

Lab 1: Learning Basic Linux Commands

OS used: Ubuntu (22.04 LST)

1. ls command

Syntax: ls[option][directory]

Usage: The ls command lists files and directories within the file system and shows detailed information about them.

Commands used:

- ls: it lists all the unhidden files and directories within current directory
- ls -l : it lists files in long listing format which includes:
 - the file type
 - number of hard links to the file
 - file owner
 - the file permissions
 - file group
 - file size
 - data and time
 - file name

Output:

```
jenisha-pandit@jenisha-pandit: ~  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
jenisha-pandit@jenisha-pandit:~$ ls  
Desktop  Downloads  Pictures  snap      Videos  
Documents Music      Public    Templates  
jenisha-pandit@jenisha-pandit:~$ ls -l  
total 36  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 16 20:14 Desktop  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Documents  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Downloads  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Music  
drwxr-xr-x 3 jenisha-pandit jenisha-pandit 4096 Jun 16 17:17 Pictures  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Public  
drwx----- 5 jenisha-pandit jenisha-pandit 4096 Jun 16 08:59 snap  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Templates  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Videos  
jenisha-pandit@jenisha-pandit:~$ |
```

2. cd command

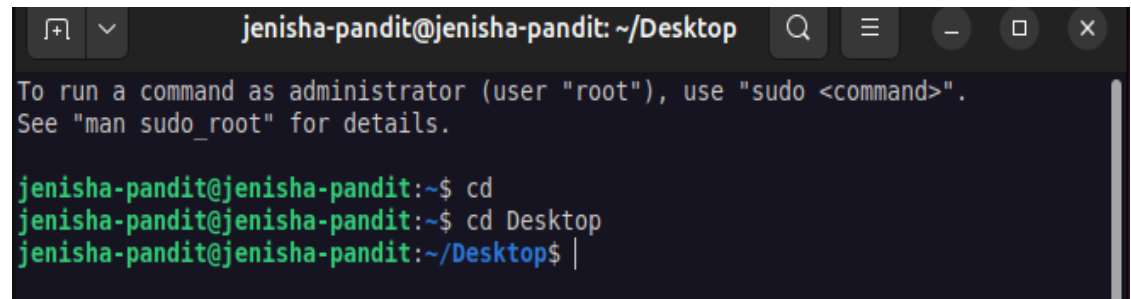
Syntax: cd

Usage: the cd command is used to change the current directory.

Commands used:

- cd desktop: it changes the directory to desktop

Output:



```
jenisha-pandit@jenisha-pandit: ~/Desktop
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

jenisha-pandit@jenisha-pandit:~$ cd
jenisha-pandit@jenisha-pandit:~$ cd Desktop
jenisha-pandit@jenisha-pandit:~/Desktop$ |
```

3. grep command

(Global Regular Expression print)

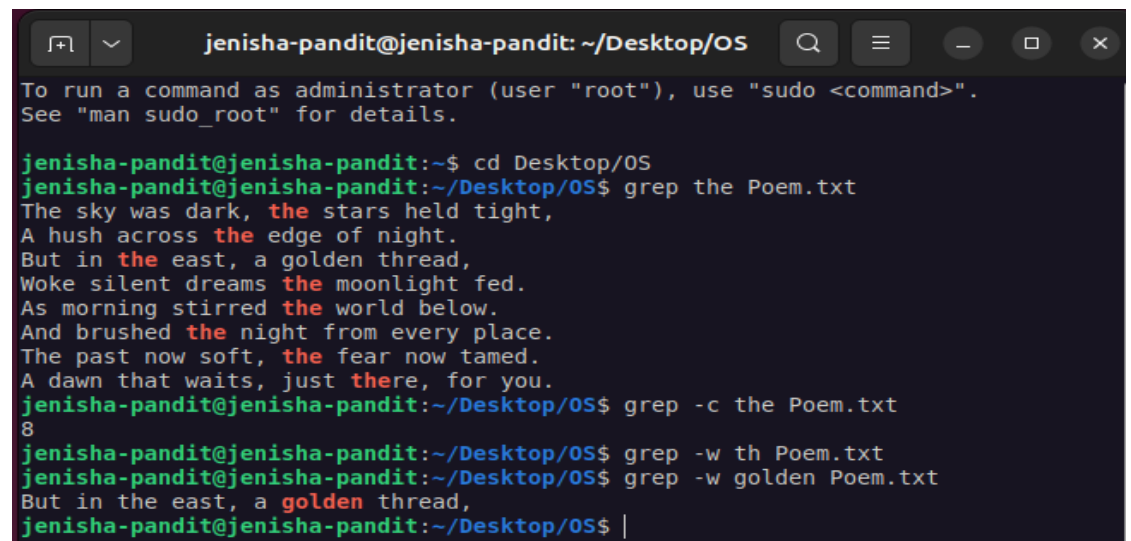
Syntax: grep "search_term" filename.txt

Usage: used to search text patterns in file.

Commands used:

- grep the file_name: search for pattern "the" in file.
- grep -c the file_name: shows how many "the" are present in the file.
- grep -w: shows the exact match

Output:



```
jenisha-pandit@jenisha-pandit: ~/Desktop/OS
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

jenisha-pandit@jenisha-pandit:~$ cd Desktop/OS
jenisha-pandit@jenisha-pandit:~/Desktop/OS$ grep the Poem.txt
The sky was dark, the stars held tight,
A hush across the edge of night.
But in the east, a golden thread,
Woke silent dreams the moonlight fed.
As morning stirred the world below.
And brushed the night from every place.
The past now soft, the fear now tamed.
A dawn that waits, just there, for you.
jenisha-pandit@jenisha-pandit:~/Desktop/OS$ grep -c the Poem.txt
8
jenisha-pandit@jenisha-pandit:~/Desktop/OS$ grep -w th Poem.txt
jenisha-pandit@jenisha-pandit:~/Desktop/OS$ grep -w golden Poem.txt
But in the east, a golden thread,
jenisha-pandit@jenisha-pandit:~/Desktop/OS$ |
```

4. su command

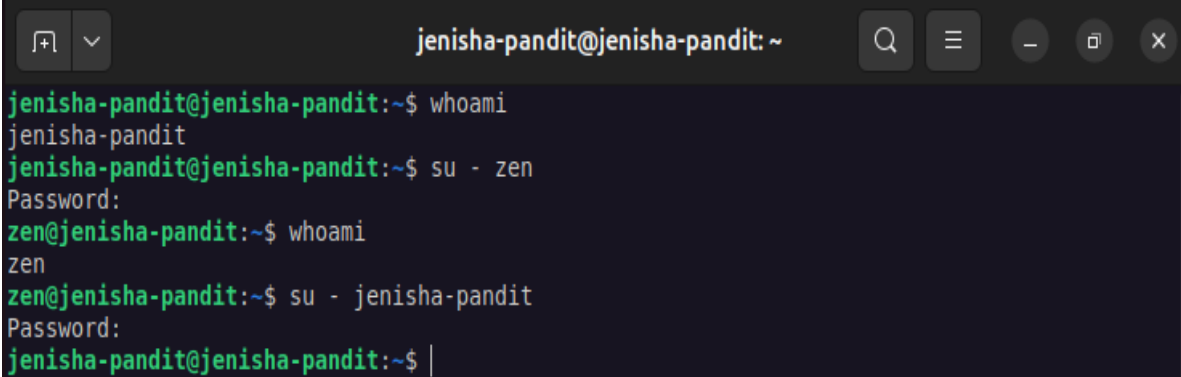
Syntax: su [OPTIONS] [USERNAME]

Usage: used to switch the users.

Commands used:

- su - zen: switched the user to zen.
- su – jenisha-pandit: switched the user to jenisha-pandit

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' with standard window controls. The terminal shows the following commands and output:

```
jenisha-pandit@jenisha-pandit:~$ whoami
jenisha-pandit
jenisha-pandit@jenisha-pandit:~$ su - zen
Password:
zen@jenisha-pandit:~$ whoami
zen
zen@jenisha-pandit:~$ su - jenisha-pandit
Password:
jenisha-pandit@jenisha-pandit:~$ |
```

5. sudo command

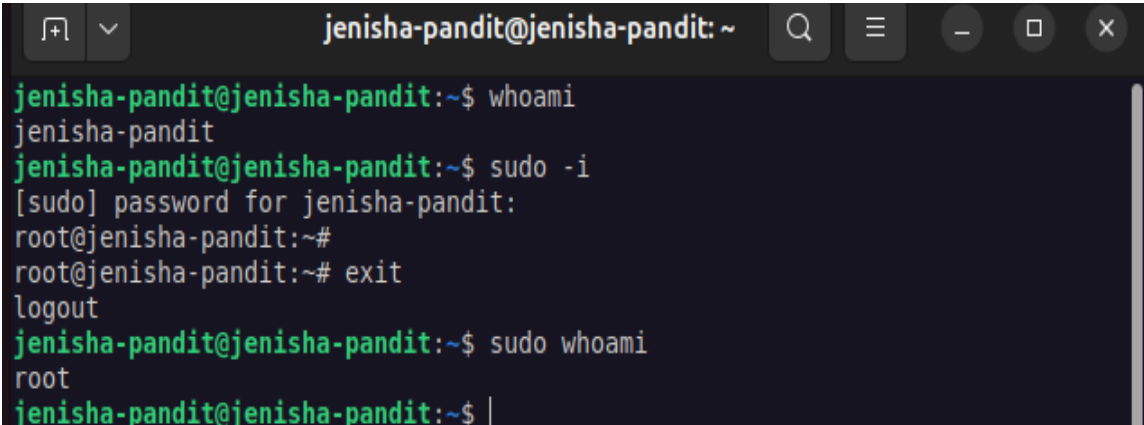
Syntax: sudo [OPTIONS] COMMAND

Usage It temporarily grants a user administrative right.

Commands used:

- sudo -i: Start a root shell
- sudo whoami : Test sudo privileges

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' with standard window controls. The terminal shows the following commands and output:

```
jenisha-pandit@jenisha-pandit:~$ whoami
jenisha-pandit
jenisha-pandit@jenisha-pandit:~$ sudo -i
[sudo] password for jenisha-pandit:
root@jenisha-pandit:~#
root@jenisha-pandit:~# exit
logout
jenisha-pandit@jenisha-pandit:~$ sudo whoami
root
jenisha-pandit@jenisha-pandit:~$ |
```

6. pwd command

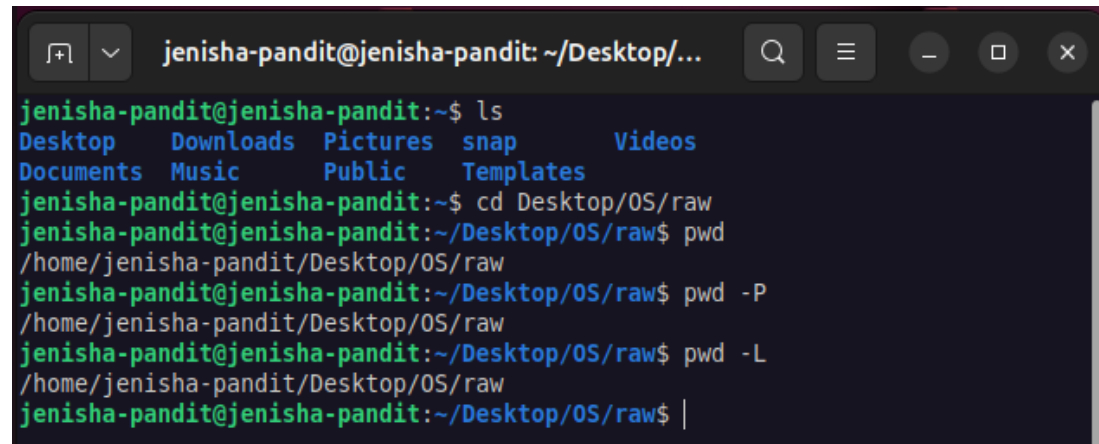
Syntax: pwd [OPTION]

Usage: shows logical path of the working directory and shows physical or actual path of the working directory

Commands used:

- pwd -P: shows physical path
- pwd -L: shows logical path

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~/Desktop/...' showing the execution of the pwd command. The user starts at the home directory, lists files with 'ls', changes to '/Desktop/OS/raw' with 'cd', and then runs 'pwd' to show the logical path, '-P' to show the physical path, and '-L' to show the logical path again.

```
jenisha-pandit@jenisha-pandit:~$ ls
Desktop  Downloads  Pictures  snap      Videos
Documents Music      Public   Templates
jenisha-pandit@jenisha-pandit:~$ cd Desktop/OS/raw
jenisha-pandit@jenisha-pandit:~/Desktop/OS/raw$ pwd
/home/jenisha-pandit/Desktop/OS/raw
jenisha-pandit@jenisha-pandit:~/Desktop/OS/raw$ pwd -P
/home/jenisha-pandit/Desktop/OS/raw
jenisha-pandit@jenisha-pandit:~/Desktop/OS/raw$ pwd -L
/home/jenisha-pandit/Desktop/OS/raw
jenisha-pandit@jenisha-pandit:~/Desktop/OS/raw$ |
```

7. mv command

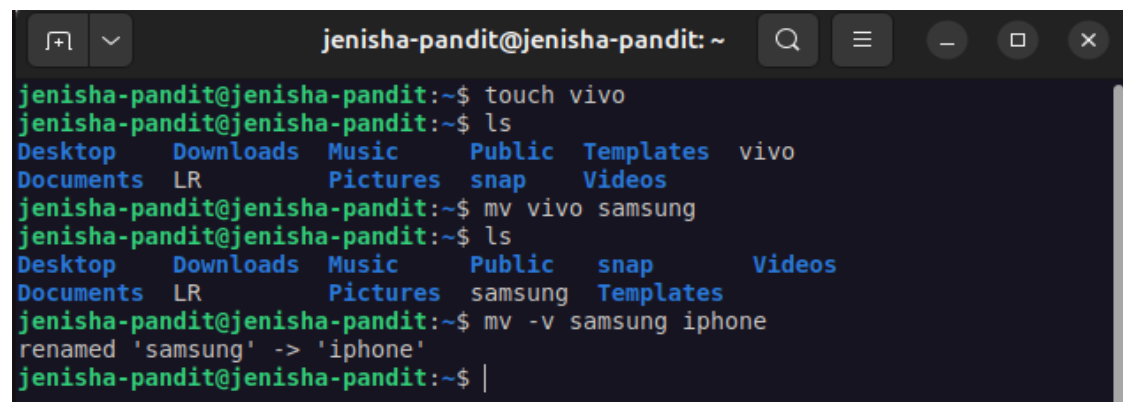
Syntax: mv [OPTIONS] source target

Usage: It is used to move a file from one location to another, rename and move multiple files to a directory

Commands used:

- mv: Moves or renames files/directories without warning.
- mv -v: Asks before overwriting.

