

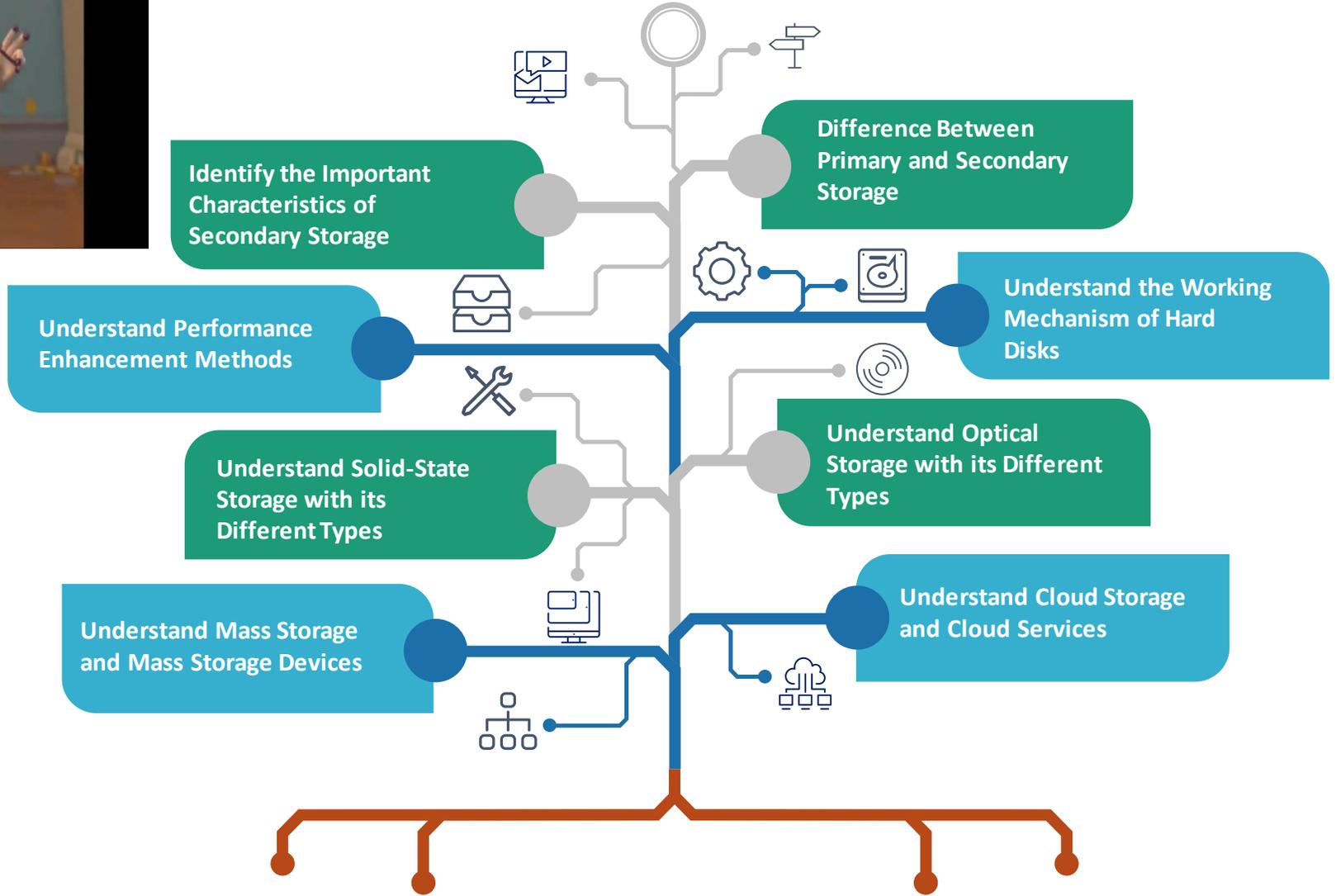


Welcome everyone to This DOPE presentation

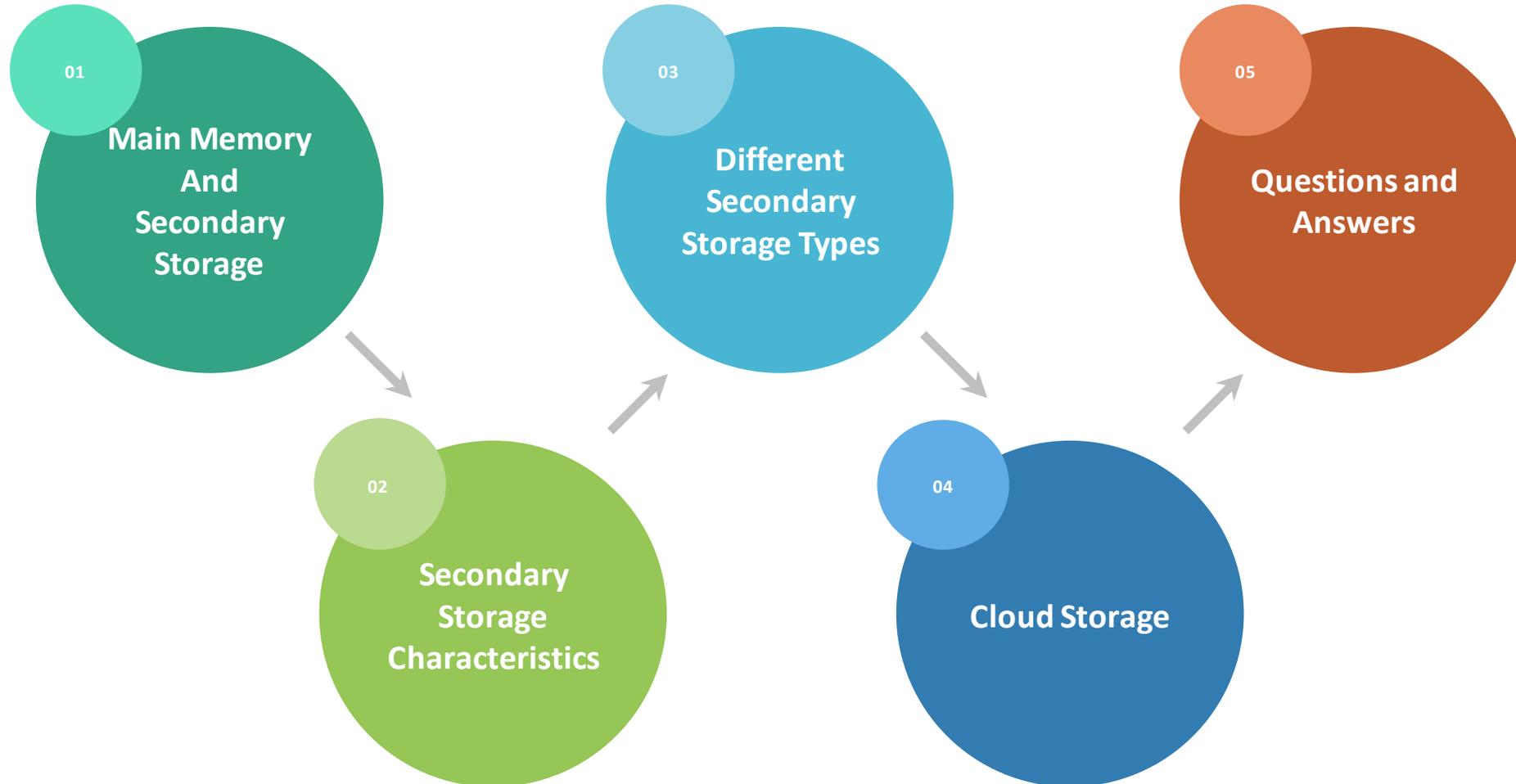


Learning Outcomes

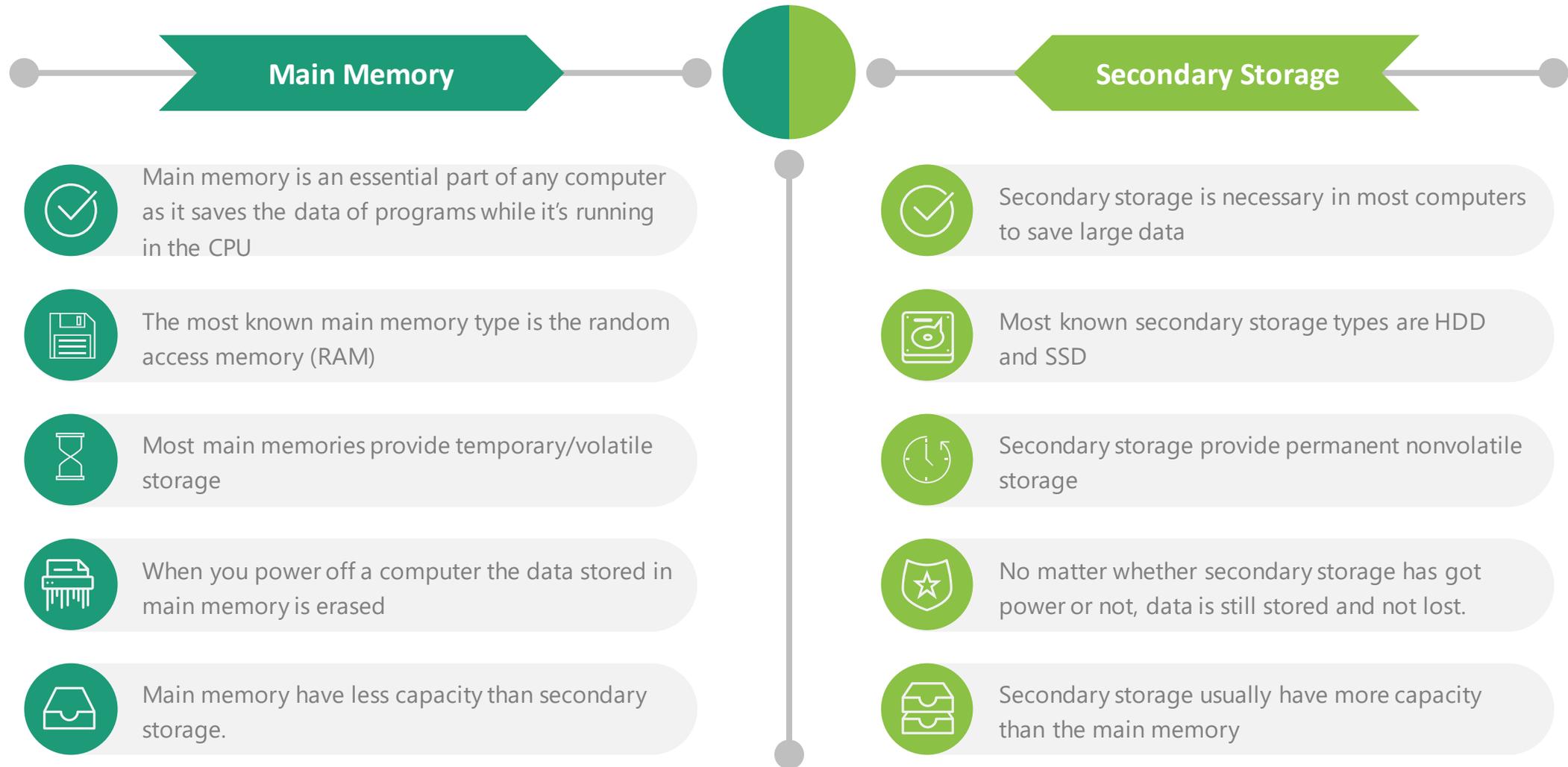
Yeah we are going to learn all that



Contents



Main Memory and Secondary Storage Comparison



Quick Note: Just imagine the second image in main memory as a ram icon and not a floppy disk, searching for ram icon that works in power point took forever

Secondary Storage Characteristics



Media

The physical material that holds the data and programs.



Capacity

Measures how much a particular storage medium can hold.



Storage devices

The hardware that reads data and programs from storage media.



Access Speed

Measures the amount of time required by storage device to retrieve data.



