-major computer components [HDD->RAM->CPU->RAM->HDD ]:

In the field of big data and data analytics, we want to focus on

\*RAM (random access memory): stores the data that the computer is actively using so that it can be accessed quickly by the CPU when needed. it’s temporary, and all the data on it will be lost when the computer is turned off. It’s small in storing capacity.

\*Storage: another type of memory, has much more storage capacity than ram, maintains the data after power is cut off.

\*CPU (central processing unit, or processor): the part that takes instructions from a program or application and performs a calculation. CPU is also limited, so you can have a limited number of processes running at the same time.

Explain how to they’re limited and should be used wisely, give a snapshot of task manager and how it shows the resources used(task manager slide)

-what is a software: collection of [instructions](https://en.wikipedia.org/wiki/Instruction_(computer_science)) that tell a [computer](https://en.wikipedia.org/wiki/Computer) how to work. System software[critical to computer functioning] & application system software

Everything running on your computer, including applications, background programs, and your operating system.

-what is an operating system: the software that allocates the resources needed for applications to run.

Clarify what resources mean

Types: MS windows, linux, MACOS, MAC IOS, watchOS, google android

Introduce the hardware, OS, app, user diagram

-application (mention browser) vs program: applications are programs that are designed for the end-user(you), so it offers an interface for the user to perform various functions, tasks, or activities by accepting input from the user.

Examples include MS EXCEL, google chrome, notepad, zoom

So all applications are programs but not all programs and necessarily applications.

-how are programs written? Through a programming language, so a programming language is computer language used to write software programs for the computers to [execute](https://www.computerhope.com/jargon/e/execute.htm).

There are many programming languages, and they differ in the syntax(rules) followed to write using that programming language.

-download (from the web) or from flash/CD vs install:

Downloading a program means copying the program file from a remote source into my computer.

Installing the program is allowing the program to make changes in your computer, like creating icons, placing certain subfiles in specific locations, change some configuration in your system so that the program can be easily used through your computer interface.

-what is a file: computer resources for storing data or information. There are many different file formats for storing different types of data. Illustrate on diagram and explain file extensions and what do they mean.

What is a folder(directory) container inside which files can be stored

File and folders tree hierarchy: tree of files and folders

File path: the series of folders and subfolders leading to a specific file

-what is a computer network? A network is a collection of computers and other electronic devices connected with each other to allow data sharing.

Show a diagram of a network.

-What is IP address

-what is the internet, how it differs from the web?

Is the whole infrastructure that connect small networks with each other to form a vast network of networks for the purpose of data sharing.

One way data is shared is through the or www(short for world wide web). The web is composed of billions of connected digital documents that are viewed in a web browser, such as Chrome, [Safari](https://www.lifewire.com/what-is-safari-4173608), [Firefox](https://www.lifewire.com/the-history-of-firefox-446233).

How are they connected? Normally through hyperlinks.

What is URL (web address): address of a resource on the web

Webpage: digital document on the web, a collection forms a website.

-what is a server? a computer with powerful resources(ram, storage, CPUs) their role is to serve things to normal computers like yours and mine. Meaning they need to serve many computer, that’s why there powerful and fast

Show a picture of data center

Types of server? web server, mail server, game server(server keeps the game in sync for players[Player locations. Player activity. Game rules and scores]) describe point od views.

-what is a server? -client and server topology (mention browser as the client)? Types of servers? how rampant servers are around us? What is loopback address and what are ports [use when testing setup]