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' showing the execution of the mv command. The user creates a file 'vivo' with 'touch', lists files with 'ls', moves 'vivo' to 'samsung' with 'mv', lists files again, and then renames 'samsung' to 'iphone' with 'mv -v', which shows a confirmation message.

```
jenisha-pandit@jenisha-pandit:~$ touch vivo
jenisha-pandit@jenisha-pandit:~$ ls
Desktop  Downloads  Music  Public  Templates  vivo
Documents LR       Pictures snap    Videos
jenisha-pandit@jenisha-pandit:~$ mv vivo samsung
jenisha-pandit@jenisha-pandit:~$ ls
Desktop  Downloads  Music  Public  snap  Videos
Documents LR       Pictures samsung Templates
jenisha-pandit@jenisha-pandit:~$ mv -v samsung iphone
renamed 'samsung' -> 'iphone'
jenisha-pandit@jenisha-pandit:~$ |
```

8. cp command

Syntax: cp [OPTIONS] source target

Usage: It is used to copy the file\ directory

Commands used:

- cp: copies the file.
- cp -i : gives warning to the user before overwriting
- cp -R : copies the entire directory

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls  
Desktop  Downloads  file2.txt  LR      Pictures  snap      Videos  
Documents file1.txt  iphone    Music   Public    Templates  
jenisha-pandit@jenisha-pandit:~$ cp file1.txt Desktop  
jenisha-pandit@jenisha-pandit:~$ cp iphone file2.txt Desktop  
jenisha-pandit@jenisha-pandit:~$ cp -i file1.txt file2.txt  
cp: overwrite 'file2.txt'? y  
jenisha-pandit@jenisha-pandit:~$ cp -R Music Desktop  
jenisha-pandit@jenisha-pandit:~$ |
```

9. rm command

Syntax: rm [OPTIONS] file or directory

Usage: It is used to delete the file\ directory

Commands used:

- rm: deletes file without confirming.
- rm -i: asks the user before deleting the file.
- rm -R: performs a recursive search for all subdirectories and file within these subdirectories.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls  
Desktop  Downloads  file2.txt  LR      Pictures  snap      Videos  
Documents file1.txt  iphone    Music   Public    Templates  
jenisha-pandit@jenisha-pandit:~$ rm file1.txt  
jenisha-pandit@jenisha-pandit:~$ ls  
Desktop  Downloads  iphone  Music   Public  Templates  
Documents file2.txt  LR      Pictures snap     Videos  
jenisha-pandit@jenisha-pandit:~$ rm -i file2.txt  
rm: remove regular file 'file2.txt'? y  
jenisha-pandit@jenisha-pandit:~$ ls  
Desktop  Downloads  LR      Pictures  snap      Videos  
Documents iphone    Music   Public    Templates  
jenisha-pandit@jenisha-pandit:~$ rm -R Music  
jenisha-pandit@jenisha-pandit:~$ |
```

10. mkdir

Syntax: mkdir [OPTIONS] directory name

Usage: It is used to create directory.

Commands used:

- mkdir: creates new directory on currently working directory.

Output:

```
jenisha-pandit@jenisha-pandit: ~/Desktop/car
jenisha-pandit@jenisha-pandit:~$ ls
Desktop  Downloads  LR          Public  Templates
Documents  iphone    Pictures  snap    Videos
jenisha-pandit@jenisha-pandit:~$ cd Desktop
jenisha-pandit@jenisha-pandit:~/Desktop$ mkdir fan
jenisha-pandit@jenisha-pandit:~/Desktop$ ls
fan  file1.txt  file2.txt  iphone  Music  OS
jenisha-pandit@jenisha-pandit:~/Desktop$ mkdir lamp light
jenisha-pandit@jenisha-pandit:~/Desktop$ ls
fan  file1.txt  file2.txt  iphone  lamp  light  Music  OS
jenisha-pandit@jenisha-pandit:~/Desktop$ mkdir car car/tesla
jenisha-pandit@jenisha-pandit:~/Desktop$ ls
car  fan  file1.txt  file2.txt  iphone  lamp  light  Music  OS
jenisha-pandit@jenisha-pandit:~/Desktop$ cd car
jenisha-pandit@jenisha-pandit:~/Desktop/car$ ls
tesla
jenisha-pandit@jenisha-pandit:~/Desktop/car$ |
```

11. rmdir

Syntax: rmdir [OPTIONS] directory_name

Usage: It is used to remove the directories.

Commands used:

- rmdir: removes the directory

Output:

```
jenisha-pandit@jenisha-pandit: ~/Desktop
jenisha-pandit@jenisha-pandit:~$ ls
APPLE  CAT  Documents  iphone  Pictures  snap  Videos
BALL  Desktop  Downloads  LR  Public  Templates
jenisha-pandit@jenisha-pandit:~$ rmdir APPLE
jenisha-pandit@jenisha-pandit:~$ ls
BALL  Desktop  Downloads  LR  Public  Templates
CAT  Documents  iphone  Pictures  snap  Videos
jenisha-pandit@jenisha-pandit:~$ rmdir BALL CAT
jenisha-pandit@jenisha-pandit:~$ ls
Desktop  Downloads  LR  Public  Templates
Documents  iphone  Pictures  snap  Videos
```

12. chmod

Syntax: chmod [OPTIONS] mode file

Usage: It is used to change the mode file or folder.

Commands used:

- sudo chmod: it changed the mode of existing file.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls -l  
total 32  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit  0 Jun 17 22:14 college.txt  
drwxr-xr-x 8 jenisha-pandit jenisha-pandit 4096 Jun 17 20:19 Desktop  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Documents  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Downloads  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit  0 Jun 17 19:39 iphone  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit  0 Jun 17 19:26 LR  
drwxr-xr-x 3 jenisha-pandit jenisha-pandit 4096 Jun 16 17:17 Pictures  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Public  
drwx----- 5 jenisha-pandit jenisha-pandit 4096 Jun 16 08:59 snap  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Templates  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Videos  
jenisha-pandit@jenisha-pandit:~$ sudo 774 college.txt  
[sudo] password for jenisha-pandit:  
sudo: 774: command not found  
jenisha-pandit@jenisha-pandit:~$ sudo chmod 774 college.txt  
jenisha-pandit@jenisha-pandit:~$ ls -l  
total 32  
-rwxrwxr-- 1 jenisha-pandit jenisha-pandit  0 Jun 17 22:14 college.txt  
drwxr-xr-x 8 jenisha-pandit jenisha-pandit 4096 Jun 17 20:19 Desktop  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Documents  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Downloads  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit  0 Jun 17 19:39 iphone  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit  0 Jun 17 19:26 LR  
drwxr-xr-x 3 jenisha-pandit jenisha-pandit 4096 Jun 16 17:17 Pictures  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Public  
drwx----- 5 jenisha-pandit jenisha-pandit 4096 Jun 16 08:59 snap  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Templates  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Videos
```

13. cat

Syntax: cat [OPTIONS] file

Usage: It is used to create, display content, concatenate and append the files.

Commands used:

- cat>abc: created the file “abc”.
- cat abc : display the content of file abc.
- cat abc>cde : copies the content of “abc” to “cde”.
- cat cat>>abc : append the file.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ cat>abc  
this is an eg file.  
  
jenisha-pandit@jenisha-pandit:~$ ls  
abc      Desktop  Downloads  LR      Public  Templates  
college.txt Documents  iphone     Pictures snap   Videos  
jenisha-pandit@jenisha-pandit:~$ cat abc  
this is an eg file.  
  
jenisha-pandit@jenisha-pandit:~$ cat abc>cde  
jenisha-pandit@jenisha-pandit:~$ cat cde  
this is an eg file.  
  
jenisha-pandit@jenisha-pandit:~$ cat>>abc  
adding more text  
jenisha-pandit@jenisha-pandit:~$ cat abc  
this is an eg file.  
  
adding more text  
jenisha-pandit@jenisha-pandit:~$ |
```

14. echo

Syntax: echo [OPTIONS] string

Usage: Prints text or variables to the screen.

Commands used:

- Echo: It displays the content.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ echo Learning basic commands of LINUX  
Learning basic commands of LINUX  
jenisha-pandit@jenisha-pandit:~$ cd Desktop  
jenisha-pandit@jenisha-pandit:~/Desktop$ echo The files inside Desktop are: $(ls)  
The files inside Desktop are: car fan file1.txt file2.txt iphone lamp light Music OS  
jenisha-pandit@jenisha-pandit:~/Desktop$ cd ..  
jenisha-pandit@jenisha-pandit:~$ x=5  
jenisha-pandit@jenisha-pandit:~$ echo the value of x: $x  
the value of x: 5  
jenisha-pandit@jenisha-pandit:~$
```


15. chown

Syntax: chown [OPTIONS] owner[:group] file

Usage: It changes the owner of a file or directory.

Commands used:

- sudo chown : it changed the ownership of existing file.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls -l  
total 32  
-rwxrwxr-- 1 jenisha-pandit jenisha-pandit 0 Jun 17 22:14 college.txt  
drwxr-xr-x 8 jenisha-pandit jenisha-pandit 4096 Jun 17 20:19 Desktop  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Documents  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Downloads  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit 0 Jun 17 19:39 iphone  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit 0 Jun 17 19:26 LR  
drwxr-xr-x 3 jenisha-pandit jenisha-pandit 4096 Jun 16 17:17 Pictures  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Public  
drwx----- 5 jenisha-pandit jenisha-pandit 4096 Jun 16 08:59 snap  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Templates  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Videos  
jenisha-pandit@jenisha-pandit:~$ sudo chown zen college.txt  
jenisha-pandit@jenisha-pandit:~$ ls -l  
total 32  
-rwxrwxr-- 1 zen jenisha-pandit 0 Jun 17 22:14 college.txt  
drwxr-xr-x 8 jenisha-pandit jenisha-pandit 4096 Jun 17 20:19 Desktop  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Documents  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Downloads  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit 0 Jun 17 19:39 iphone  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit 0 Jun 17 19:26 LR  
drwxr-xr-x 3 jenisha-pandit jenisha-pandit 4096 Jun 16 17:17 Pictures  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Public  
drwx----- 5 jenisha-pandit jenisha-pandit 4096 Jun 16 08:59 snap  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Templates  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Videos  
jenisha-pandit@jenisha-pandit:~$
```

16. wc

Syntax: wc [OPTIONS] file

Usage: Counts words, lines, characters in a file.

Commands used:

- wc : shows lines, words and characters.
- wc -l: counts only the number of lines in a file
- wc -w: counts only the number of words in a file
- wc -c: counts only the number of characters in a file.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls  
abc college.txt Documents iphone Pictures snap Videos  
cde Desktop Downloads LR Public Templates  
jenisha-pandit@jenisha-pandit:~$ file abc  
abc: ASCII text  
jenisha-pandit@jenisha-pandit:~$ wc abc  
 4 12 56 abc  
jenisha-pandit@jenisha-pandit:~$ wc -l abc  
4 abc  
jenisha-pandit@jenisha-pandit:~$ wc -w abc  
12 abc  
jenisha-pandit@jenisha-pandit:~$ wc -c abc  
56 abc  
jenisha-pandit@jenisha-pandit:~$ |
```

17. man

Syntax: man command_name

Usage: Shows the manual/help for any command.

Commands used:

- man ls: shows the manual for command ls.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ man ls|
```

```
LS(1) User Commands LS(1)  
  
NAME  
    ls - list directory contents  
  
SYNOPSIS  
    ls [OPTION]... [FILE]...  
  
DESCRIPTION  
    List information about the FILEs (the current directory by  
    default). Sort entries alphabetically if none of -cftuvSUX  
    nor --sort is specified.  
  
    Mandatory arguments to long options are mandatory for short  
    options too.  
  
    -a, --all  
        do not ignore entries starting with .  
  
    -A, --almost-all  
        do not list implied . and ..  
  
    --author  
Manual page ls(1) line 1 (press h for help or q to quit)
```

18. history

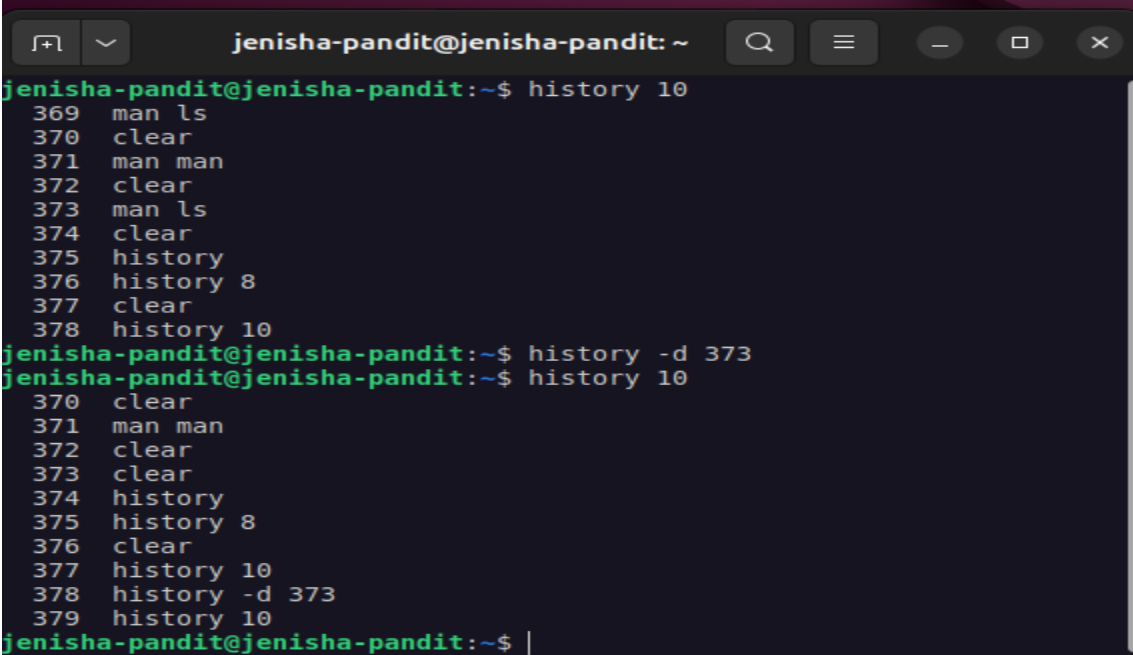
Syntax: history [OPTIONS] [n]

Usage: Shows the list of recently used commands.

Commands used:

- history: display the history of commands that we used.
- history 10: display the last 10 command history.

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' with standard window controls. The user enters 'history 10', and the terminal displays a list of 10 commands with their corresponding line numbers: 369 man ls, 370 clear, 371 man man, 372 clear, 373 man ls, 374 clear, 375 history, 376 history 8, 377 clear, and 378 history 10. The user then enters 'history -d 373' to delete the entry at line 373. Finally, the user enters 'history 10' again, and the terminal shows the updated list of 9 commands, starting from line 370: 370 clear, 371 man man, 372 clear, 373 clear, 374 history, 375 history 8, 376 clear, 377 history 10, 378 history -d 373, and 379 history 10. The prompt is now 'jenisha-pandit@jenisha-pandit:~\$ |'.