Secondary Storage Types

Couldn't come up with a meme for this slide so take this meme template anyway



Hard Disks



USB or Flash Drives



Solid State Disks



Optical Disks



Big Brain Time

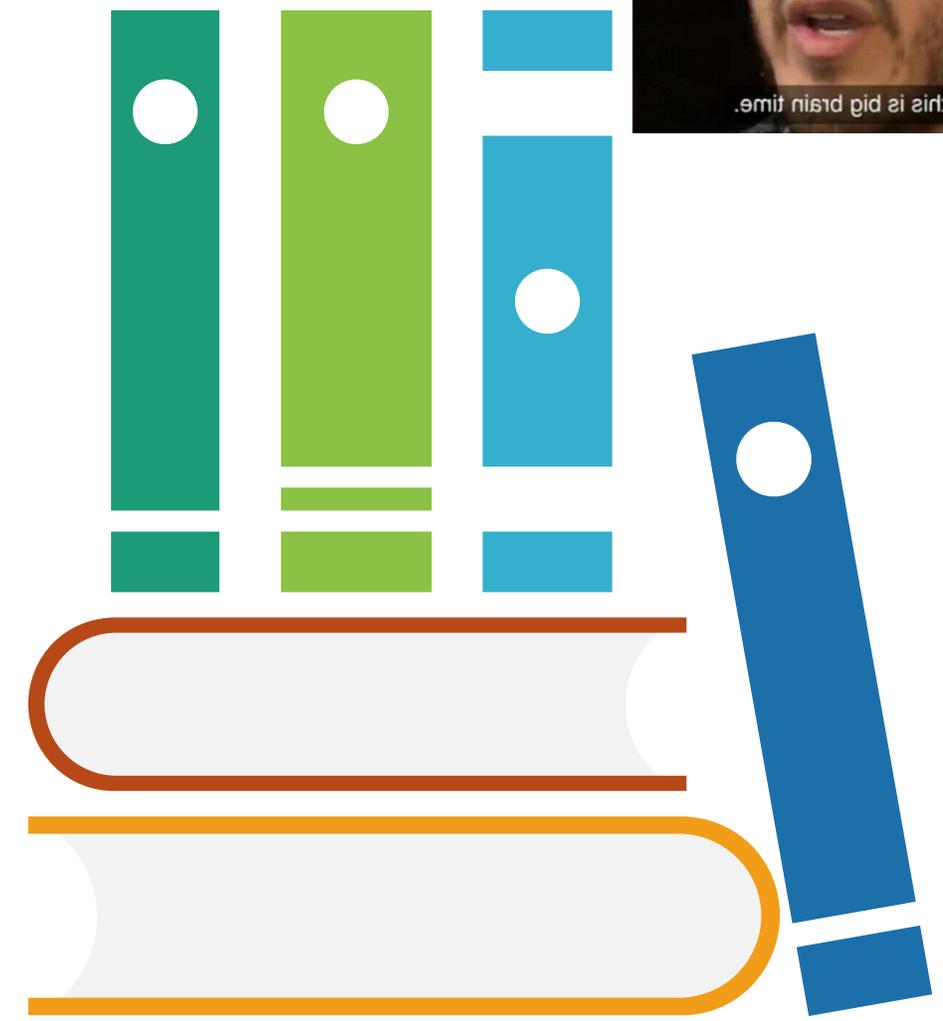


- ◆ 1) What's The main differences between Main Memory and Secondary Storage?

- ◆ 2) What are the 4 characteristics of Secondary Storage Devices?

- ◆ 3) What are the 4 Types of Secondary Storage?

- ◆ 4) What are the names of our team members?



Big Brain Time



1) What's The main differences between Main Memory and Secondary Storage?

Secondary storage has more capacity than main memory
Secondary storage stores data forever until deleted unlike the main memory which stores data for a temporary time interval
Secondary storage stores data whether there is power or not.

2) What are the 4 characteristics of Secondary Storage Devices?

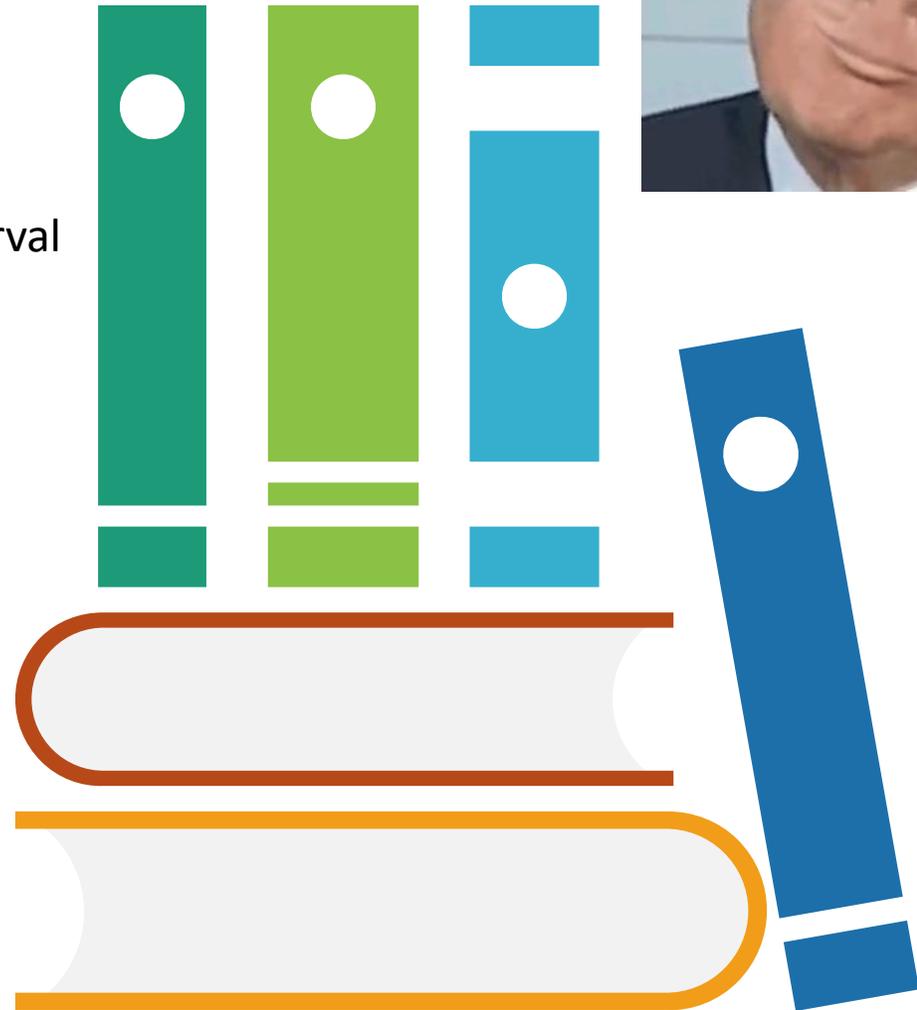
Media, Capacity, Access Speed, and Storage Devices

3) What are the 4 Types of Secondary Storage?

Hard Disk, USB/Flash Drivers, Solid-State Disks and Optical Discs

4) What are the names of our team members?

