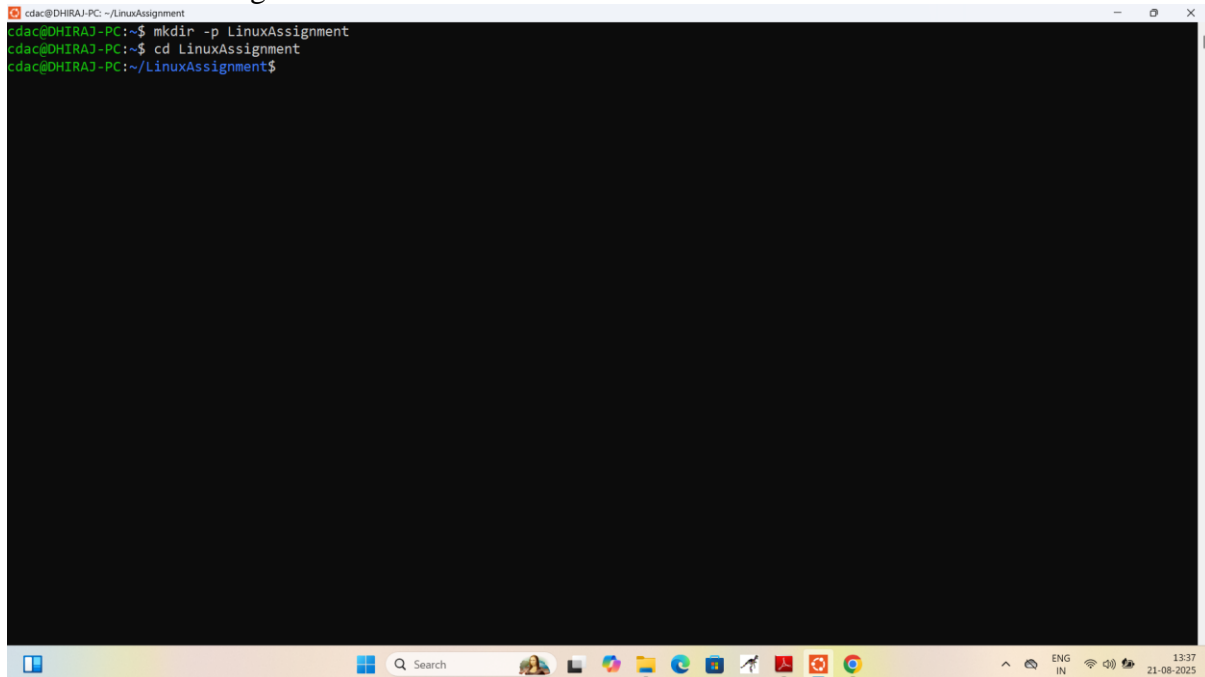


Problem 1: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

a) Navigate and List:

Start by navigating to your home directory and list its contents. Then, move into a directory named "LinuxAssignment" if it exists; otherwise, create it.