19. clear

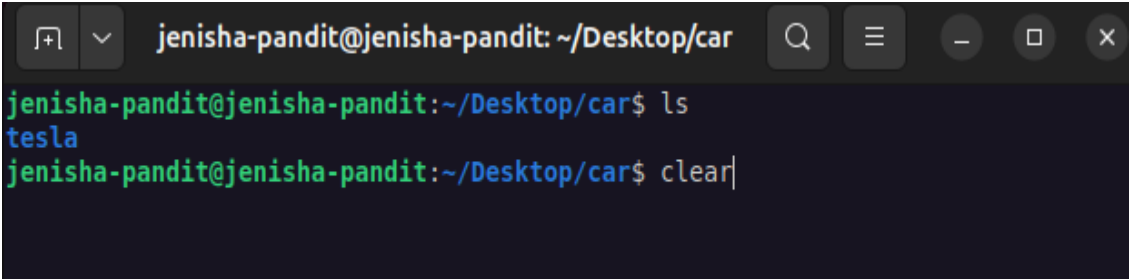
Syntax: clear

Usage: Clears the terminal screen.

Commands used:

- clear: It clears the terminal.

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~/Desktop/car' with standard window controls. The user enters 'ls', and the terminal displays 'tesla'. The user then enters 'clear', and the terminal screen is cleared, leaving only the prompt 'jenisha-pandit@jenisha-pandit:~/Desktop/car\$' visible.

20. touch

Syntax: touch [OPTIONS] file

Usage: Creates an empty file or updates file timestamp.

Commands used:

- touch file1: creates the file named file1.
- touch file1 file2 file3: creates the file named file 1 file2 and file3 resp.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls  
abc college.txt Documents iphone Pictures snap Videos  
cde Desktop Downloads LR Public Templates  
jenisha-pandit@jenisha-pandit:~$ touch file1 file2 file3  
jenisha-pandit@jenisha-pandit:~$ ls  
abc Desktop file1 iphone Public Videos  
cde Documents file2 LR snap  
college.txt Downloads file3 Pictures Templates  
jenisha-pandit@jenisha-pandit:~$ |
```

21. locate

Syntax: locate [options] pattern

Usage: Quickly finds the path of files using a prebuilt database.

Command used:

- locate: find the file from the database

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls  
abc college.txt Documents file1 file3 LR Public Templates  
cde Desktop Downloads file2 iphone Pictures snap Videos  
jenisha-pandit@jenisha-pandit:~$ locate college  
/home/jenisha-pandit/college.txt  
jenisha-pandit@jenisha-pandit:~$ locate LR  
/home/jenisha-pandit/LR  
/snap/core22/1981/usr/share/python-babel-localedata/locale-data/en_LR.dat  
/snap/core22/1981/usr/share/python-babel-localedata/locale-data/ff_Latn_LR.dat  
/snap/core22/1981/usr/share/python-babel-localedata/locale-data/vai_Latn_LR.dat  
/snap/core22/1981/usr/share/python-babel-localedata/locale-data/vai_Vaii_LR.dat  
/snap/core22/2010/usr/share/python-babel-localedata/locale-data/en_LR.dat  
/snap/core22/2010/usr/share/python-babel-localedata/locale-data/ff_Latn_LR.dat
```

22. netstat


Syntax: netstat [options]

Usage: Displays network connections and listening ports.

Command used:

- netstat -at | less: displays only TCP sockets.

Output:



```
jenisha-pandit@jenisha-pandit:~$ netstat -at | less
```

```
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp      0      0 localhost:ipp            0.0.0.0:*               LISTEN
tcp      0      0 _localdnstub:domain     0.0.0.0:*               LISTEN
tcp      0      0 _localdnspoxy:domain    0.0.0.0:*               LISTEN
tcp6     0      0 ip6-localhost:ipp       [::]:*                  LISTEN
```

23. ss

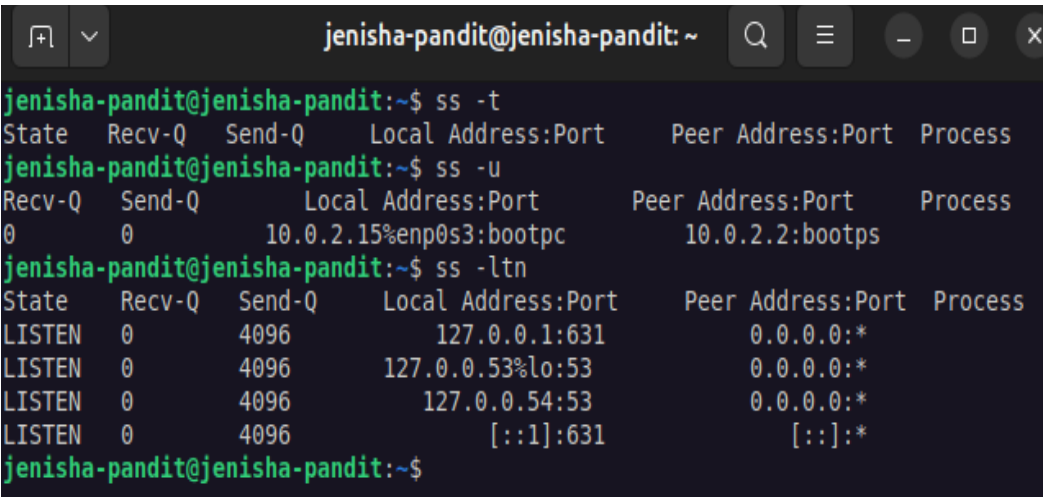
Syntax: ss [options]

Usage: Shows detailed socket and network connection information.

Command used:

- ss -t: shows established TCP connection
- ss -u: shows udp connection.
- ss -ltn: shows which ports are available for connection in our server

Output:



```
jenisha-pandit@jenisha-pandit:~$ ss -t
State Recv-Q Send-Q Local Address:Port Peer Address:Port Process
jenisha-pandit@jenisha-pandit:~$ ss -u
Recv-Q Send-Q Local Address:Port Peer Address:Port Process
0 0 10.0.2.15%enp0s3:bootpc 10.0.2.2:bootps
jenisha-pandit@jenisha-pandit:~$ ss -ltn
State Recv-Q Send-Q Local Address:Port Peer Address:Port Process
LISTEN 0 4096 127.0.0.1:631 0.0.0.0:*
LISTEN 0 4096 127.0.0.53%lo:53 0.0.0.0:*
LISTEN 0 4096 127.0.0.54:53 0.0.0.0:*
LISTEN 0 4096 [::1]:631 [::]:*
jenisha-pandit@jenisha-pandit:~$
```

24. df

Syntax: df [options] [file]

Usage: Reports available and used disk space on filesystems.

Command used:

- df -h: display the allocated and available memory.
- df -h -BK: shows in kilobytes
- df -h -GK: shows in Gigabyte

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ df -h  
Filesystem      Size  Used Avail Use% Mounted on  
tmpfs            505M  1.5M  503M   1% /run  
/dev/sda2        98G   11G   83G  11% /  
tmpfs            2.5G    0  2.5G   0% /dev/shm  
tmpfs            5.0M   8.0K  5.0M   1% /run/lock  
tmpfs            505M  140K  505M   1% /run/user/1000  
jenisha-pandit@jenisha-pandit:~$ df -h -BK  
Filesystem      1K-blocks    Used Available Use% Mounted on  
tmpfs            516572K    1504K  515068K   1% /run  
/dev/sda2       102725552K 10503164K 86958056K  11% /  
tmpfs            2582844K      0K  2582844K   0% /dev/shm  
tmpfs            5120K        8K    5112K   1% /run/lock  
tmpfs            516568K    140K  516428K   1% /run/user/1000  
jenisha-pandit@jenisha-pandit:~$ df -h -BG  
Filesystem      1G-blocks    Used Available Use% Mounted on  
tmpfs            1G         1G         1G   1% /run  
/dev/sda2        98G        11G         83G  11% /  
tmpfs            3G         0G         3G   0% /dev/shm  
tmpfs            1G         1G         1G   1% /run/lock  
tmpfs            1G         1G         1G   1% /run/user/1000  
jenisha-pandit@jenisha-pandit:~$
```

25. du

Syntax: du [options] [directory or file]

Usage: Estimates and displays disk space used by files and directories.

Command used:

- du -h: display disk space used for files and directories.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ du -h  
4.0K  ./Videos  
2.0K  ./rpmdb  
4.0K  Files  
4.0K  ./ssh  
4.0K  ./Downloads  
8.0K  ./config/evolution/sources  
12K   ./config/evolution  
8.0K  ./config/gtk-3.0  
8.0K  ./config/yelp  
12K   ./config/dconf  
4.0K  ./config/gtk-4.0  
4.0K  ./config/nautilus
```

26. uname

Syntax: uname [options]

Usage: Prints system information like kernel name and version.

Command used:

- uname: shows kernel name
- uname -r: shows the kernel release version
- uname -s: shows kernel name
- uname -n: shows host name
- uname -m: shows information about machine
- uname -p: shows processor

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ uname  
Linux  
jenisha-pandit@jenisha-pandit:~$ uname -r  
6.11.0-26-generic  
jenisha-pandit@jenisha-pandit:~$ uname -s  
Linux  
jenisha-pandit@jenisha-pandit:~$ uname -n  
jenisha-pandit  
jenisha-pandit@jenisha-pandit:~$ uname -m  
x86_64  
jenisha-pandit@jenisha-pandit:~$ uname -p  
x86_64  
jenisha-pandit@jenisha-pandit:~$ |
```

27. passwd

Syntax: passwd [options] [username]

Usage: Used to change a user's password.

Command used:

- passwd zen : changed the password for user zen.

Output:

```
zen@jenisha-pandit: ~  
zen@jenisha-pandit:~$ passwd zen  
Changing password for zen.  
Current password:  
New password:  
Retype new password:  
passwd: password updated successfully  
zen@jenisha-pandit:~$ |
```

28. useradd

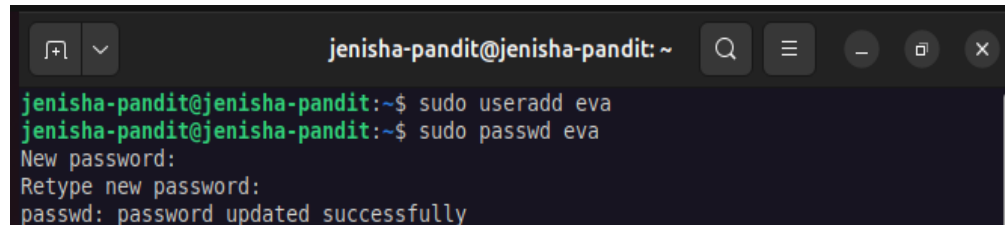
Syntax: useradd [options] username

Usage: Used to create a new user account.

Command used:

- sudo useradd: Add the new user. //sudo is used for root permission

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sudo useradd eva  
jenisha-pandit@jenisha-pandit:~$ sudo passwd eva  
New password:  
Retype new password:  
passwd: password updated successfully
```

29. userdel

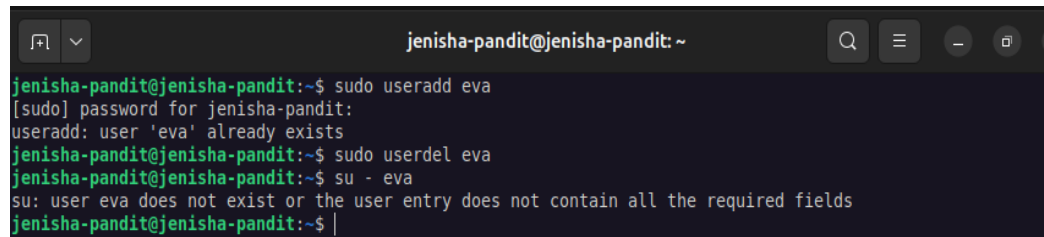
Syntax: userdel [options] username

Usage: Used to delete an existing user account.

Command used:

- sudo userdel: Delete the existing user. //sudo is used for root permission

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sudo useradd eva  
[sudo] password for jenisha-pandit:  
useradd: user 'eva' already exists  
jenisha-pandit@jenisha-pandit:~$ sudo userdel eva  
jenisha-pandit@jenisha-pandit:~$ su - eva  
su: user eva does not exist or the user entry does not contain all the required fields  
jenisha-pandit@jenisha-pandit:~$ |
```

30. find

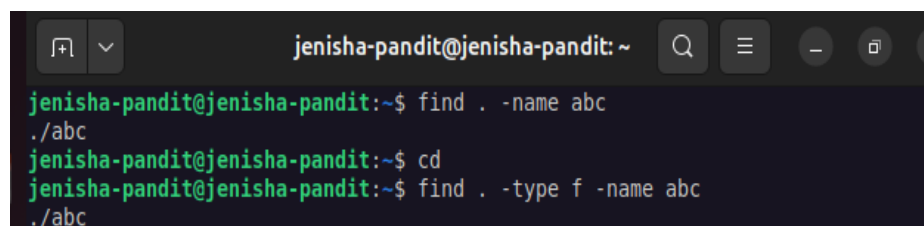
Syntax: find [path] [options] [expression]

Usage: Searches for files and directories in a specified location.

Command used:

- find . -name abc: Search for any file or directory named abc starting from the current directory (.).
- find . -type f -name abc: Search for a file (-type f) named abc starting from the current directory.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ find . -name abc  
./abc  
jenisha-pandit@jenisha-pandit:~$ cd  
jenisha-pandit@jenisha-pandit:~$ find . -type f -name abc  
./abc
```


31. apt-get

Syntax: apt-get [options] command

Usage: Used to install, upgrade, or remove software packages.

Command used:

- sudo apt-get update: Updates the local package list from online repositories.
- sudo apt-get install neofetch: Install the neofetch package.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sudo apt-get update  
[sudo] password for jenisha-pandit:  
Hit:1 http://np.archive.ubuntu.com/ubuntu noble InRelease  
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease  
Hit:3 http://np.archive.ubuntu.com/ubuntu noble-updates InRelease  
Hit:4 http://np.archive.ubuntu.com/ubuntu noble-backports InRelease  
Reading package lists... Done  
jenisha-pandit@jenisha-pandit:~$ sudo apt-get install neofetch  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
The following additional packages will be installed:  
  caca-utils chafa imagemagick imagemagick-6-common imagemagick-6.q16 jp2a  
  libavif16 libchafa0t64 libgav1-1 libgcl libid3tag0 libimath-3-1-29t64  
  libimlib2t64 libjxr-tools libjxr0t64 liblqr-1-0  
  libmagickcore-6.q16-7-extra libmagickcore-6.q16-7t64  
  libmagickwand-6.q16-7t64 libnetpbm11t64 libopenexr-3-1-30 libraw23t64  
  libsixel-bin libsixel1 libyuv0 netpbm toilet toilet-fonts w3m w3m-img
```

32. apt

Syntax: apt [options] command

Usage: A simplified command-line tool to manage packages.

Command used:

- sudo apt-get upgrade -y: Upgrade the local package list from online repositories without asking yes or no.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sudo apt upgrade -y  
Reading package lists... Done  
Building dependency tree... Done  
Reading state information... Done  
Calculating upgrade... Done  
Get more security updates through Ubuntu Pro with 'esm-apps' enabled:  
  libzvb1-common libcjson1 libpostproc57 libavcodec60  
  libgststreamer-plugins-bad1.0-0 libzvb1t64 libavutil58 libswscale7  
  libswresample4 libavformat60 libavfilter9  
Learn more about Ubuntu Pro at https://ubuntu.com/pro  
The following upgrades have been deferred due to phasing:  
  ubuntu-drivers-common  
The following packages will be upgraded:  
  apparmor apt apt-utils bluez bluez-cups bluez-obexd cloud-init  
  distro-info-data dmsetup dns-root-data dracut-install  
  fonts-noto-color-emoji fwupd gir1.2-gtk-3.0 gir1.2-gtk-4.0  
  gir1.2-mutter-14 gir1.2-packagekitglib-1.0 gnome-control-center  
  gnome-control-center-data gnome-control-center-faces gnome-shell
```

33. ping

Syntax: ping [options] destination

Usage: Used to test network connectivity to a host.