Anas, Awin, Rafi, Abdullah



Hard Disks

Working Mechanism



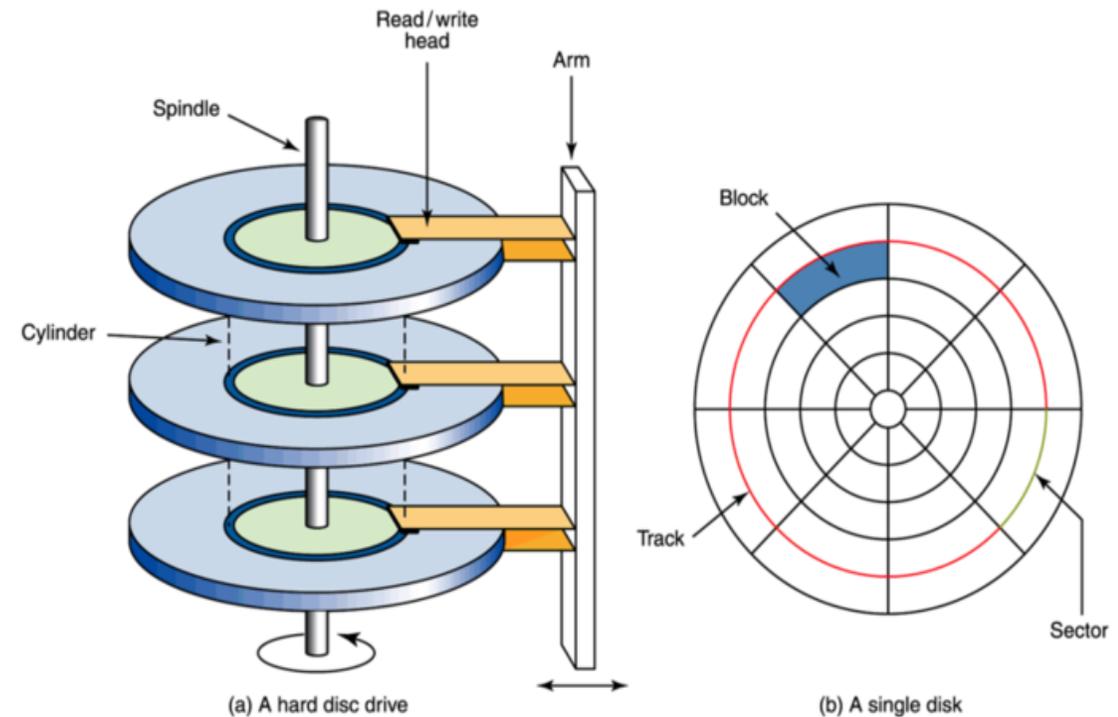
Hard disks save files by altering the magnetic charges of the disk's surface to represent 1s and 0s. Hard disks retrieve data by reading these charges from the magnetic disk.

Hard disk use rigid metallic platters that are stacked one on top of another. Hard disks organize files using tracks, sectors and cylinders



Each track is divided into invisible wedge-shaped sections called sectors.

Cylinders are necessary to differentiate files stored on the same track and section of different platters.



Hard Disks

Types of Hard Disks



Internal Hard Disk

Located inside the system unit.



External Hard Disk

Located outside the system unit and is removable.



Solid State Devices

- Solid state devices are devices without moving parts.

When you buy a new USB
All of your family and friends:



Our USB

Solid-State Drivers

Faster and more durable than HDD
Uses less energy than HDD
Makes less noise than HDD

USB Drivers

So small and compact which make them convenient to carry around thus it has been mostly used to transfer data between computers

Flash Memory Cards

Widely used by different computers
Digital Cameras, Personal PCs, Mobile Phones and much more
Small and compact.

Performance Enhancements

01

Disk Caching

Disk cache stores the most recent and frequently used programs and data. When a user or program requests data, the operating system first reviews the disk cache. If the data is found, the OS and memory quickly deliver the data to the program.

02

Redundant Arrays of inexpensive disks

Several inexpensive hard-disk drives are connected to one another. These connections can be by a network or within specialized RAID devices. The result is expanded storage capability, fast access speed, and high reliability.

03

File Compression and Decompression

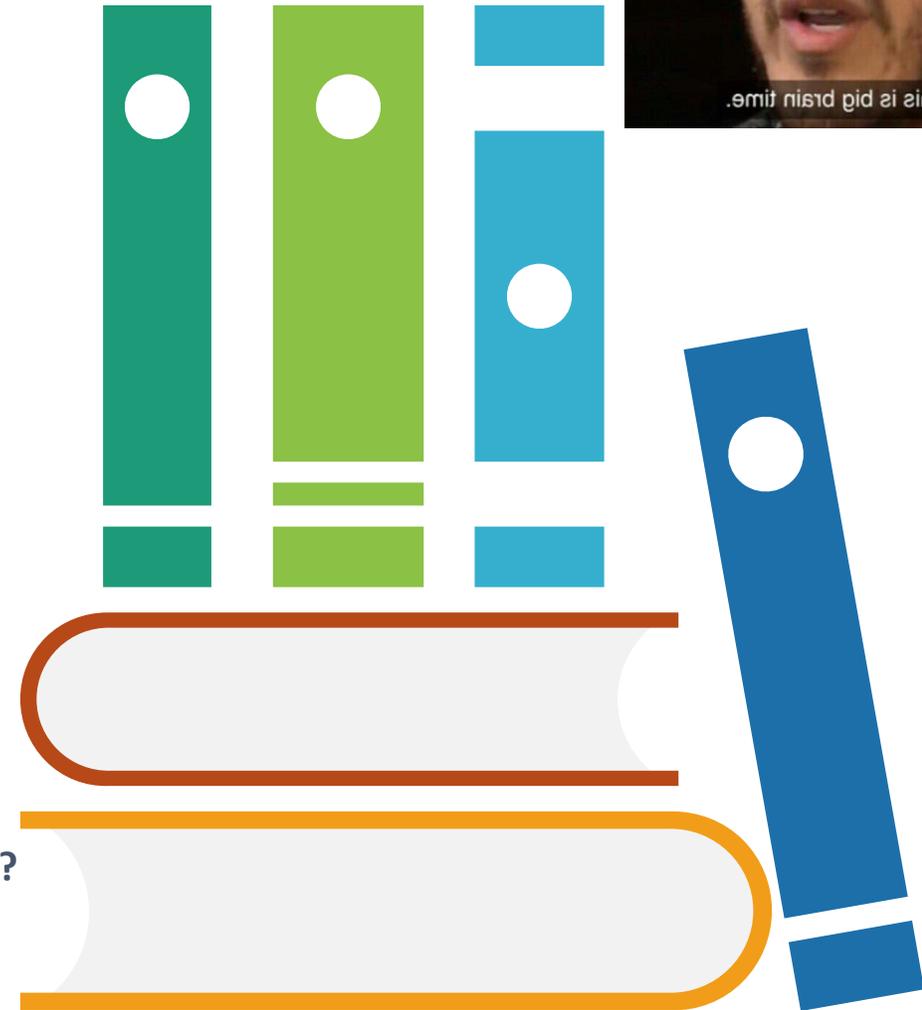
File compression and file decompression increase storage capacity by reducing the amount of space required to store data and programs. It's not only specific to hard disks, it can be used with other storage types.



