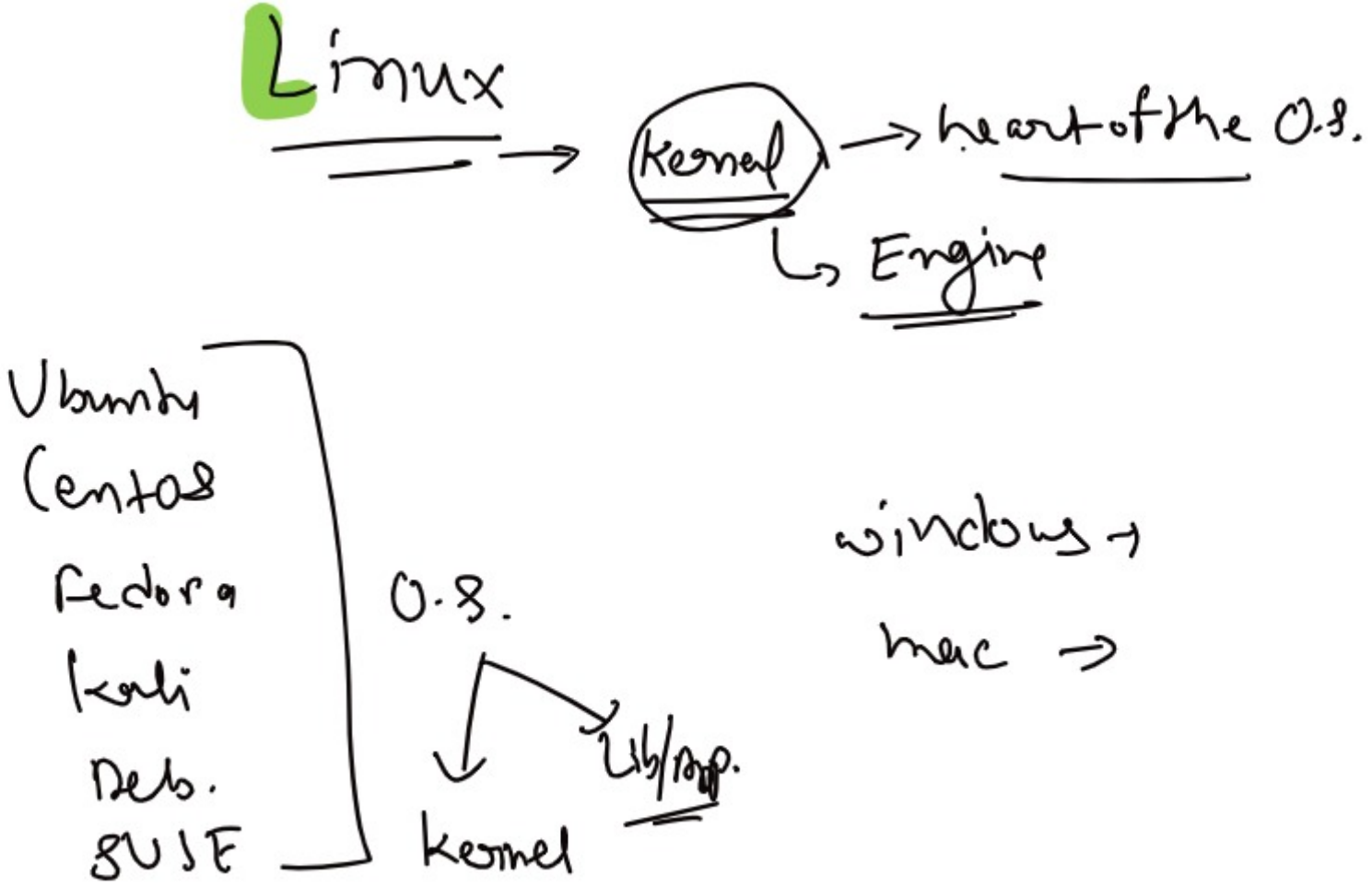

Linux
Kernel
heart of the O.S.
Engine
Ubuntu
Centos
Fedora
kali
Deb.
SUSE
O.S.
Lib/App.
kernel
windows
mac