Command used:

- ping www.google.com: connects to the google server and checks the IP address also.
- ping -q www.google.com: using '-q' gives summary

Output:

```
jenisha-pandit@jenisha-pandit: ~ x      jenisha-pandit@jenisha-pandit: ~ x v
jenisha-pandit@jenisha-pandit:~$ ping www.google.com
PING www.google.com (142.250.194.196) 56(84) bytes of data.
64 bytes from dell2s07-in-f4.1e100.net (142.250.194.196): icmp_seq=1 ttl=255
time=26.7 ms
64 bytes from dell2s07-in-f4.1e100.net (142.250.194.196): icmp_seq=2 ttl=255
time=24.7 ms
64 bytes from dell2s07-in-f4.1e100.net (142.250.194.196): icmp_seq=4 ttl=255
time=23.1 ms
^C
--- www.google.com ping statistics ---
4 packets transmitted, 3 received, 25% packet loss, time 3020ms
rtt min/avg/max/mdev = 23.057/24.814/26.705/1.492 ms
jenisha-pandit@jenisha-pandit:~$ ping -q www.google.com
PING www.google.com (142.250.194.196) 56(84) bytes of data.
```

34. head

Syntax: head [options] [files]

Usage: Displays the first few lines of a file.

Command used:

- head states.txt: Display all the content of file 'states.txt'.
- head -n 1 states.txt: Display only one the content of file 'states.txt'.
- head states.txt capital.txt: Display all the content of both files 'states.txt' and 'capital.txt'.

Output:

```
Firefox      jenisha-pandit@jenisha-pandit: ~/Head  🔍  ☰  -  🖼  ✕
jenisha-pandit@jenisha-pandit:~/Head$ head states.txt
koshi
bagmati
gandaki
jenisha-pandit@jenisha-pandit:~/Head$ head -n 1 states.txt
koshi
jenisha-pandit@jenisha-pandit:~/Head$ head states.txt capital.txt
==> states.txt <==
koshi
bagmati
gandaki

==> capital.txt <==
biratnagar
hetuda
pokhara
jenisha-pandit@jenisha-pandit:~/Head$ |
```

35. rename

Syntax: rename [options] 's/old/new/' files

Usage: Renames multiple files using patterns.

Command used:

- Rename 's/Head/Province/' Head: Renamed the file 'Head' to 'Province'.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls  
abc      Desktop  file1    file3  iphone  Public  video65.txt  
cde      Documents file1.txt head   LR      snap    Videos  
college.txt Downloads file2    Head   Pictures Templates  
jenisha-pandit@jenisha-pandit:~$ rename 's/Head/Province/' Head  
jenisha-pandit@jenisha-pandit:~$ ls  
abc      Desktop  file1    file3  LR      Public  video65.txt  
cde      Documents file1.txt head   Pictures snap    Videos  
college.txt Downloads file2    iphone Province Templates  
jenisha-pandit@jenisha-pandit:~$
```

36. tail

Syntax: tail [options] [file]

Usage: Displays the last few lines of a file (default: 10 lines).

Command used:

- tail alpha.txt: Shows the last 10 lines of the file named
- tail -n 2 alpha.txt: Displays the last 5 lines of the file
- tail -f /var/log/syslog: Continuously displays new lines added to /var/log/syslog in real time, useful for monitoring logs.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ tail alpha.txt  
d  
e  
f  
g  
h  
i  
j  
k  
l  
m  
jenisha-pandit@jenisha-pandit:~$ tail -n 2 alpha.txt  
l  
m  
jenisha-pandit@jenisha-pandit:~$ tail -f /var/log/syslog  
2025-06-19T14:00:04.136603+05:45 jenisha-pandit gnome-shell[1778]: meta_window_set_stack_position_no_sync: assertion 'window->stack_position >= 0' failed  
2025-06-19T14:00:04.168361+05:45 jenisha-pandit systemd[1542]: Started vte-spawn-d1953a98-albc-4db3-a80a-bcc0ff58d736.scope - VTE child process 3098 launched by gnome-terminal-server process 3091.  
2025-06-19T14:00:55.551655+05:45 jenisha-pandit systemd[1542]: gnome-terminal-server.service: Consumed 3.202s CPU time.
```

37. tac

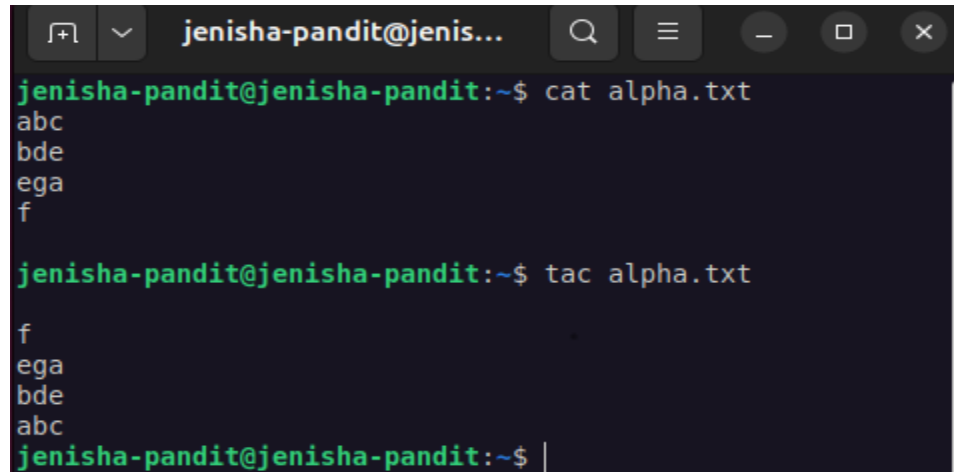
Syntax: tac [file]

Usage: Displays file contents in reverse line order.

Command used:

- Tac alpha.txt: Reverse the text on file alpha.txt.

Output:



```
jenisha-pandit@jenisha-pandit:~$ cat alpha.txt
abc
bde
ega
f

jenisha-pandit@jenisha-pandit:~$ tac alpha.txt
f
ega
bde
abc
jenisha-pandit@jenisha-pandit:~$ |
```

38. comm

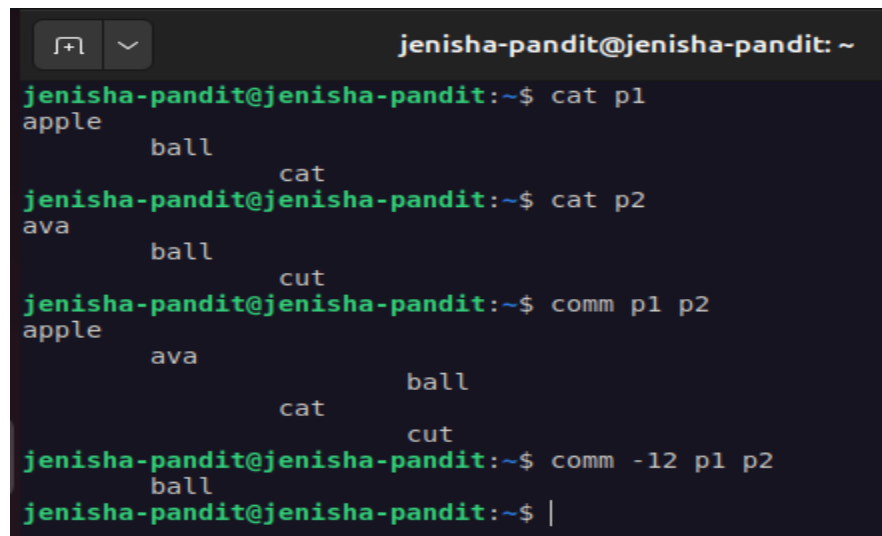
Syntax: comm [file1] [file2]

Usage: Compares two sorted files line by line.

Command used:

- comm p1 p2: shows all the content on both file p1 and p2 without repetition.
- comm -12 p1 p2: shows only the common text.

Output:



```
jenisha-pandit@jenisha-pandit:~$ cat p1
apple
    ball
        cat
jenisha-pandit@jenisha-pandit:~$ cat p2
ava
    ball
        cut
jenisha-pandit@jenisha-pandit:~$ comm p1 p2
apple
    ava
        ball
            cat
                cut
jenisha-pandit@jenisha-pandit:~$ comm -12 p1 p2
    ball
jenisha-pandit@jenisha-pandit:~$ |
```

39. cut

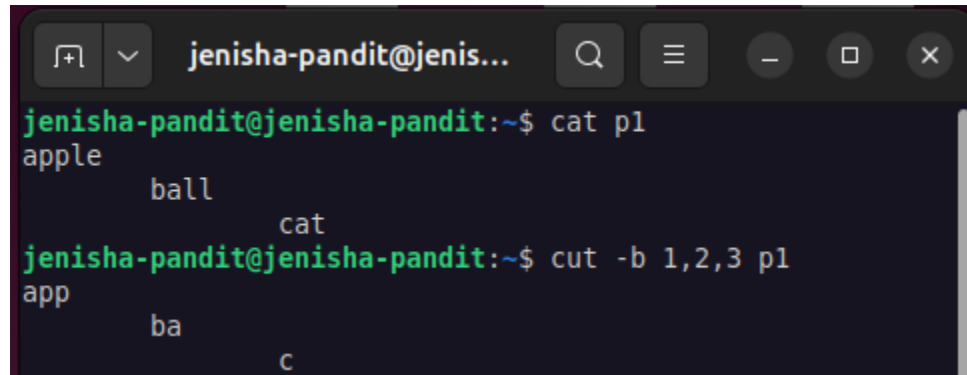
Syntax: cut -d [delimiter] -f [field] [file]

Usage: Extracts specific columns or fields from a file or output.

Command used:

- cut -b 1,2,3 p1: remove the last three words

Output:

A terminal window with a dark background. The title bar shows 'jenisha-pandit@jenis...'. The prompt is 'jenisha-pandit@jenisha-pandit:~\$'. The first command is 'cat p1', which outputs 'apple', 'ball', and 'cat' on separate lines. The second command is 'cut -b 1,2,3 p1', which outputs 'app', 'ba', and 'c' on separate lines.

```
jenisha-pandit@jenisha-pandit:~$ cat p1
apple
ball
cat
jenisha-pandit@jenisha-pandit:~$ cut -b 1,2,3 p1
app
ba
c
```

40. sort

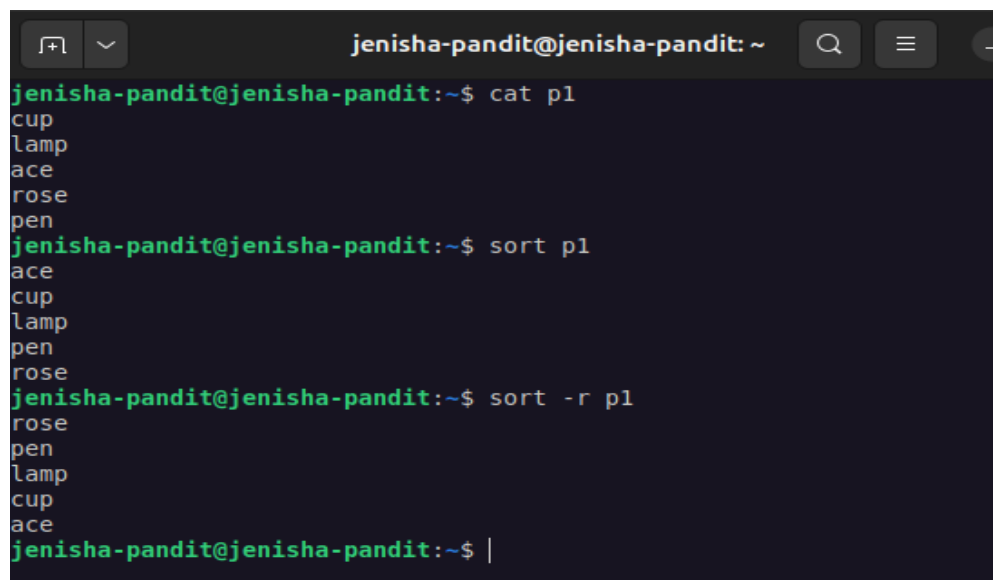
Syntax: sort [options] [file]

Usage: Sorts lines of text in a file alphabetically or numerically.

Command used:

- sort p1: arrange the content of p1 on ascending order.
- sort -r p1: arrange the content of p1 on descending order.

Output:

A terminal window with a dark background. The title bar shows 'jenisha-pandit@jenisha-pandit: ~'. The prompt is 'jenisha-pandit@jenisha-pandit:~\$'. The first command is 'cat p1', which outputs 'cup', 'lamp', 'ace', 'rose', and 'pen' on separate lines. The second command is 'sort p1', which outputs 'ace', 'cup', 'lamp', 'pen', and 'rose' on separate lines. The third command is 'sort -r p1', which outputs 'rose', 'pen', 'lamp', 'cup', and 'ace' on separate lines.

```
jenisha-pandit@jenisha-pandit:~$ cat p1
cup
lamp
ace
rose
pen
jenisha-pandit@jenisha-pandit:~$ sort p1
ace
cup
lamp
pen
rose
jenisha-pandit@jenisha-pandit:~$ sort -r p1
rose
pen
lamp
cup
ace
jenisha-pandit@jenisha-pandit:~$ |
```

41. date

Syntax: date or date +"format"

Usage: Displays or sets the current system date and time.

Command used:

- Date: Display current date with time
- Date "+%Y": Display current year
- Date "+%B": Display current month
- Date "+%H:%M:%S": Display time

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ date  
Thu Jun 19 02:31:07 PM +0545 2025  
jenisha-pandit@jenisha-pandit:~$ date "+%Y"  
2025  
jenisha-pandit@jenisha-pandit:~$ date "+%B"  
June  
jenisha-pandit@jenisha-pandit:~$ date "+%H:%M:%S"  
14:33:19  
jenisha-pandit@jenisha-pandit:~$ |
```

42. cal

Syntax: cal [month] [year]

Usage: Displays a calendar of a given month/year.

Command used:

- cal: shows Calander of current date

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ cal  
    June 2025  
Su Mo Tu We Th Fr Sa  
 1  2  3  4  5  6  7  
 8  9 10 11 12 13 14  
15 16 17 18 19 20 21  
22 23 24 25 26 27 28  
29 30  
  
jenisha-pandit@jenisha-pandit:~$ cal june 1990  
    June 1990  
Su Mo Tu We Th Fr Sa  
                1  2  
 3  4  5  6  7  8  9  
10 11 12 13 14 15 16  
17 18 19 20 21 22 23  
24 25 26 27 28 29 30  
  
jenisha-pandit@jenisha-pandit:~$ |
```

43. time

Syntax: time [command]

Usage: Measures how long a command takes to run.