Big Brain Time



- ◆ 1) How do hard disks save data?
- ◆ 2) What are two types of Hard disks ?
- ◆ 3) List 3 Methods of Performance Enhancement
- ◆ 4) On a scale of 1 to 10 how handsome is the person explaining?



Big Brain Time



◆ 1) What's the working mechanism of Hard disks?

The hard disk saves data by altering the magnetic charge of the disk

◆ 2) What are two types of Hard disks ?

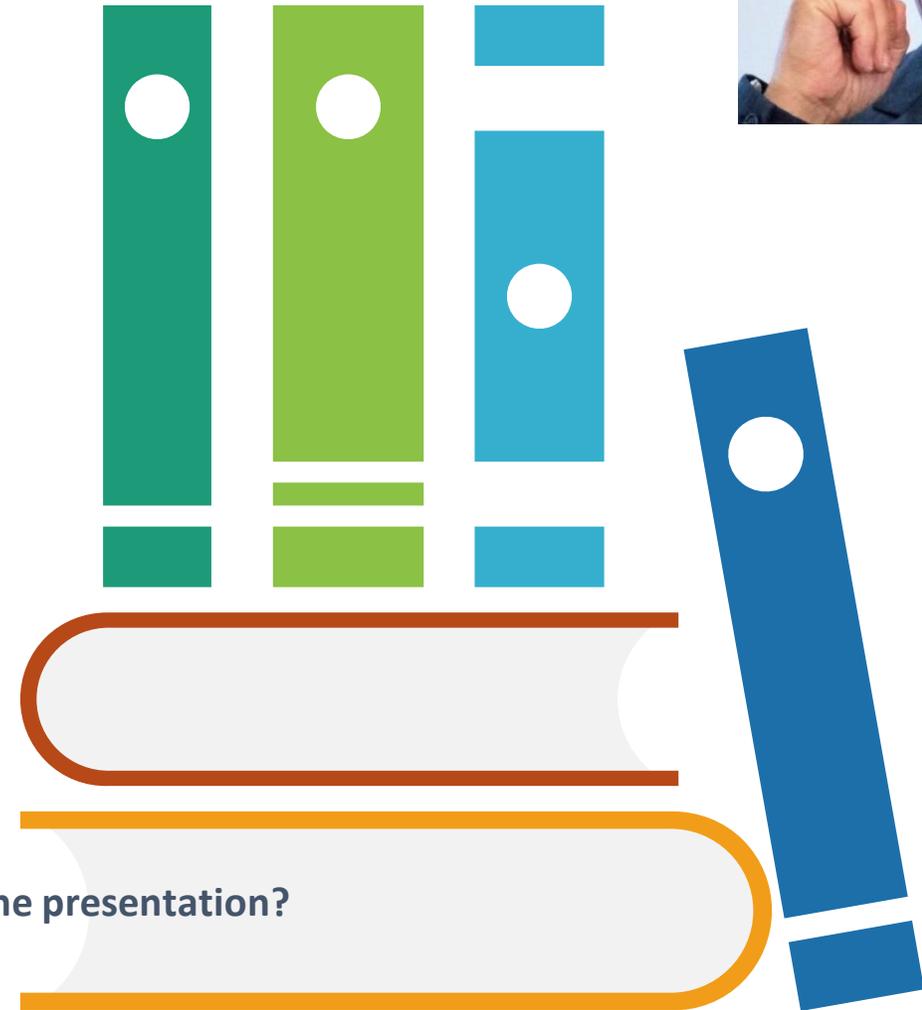
Internal and External

◆ 3) List 3 Methods of Performance Enhancement

Disk Caching, File Compressing and decompressing, and RAID

◆ 4) On a scale of 1 to 10 how handsome is the person who did the presentation?

Solid 10

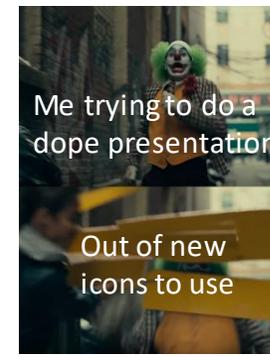


SSD

HDD



HDD vs SSD



Advantages For HDD

HDDs have higher storage capacity than SSD, which make it a better option if someone wants to store really large data.



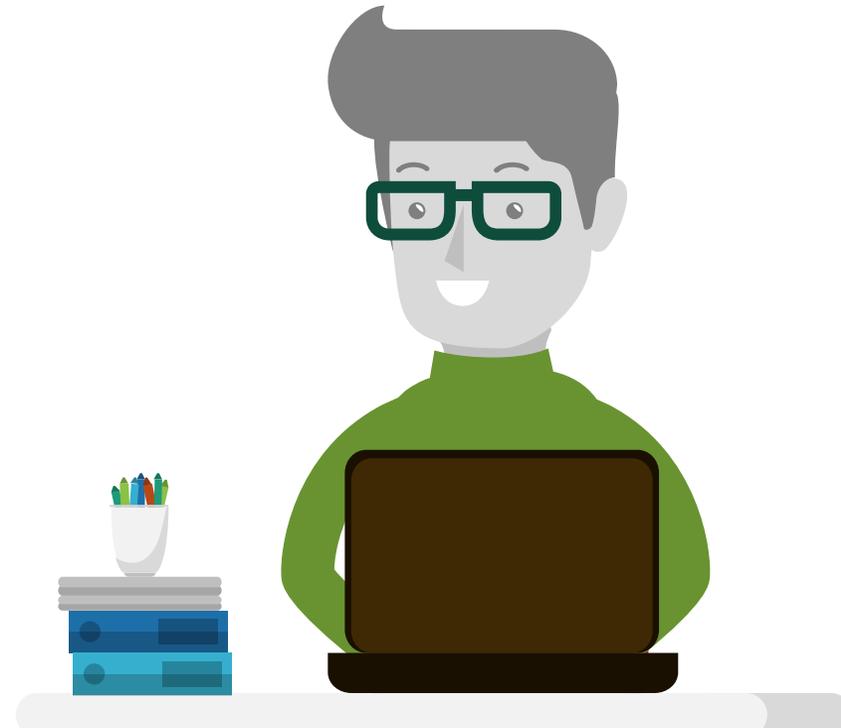
Advantages For HDD

HDDs are way cheaper than SSD, which makes it the better option if someone is on budget.