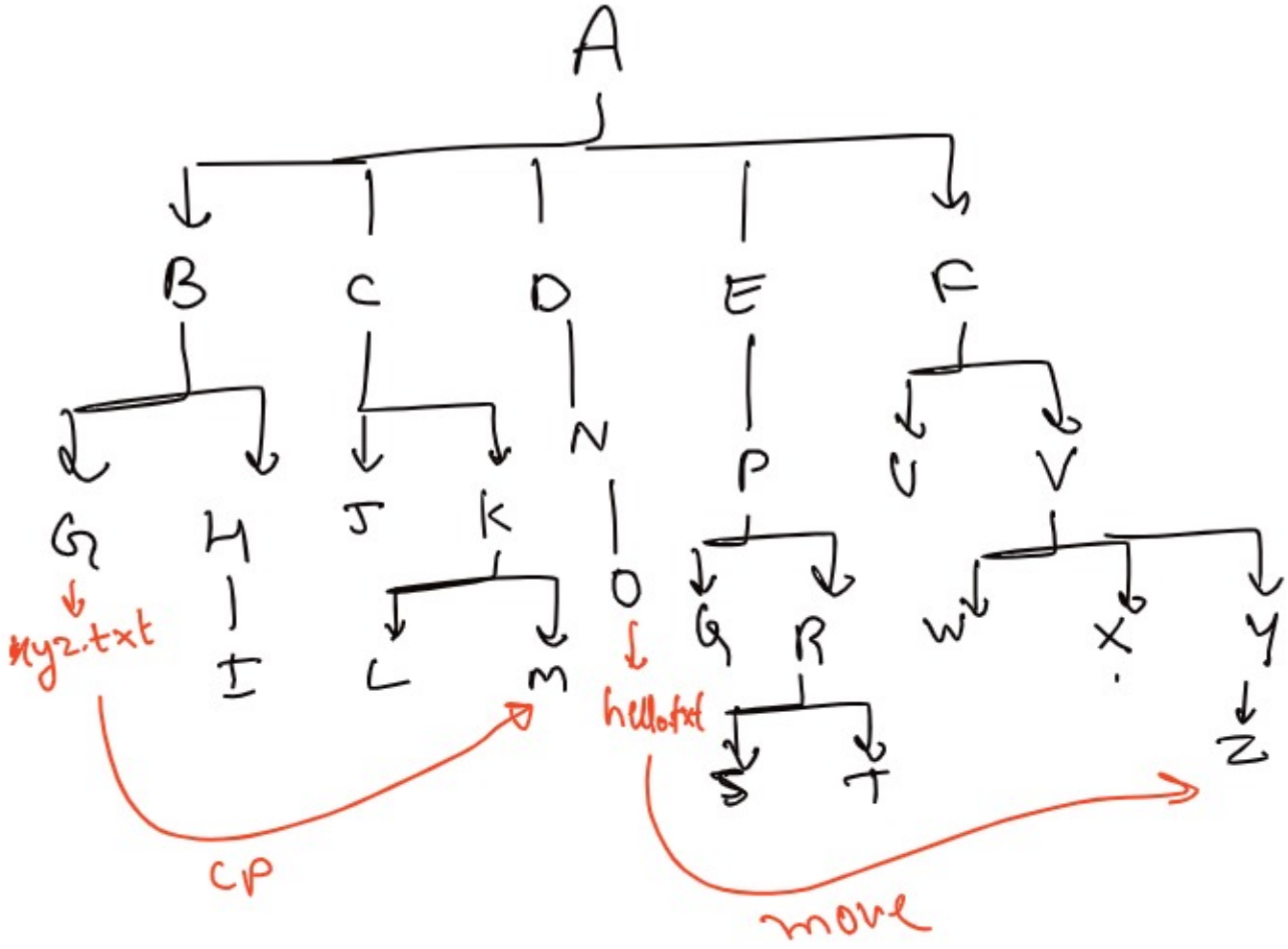
windows → kernel
NTkernel

mac → darwin

1) Linus torvald 1991 C lang

1) open source
2) free
3) Secure
4) Privacy
5) No need of Antivirus
6) multi User
7) multi Login

```
cd SKIT
 1207  mkdir A B C
 1208  ls
 1209  cd ..
 1210  cd SKIT/
 1211  mkdir A/X/Y/Z
 1212  mkdir -p A/X/Y/Z
 1213  tree
 1214  sudo apt  install tree
 1215  tree
 1216  rmdir C
 1217  tree
 1218  mkdir -p A/X/Y/Z
 1219  tree
 1220  rm -r -v A
 1221  ls
 1222  ls -l
 1223  touch xyz.txt
 1224  ls
 1225  unalias ls
 1226  ls
 1227  touch abc
 1228  ls
 1229  ls- ll
 1230  ls -l
 1231  nano abc
 1232  cat abc
```