Command used:

- Time: shows the time taken by any command.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ time whoami  
jenisha-pandit  
  
real    0m0.011s  
user    0m0.001s  
sys     0m0.004s  
jenisha-pandit@jenisha-pandit:~$ time date  
Thu Jun 19 02:40:56 PM +0545 2025  
  
real    0m0.003s  
user    0m0.001s  
sys     0m0.002s  
jenisha-pandit@jenisha-pandit:~$
```

44. host

Syntax: host [domain]

Usage: Performs a DNS lookup for a domain or IP.

Command used:

- host: Finds the IP address of the domain
- host -t mx: Shows the mail exchange (MX) servers
- host -t ns: Displays the name servers (NS) responsible for any site.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ host youtube.com  
youtube.com has address 142.251.43.174  
youtube.com has IPv6 address 2404:6800:4002:815::200e  
youtube.com mail is handled by 0 smtp.google.com.  
jenisha-pandit@jenisha-pandit:~$ host -t mx youtube.com  
youtube.com mail is handled by 0 smtp.google.com.  
jenisha-pandit@jenisha-pandit:~$ host -t ns youtube.com  
youtube.com name server ns3.google.com.  
youtube.com name server ns1.google.com.  
youtube.com name server ns4.google.com.  
youtube.com name server ns2.google.com.  
jenisha-pandit@jenisha-pandit:~$ |
```

45. wget

Syntax: wget [URL]

Usage: Downloads files from the web using HTTP, HTTPS, or FTP.

Command used:

- wget URL: Downloads a file from the specified URL.
- wget -c URL: Resumes a partially downloaded file from the given URL.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
--2025-06-19 14:49:57-- https://ff.garena.com/en  
Resolving ff.garena.com (ff.garena.com)... 148.222.67.157  
Connecting to ff.garena.com (ff.garena.com)|148.222.67.157|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: unspecified [text/html]  
Saving to: 'en'  
  
en  
[ 93.39K 389KB/s in 0.2s  
2025-06-19 14:49:58 (389 KB/s) - 'en' saved [95633]  
  
jenisha-pandit@jenisha-pandit:~$ wget -c https://ff.garena.com/en  
--2025-06-19 14:51:31-- https://ff.garena.com/en  
Resolving ff.garena.com (ff.garena.com)... 148.222.67.157  
Connecting to ff.garena.com (ff.garena.com)|148.222.67.157|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: unspecified [text/html]  
Saving to: 'en'  
  
en [ 93.39K 441KB/s in 0.2s  
2025-06-19 14:51:32 (441 KB/s) - 'en' saved [95633]  
  
jenisha-pandit@jenisha-pandit:~$
```

46. id

Syntax: id [username]

Usage: Shows a user's UID, GID, and group info.

Command used:

- id: Displays the UID, GID, and group memberships of the current user.
- id zen: Displays the UID, GID, and group memberships of the user named zen.
- id root: Shows the UID, GID, and groups for the user root.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ id  
uid=1000(jenisha-pandit) gid=1000(jenisha-pandit) groups=1000(jenisha-pandit),4(adm),24(cdrom),  
27(sudo),30(dip),46(plugdev),100(users),114(lpadmin)  
jenisha-pandit@jenisha-pandit:~$ id zen  
uid=1001(zen) gid=1001(zen) groups=1001(zen),100(users)  
jenisha-pandit@jenisha-pandit:~$ id root  
uid=0(root) gid=0(root) groups=0(root)  
jenisha-pandit@jenisha-pandit:~$
```


47. ps

Syntax: ps [options]

Usage: Displays information about currently running processes.

Command used:

- ps : Lists processes running in the current terminal session.
- ps -e: Shows all running processes on the system.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ps  
  PID TTY          TIME CMD  
 5235 pts/0    00:00:00 bash  
 5568 pts/0    00:00:00 ps  
jenisha-pandit@jenisha-pandit:~$ ps -e  
  PID TTY          TIME CMD  
    1 ?           00:00:06 systemd  
    2 ?           00:00:00 kthreadd  
    3 ?           00:00:00 pool_workqueue_release  
    4 ?           00:00:00 kworker/R-rcu_gp  
    5 ?           00:00:00 kworker/R-sync_wq  
    6 ?           00:00:00 kworker/R-slub_flushwq  
    7 ?           00:00:00 kworker/R-netns  
   10 ?           00:00:00 kworker/0:0H-events_highpri  
   11 ?           00:00:00 kworker/u8:0-ipv6_addrconf  
   12 ?           00:00:00 kworker/R-mm_percpu_wq
```

48. top

Syntax: top

Usage: Shows a live real-time view of system process and resource usage.

Command used:

- top: Display a live list of running processes with CPU and mem. usages.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ top  
  
top - 15:00:44 up 1:13, 1 user, load average: 0.46, 0.65, 0.60  
Tasks: 202 total, 1 running, 201 sleeping, 0 stopped, 0 zombie  
%Cpu(s): 6.3 us, 4.8 sy, 0.0 ni, 88.2 id, 0.0 wa, 0.0 hi, 0.7 si, 0.0 st  
MiB Mem : 5044.6 total, 1891.9 free, 1777.3 used, 1719.8 buff/cache  
MiB Swap: 4096.0 total, 4096.0 free, 0.0 used, 3267.3 avail Mem  
  
  PID USER      PR  NI   VIRT   RES   SHR  S  %CPU  %MEM   TIME+  COMMAND  
 4843 jenisha+  20   0 2568420 175452 114172 S  12.5   3.4  1:51.09 Isolated Web Co  
 1778 jenisha+  20   0 3995712 400188 145036 S   6.6   7.7   5:58.96 gnome-shell  
 4822 jenisha+  20   0 354432 62424 50520 S   3.3   1.2   0:28.30 Utility Process  
 5777 jenisha+  20   0 706528 55032 43352 S   1.6   1.1   0:05.44 gnome-terminal-  
 5799 jenisha+  20   0 23204 5972 3796 R   1.0   0.1   0:01.03 top  
    39 root      20   0 0 0 0 S   0.3   0.0   0:00.49 kcompactd0  
 3298 jenisha+  20   0 2889372 67756 52056 S   0.3   1.3   0:07.02 gjs  
 3875 root      20   0 0 0 0 I   0.3   0.0   0:00.53 kworker/u9:0-flus+  
 3876 root      20   0 0 0 0 I   0.3   0.0   0:02.27 kworker/u10:3-eve+  
    1 root      20   0 22980 14104 9496 S   0.0   0.3   0:49.42 systemd
```

49. kill

Syntax: kill [PID]

Usage: Sends a signal (default: TERM) to terminate a specific process.

Command used:

- kill 4263: Sends a gentle signal to process 4263 to terminate.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ps -ef | grep firefox  
jenisha+  4081    1778 13 14:47 ?        00:02:11 /snap/firefox/5751/usr/lib/f  
irefox/firefox  
jenisha+  4236    4081  0 14:47 ?        00:00:00 /snap/firefox/5751/usr/lib/f  
irefox/firefox -contentproc -parentBuildID 20250211160552 -prefsHandle 0 -prefsL  
en 32645 -prefMapHandle 1 -prefMapSize 261595 -sandboxReporter 2 -chrootClient 3  
-ipcHandle 4 -initialChannelId {5e5c1bfb-cb41-4eb1-a21a-1d8d1b92fc00} -parentPi  
d 4081 -crashReporter 5 -appDir /snap/firefox/5751/usr/lib/firefox/browser 1 soc  
ket  
jenisha+  4263    4081  0 14:47 ?        00:00:04 /snap/firefox/5751/usr/lib/f  
irefox/firefox -contentproc -isForBrowser -prefsHandle 0 -prefsLen 32786 -prefMa  
pHandle 1 -prefMapSize 261595 -jsInitHandle 2 -jsInitLen 253512 -parentBuildID 2  
0250211160552 -sandboxReporter 3 -chrootClient 4 -ipcHandle 5 -initialChannelId  
{6ec2c134-ba9e-4b8a-92cb-75e2551bdc58} -parentPid 4081 -crashReporter 6 -greomni  
/snap/firefox/5751/usr/lib/firefox/omni.ja -appomni /snap/firefox/5751/usr/lib/  
firefox/browser/omni.ja -appDir /snap/firefox/5751/usr/lib/firefox/browser 2 tab  
jenisha+  4270    4081  0 14:47 ?        00:00:02 /snap/firefox/5751/usr/lib/f  
irefox/firefox -contentproc -parentBuildID 20250211160552 -prefsHandle 0 -prefsL  
en 32786 -prefMapHandle 1 -prefMapSize 261595 -sandboxReporter 2 -chrootClient 3  
jenisha-pandit@jenisha-pandit:~$ kill 4263  
jenisha-pandit@jenisha-pandit:~$ ps -ef | grep firefox  
jenisha+  4081    1778 13 14:47 ?        00:02:12 /snap/firefox/5751/usr/lib/f  
irefox/firefox  
jenisha+  4236    4081  0 14:47 ?        00:00:00 /snap/firefox/5751/usr/lib/f  
irefox/firefox -contentproc -parentBuildID 20250211160552 -prefsHandle 0 -prefsL  
en 32645 -prefMapHandle 1 -prefMapSize 261595 -sandboxReporter 2 -chrootClient 3  
-ipcHandle 4 -initialChannelId {5e5c1bfb-cb41-4eb1-a21a-1d8d1b92fc00} -parentPi  
d 4081 -crashReporter 5 -appDir /snap/firefox/5751/usr/lib/firefox/browser 1 soc  
ket  
jenisha+  4270    4081  0 14:47 ?        00:00:02 /snap/firefox/5751/usr/lib/f  
irefox/firefox -contentproc -parentBuildID 20250211160552 -prefsHandle 0 -prefsL  
en 32786 -prefMapHandle 1 -prefMapSize 261595 -sandboxReporter 2 -chrootClient 3  
-ipcHandle 4 -initialChannelId {a04d0324-583b-47be-a70c-ad84a7b73ef1} -parentPi  
d 4081 -crashReporter 5 -appDir /snap/firefox/5751/usr/lib/firefox/browser 3 rdd  
jenisha+  4609    4081  0 14:48 ?        00:00:02 /snap/firefox/5751/usr/lib/f
```

50. pkill

Syntax: pkill [process_name]

Usage: Kills all processes that match a given name.

Command used:

- pkill: Gracefully kills all matching processes.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sleep 100 &  
[1] 8083  
jenisha-pandit@jenisha-pandit:~$ pkill sleep  
[1]+  Terminated                  sleep 100
```

51. killall

Syntax: killall [process_name]

Usage: Kills all processes with the exact specified name.

Command used:

- killall sleep: Terminates all processes named sleep.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sleep 100 &  
[1] 9459  
jenisha-pandit@jenisha-pandit:~$ sleep 200 &  
[2] 9460  
jenisha-pandit@jenisha-pandit:~$ pgrep sleep  
9459  
jenisha-pandit@jenisha-pandit:~$ killall sleep  
[1]-  Terminated                  sleep 100  
[2]+  Terminated                  sleep 200  
jenisha-pandit@jenisha-pandit:~$
```

52. bg

Syntax: bg [job_id]

Usage: Resumes a suspended job in the background.

Command used:

- bg: Resumes the most recently suspended job in the background.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sleep 100  
^Z  
[1]+  Stopped                  sleep 100  
jenisha-pandit@jenisha-pandit:~$ bg  
[1]+ sleep 100 &  
jenisha-pandit@jenisha-pandit:~$ jobs  
[1]+  Running                  sleep 100 &  
jenisha-pandit@jenisha-pandit:~$ fg  
sleep 100
```

53. fg

Syntax: fg [%job_id]

Usage: Brings a background or suspended job to the foreground.

Command used:

- fg: Brings the most recently suspended or backgrounded job back to the foreground.
- fg %1: Brings the job with job ID 1 (i.e., %1) to the foreground explicitly.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sleep 10  
^Z  
[1]+  Stopped                  sleep 10  
jenisha-pandit@jenisha-pandit:~$ bg  
[1]+  sleep 10 &  
jenisha-pandit@jenisha-pandit:~$ fg  
bash: fg: job has terminated  
[1]+  Done                    sleep 10  
jenisha-pandit@jenisha-pandit:~$ jobs  
jenisha-pandit@jenisha-pandit:~$ fg %1  
bash: fg: %1: no such job  
jenisha-pandit@jenisha-pandit:~$ |
```

54. tar

Syntax: tar -czvf archive.tar.gz files/

Usage: Archives and compresses files or folders into a .tar.gz file.

Command used:

- tar -cvf: Creates a .tar archive named archive.tar from the specified files or directory without compression.
- tar -tvf: Lists the contents of the archive.tar file without extracting anything.
- tar -xvf: Extracts the contents of the archive.tar file into the current directory.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ echo "Hello from file1">file1.txt  
jenisha-pandit@jenisha-pandit:~$ echo "Hello from file2">file2.txt  
jenisha-pandit@jenisha-pandit:~$ tar -cvf myarchive.tar file1.txt file2.txt  
file1.txt  
file2.txt  
jenisha-pandit@jenisha-pandit:~$ tar -tvf myarchive.tar  
-rw-rw-r-- jenisha-pandit/jenisha-pandit 17 2025-06-21 16:04 file1.txt  
-rw-rw-r-- jenisha-pandit/jenisha-pandit 17 2025-06-21 16:04 file2.txt  
jenisha-pandit@jenisha-pandit:~$ rm file1.txt file2.txt  
jenisha-pandit@jenisha-pandit:~$ tar -xvf myarchive.tar  
file1.txt  
file2.txt  
jenisha-pandit@jenisha-pandit:~$
```

55. gzip

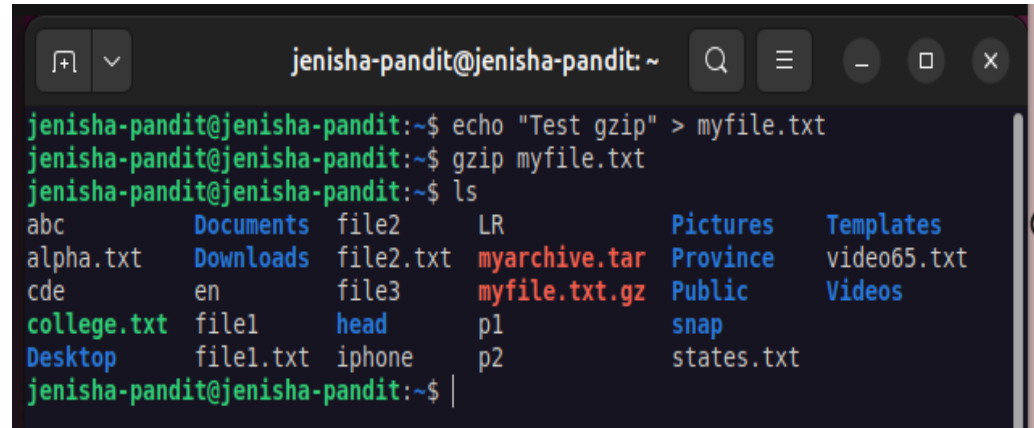
Syntax: gzip filename

Usage: Compresses a single file and replaces it with .gz version.