Ans:- mkdir LinuxAssignment
cd LinuxAssignment

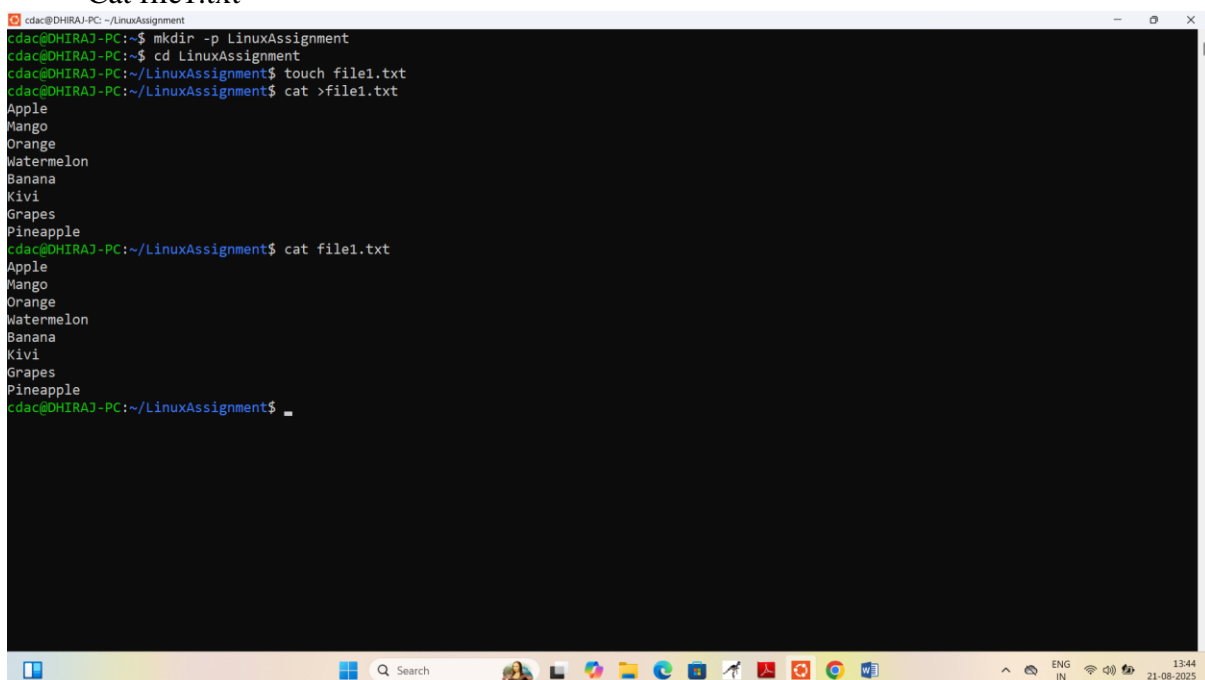
A terminal window titled 'cdac@DHIRAJ-PC: ~/LinuxAssignment' showing the execution of 'mkdir -p LinuxAssignment', 'cd LinuxAssignment', and the resulting prompt 'cdac@DHIRAJ-PC: ~/LinuxAssignment\$'. The window is overlaid on a Windows desktop with a taskbar at the bottom showing various application icons and system status icons on the right.

```
cdac@DHIRAJ-PC: ~/LinuxAssignment
cdac@DHIRAJ-PC:~$ mkdir -p LinuxAssignment
cdac@DHIRAJ-PC:~$ cd LinuxAssignment
cdac@DHIRAJ-PC:~/LinuxAssignment$
```

b) File Management:

a. Inside the " LinuxAssignment " directory, create a new file named "file1.txt". Display its contents.

Ans:- touch file1.txt
Cat file1.txt

A terminal window titled 'cdac@DHIRAJ-PC: ~/LinuxAssignment' showing the execution of 'mkdir -p LinuxAssignment', 'cd LinuxAssignment', 'touch file1.txt', and 'cat >file1.txt'. It then displays a list of fruits: Apple, Mango, Orange, Watermelon, Banana, Kivi, Grapes, and Pineapple. The 'cat file1.txt' command is executed again, displaying the same list of fruits. The window is overlaid on a Windows desktop with a taskbar at the bottom.