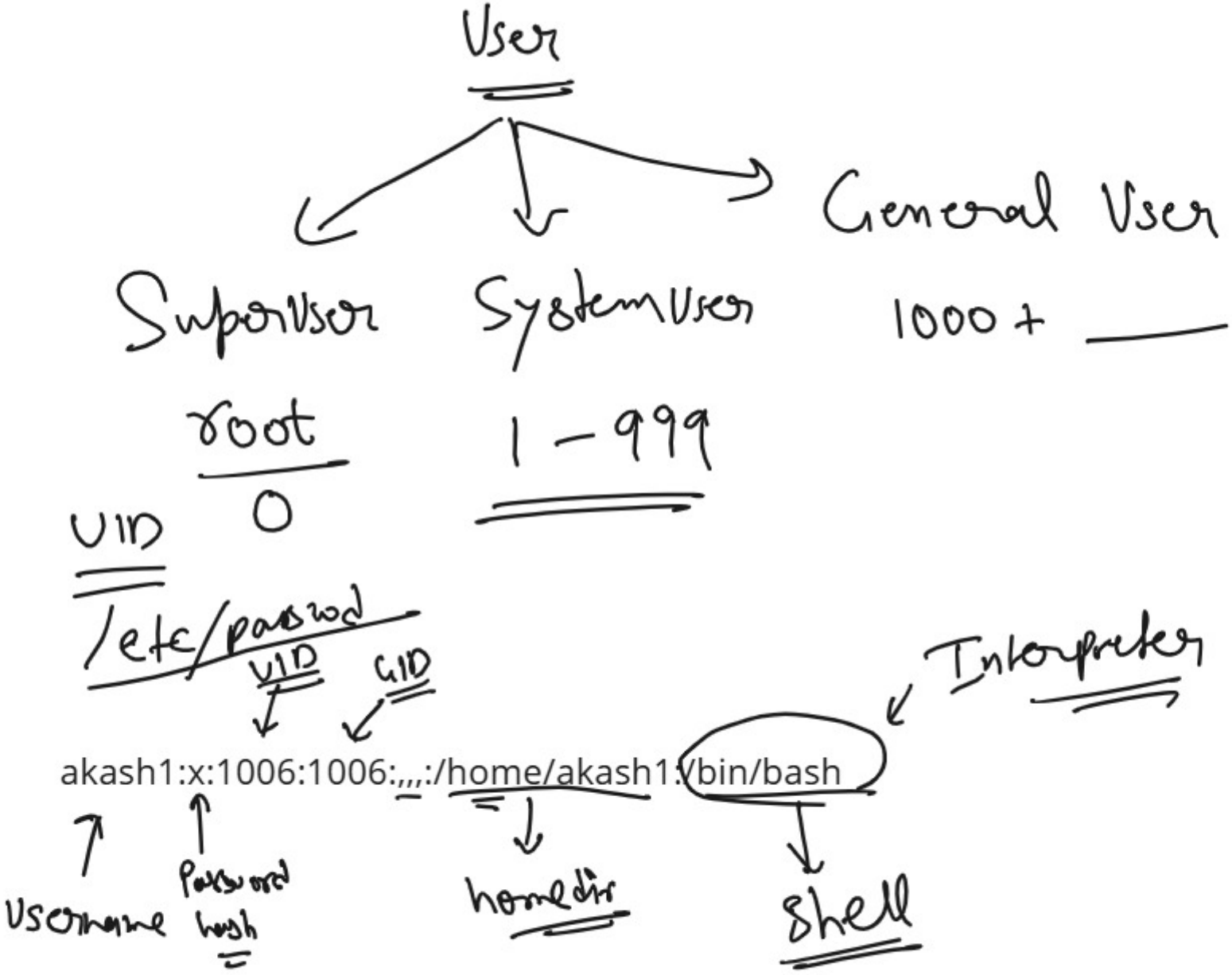


1)Create above directory structure

2) create a xyz.txt in G dir and hello.txt in O dir

3) Copy xyz.txt in M dir

4) Move hello.txt into Z dir



sudo userdel -r akash1

1. DevOps Overview

What is DevOps?

1. DevOps is a **combination of Development (Dev) and Operations (Ops)**.
2. It is a **culture, set of practices, and tools** that improve collaboration between development and IT operations teams.
3. DevOps helps in **automating software delivery and infrastructure management**.

Benefits of DevOps Tools in the Software Development Lifecycle

1. **Faster software releases** with CI/CD pipelines.
2. **Improved collaboration** between developers and IT teams.
3. **Automated testing and deployment** reduce human errors.
4. **Better monitoring and feedback loops** for system stability.
5. **Efficient infrastructure management** using tools like Terraform, Ansible, and Kubernetes.

Overview of DevOps Toolchain

The DevOps toolchain consists of different tools used in various stages of the software development lifecycle:

1. **Planning** – Jira, Trello
2. **Version Control** – Git, GitHub, GitLab
3. **CI/CD** – Jenkins, GitHub Actions, GitLab CI/CD
4. **Configuration Management** – Ansible, Puppet, Chef
5. **Containerization & Orchestration** – Docker, Kubernetes
6. **Monitoring & Logging** – Prometheus, Grafana, ELK Stack

2. Linux Basics for DevOps

Introduction to Linux and Command-Line Interface (CLI)