Disadvantages For HDD

HDDs Consume higher energy than SSDs and also it produce a lot of noise while being less durable and slower than SSDs



Advantages For SSD

SSD consume less energy than HDDs and produce less noise which is good if you want to play online games midnight without your dad waking up.



Advantages For SSD

SSD is way faster and also more durable than HDD.



Disadvantages For SSD

SSDs are more expensive than HDDs, and also have less storage capacity.

Optical Disc

Working Mechanism

In optical disc technology, a laser beam alters the surface of a plastic or metallic disc to represent data. But, unlike a hard disk, that uses magnetic charges, optical disc uses reflected light.

The 1s and 0s are represented by flat areas called lands and bumpy areas called pits on the disc surface.

The disc is read by an optical disc drive using a laser that projects a tiny beam of light on these areas. The amount of reflected light determines whether the area represents a 1 or a 0.

Like hard disks, optical discs use tracks and sectors to organize and store files. Unlike the concentric tracks and wedge-shaped sectors used for hard disks, however, optical discs typically use a single track that spirals outward from the center of the disc. This single track is divided into equal-sized sectors.

That meme should've been in SSD slide but there were no space left.

	Walking
	Running
	Sprinting
	PC running on SSD



Optical Discs

Different Types

Compact Disc (CD)

Were the first widely available optical disc for PCs

Lately it was replaced by DVD and Blue-Rays

Has a typical storage capacity of around 700mb



Digital Versatile Disc

DVD are the standard optical discs for PCs

Looks similar to CD

Has a typical storage capacity of around 4.7 GB



Blu-Ray Discs

The newest form of optical discs.

It was designed to store high definition videos.

Has a typical storage capacity of around 50 GB



Optical Discs

Basic Formats

1

Read-Only

Read-only (CD-ROM for read-only-memory) discs are discs that cannot be written on or erased by the user. Optical discs that you buy in a store, such as music CDs, DVD movies, and Blu-ray video games, are often read only.



2

Write-Once

Write-once (R for recordable) discs can be written on once. After that, the disc can be read many times but cannot be written on or erased. These discs are ideal for creating permanent archives, such as CD-R, often used for storing family photos, and DVD-R, often used to store home movies.



3

Rewriteable

Rewriteable (RW for rewriteable) discs are similar to write-once discs except that the disc surface is not permanently altered when data is recorded.

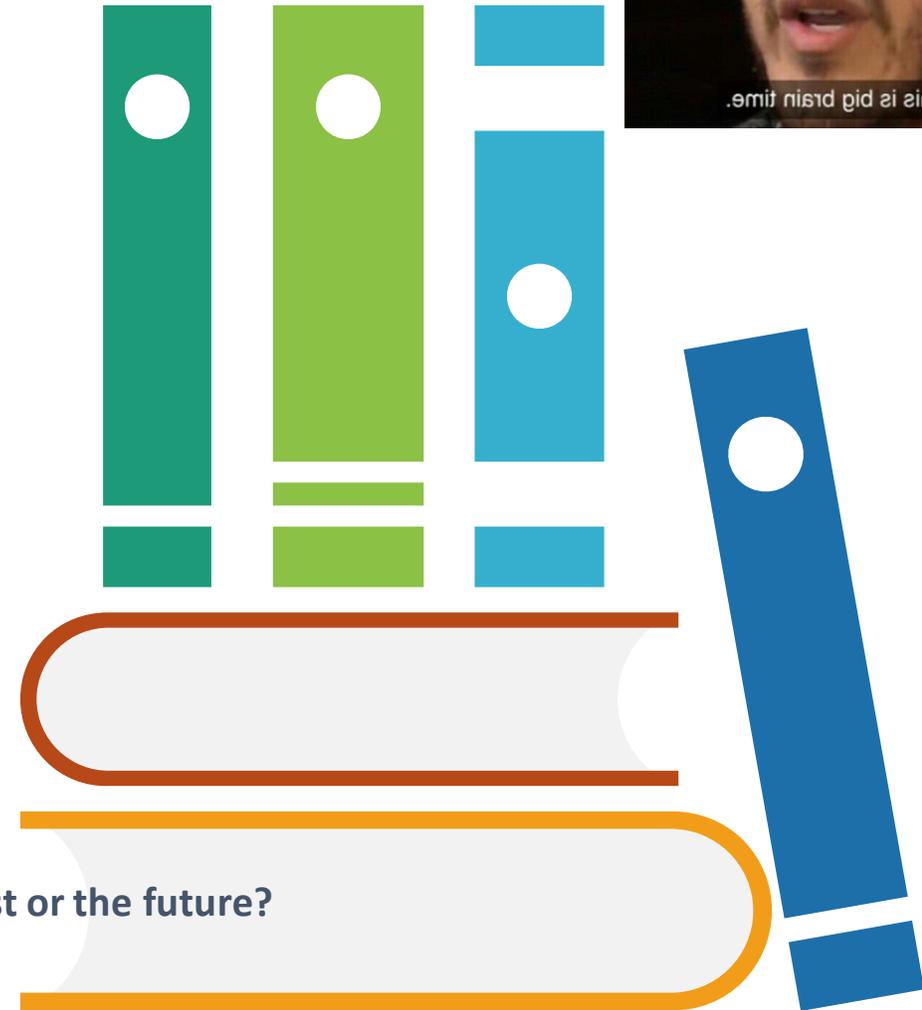




Big Brain Time



- ◆ What are the benefits of SSD over HDD?
- ◆ What are the 3 types of optical discs?
- ◆ What are the 3 formats of optical discs?
- ◆ If you had a time travel machine would you go to live in the past or the future?