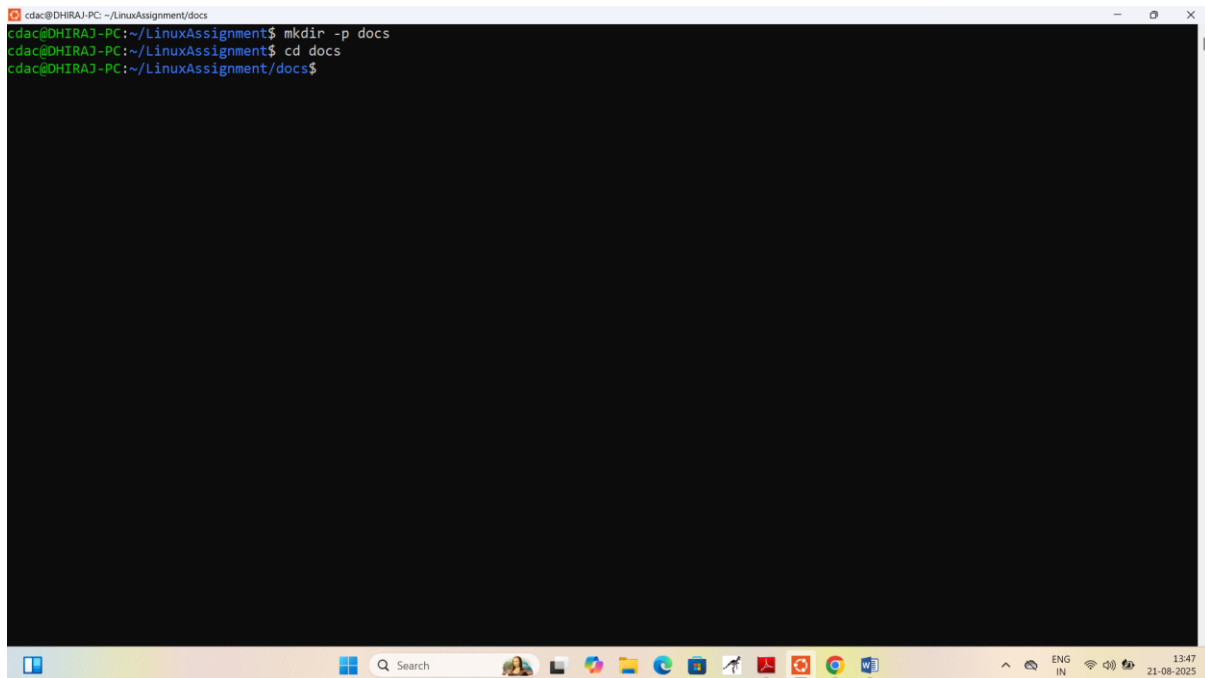
```
cdac@DHIRAJ-PC: ~/LinuxAssignment
cdac@DHIRAJ-PC:~$ mkdir -p LinuxAssignment
cdac@DHIRAJ-PC:~$ cd LinuxAssignment
cdac@DHIRAJ-PC:~/LinuxAssignment$ touch file1.txt
cdac@DHIRAJ-PC:~/LinuxAssignment$ cat >file1.txt
Apple
Mango
Orange
Watermelon
Banana
Kivi
Grapes
Pineapple
cdac@DHIRAJ-PC:~/LinuxAssignment$ cat file1.txt
Apple
Mango
Orange
Watermelon
Banana
Kivi
Grapes
Pineapple
cdac@DHIRAJ-PC:~/LinuxAssignment$ _
```

c) Directory Management:

Create a new directory named "docs" inside the "LinuxAssignment" directory.

Ans:- mkdir docs

cd docs

A terminal window titled 'cdac@DHIRAJ-PC: ~/LinuxAssignment/docs' showing the execution of 'mkdir -p docs' and 'cd docs' commands. The terminal output shows the user's path changing from '~/LinuxAssignment' to '~/LinuxAssignment/docs'. The Windows taskbar at the bottom shows the time as 13:47 on 21-08-2025.

