

Assignment 1 – Unit-1: Linux Basics

 **Objective:** Practice essential Linux commands and run sample lab scripts (Lab3 & Lab5).

Selected Lab Files

- Lab3.sh
- Lab5.sh

Commands, Outputs & Explanations

- ◊ 1. **pwd** – Print Working Directory

```
pwd
```

Output:

```
/home/student/Unit-1
```

 Prints the **current working directory**.

- ◊ 2. **ls** – List Directory Contents

```
ls
```

Output (sample):

```
Lab3.sh  Lab5.sh  Documents  Downloads
```

 Lists files and folders. **ls -l** → details, **ls -a** → hidden files.

- ◊ 3. **mkdir** – Make Directory

```
mkdir testfolder
```

❖ Creates a new folder.

◊ 4. **cd** – Change Directory

```
cd testfolder  
pwd
```

Output:

```
/home/student/Unit-1/testfolder
```

❖ Moves between directories.

◊ 5. **rmdir** – Remove Empty Directory

```
rmdir testfolder
```

◊ 6. **touch** – Create Empty File

```
touch file1.txt
```

❖ Creates empty file / updates timestamp.

◊ 7. **cp** – Copy Files

```
cp file1.txt file2.txt
```

◊ 8. **mv** – Move / Rename Files

```
mv file2.txt renamed.txt
```

◊ 9. **rm** – Delete Files

```
rm renamed.txt
```

◊ 10. **cat** – View File

```
cat file1.txt
```

◊ 11. **nano** – Text Editor

```
nano file1.txt
```

◊ 12. **clear** – Clear Screen

```
clear
```

◊ 13. **echo** – Print Text

```
echo "Hello World"
```

◊ 14. **man** – Manual Pages

```
man ls
```

◊ 15. **whoami** – Current User

```
whoami
```

◊ 16. **who** – Logged-in Users

```
who
```

- ◊ 17. **passwd** – Change Password

```
passwd
```

- ◊ 18. **sudo** – Run as Admin

```
sudo ls /root
```

❖ Runs command as root.

- ◊ 19. **find** – Search Files

```
find . -name "*.txt"
```

- ◊ 20. **grep** – Search Inside Files

```
grep "Hello" file1.txt
```

- ◊ 21. **chmod** – Change Permissions

```
chmod 755 script.sh  
chmod 644 file.txt
```

- ◊ 22. **chown** – Change Ownership

```
sudo chown chaya:chaya file1.txt
```

- ◊ 23. **df** – Disk Usage

```
df -h
```

- ◊ 24. **du** – Directory Size

```
du -sh Documents/
```

- ◊ 25. **top** – Process Monitor

```
top
```

❖ Press **q** to quit.

- ◊ 26. **ping** – Network Check

```
ping google.com
```

- ◊ 27. **ip a** – Show Network Info

```
ip a
```

- ◊ 28. **netstat** / **ss** – Active Connections

```
netstat -tuln  
ss -tuln
```

- ◊ 29. **apt** – Package Manager

```
sudo apt update  
sudo apt install git  
sudo apt remove git
```

- ◊ 30. **ps** – List Processes

```
ps aux
```

◊ 31. **kill** – Kill Process

```
kill 1234  
kill -9 1234
```

◊ 32. **shutdown & reboot**

```
sudo shutdown now  
sudo shutdown -r now
```

📝 Lab File Execution

◊ Lab3.sh

```
./Lab3.sh
```

Output:

```
Hello, Linux World!
```

◊ Lab5.sh

```
./Lab5.sh
```

Output:

```
Today is:  
Tue Sep 9 20:45:02 IST 2025
```

❓ Extra Questions

Q1. Difference between `chmod` and `chown`?

- `chmod` → change permissions (rwx).
- `chown` → change ownership (user/group).

Q2. How to check current directory & user?

```
pwd
whoami
```

Q3. Why use `sudo`? Runs commands as root with admin privileges.