Command used:

- gzip myfile.txt: Compresses myfile.txt into myfile.txt.gz and deletes the original myfile.txt.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ echo "Test gzip" > myfile.txt  
jenisha-pandit@jenisha-pandit:~$ gzip myfile.txt  
jenisha-pandit@jenisha-pandit:~$ ls  
abc          Documents  file2      LR          Pictures    Templates  
alpha.txt    Downloads  file2.txt  myarchive.tar Province    video65.txt  
cde          en         file3      myfile.txt.gz Public       Videos  
college.txt  file1      head       p1          snap  
Desktop      file1.txt  iphone     p2          states.txt  
jenisha-pandit@jenisha-pandit:~$ |
```

56. alias

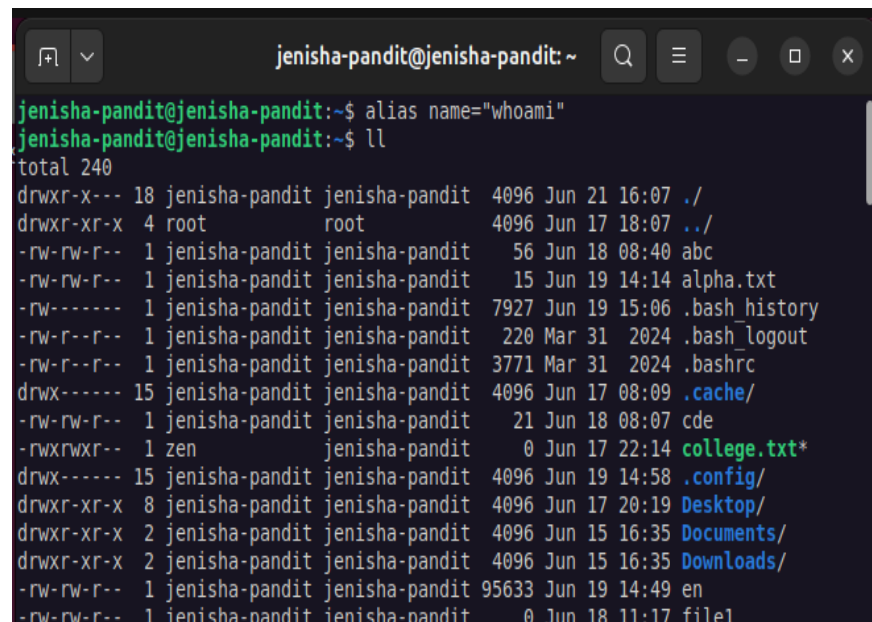
Syntax: alias name='command'

Usage: Creates a shortcut for a longer command.

Command used:

- alias name="whoami": creates a shortcut called name that runs the whoami command when typed in the terminal.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ alias name="whoami"  
jenisha-pandit@jenisha-pandit:~$ ll  
total 240  
drwxr-x--- 18 jenisha-pandit jenisha-pandit 4096 Jun 21 16:07 ./  
drwxr-xr-x  4 root            root      4096 Jun 17 18:07 ../  
-rw-rw-r--  1 jenisha-pandit jenisha-pandit   56 Jun 18 08:40 abc  
-rw-rw-r--  1 jenisha-pandit jenisha-pandit   15 Jun 19 14:14 alpha.txt  
-rw-----  1 jenisha-pandit jenisha-pandit 7927 Jun 19 15:06 .bash_history  
-rw-r--r--  1 jenisha-pandit jenisha-pandit 220 Mar 31 2024 .bash_logout  
-rw-r--r--  1 jenisha-pandit jenisha-pandit 3771 Mar 31 2024 .bashrc  
drwx----- 15 jenisha-pandit jenisha-pandit 4096 Jun 17 08:09 .cache/  
-rw-rw-r--  1 jenisha-pandit jenisha-pandit   21 Jun 18 08:07 cde  
-rwxrwxr--  1 zen            jenisha-pandit    0 Jun 17 22:14 college.txt*  
drwx----- 15 jenisha-pandit jenisha-pandit 4096 Jun 19 14:58 .config/  
drwxr-xr-x  8 jenisha-pandit jenisha-pandit 4096 Jun 17 20:19 Desktop/  
drwxr-xr-x  2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Documents/  
drwxr-xr-x  2 jenisha-pandit jenisha-pandit 4096 Jun 15 16:35 Downloads/  
-rw-rw-r--  1 jenisha-pandit jenisha-pandit 95633 Jun 19 14:49 en  
-rw-rw-r--  1 jenisha-pandit jenisha-pandit    0 Jun 18 11:17 file1
```

57. who

Syntax: who

Usage: Shows users currently logged into the system.

Command used:

- who: shows who is currently logged into the system, including their usernames, login terminals, and login times.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ who  
jenisha-pandit seat0      2025-06-19 13:47 (login screen)  
jenisha-pandit tty2       2025-06-19 13:47 (tty2)  
jenisha-pandit@jenisha-pandit:~$ |
```

58. whoami

Syntax: whoami

Usage: Displays the username of the current user.

Command used:

- whoami : Displays the current user's username.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ whoami  
jenisha-pandit  
jenisha-pandit@jenisha-pandit:~$ |
```

59. w

Syntax: w

Usage: Displays how long the system has been running, users, and load average.

Command used:

- w: Shows who is logged in and what they are doing, including system load and processes.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ w  
17:38:17 up 10:09, 1 user, load average: 0.29, 0.28, 0.17  
USER   TTY    FROM          LOGIN@  IDLE   JCPU   PCPU   WHAT  
jenisha- tty2  -             Thu13   2days 0.12s  0.10s /usr/libexec/gn  
jenisha-pandit@jenisha-pandit:~$ |
```

60. uptime

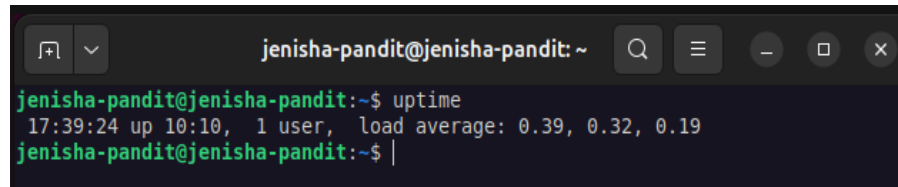
Syntax: uptime

Usage: Displays how long the system has been running, users, and load average.

Command used:

- uptime: Shows how long the system has been running, along with the number of users and system load averages.

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' showing the output of the 'uptime' command. The output displays the current time (17:39:24), system uptime (up 10:10), number of users (1 user), and load averages (0.39, 0.32, 0.19).

```
jenisha-pandit@jenisha-pandit:~$ uptime
17:39:24 up 10:10, 1 user, load average: 0.39, 0.32, 0.19
jenisha-pandit@jenisha-pandit:~$ |
```

61. free

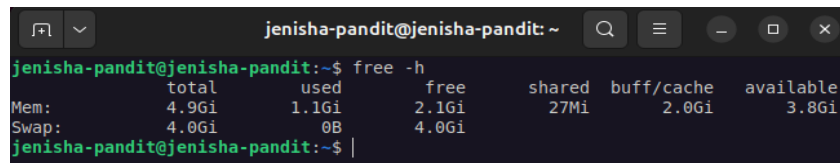
Syntax: free -h

Usage: Shows available and used RAM and swap memory in a human-readable format.

Command used:

- free -h: Displays available and used memory (RAM and swap) in human-readable format.

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' showing the output of the 'free -h' command. The output is a table showing memory usage for Mem and Swap, with columns for total, used, free, shared, buff/cache, and available.

```
jenisha-pandit@jenisha-pandit:~$ free -h
              total        used         free       shared    buff/cache   available
Mem:            4.9Gi        1.1Gi         2.1Gi         27Mi         2.0Gi         3.8Gi
Swap:           4.0Gi          0B          4.0Gi
jenisha-pandit@jenisha-pandit:~$ |
```

62. crontab

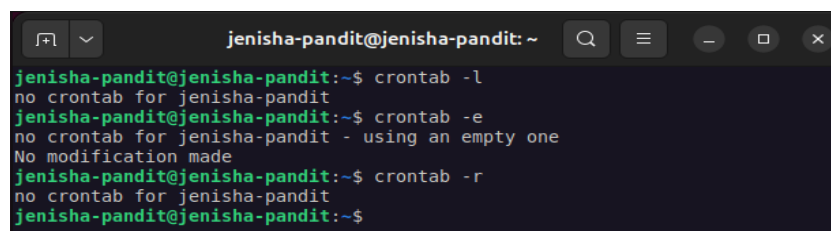
Syntax: crontab -e

Usage: Opens the cron scheduler to set recurring tasks.

Command used:

- crontab -l: Lists the current user's scheduled cron jobs.
- crontab -e: Opens the cron job editor to add or modify scheduled tasks.
- crontab -r: Removes all cron jobs for the current user (use with caution).

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' showing the output of three 'crontab' commands: -l, -e, and -r. The output shows that there is no crontab for the user, and that the crontab was successfully created and then removed.

```
jenisha-pandit@jenisha-pandit:~$ crontab -l
no crontab for jenisha-pandit
jenisha-pandit@jenisha-pandit:~$ crontab -e
no crontab for jenisha-pandit - using an empty one
No modification made
jenisha-pandit@jenisha-pandit:~$ crontab -r
no crontab for jenisha-pandit
jenisha-pandit@jenisha-pandit:~$
```


63. xargs

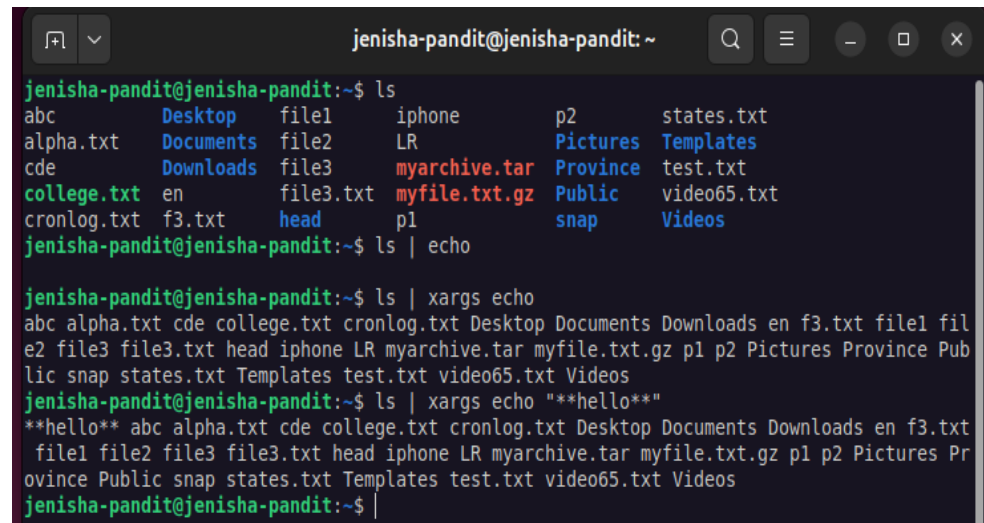
Syntax: command | xargs other_command

Usage: Passes input from one command as arguments to another.

Command used:

- `ls | xargs echo`: Lists files and prints them in a single line using echo.
- `ls | xargs echo "***hello***"`: Prints "hello" followed by the list of files from `ls`, all in one line.

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' showing the execution of 'ls' and 'xargs' commands. The 'ls' command lists files in a multi-column format. The 'ls | xargs echo' command concatenates all file names into a single line. The 'ls | xargs echo "***hello***"' command prints '***hello***' followed by the file names.

```
jenisha-pandit@jenisha-pandit:~$ ls
abc      Desktop  file1    iphone    p2        states.txt
alpha.txt Documents file2     LR        Pictures  Templates
cde      Downloads file3    myarchive.tar Province  test.txt
college.txt en       file3.txt myfile.txt.gz Public    video65.txt
cronlog.txt f3.txt   head     p1        snap      Videos
jenisha-pandit@jenisha-pandit:~$ ls | echo
abc alpha.txt cde college.txt cronlog.txt Desktop Documents Downloads en f3.txt file1 file2
file3 file3.txt head iphone LR myarchive.tar myfile.txt.gz p1 p2 Pictures Province Public
snap states.txt Templates test.txt video65.txt Videos
jenisha-pandit@jenisha-pandit:~$ ls | xargs echo
***hello*** abc alpha.txt cde college.txt cronlog.txt Desktop Documents Downloads en f3.txt
file1 file2 file3 file3.txt head iphone LR myarchive.tar myfile.txt.gz p1 p2 Pictures Province
Public snap states.txt Templates test.txt video65.txt Videos
jenisha-pandit@jenisha-pandit:~$
```

64. env

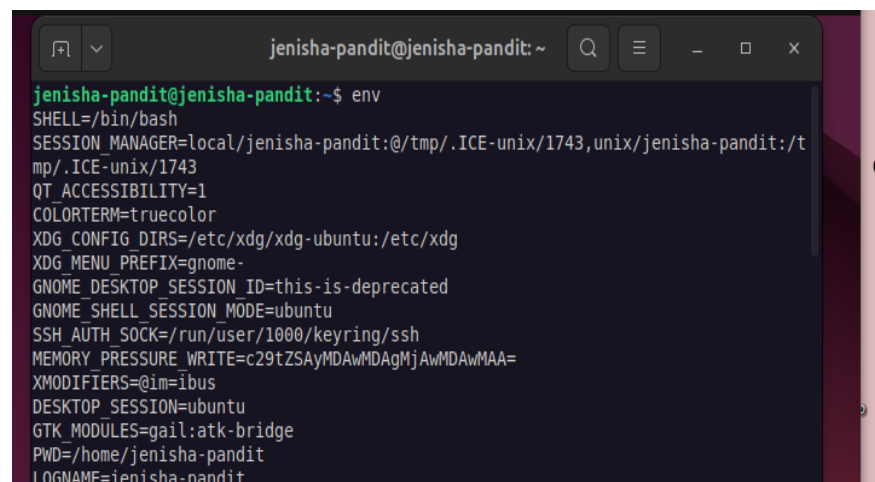
Syntax: env

Usage: Lists all current environment variables.

Command used:

- `env`: Displays the current environment variables for the shell session.

Output:

A terminal window titled 'jenisha-pandit@jenisha-pandit: ~' showing the output of the 'env' command, which lists all current environment variables.