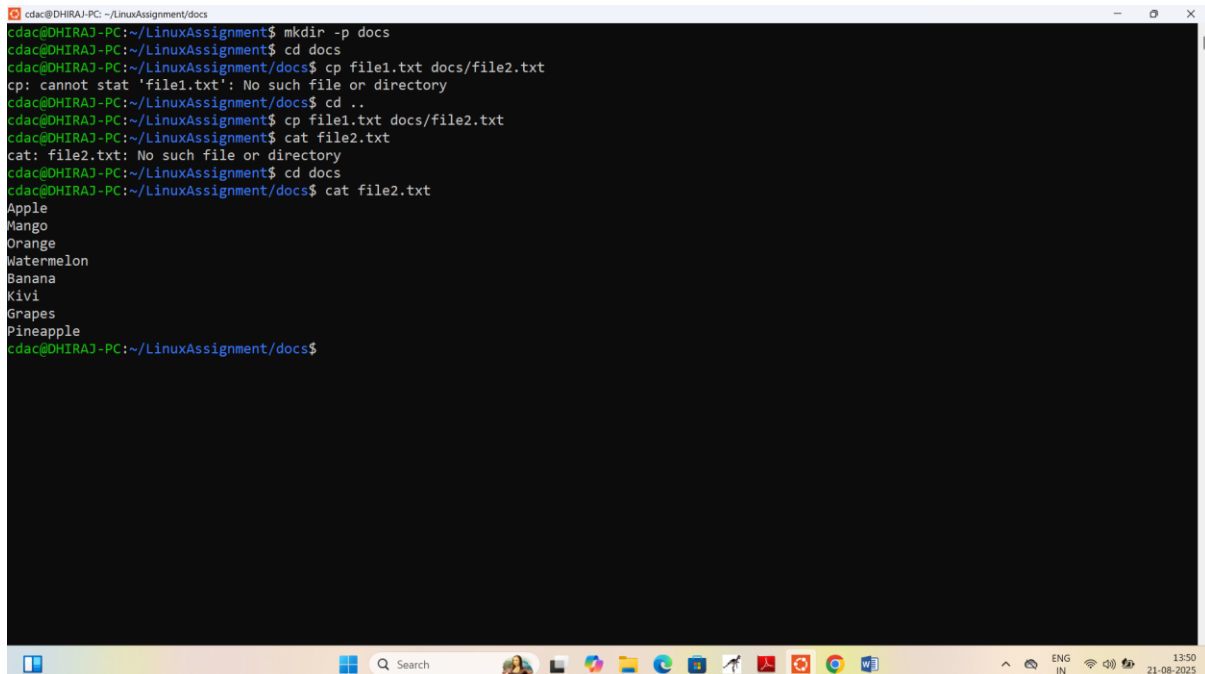
```
cdac@DHIRAJ-PC: ~/LinuxAssignment/docs
cdac@DHIRAJ-PC:~/LinuxAssignment$ mkdir -p docs
cdac@DHIRAJ-PC:~/LinuxAssignment$ cd docs
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$
```

d) Copy and Move Files:

Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".

Ans:- cp file1.txt docs/file2.txt

Cat file2.txt

A terminal window titled 'cdac@DHIRAJ-PC: ~/LinuxAssignment/docs' showing the execution of 'mkdir -p docs', 'cd docs', 'cp file1.txt docs/file2.txt', and 'cat file2.txt' commands. The output of 'cat file2.txt' lists various fruits: Apple, Mango, Orange, Watermelon, Banana, Kivi, Grapes, and Pineapple. The Windows taskbar at the bottom shows the time as 13:50 on 21-08-2025.

