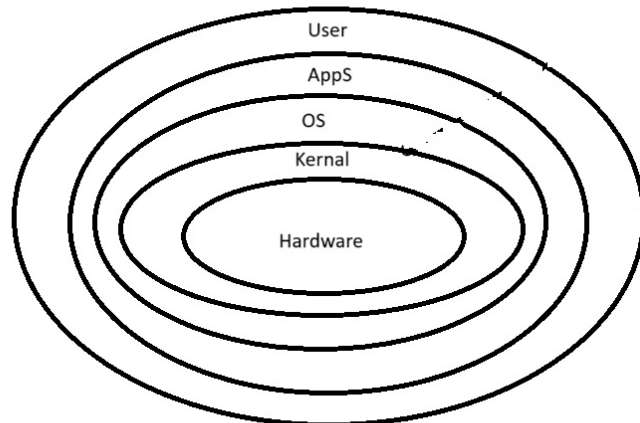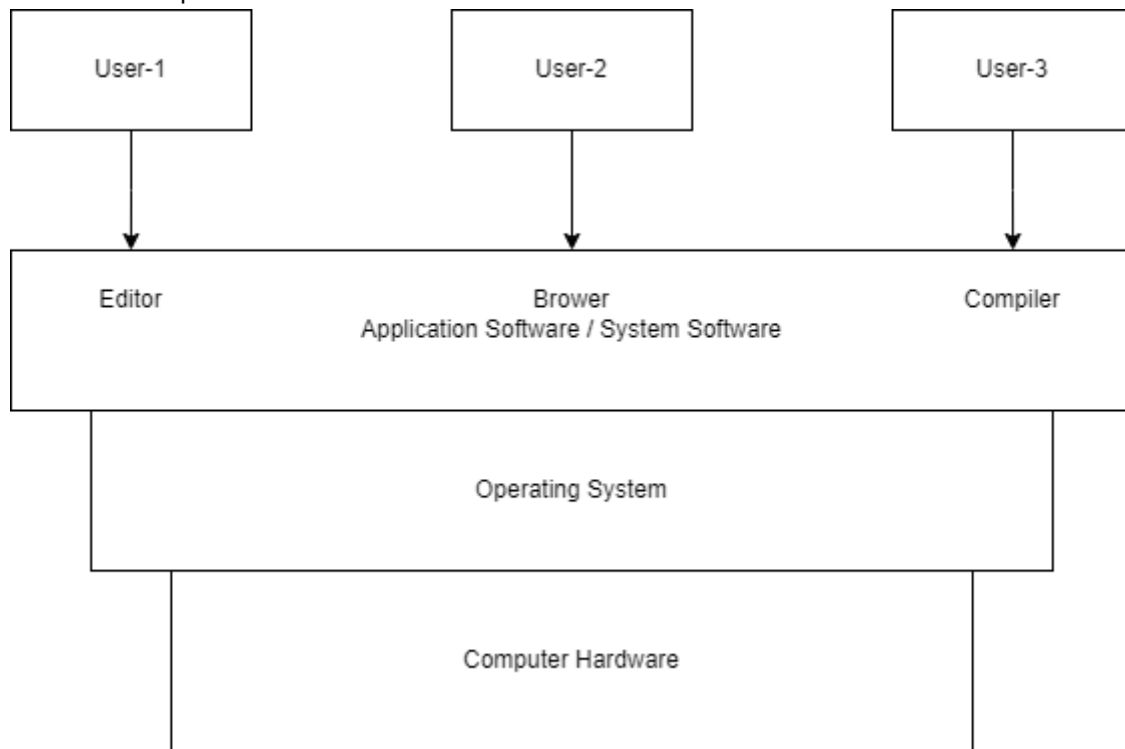OS Notes Day-1 Date: 24-02-2025