Big Brain Time



◆ What are the benefits of SSD over HDD?

Since SSD is quieter than HDD you can play online games at night without waking up your dad, since SSD is faster you can close the laptop faster in case your dad woke up, and because SSD is more expensive you can't get it.

◆ What are the 3 types of optical discs?

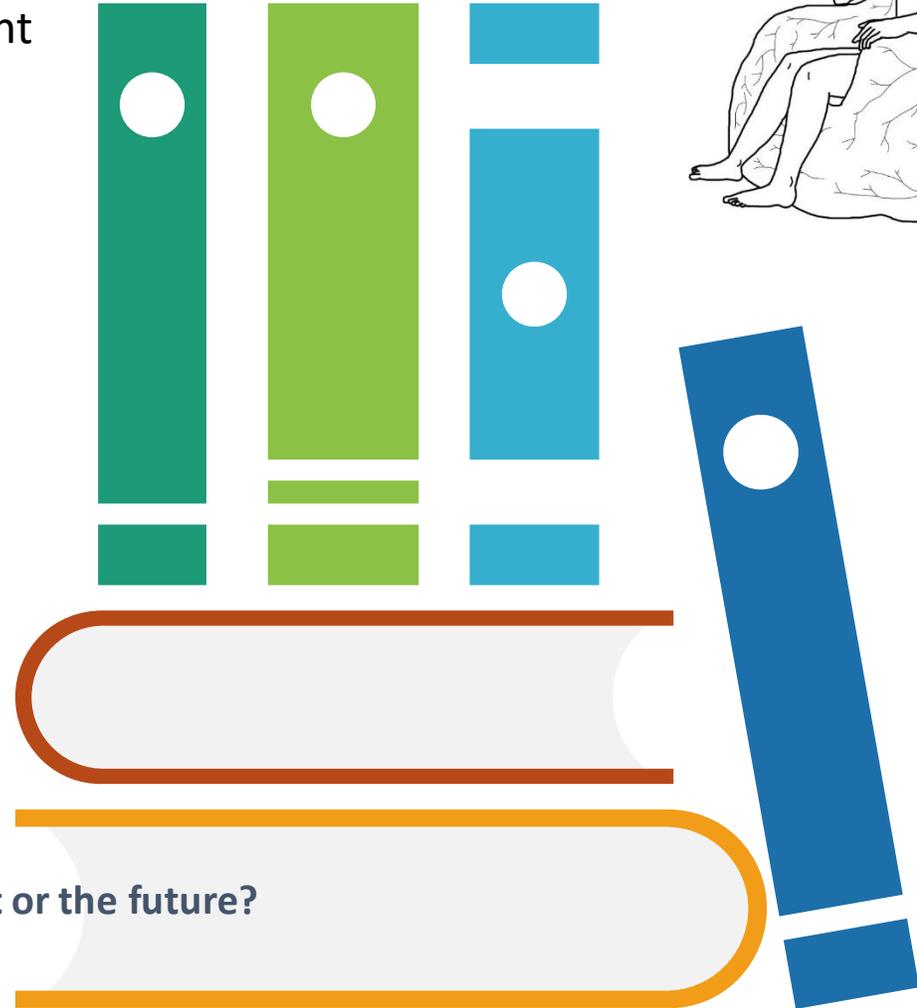
CD, DVD, Blu-Ray

◆ What are the 3 formats of optical discs?

Read-Only, Write-Once, Rewriteable

◆ If you had a time travel machine would you go to live in the past or the future?

both



Cloud Storage



Cloud Services

Internet acts as a cloud for companies where as customer access applications without installing them, and use the applications as a service and not a product.



Cloud Storage

One of those Services is cloud storage where you store your data online.



Cloud Storage Benefits

With cloud storage you don't have to worry about taking backups or doing maintenance or hardware upgrading, also file sharing is super easy as anyone with internet connected device can access the data



Cloud Storage Disadvantages

Access speed might be an issue when storing data online since the speed depends on your internet connection which in most cases isn't quick. Some also might argue that the data uploaded online isn't being secured in good way, although most big companies have security protocols.



Mass Storage Devices



Mass Storage Devices

Mass storage devices are specialized high-capacity secondary storage designed for huge organizations and companies to store huge data.



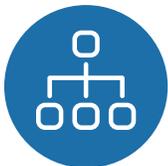
Mass Storage Devices

These mass storage solutions allow large corporations and institutions to centralize their maintenance and security of data, thereby reducing costs and personnel.



Enterprise Storage System (ERP)

Most large organizations have established a strategy called an enterprise storage system to promote efficient and safe use of data across the networks within their organizations.



Storage Area Network (SAN)

SAN is an architecture to link remote computer storage devices, such as ERP, to computers such that the devices are as available as locally attached drives. In a SAN system, the user's computer provides the file system for storing data, but the SAN provides the disk space for data



Mass Storage Devices

ERP in Details



File Servers

Dedicated computers with very large storage capacities that provide users access to fast storage and retrieval of data.



Network Attached Storage

type of file server designed for homes and small businesses. NAS is less expensive, easier to set up, and easier to manage than most file servers. However, it does not include powerful management tools and features found in many large-scale file servers.



RAID Systems

Larger versions of the specialized devices discussed earlier in this chapter that protect data by constantly making backup copies of files moving across the organization's networks.