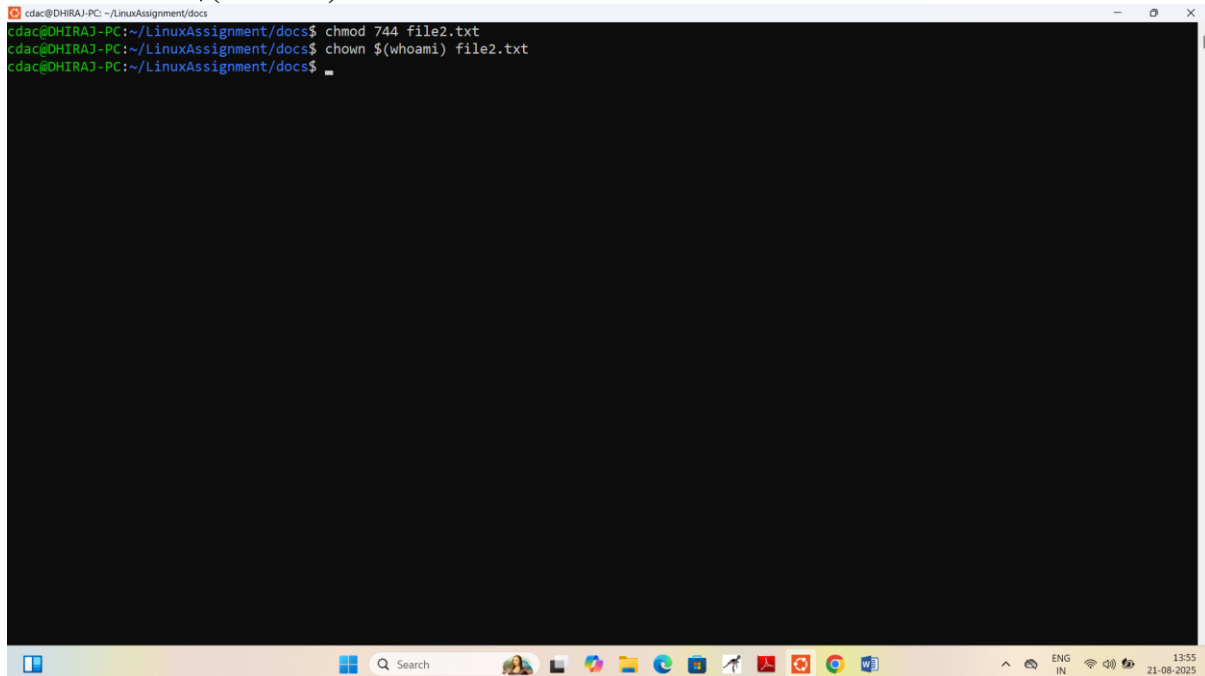
```
cdac@DHIRAJ-PC:~/LinuxAssignment/docs
cdac@DHIRAJ-PC:~/LinuxAssignment$ mkdir -p docs
cdac@DHIRAJ-PC:~/LinuxAssignment$ cd docs
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ cp file1.txt docs/file2.txt
cp: cannot stat 'file1.txt': No such file or directory
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ cd ..
cdac@DHIRAJ-PC:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment$ cat file2.txt
cat: file2.txt: No such file or directory
cdac@DHIRAJ-PC:~/LinuxAssignment$ cd docs
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ cat file2.txt
Apple
Mango
Orange
Watermelon
Banana
Kivi
Grapes
Pineapple
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$
```

e) Permissions and Ownership:

Change the permissions of "file2.txt" to allow read, write, and execute permissions for the owner and only read permissions for others. Then, change the owner of "file2.txt" to the current user.