Session-1: Introduction to Operating System

- What is OS?
    - Hardware Manager: It manage all the hardware resources or components of computer.
    - Process Manager: It supervise all the task/process/job which is being executed by processor.
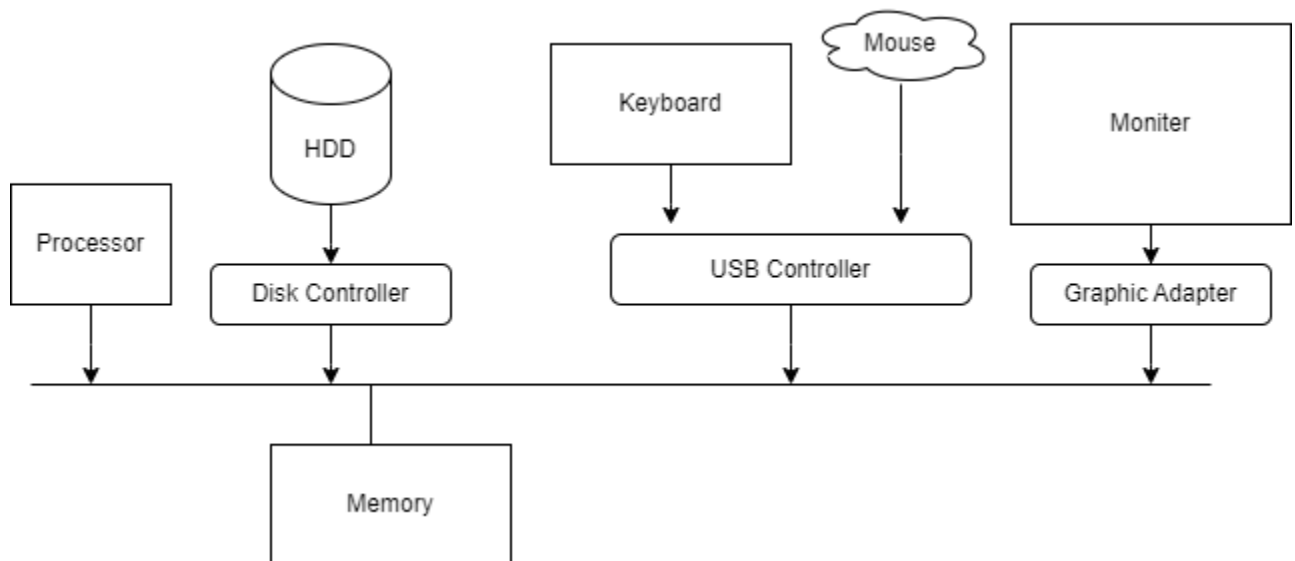   - It is an Interface between Hardware and User.

