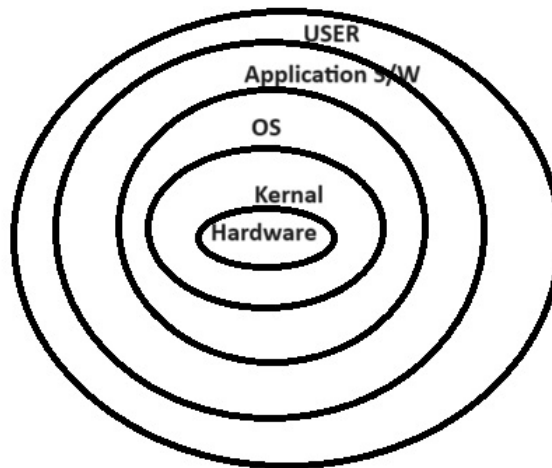
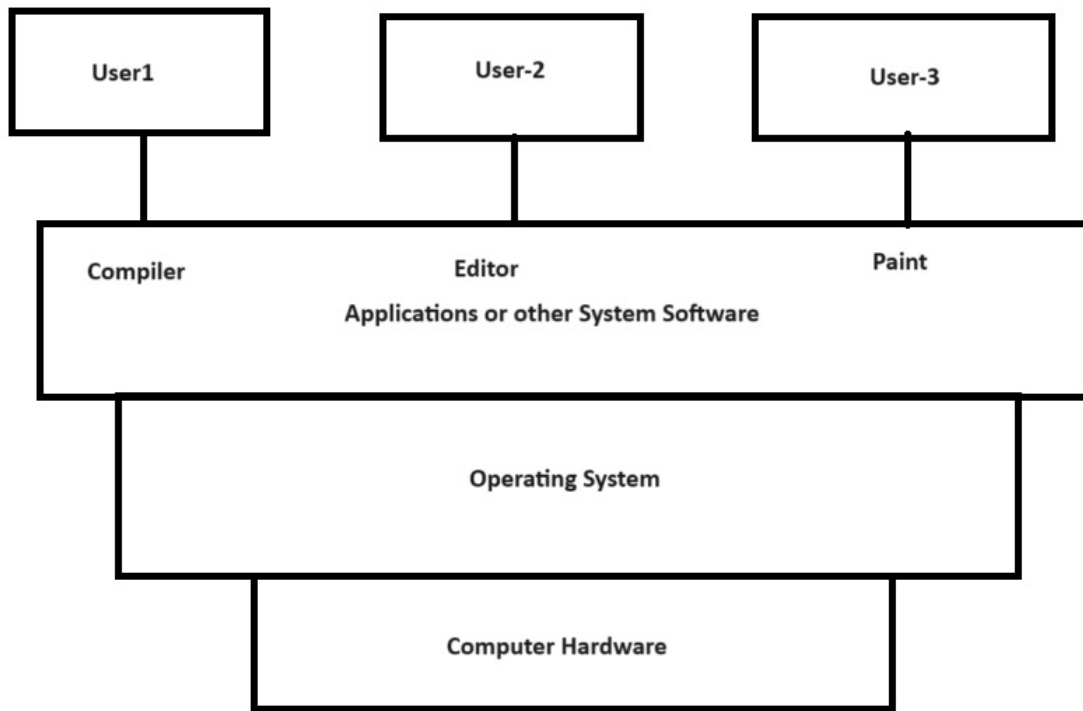


## Session-1: Introduction to Operating System

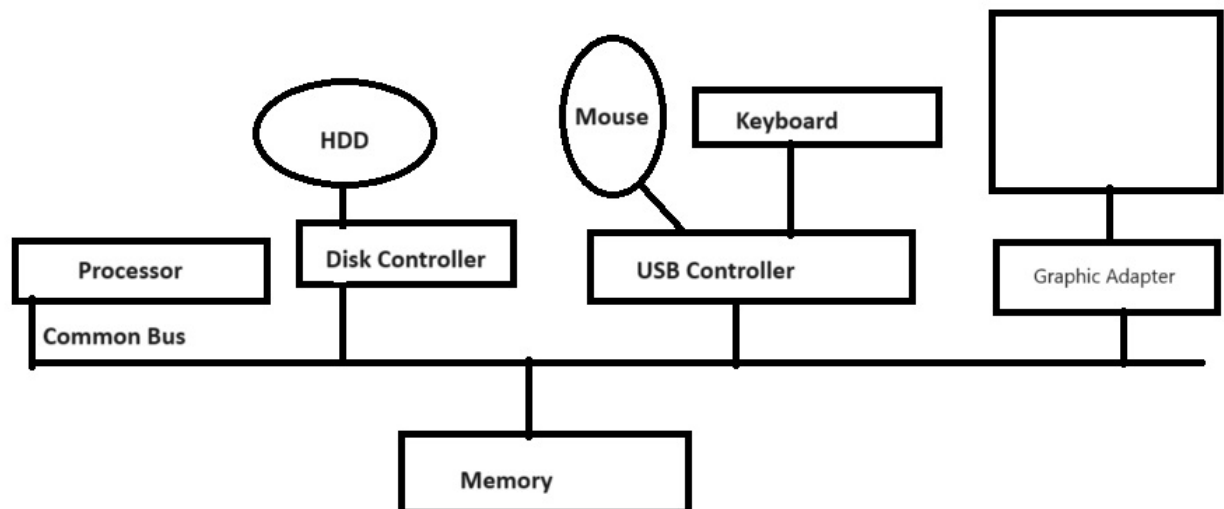
- What is OS?
  - Hardware Manager: It manage all the hardware resources or components of computer.
  - Process Manager: It supervise all the task/process/job which is being executed by processor.
- How is it different from other application software?
  - OS is installed over hard-drive.
  - Applications are also installed over hard-drive but under the layer of OS.
  - OS runs over computer system, and Applications runs over OS.
- Why is it hardware dependent?