Ans:- `chmod 744 file2.txt`

`Chown $(whoami) file2.txt`

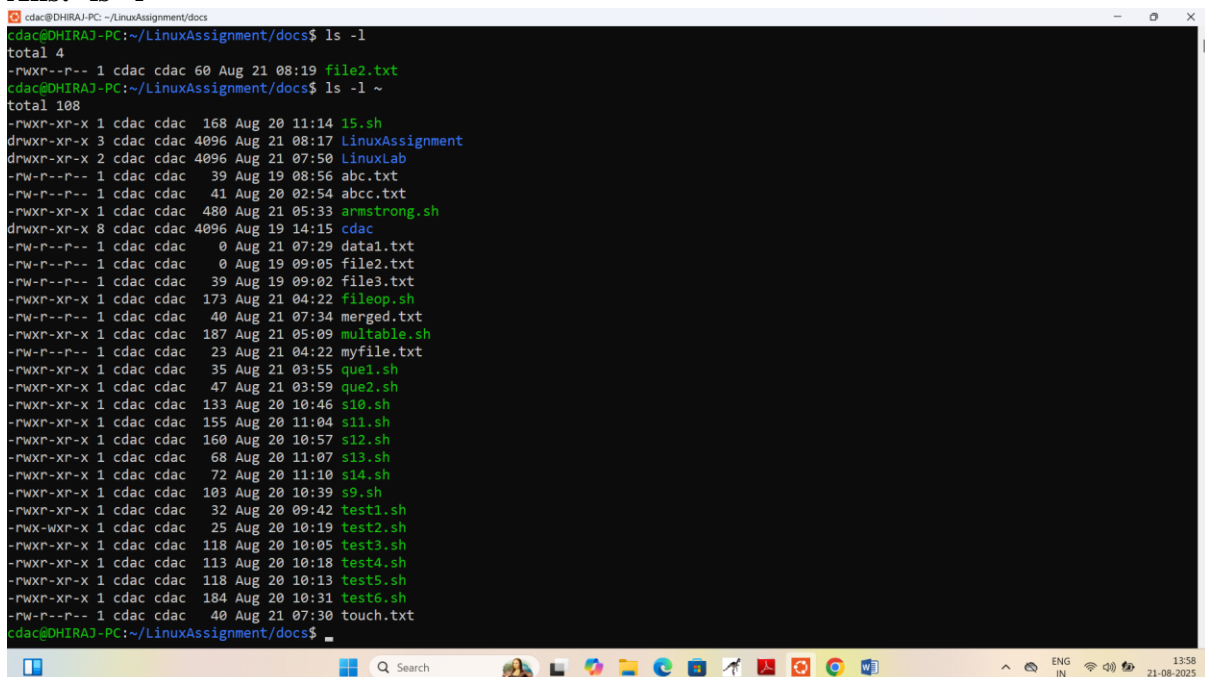


```
cdac@DHIRAJ-PC: ~/LinuxAssignment/docs
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ chown $(whoami) file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$
```

f) Final Checklist:

Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly.

