

Part-A

I.

```
This message is shown once a day. To disable it please create the
/home/cdac/.hushlogin file.
cdac@DESKTOP-53NKIQ7:~$ echo "Hello,World!"
Hello,World!
cdac@DESKTOP-53NKIQ7:~$ |
```

Explanation:

Displays the text "Hello, World!" in the terminal.

II.

```
cdac@DESKTOP-53NKIQ7:~$ name = "Productive"
Command 'name' not found, did you mean:
  command 'name' from snap name (name0264)
  command 'name' from deb name (0.242+dfsg.1-1)
  command 'named' from deb bind9 (1:9.18.18-0ubuntu0.22.04.1)
  command 'lame' from deb lame (3.100-3build2)
  command 'nvme' from deb nvme-cli (1.16-3ubuntu0.1)
  command 'uname' from deb coreutils (8.32-4.1ubuntu1)
  command 'nama' from deb nama (1.216-1)
  command 'nam' from deb nam (1.15-5.2)
  command 'namei' from deb util-linux (2.37.2-4ubuntu3)
See 'snap info <snapname>' for additional versions.
cdac@DESKTOP-53NKIQ7:~$ echo name = "Productive"
name = Productive
```

Explanation:

Assigns the value "Productive" to the variable `name`.

III.

```
cdac@DESKTOP-53NKIQ7:~$ touch file.txt
cdac@DESKTOP-53NKIQ7:~$ ls
LinuxAssignment file.txt
cdac@DESKTOP-53NKIQ7:~$ |
```

Explanation:

Creates an empty file named `file.txt` if it doesn't already exist, or updates its timestamp if it does.

IV.

```
cdac@DESKTOP-53NKIQ7:~$ rm file.txt
cdac@DESKTOP-53NKIQ7:~$ ls
LinuxAssignment
```

Explanation:

Lists all files and directories in the current directory, including hidden ones.

V.

```
cdac@DESKTOP-53NKIQ7:~$ ls -a
.  .bash_history  .bashrc  .local  .profile  LinuxAssignment
.. .bash_logout  .cache   .motd_shown  .sudo_as_admin_successful
cdac@DESKTOP-53NKIQ7:~$ |
```

Explanation:

Deletes the file named `file.txt` from the current directory.

VI.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ cp file.txt file2.txt
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ cat file2.txt
Hello...
This is Nehal Kakade
This is my OS assignment
I am doing problem 1
I am doing problem 2
I am doing problem 3
I am doing problem 4
I am doing problem 5
I am doing problem 6
I am doing problem 7
I have solved everything
I am ending this file
Have a good day!
Bye Bye
```

Explanation:

Copies the contents of `file1.txt` to a new file named `file2.txt`.

VII.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ mv file2.txt newD
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ cd newD
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ ls
docs  file2.txt  newD
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ |
```

Explanation:

Moves `file.txt` to the specified directory `/path/to/directory/`.

VIII.

```
cdac@DESKTOP-53NKIQ7:~$ cd LinuxAssignment
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ touch script.sh
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ chmod 755 script.sh
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ ls
abc.zip docs file.txt newD numbers.txt script.sh
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ ls -l
total 20
-rw-r--r-- 1 cdac cdac 506 Aug 28 21:40 abc.zip
drwxr-xr-x 2 cdac cdac 4096 Aug 29 21:38 docs
-rw-r--r-- 1 cdac cdac 274 Aug 28 22:21 file.txt
drwxr-xr-x 4 cdac cdac 4096 Aug 30 22:11 newD
-rw-r--r-- 1 cdac cdac 51 Aug 28 22:29 numbers.txt
-rwxr-xr-x 1 cdac cdac 0 Aug 30 22:18 script.sh
```

Explanation:

Sets the permissions of `script.sh` to read, write, and execute for the owner, and read and execute for the group and others.

IX.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ nano file.txt
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ grep "pattern" file.txt
pattern
I have a coding pattern
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ |
```

Explanation:

Searches for lines containing "pattern" in `file.txt` and displays them.

X. The **kill** command terminates processes via the process ID

XI.

```
cdac@DESKTOP-53NKIQ7:~$ mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt
Hello, World!
cdac@DESKTOP-53NKIQ7:~/mydir$ |
```

Explanation:

Creates a directory `mydir`, navigates into it, creates an empty file `file.txt`, writes "Hello, World!" to `file.txt`, and then displays the contents of `file.txt`.

XII.

```
cdac@DESKTOP-53NKIQ7:~/mydir$ ls -l | grep ".txt"
-rw-r--r-- 1 cdac cdac 14 Aug 31 17:51 file.txt
cdac@DESKTOP-53NKIQ7:~/mydir$ |
```

Explanation:

Lists files in long format and filters the output to show only files with a `.txt` extension.

XIII.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ cat file1.txt file2.txt | sort | uniq
Bye Bye
Have a good day!
Hello...
I am Nehal
I am doing problem 1
I am doing problem 2
I am doing problem 3
I am doing problem 4
I am doing problem 5
I am doing problem 6
I am doing problem 7
I am ending this file
I have solved everything
This is Nehal Kakade
This is my OS assignment
bye
hello
hii
```

Explanation:

Concatenates the contents of `file1.txt` and `file2.txt`, sorts the combined output, and removes any duplicate lines.