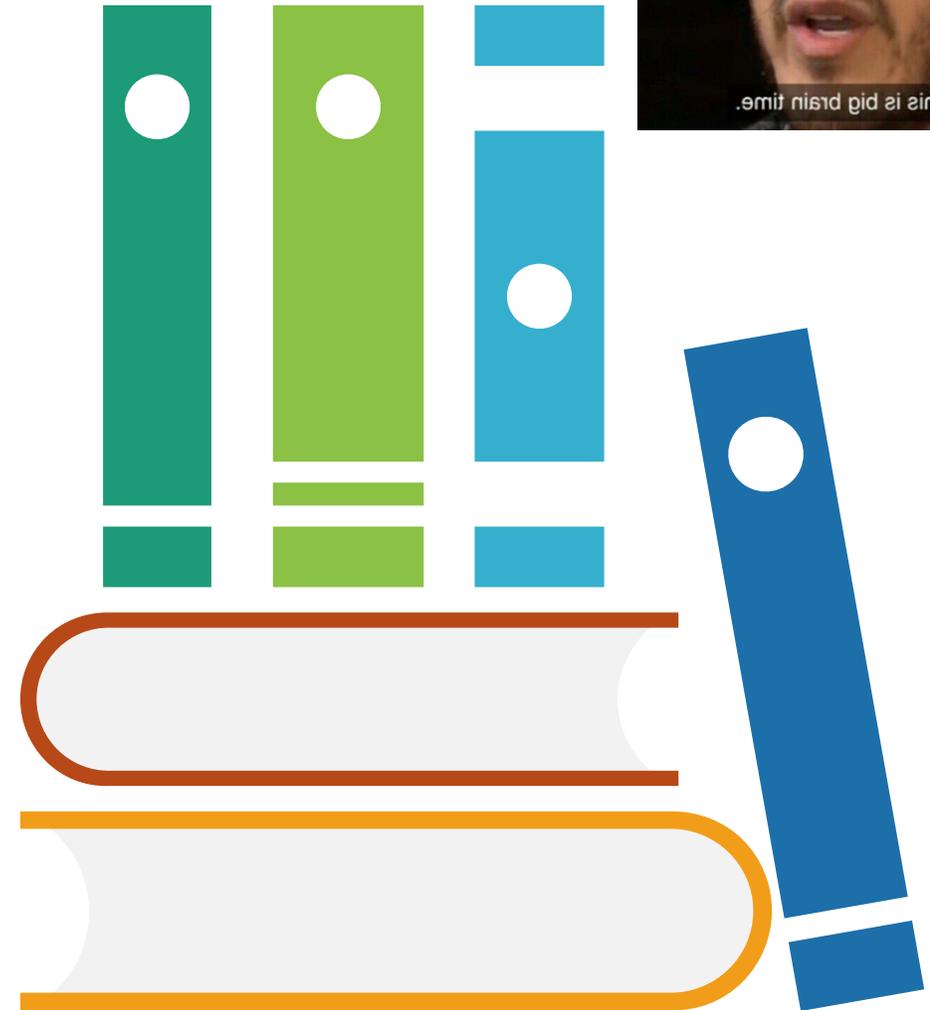


Organizational Cloud Storage

high-speed Internet connection to a dedicated remote storage facility. These facilities contain banks of file servers to offer enormous amounts of storage

Big Brain Time

- ◆ 1) What's Cloud Storage?
- ◆ 2) What are some benefits of Cloud Storage?
- ◆ 3) What does ERP stands for?
- ◆ 4) That's not a question just take a moment to appreciate yourself, you're awesome ^.^

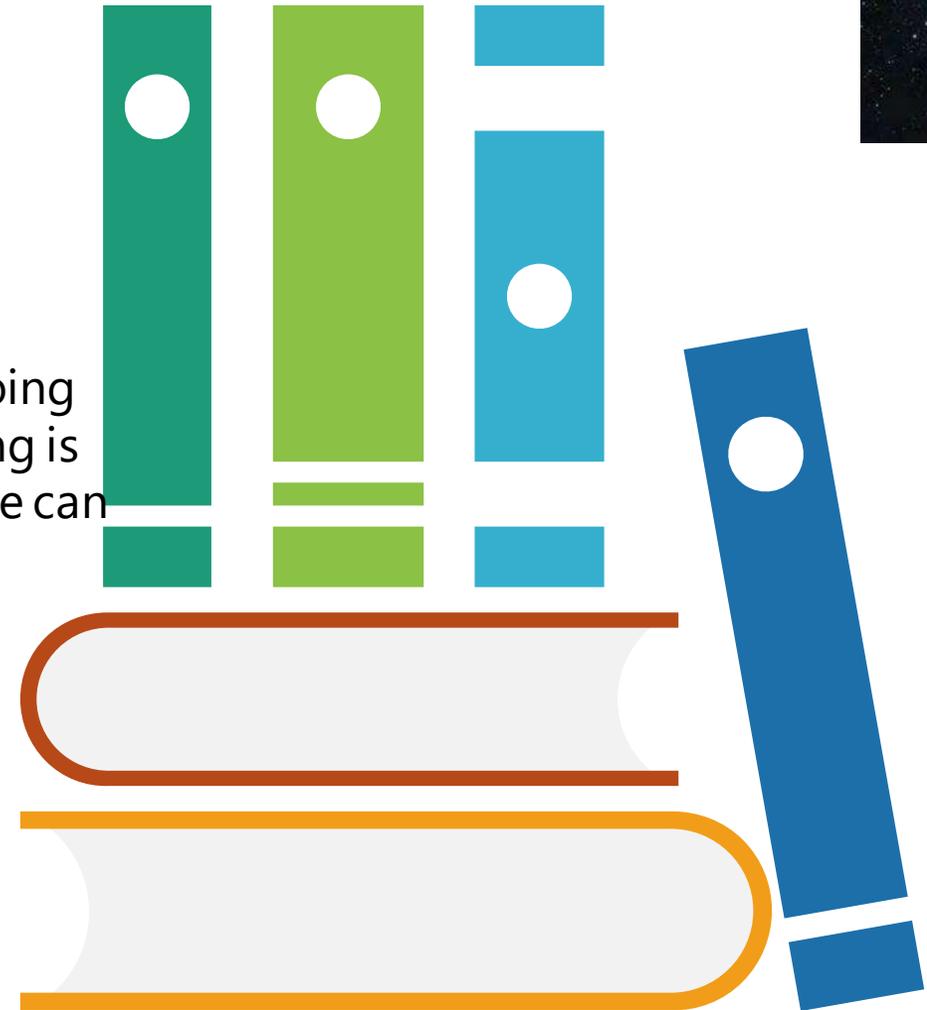


Big Brain Time

Please don't tell Erdogan that I used him , I might go to jail for it c:



- ◆ 1) What's Cloud Storage?
It's a method of storing data online on the internet.
- ◆ 2) What are some benefits of Cloud Storage?
you don't have to worry about taking backups or doing maintenance or hardware upgrading, also file sharing is super easy as anyone with internet connected device can access the data
- ◆ 3) What does ERP stands for?
Enterprise resource planning
- ◆ 4) That's not a question just take a moment to appreciate yourself, you're awesome
Or not I don't know you yet lol





Everything explained 100 percent



On a scale of 1 to 10 tell us how much did you enjoy the presentation



When you are ready to sleep but instead of shutdown you press Restart and you are running a pc with HDD so now you have to waste 8 minutes of your life.



Slide if they liked the presentation and Q&A



Slide if they didn't like the presentation and Q&A