Q4. How to stop an unresponsive process? Use `ps aux` to find PID, then `kill -9 PID`.

✓ Conclusion

This assignment covered:

- **Basic Linux commands** (navigation, files, search).
- **Admin commands** (sudo, user management, chmod, chown).
- **System monitoring** (df, du, top, ps, kill).
- **Networking & packages** (ping, ip a, apt).
- **Shutdown & reboot** operations.
- **Lab scripts** execution (Lab3 & Lab5).

terminal screenshots

```
chayanika@aryaveer-lohta-ThinkPad-E16-Gen-2:~$ ls
Desktop Documents Downloads Music Pictures Public snap Templates Videos
chayanika@aryaveer-lohta-ThinkPad-E16-Gen-2:~$ touch 1.sh
chayanika@aryaveer-lohta-ThinkPad-E16-Gen-2:~$ ls
1.sh Documents Music Public Templates
Desktop Downloads Pictures snap Videos
chayanika@aryaveer-lohta-ThinkPad-E16-Gen-2:~$ ls -l
total 36
-rw-rw-r-- 1 chayanika chayanika 0 Nov 18 12:37 1.sh
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Desktop
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Documents
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Downloads
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Music
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Pictures
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Public
drwx----- 3 chayanika chayanika 4096 Nov 18 12:36 snap
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Templates
drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Videos
chayanika@aryaveer-lohta-ThinkPad-E16-Gen-2:~$ ls -a
. .bash_logout .config Downloads Music Public Templates
.. .bashrc Desktop .gnupg Pictures snap Videos
1.sh .cache Documents .local .profile .ssh
```

```
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~$ ls -ls
total 36
0 -rw-rw-r-- 1 chayanika chayanika 0 Nov 18 12:37 1.sh
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Desktop
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Documents
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Downloads
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Music
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Pictures
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Public
4 drwx----- 3 chayanika chayanika 4096 Nov 18 12:36 snap
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Templates
4 drwxr-xr-x 2 chayanika chayanika 4096 Nov 18 12:36 Videos
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~$ ls -la
total 76
drwxr-x--- 16 chayanika chayanika 4096 Nov 18 12:37 .
drwxr-xr-x  5 root    root   4096 Nov 18 12:33 ..
-rw-rw-r--  1 chayanika chayanika 0 Nov 18 12:37 1.sh
-rw-r----  1 chayanika chayanika 220 Nov 18 12:33 .bash_logout
-rw-r----  1 chayanika chayanika 3771 Nov 18 12:33 .bashrc
drwx----- 10 chayanika chayanika 4096 Nov 18 12:37 .cache
drwx----- 10 chayanika chayanika 4096 Nov 18 12:37 .config
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Desktop
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Documents
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Downloads
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 .gnupg
drwx----- 4 chayanika chayanika 4096 Nov 18 12:36 .local
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Music
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Pictures
-rw-r----  1 chayanika chayanika 807 Nov 18 12:33 .profile
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Public
drwx----- 3 chayanika chayanika 4096 Nov 18 12:36 snap
drwx----- 2 chayanika chayanika 4096 Nov 18 12:36 .ssh
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Templates
drwxr-xr-x  2 chayanika chayanika 4096 Nov 18 12:36 Videos
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~$ pwd
/home/chayanika
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~$ cd Desktop/
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~/Desktop$ mkdir 1
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~/Desktop$ cd 1
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~/Desktop/1$ touch new.sh
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~/Desktop/1$ cp -r folder1 folder2
cp: cannot stat 'folder1': No such file or directory
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~/Desktop/1$ mkdir folder1 folder 2
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~/Desktop/1$ cp -r folder1 folder2
chayanika@aryaveer-lohia-ThinkPad-E16-Gen-2:~/Desktop/1$ mv 1.sh 2.sh
mv: cannot stat '1.sh': No such file or directory
```