```
jenisha-pandit@jenisha-pandit:~$ env
SHELL=/bin/bash
SESSION_MANAGER=local/jenisha-pandit:@/tmp/.ICE-unix/1743,unix/jenisha-pandit:/tmp/.ICE-unix/1743
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
GNOME_SHELL_SESSION_MODE=ubuntu
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
MEMORY_PRESSURE_WRITE=c29tZSAyMDAwMDAgMjAwMDAwMAA=
XMODIFIERS=@im=ibus
DESKTOP_SESSION=ubuntu
GTK_MODULES=gail:atk-bridge
PWD=/home/jenisha-pandit
LOGNAME=jenisha-pandit
```


65. printenv

Syntax: printenv [VARIABLE]

Usage: Displays the value of a specific or all environment variables.

Command used:

- printenv PATH: : Prints the value of the PATH environment variable, showing directories searched for executables.

Output:

```
jenisha-pandit@jenisha-pandit:~$ printenv PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
jenisha-pandit@jenisha-pandit:~$ |
```

66. mount

Syntax: sudo mount device mount_point

Usage: Attaches a filesystem (like USB) to a directory.

Command used:

- sudo mount /dev/sdb1 /mnt/usb: Mounts the device /dev/sdb1 (usually a USB or external drive) to the directory /mnt/usb with root (sudo) permissions, making its contents accessible there.

Output:

```
jenisha-pandit@jenisha-pandit:~$ sudo mkdir /mnt/usb
[sudo] password for jenisha-pandit:
jenisha-pandit@jenisha-pandit:~$ sudo mount /dev/sdb1 /mnt/usb
mount: /mnt/usb: special device /dev/sdb1 does not exist.
dmesg(1) may have more information after failed mount system call.
jenisha-pandit@jenisha-pandit:~$ lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS
loop0       7:0    0     4K  1 loop /snap/bare/5
loop1       7:1    0  73.9M  1 loop /snap/core22/1981
loop2       7:2    0  73.9M  1 loop /snap/core22/2010
loop3       7:3    0  258M  1 loop /snap/firefox/5751
loop4       7:4    0  91.7M  1 loop /snap/gtk-common-themes/1535
loop5       7:5    0  516M  1 loop /snap/gnome-42-2204/202
loop6       7:6    0  11.1M  1 loop /snap/firmware-updater/167
loop7       7:7    0  10.8M  1 loop /snap/snap-store/1248
loop8       7:8    0  10.8M  1 loop /snap/snap-store/1270
loop9       7:9    0  50.9M  1 loop /snap/snapd/24505
loop10      7:10   0  50.9M  1 loop /snap/snapd/24718
loop11      7:11   0   568K  1 loop /snap/snapd-desktop-integration/253
sda         8:0    0 100.1G  0 disk
├─sda1      8:1    0     1M  0 part
└─sda2      8:2    0 100.1G  0 part /
sr0        11:0    1 1024M  0 rom
jenisha-pandit@jenisha-pandit:~$
```

67. umount

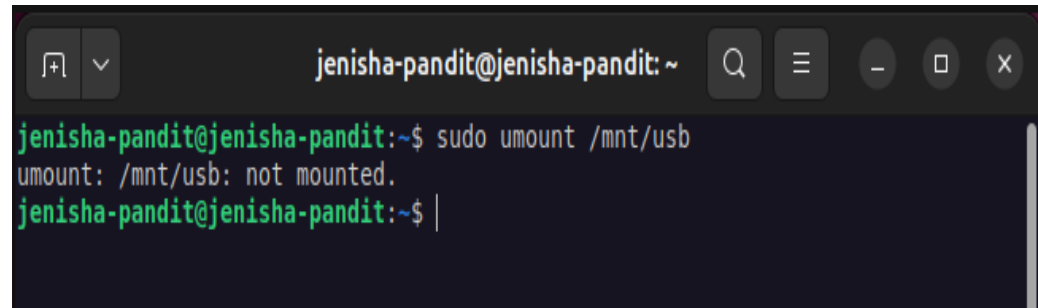
Syntax: sudo umount device_or_mount_point

Usage: Detaches a mounted filesystem safely.

Command used:

- sudo umount /mnt/usb: It unmounts the device mounted at /mnt/usb, safely disconnecting it from the system.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ sudo umount /mnt/usb  
umount: /mnt/usb: not mounted.  
jenisha-pandit@jenisha-pandit:~$ |
```

68. lsblk

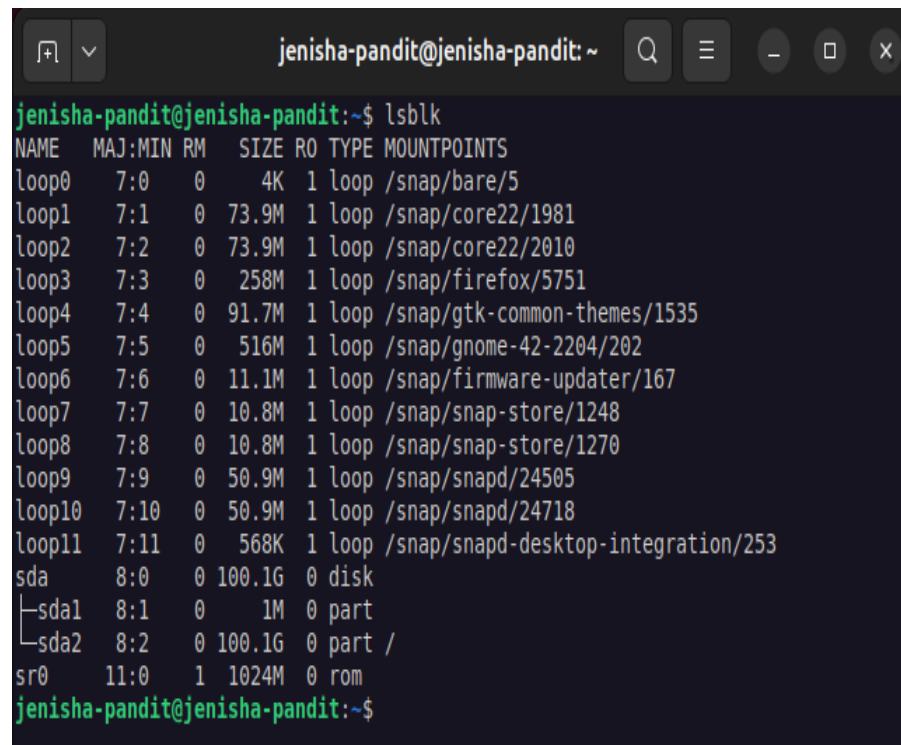
Syntax: lsblk

Usage: Lists information about all storage devices and partitions.

Command used:

- lsblk: Lists all block devices (like hard drives, USBs, partitions) in a tree format, showing their mount points and sizes.

Output:



```
jenisha-pandit@jenisha-pandit:~$ lsblk  
NAME        MAJ:MIN RM  SIZE RO TYPE MOUNTPOINTS  
loop0       7:0    0    4K  1 loop /snap/bare/5  
loop1       7:1    0  73.9M  1 loop /snap/core22/1981  
loop2       7:2    0  73.9M  1 loop /snap/core22/2010  
loop3       7:3    0  258M   1 loop /snap/firefox/5751  
loop4       7:4    0  91.7M  1 loop /snap/gtk-common-themes/1535  
loop5       7:5    0  516M  1 loop /snap/gnome-42-2204/202  
loop6       7:6    0  11.1M  1 loop /snap/firmware-updater/167  
loop7       7:7    0  10.8M  1 loop /snap/snap-store/1248  
loop8       7:8    0  10.8M  1 loop /snap/snap-store/1270  
loop9       7:9    0  50.9M  1 loop /snap/snapd/24505  
loop10      7:10   0  50.9M  1 loop /snap/snapd/24718  
loop11      7:11   0   568K  1 loop /snap/snapd-desktop-integration/253  
sda         8:0    0 100.1G  0 disk  
├─sda1      8:1    0    1M  0 part  
└─sda2      8:2    0 100.1G  0 part /  
sr0        11:0    1 1024M  0 rom  
jenisha-pandit@jenisha-pandit:~$
```

69. journalctl

Syntax: journalctl [options]

Usage: Displays logs from the systemd journal.

Command used:

- journalctl : Views system logs collected by systemd-journald.
- journalctl -b: Shows logs from the current boot only.
- journalctl -f: Follows the log output in real-time (like tail -f).
- journalctl -u ssh: Displays logs related to the ssh service.

Output:

```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ journalctl  
Jun 15 16:32:44 jenisha-pandit kernel: Linux version 6.11.0-26-generic (build...  
Jun 15 16:32:44 jenisha-pandit kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-  
Jun 15 16:32:44 jenisha-pandit kernel: KERNEL supported cpus:  
Jun 15 16:32:44 jenisha-pandit kernel: Intel GenuineIntel  
Jun 15 16:32:44 jenisha-pandit kernel: AMD AuthenticAMD  
Jun 15 16:32:44 jenisha-pandit kernel: Hygon HygonGenuine  
Jun 15 16:32:44 jenisha-pandit kernel: Centaur CentaurHauls  
Jun 15 16:32:44 jenisha-pandit kernel: zhaoxin Shanghai  
Jun 15 16:32:44 jenisha-pandit kernel: BIOS-provided physical RAM map:  
  
jenisha-pandit@jenisha-pandit:~$ journalctl -b  
Jun 19 13:46:54 jenisha-pandit kernel: Linux version 6.11.0-26-generic (build...  
Jun 19 13:46:54 jenisha-pandit kernel: Command line: BOOT_IMAGE=/boot/vmlinuz-  
Jun 19 13:46:54 jenisha-pandit kernel: KERNEL supported cpus:  
Jun 19 13:46:54 jenisha-pandit kernel: Intel GenuineIntel  
Jun 19 13:46:54 jenisha-pandit kernel: AMD AuthenticAMD  
Jun 19 13:46:54 jenisha-pandit kernel: Hygon HygonGenuine  
Jun 19 13:46:54 jenisha-pandit kernel: Centaur CentaurHauls  
Jun 19 13:46:54 jenisha-pandit kernel: zhaoxin Shanghai  
Jun 19 13:46:54 jenisha-pandit kernel: BIOS-provided physical RAM map:  
Jun 19 13:46:54 jenisha-pandit kernel: BIOS-e820: [mem 0x0000000000000000-0x00...  
Jun 19 13:46:54 jenisha-pandit kernel: BIOS-e820: [mem 0x00000000000009fc00-0x00...  
Jun 19 13:46:54 jenisha-pandit kernel: BIOS-e820: [mem 0x000000000000f0000-0x00...  
Jun 19 13:46:54 jenisha-pandit kernel: BIOS-e820: [mem 0x0000000000100000-0x00...  
Jun 19 13:46:54 jenisha-pandit kernel: BIOS-e820: [mem 0x00000000dfff0000-0x00...  
  
jenisha-pandit@jenisha-pandit:~$ journalctl -f  
Jun 21 19:28:25 jenisha-pandit gnome-shell[1778]: meta_window_set_stack_positio...  
n_no_sync: assertion 'window->stack_position >= 0' failed  
Jun 21 19:28:25 jenisha-pandit systemd[1542]: Started vte-spawn-e97b0b07-7944-4...  
156-9756-a1080a0f730e.scope - VTE child process 13339 launched by gnome-termina...  
l-server process 13332.  
Jun 21 19:28:44 jenisha-pandit systemd[1542]: gnome-terminal-server.service: Co...  
nsumed 3.127s CPU time.  
Jun 21 19:28:45 jenisha-pandit systemd[1542]: Started app-gnome-org.gnome.Termi...  
nal-13355.scope - Application launched by gnome-shell.  
Jun 21 19:28:46 jenisha-pandit dbus-daemon[1578]: [session uid=1000 pid=1578] A...  
ctivating via systemd: service name='org.gnome.Terminal' unit='gnome-terminal-s...  
erver.service' requested by '1.275' (uid=1000 pid=13359 comm="/usr/bin/gnome-t...  
terminal.real" label="unconfined")  
  
jenisha-pandit@jenisha-pandit:~$ journalctl -u ssh  
-- No entries --  
jenisha-pandit@jenisha-pandit:~$
```

70. nano

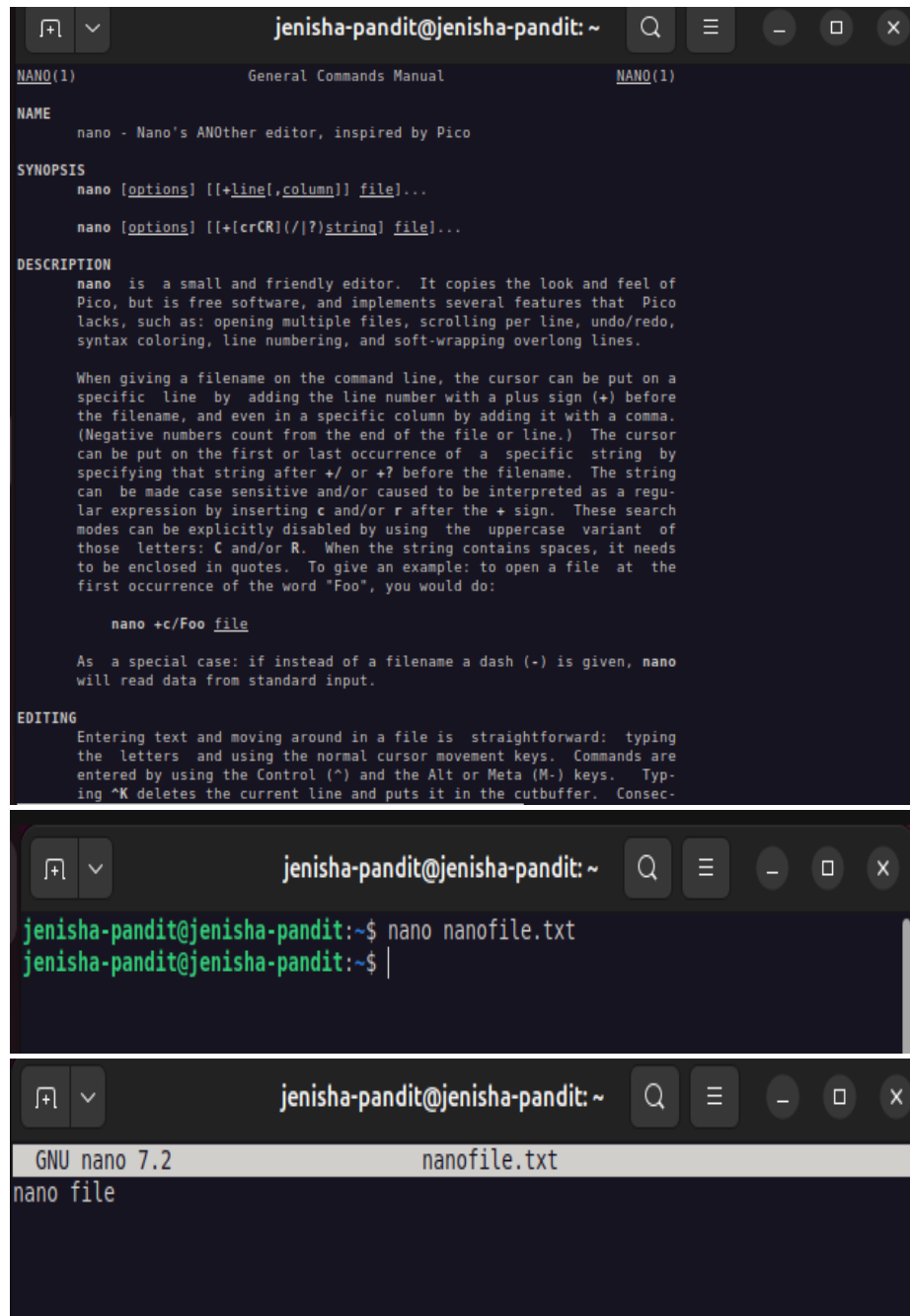
Syntax: nano filename

Usage: Opens or creates a file in a simple terminal text editor.

