety of batch processing applications such as reading of bank cheques, payroll processing and general stock control.

Solid state device- Flash memory & Memory stick

- **Flash Memory :** Memory sticks are available from 1 Gb up to 8 Gb. They are typically small, lightweight, removable and rewritable. They consist of a small printed circuit board which is encased in plastic or metal casing. They usually have a removable cap which covers and protects the part of the stick which is inserted into a USB port.
- **Advantage :**
 - ✓ Hold more data than CD
 - ✓ More reliable than floppy disk, because they have no moving part
 - ✓ More compact and portable than floppy disks or CDs/DVDs.
- **Disadvantage :**
 - ✗ Lost easily
 - ✗ The metal part which is inserted into the USB port can be snapped off if they are handled roughly
 - ✗ More expensive than floppy disks, CDs and DVDs