1. Linux is an **open-source operating system** used in DevOps for running applications, servers, and automation scripts.
2. The **Command-Line Interface (CLI)** allows users to execute commands efficiently instead of using a graphical interface.
3. Linux distributions used in DevOps: **Ubuntu, CentOS, RedHat, Debian**.

Basic Linux Commands

File Operations

1. ls – List files and directories
2. cd – Change directory
3. pwd – Show current directory
4. mkdir – Create a directory
5. rm -rf – Remove files or directories

Managing Users and Groups

1. Creating a user: useradd username
2. Creating a group: groupadd groupname
3. Adding user to a group: usermod -aG groupname username
4. Checking user details: id username
5. Deleting a user: userdel -r username

Terminal shortcuts

1. CTRL+SHIFT+V ---- Paste --- Similar to CTRL+V in other applications.
2. CTRL+SHIFT+T ---- New Tab
3. CTRL+D ---- Close Tab Or the application if all the Tabs are closed.
4. CTRL+L ---- Clear screen
5. CTRL+K ---- Delete the text before the cursor.
6. CTRL+A ---- Move cursor to the beginning.
7. CTRL+E ---- Move the cursor to the end.
8. CTRL+C ---- Kill current task.
9. CTRL+Z ---- Move task to background. type 'fg'> to bring to foreground.
10. ~ ---- Home folder symbol. i.e. 'cd ~/Documents'
11. Up Cursor or CTRL+P ---- Scrolls through the commands you have previously entered.
12. Down Cursor or CTRL+N ---- Takes you back to a more recent command.
13. CTRL+A or HOME ---- Moves the cursor to the start of a line.
14. CTRL+E or END ---- Moves the cursor to the end of a line.