Command used:

- nano nanofile.txt: Opens or creates the file nanofile.txt in the Nano text editor for editing in the terminal.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
NANO(1) General Commands Manual NANO(1)  
NAME  
    nano - Nano's ANOther editor, inspired by Pico  
SYNOPSIS  
    nano [options] [[+line[,column]] file]...  
    nano [options] [[+{crCR}[/]?string] file]...  
DESCRIPTION  
    nano is a small and friendly editor. It copies the look and feel of Pico, but is free software, and implements several features that Pico lacks, such as: opening multiple files, scrolling per line, undo/redo, syntax coloring, line numbering, and soft-wrapping overlong lines.  
    When giving a filename on the command line, the cursor can be put on a specific line by adding the line number with a plus sign (+) before the filename, and even in a specific column by adding it with a comma. (Negative numbers count from the end of the file or line.) The cursor can be put on the first or last occurrence of a specific string by specifying that string after +/ or +? before the filename. The string can be made case sensitive and/or caused to be interpreted as a regular expression by inserting c and/or r after the + sign. These search modes can be explicitly disabled by using the uppercase variant of those letters: C and/or R. When the string contains spaces, it needs to be enclosed in quotes. To give an example: to open a file at the first occurrence of the word "Foo", you would do:  
    nano +c/Foo file  
    As a special case: if instead of a filename a dash (-) is given, nano will read data from standard input.  
EDITING  
    Entering text and moving around in a file is straightforward: typing the letters and using the normal cursor movement keys. Commands are entered by using the Control (^) and the Alt or Meta (M-) keys. Typing ^K deletes the current line and puts it in the cutbuffer. Consec-
```

```
jenisha-pandit@jenisha-pandit:~$ nano nanofile.txt  
jenisha-pandit@jenisha-pandit:~$ |
```

```
GNU nano 7.2 nanofile.txt  
nano file
```

71. vim

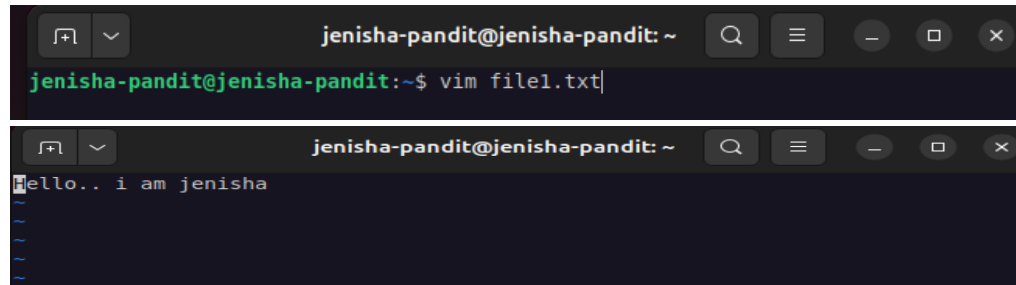
Syntax: vim filename

Usage: Opens or creates a file in a powerful terminal-based editor.

Command used:

- vim file1.txt: open and edit file1.txt

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ vim file1.txt  
Hello.. i am jenisha  
~  
~  
~
```

72. less

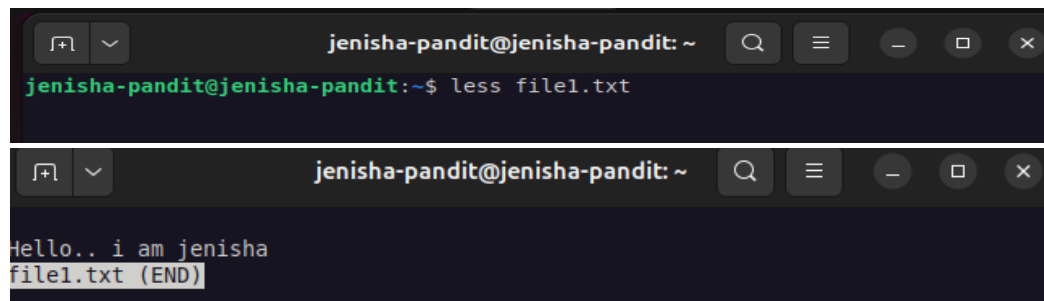
Syntax: less filename

Usage: Views file content one page at a time with scroll.

Command used:

- less file1.txt: view the contents of file1.txt one page at a time

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ less file1.txt  
Hello.. i am jenisha  
file1.txt (END)
```

73. scp

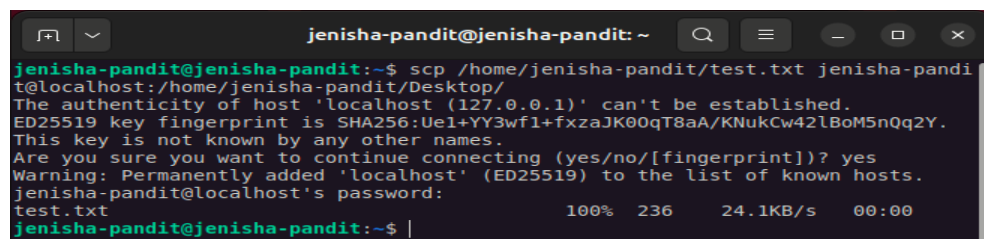
Syntax: scp file user@host:/path/

Usage: Securely copies files between local and remote systems over SSH.

Command used:

- scp: copies files between local and remote systems over SSH.

Output:



```
jenisha-pandit@jenisha-pandit:~$ scp /home/jenisha-pandit/test.txt jenisha-pandi  
t@localhost:/home/jenisha-pandit/Desktop/  
The authenticity of host 'localhost (127.0.0.1)' can't be established.  
ED25519 key fingerprint is SHA256:Uel+YY3wfl+fxzaJK00qT8aA/KNukCw42lBoM5nQq2Y.  
This key is not known by any other names.  
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes  
Warning: Permanently added 'localhost' (ED25519) to the list of known hosts.  
jenisha-pandit@localhost's password:  
test.txt  
100% 236 24.1KB/s 00:00  
jenisha-pandit@jenisha-pandit:~$ |
```

74. tee

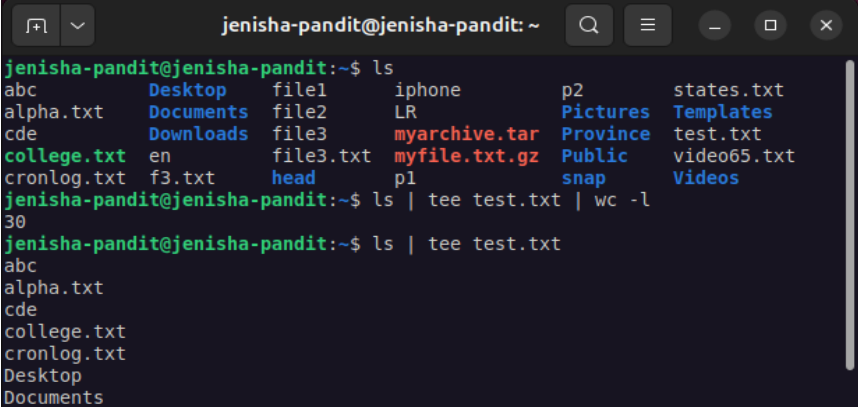
Syntax: command | tee file.txt

Usage: Writes command output to a file and displays it on the screen.

Command used:

- `ls | tee test.txt | wc -l`: lists files, saves the list to test.txt, and counts the number of files
- `ls | tee test.txt`: lists files and saves the output to test.txt while also displaying it on the screen.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ ls  
abc      Desktop  file1    iphone   p2       states.txt  
alpha.txt Documents file2     LR       Pictures Templates  
cde      Downloads file3     myarchive.tar Province test.txt  
college.txt en       file3.txt myfile.txt.gz Public  video65.txt  
cronlog.txt f3.txt  head     p1       snap     Videos  
jenisha-pandit@jenisha-pandit:~$ ls | tee test.txt | wc -l  
30  
jenisha-pandit@jenisha-pandit:~$ ls | tee test.txt  
abc  
alpha.txt  
cde  
college.txt  
cronlog.txt  
Desktop  
Documents
```

75. rsync

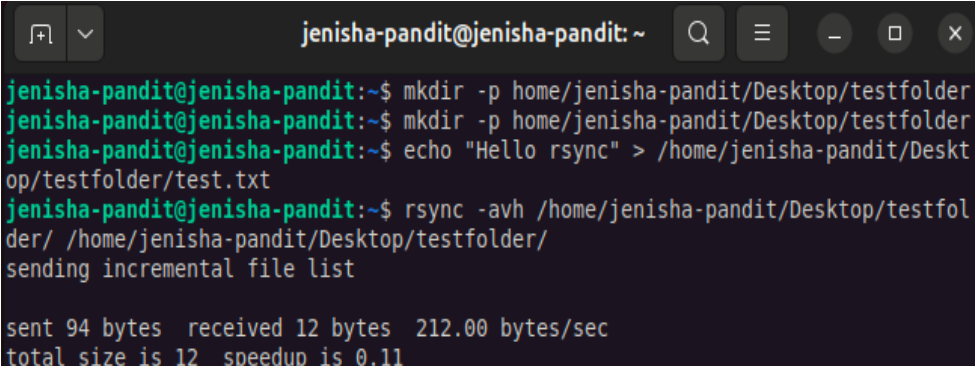
Syntax: rsync -av source/ destination/

Usage: Efficiently synchronizes files and directories locally or remotely.

Command used:

- `rsync -avh`: synchronizes files or directories by copying them from source to destination with options:
 - `-a` for archive mode (preserves permissions, timestamps, etc.),
 - `-v` for verbose output,
 - `-h` for human-readable file sizes.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$ mkdir -p home/jenisha-pandit/Desktop/testfolder  
jenisha-pandit@jenisha-pandit:~$ mkdir -p home/jenisha-pandit/Desktop/testfolder  
jenisha-pandit@jenisha-pandit:~$ echo "Hello rsync" > /home/jenisha-pandit/Desktop/testfolder/test.txt  
jenisha-pandit@jenisha-pandit:~$ rsync -avh /home/jenisha-pandit/Desktop/testfolder/ /home/jenisha-pandit/Desktop/testfolder/  
sending incremental file list  
  
sent 94 bytes  received 12 bytes  212.00 bytes/sec  
total size is 12  speedup is 0.11
```

76. ssh

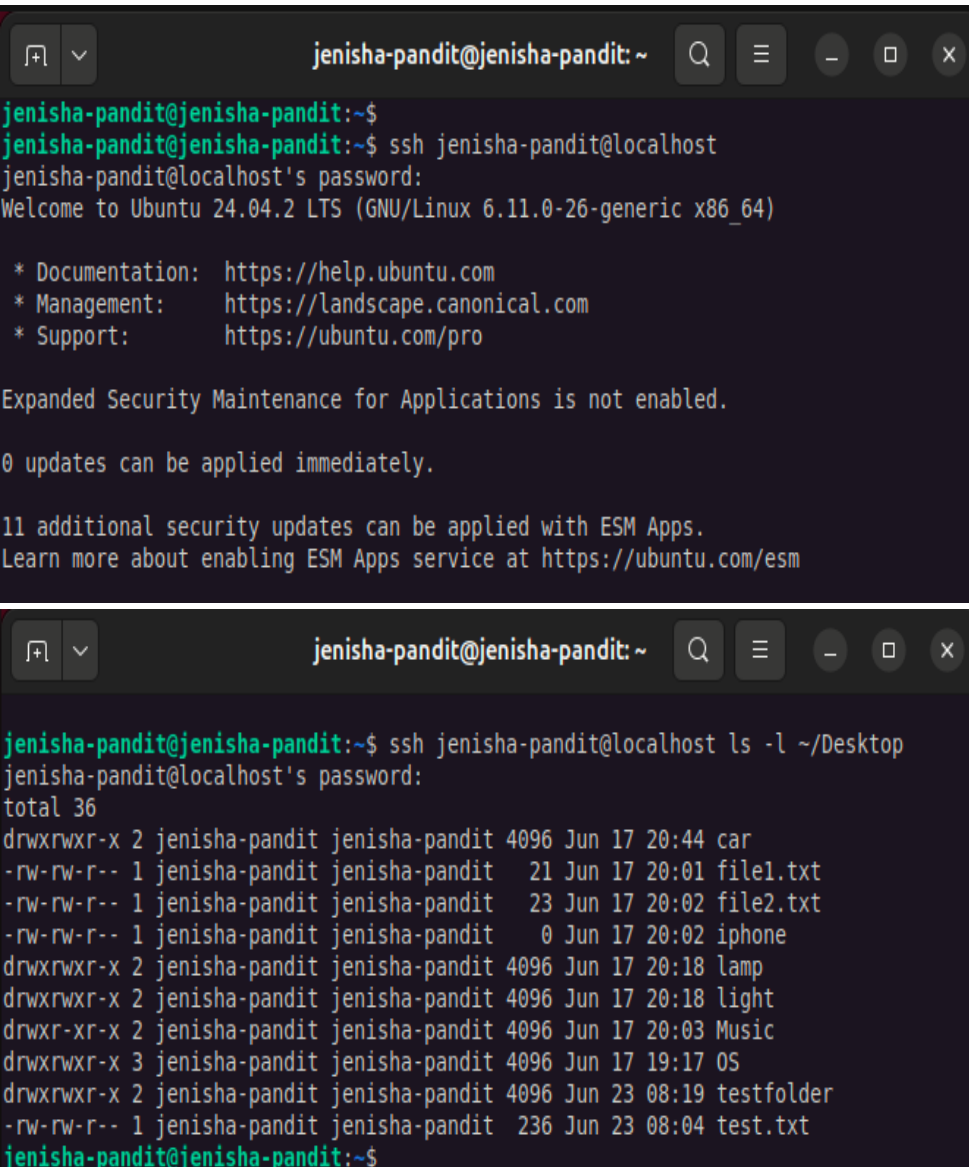
Syntax: ssh user@host

Usage: Connects to a remote system securely over SSH.

Command used:

- ssh: It allows you to execute commands or start a shell session on the remote system securely.

Output:



```
jenisha-pandit@jenisha-pandit: ~  
jenisha-pandit@jenisha-pandit:~$  
jenisha-pandit@jenisha-pandit:~$ ssh jenisha-pandit@localhost  
jenisha-pandit@localhost's password:  
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.11.0-26-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/pro  
  
Expanded Security Maintenance for Applications is not enabled.  
  
0 updates can be applied immediately.  
  
11 additional security updates can be applied with ESM Apps.  
Learn more about enabling ESM Apps service at https://ubuntu.com/esm  
  
jenisha-pandit@jenisha-pandit:~$ ssh jenisha-pandit@localhost ls -l ~/Desktop  
jenisha-pandit@localhost's password:  
total 36  
drwxrwxr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 17 20:44 car  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit  21 Jun 17 20:01 file1.txt  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit  23 Jun 17 20:02 file2.txt  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit   0 Jun 17 20:02 iphone  
drwxrwxr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 17 20:18 lamp  
drwxrwxr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 17 20:18 light  
drwxr-xr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 17 20:03 Music  
drwxrwxr-x 3 jenisha-pandit jenisha-pandit 4096 Jun 17 19:17 OS  
drwxrwxr-x 2 jenisha-pandit jenisha-pandit 4096 Jun 23 08:19 testfolder  
-rw-rw-r-- 1 jenisha-pandit jenisha-pandit 236 Jun 23 08:04 test.txt  
jenisha-pandit@jenisha-pandit:~$
```


Padmakanya Multiple Campus
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LAB REPORT ON
OPERATING SYSTEM
CSC 264

Submitted by:

Jenisha Pandit

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4th Semester

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