XIV.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ ls -l | grep "^d"
drwxr-xr-x 2 cdac cdac 4096 Aug 28 19:37 docs
drwxr-xr-x 2 cdac cdac 4096 Aug 28 21:25 newD
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ |
```

Explanation:

Lists files and directories in long format and filters the output to show only directories (those starting with `d`).

XV.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ grep -r "pattern" file1.txt
hello this is my new pattern
My pattern is same
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ |
```

Explanation:

Recursively searches for "pattern" in all files within the specified directory `/path/to/directory/`.

XVI.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment/newD$ cat file1.txt file2.txt | sort | uniq
Bye Bye
Have a good day!
Hello...
I am Nehal
I am doing problem 1
I am doing problem 2
I am doing problem 3
I am doing problem 4
I am doing problem 5
I am doing problem 6
I am doing problem 7
I am ending this file
I have solved everything
My pattern is same
This is Nehal Kakade
This is my OS assignment
bye
hello
hello this is my new pattern
hii
```

Explanation:

Concatenates the contents of `file1.txt` and `file2.txt`, sorts them, and then displays only the duplicate lines.

XVII.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ chmod 644 file.txt
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ ls -l
total 20
-rw-r--r-- 1 cdac cdac 506 Aug 28 21:40 abc.zip
drwxr-xr-x 2 cdac cdac 4096 Aug 29 21:38 docs
-rw-r--r-- 1 cdac cdac 306 Aug 30 22:25 file.txt
drwxr-xr-x 4 cdac cdac 4096 Aug 31 18:00 newD
-rw-r--r-- 1 cdac cdac 51 Aug 28 22:29 numbers.txt
-rwxr-xr-x 1 cdac cdac 0 Aug 30 22:18 script.sh
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ |
```

Explanation:

Sets the permissions of `file.txt` to read and write for the owner, and read-only for the group and others.

XVIII.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ cp -r docs newD
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ |
```

Explanation:

Recursively copies the contents of `source_directory` to `destination_directory`, including all subdirectories and files.

XIX.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ find newD -name "*.txt"
newD/file1.txt
newD/file2.txt
newD/docs/input.txt
newD/docs/output.txt
newD/docs/duplicate.txt
newD/docs/file2.txt
newD/docs/fruits.txt
```

Explanation:

Searches for files with a `.txt` extension within the directory `/path/to/search` and its subdirectories.

XX.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ chmod u+x file.txt
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ ls -l
total 20
-rw-r--r-- 1 cdac cdac  506 Aug 28 21:40 abc.zip
drwxr-xr-x 2 cdac cdac 4096 Aug 29 21:38 docs
-rwxr--r-- 1 cdac cdac  306 Aug 30 22:25 file.txt
drwxr-xr-x 4 cdac cdac 4096 Aug 31 18:00 newD
-rw-r--r-- 1 cdac cdac   51 Aug 28 22:29 numbers.txt
-rwxr-xr-x 1 cdac cdac    0 Aug 30 22:18 script.sh
```

Explanation:

Adds execute permission for the user (owner) of `file.txt`.

XXI.

```
cdac@DESKTOP-53NKIQ7:~/LinuxAssignment$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/usr/lib/wsl/lib:/mnt/c/Program
Files/Common Files/Oracle/Java/javapath:/mnt/c/Python312/Scripts:/mnt/c/Python312:/mnt/c/WINDOWS/system32:/mnt/c/WIND
OWS:/mnt/c/WINDOWS/System32/Wbem:/mnt/c/WINDOWS/System32/WindowsPowerShell/v1.0:/mnt/c/WINDOWS/System32/OpenSSH:/mnt/c
/Program Files (x86)/NVIDIA Corporation/PhysX/Common:/mnt/c/Program Files/NVIDIA Corporation/NVIDIA NvDLISR:/mnt/c/Progr
am Files/Git/cmd:/mnt/c/ProgramData/chocolatey/bin:/mnt/d/nodeJS:/mnt/c/Program Files/Java/jdk-22:/mnt/c/Users/User/App
Data/Local/Microsoft/WindowsApps:/mnt/c/Users/User/AppData/Local/gitkraken/bin:/mnt/c/Users/User/AppData/Local/Programs/
Microsoft VS Code/bin:/mnt/c/Users/User/AppData/Roaming/npm:/mnt/c/Users/User/AppData/Local/Microsoft/WindowsApps:/mnt/c
/Program Files/Java/jdk-22/bin:/snap/bin
```

Explanation:

Displays the current value of the `PATH` environment variable, which shows the directories searched for executable files.