**BASICS LINUX COMMAND**

1. **WHAT IS LINUX -**  Linux is an os it is open source and it is a multitasking and multiuser with powershell and multiple flavors. Flavours like ubuntu,centos,redhat,fedora,kalilinux etc.
2. **LINUX FILE SYSTEM HIERARCHY -** in linux everything is represented as a file including a hardware program the files is stored in a directory and every directory contains a file with a tree structure that is called file system hierarchy.

* **1./ (Root):**Primary hierarchy root and root directory of the entire file system hierarchy. Every single file and directory starts from the root directory
* The only root user has the right to write under this directory

**2. /bin :**Essential command binaries that need to be available in single-user mode; for all users, e.g., cat, ls, cp.

Contains binary executables Commands used by all the users of the system are located here e.g. ps, ls, ping, grep, cp

**3. /boot :**Boot loader files, e.g., kernels, initrd. 

* Kernel initrd, vmlinux, grub files are located under /boot

**4. /dev :**Essential device files, e.g., /dev/null.

* These include terminal devices, usb, or any device attached to the system.

**5. /etc :**Host-specific system-wide configuration files.

**6. /home :**Users’ home directories, containing saved files, personal settings, etc.

* Home directories for all users to store their personal files.

**7. /lib :**Libraries essential for the binaries in /bin/ and /sbin/.

**8. /media :**Temporary mount directory for removable devices.

**9. /mnt :**Temporarily mounted filesystems.

**10. /opt :**Optional application software packages.

* **11. /sbin :**Essential system binaries, e.g., fsck, init, route. Just like /bin, /sbin also contains binary executables.
* Example: iptables, reboot, fdisk, ifconfig, swapon

**12. /tmp :**Temporary files. Often not preserved between system reboots, and may be severely size restricted.

* Directory that contains temporary files created by system and users.
* Files under this directory are deleted when system is rebooted.

**13. /usr :**Secondary hierarchy for read-only user data; contains the majority of (multi-)user utilities and applications.

* /usr/bin contains binary files for user programs. If you can’t find a user binary under /bin, look under /usr/bin. For example: at, awk, cc, less, scp

**Linux Basics Command**

1. **ls** - The most frequently used command in Linux to list directories
2. **pwd** - Print working directory command in Linux
3. **cd** - Linux command to navigate through directories
4. **mkdir** - Command used to create directories in Linux
5. **mv** - Move or rename files in Linux
6. **cp** - Similar usage as mv but for copying files in Linux
7. **rm** - Delete files or directories
8. **touch** - Create blank/empty files
9. **ln** - Create symbolic links (shortcuts) to other files
10. **cat** - Display file contents on the terminal
11. **clear** - Clear the terminal display
12. **echo** - Print any text that follows the command
13. **less** - Linux command to display paged outputs in the terminal
14. **man** - Access manual pages for all Linux commands
15. **uname** - Linux command to get basic information about the OS
16. **whoami** - Get the active username
17. **tar** - Command to extract and compress files in Linux
18. **grep** - Search for a string within an output
19. **head** - Return the specified number of lines from the top
20. **tail** - Return the specified number of lines from the bottom
21. **diff** - Find the difference between two files
22. **export** - Export environment variables in Linux
23. **zip** - Zip files in Linux
24. **unzip** - Unzip files in Linux
25. **ssh** - Secure Shell command in Linux
26. **service** - Linux command to start and stop services
27. **ps** - Display active processes
28. **kill and killall** - Kill active processes by process ID or name
29. **df** - Display disk filesystem information
30. **mount** - Mount file systems in Linux
31. **chmod** - Command to change file permissions
32. **chown** - Command for granting ownership of files or folders
33. **ifconfig** - Display network interfaces and IP addresses
34. **wget** - Direct download files from the internet
35. **top** - View active processes live with their system usage
36. **useradd and usermod** - Add new user or change existing users data
37. **passwd** - Create or update passwords for existing users
38. **history -**  used to view the previously executed command.

SAFIA\_KHATOON