- Different components of OS

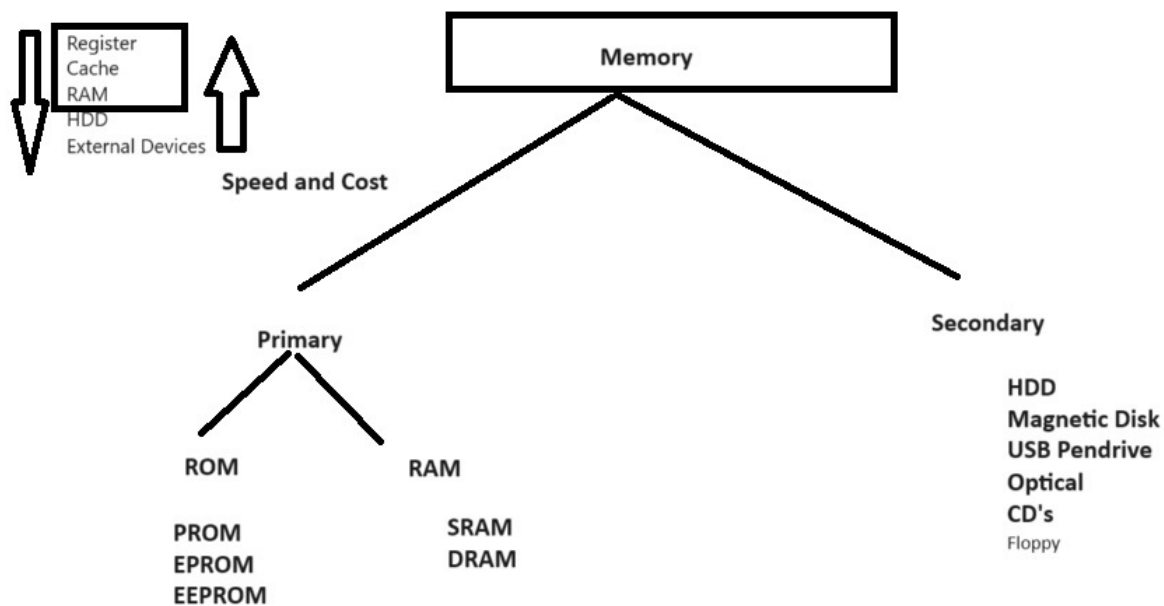


- Basic computer organization required for OS.



- Examples of well-known OS
  1. Mobile OS: Android, iOS, Windows
  2. Embedded System OS:
  3. Real Time OS: HRT, SRT
  4. Desktop OS: Personal Computer
  5. Server machine OS etc.
- How are these different from each other and why?

- Functions of OS
  - Process Management (Process Scheduling Algo)
  - Memory Management
  - Device Management (HDD, Printer, Monitor, Speaker, WebCam)
  - Disk Management (Disk Scheduling Algos)
  - Network Management (Network Card / Controller)
  - File Management
  - Security Management (Firewall, Anti Virus, Anti Spyware)
- User and Kernel space and mode; Interrupts and system calls
- Memory Hierarchy in Computer System



## Session-2: Introduction to Linux (To be discussed)

- Working with basics file system of Linux
- Commands associated with files/directories
- Other basic commands.
- Ref: <https://ubuntu.com/tutorials/command-line-for-beginners#1-overview>
- Operators like Redirection (>), Pipe (|)
- What are file permissions and how to set them?
- Permissions (chmod, chown, etc)
- Ref: <https://help.ubuntu.com/community/FilePermissions>
- Access Control List
- Network Commands (telnet, ftp, ssh, sftp, finger)
- System variables like – PS1, PS2 etc. How to set them
- Shell Programming
- What is shell; What are different shells in Linux?
- Shell variables; Wildcard symbols
- Shell meta characters; Command line arguments; Read, Echo

### **Session-3: Shell Programming**

- Decision loops (if else, test, nested if else, case controls, while...until, for)
- Regular expressions; Arithmetic expressions
- More examples in Shell Programming