- How is it different from other application software?
    - OS is installed over hard-drive.
    - Applications are also installed over hard-drive but under the layer of OS.
    - OS runs over computer system, and Applications runs over OS.
- Booting: Loading of OS from hard drive to main memory is known as Booting
    - Cold Booting: When we are starting computer system from totally power off condition and OS code loaded into main memory.
    - Hot Booting: When the system is already running and we re-start the system, then firstly RAM is totally cleared and OS code is loaded again into RAM.
- Why OS is hardware dependent?
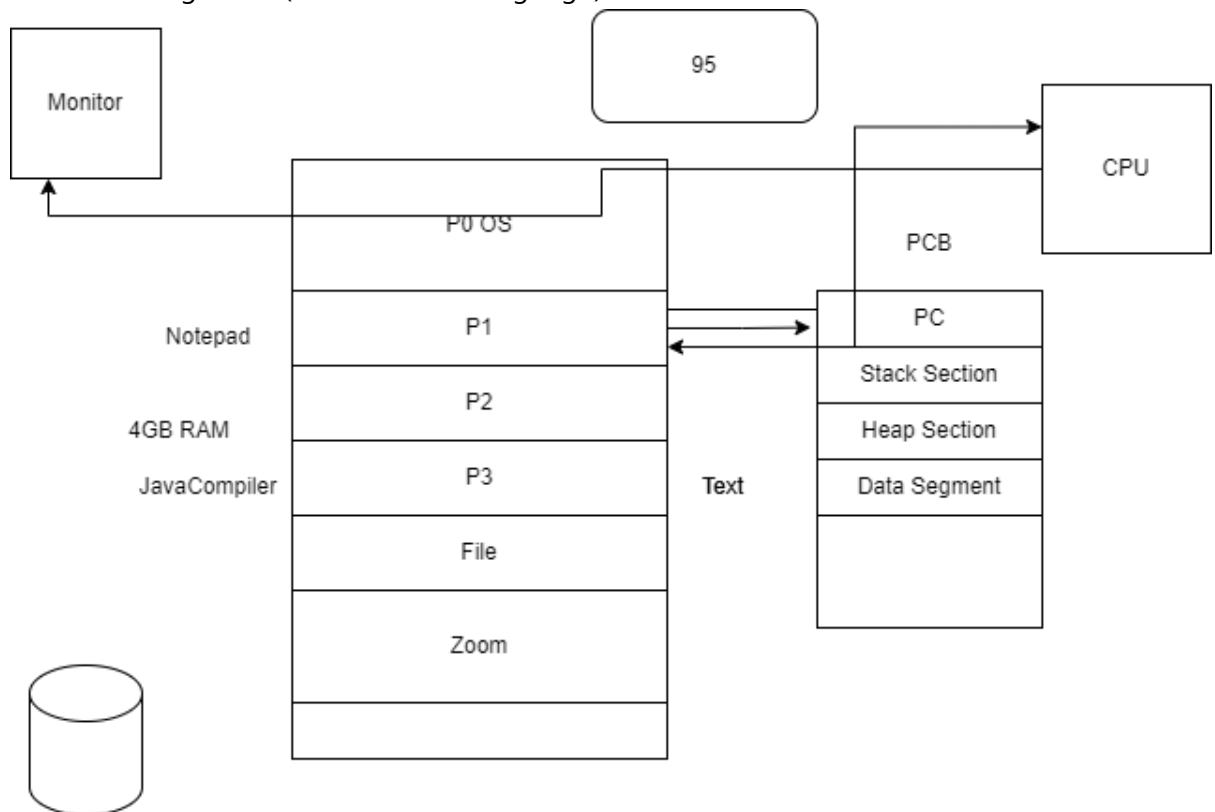   - TODO

- Different components of OS

- Basic computer organization required for OS.

- Examples of well-known OS
    - Mobile OS: Android, iOS, Windows
    - Embedded OS:
    - Real Time OS: HRT, SRT
    - Desktop OS: Windosq, MacOS, Chrome OS
    - Sever OS: Cent7 OS, Ubuntu Server
- TO DO:How are these different from each other and why?
- Functions of OS:

- Process Management (Process Scheduling Algo)

- Device Management
- Disk Management (Disk Scheduling Algos)
- File Management
- Network Management
- Security Management (Firewall, Anti Virus, BIOS)

Will be discussed tomorrow

- User and Kernel space and mode;
- Interrupts and system calls
- Memory Hierarchy in Computer System
- Types of Operating System

Session-2: Introduction to Linux

- It is an open source operating system. It is available for the user for free of cost. User can modify its code w.r.t. their need.
- The founder of linux OS is Linus Torvards. It is launched in year 1991.
- An Open Source Community is working behind its continous support and upgradation.
- Feature:
    - No Cost/ Low Cost
    - Multi-Tasking
    - Security
    - Customizable
    - Multi-User
    - Better File System
    - CLI and GUI

- Working basics of file system
  - / it is known root directory
    - /bin: User bineries
    - /sbin: System Bineries
    - /etc: Configuaration files
    - /dev: Device Files
    - /proc: Process Information
    - /var: Variables Files
    - /tmp: Temporaray files
    - /usr: User Directory
    - /Home: Parent directory for user
    - /log:
- Commands associated with files/directories & other basic commands.
- Operators like redirection, pipe