Ans:- `ls -l ~`

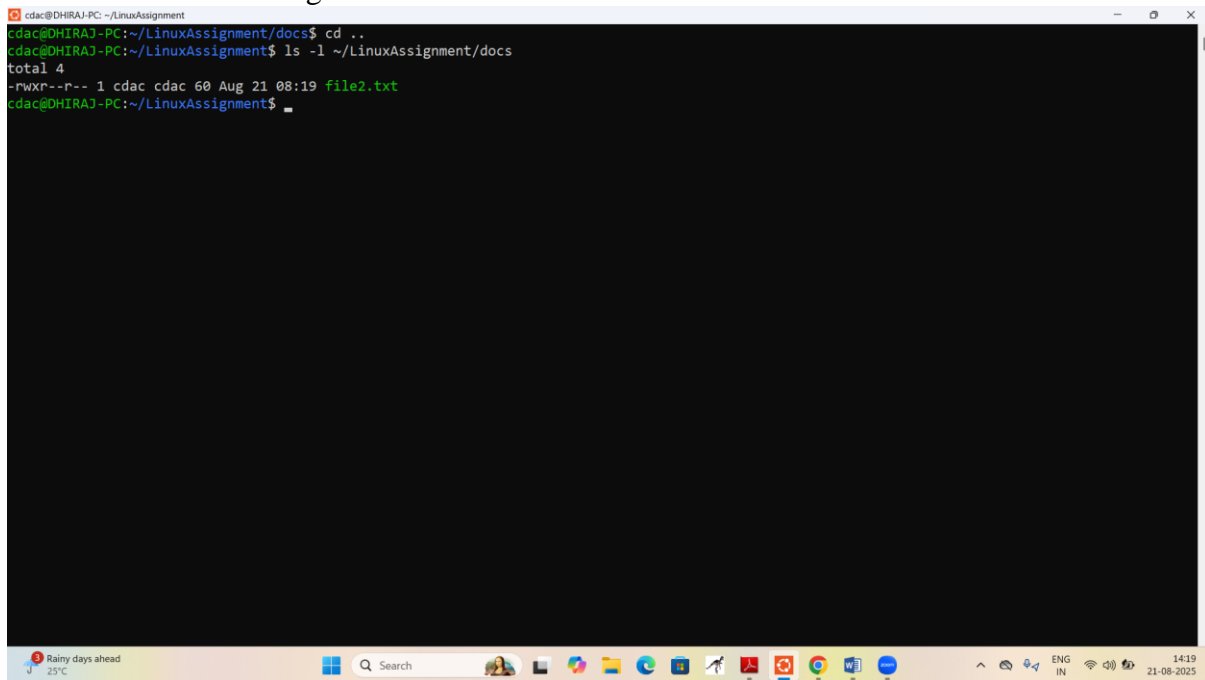


```
cdac@DHIRAJ-PC: ~/LinuxAssignment/docs
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 cdac cdac 60 Aug 21 08:19 file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ ls -l ~
total 108
-rwxr-xr-x 1 cdac cdac 168 Aug 20 11:14 15.sh
drwxr-xr-x 3 cdac cdac 4096 Aug 21 08:17 LinuxAssignment
drwxr-xr-x 2 cdac cdac 4096 Aug 21 07:50 LinuxLab
-rw-r--r-- 1 cdac cdac 39 Aug 19 08:56 abc.txt
-rw-r--r-- 1 cdac cdac 41 Aug 20 02:54 abcc.txt
-rwxr-xr-x 1 cdac cdac 480 Aug 21 05:33 armstrong.sh
drwxr-xr-x 8 cdac cdac 4096 Aug 19 14:15 cdac
-rw-r--r-- 1 cdac cdac 0 Aug 21 07:29 data1.txt
-rw-r--r-- 1 cdac cdac 0 Aug 19 09:05 file2.txt
-rw-r--r-- 1 cdac cdac 39 Aug 19 09:02 file3.txt
-rwxr-xr-x 1 cdac cdac 173 Aug 21 04:22 fileop.sh
-rw-r--r-- 1 cdac cdac 40 Aug 21 07:34 merged.txt
-rwxr-xr-x 1 cdac cdac 187 Aug 21 05:09 multable.sh
-rw-r--r-- 1 cdac cdac 23 Aug 21 04:22 myfile.txt
-rwxr-xr-x 1 cdac cdac 35 Aug 21 03:55 que1.sh
-rwxr-xr-x 1 cdac cdac 47 Aug 21 03:59 que2.sh
-rwxr-xr-x 1 cdac cdac 133 Aug 20 10:46 s10.sh
-rwxr-xr-x 1 cdac cdac 155 Aug 20 11:04 s11.sh
-rwxr-xr-x 1 cdac cdac 160 Aug 20 10:57 s12.sh
-rwxr-xr-x 1 cdac cdac 68 Aug 20 11:07 s13.sh
-rwxr-xr-x 1 cdac cdac 72 Aug 20 11:10 s14.sh
-rwxr-xr-x 1 cdac cdac 103 Aug 20 10:39 s9.sh
-rwxr-xr-x 1 cdac cdac 32 Aug 20 09:42 test1.sh
-rwxr-xr-x 1 cdac cdac 25 Aug 20 10:19 test2.sh
-rwxr-xr-x 1 cdac cdac 118 Aug 20 10:05 test3.sh
-rwxr-xr-x 1 cdac cdac 113 Aug 20 10:18 test4.sh
-rwxr-xr-x 1 cdac cdac 118 Aug 20 10:13 test5.sh
-rwxr-xr-x 1 cdac cdac 184 Aug 20 10:31 test6.sh
-rw-r--r-- 1 cdac cdac 40 Aug 21 07:30 touch.txt
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$
```

f) Final Checklist:

Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly.

Ans:- `ls -l ~/LinuxAssignment/docs`



```
cdac@DHIRAJ-PC: ~/LinuxAssignment
cdac@DHIRAJ-PC:~/LinuxAssignment/docs$ cd ..
cdac@DHIRAJ-PC:~/LinuxAssignment$ ls -l ~/LinuxAssignment/docs
total 4
-rwxr--r-- 1 cdac cdac 60 Aug 21 08:19 file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment$
```

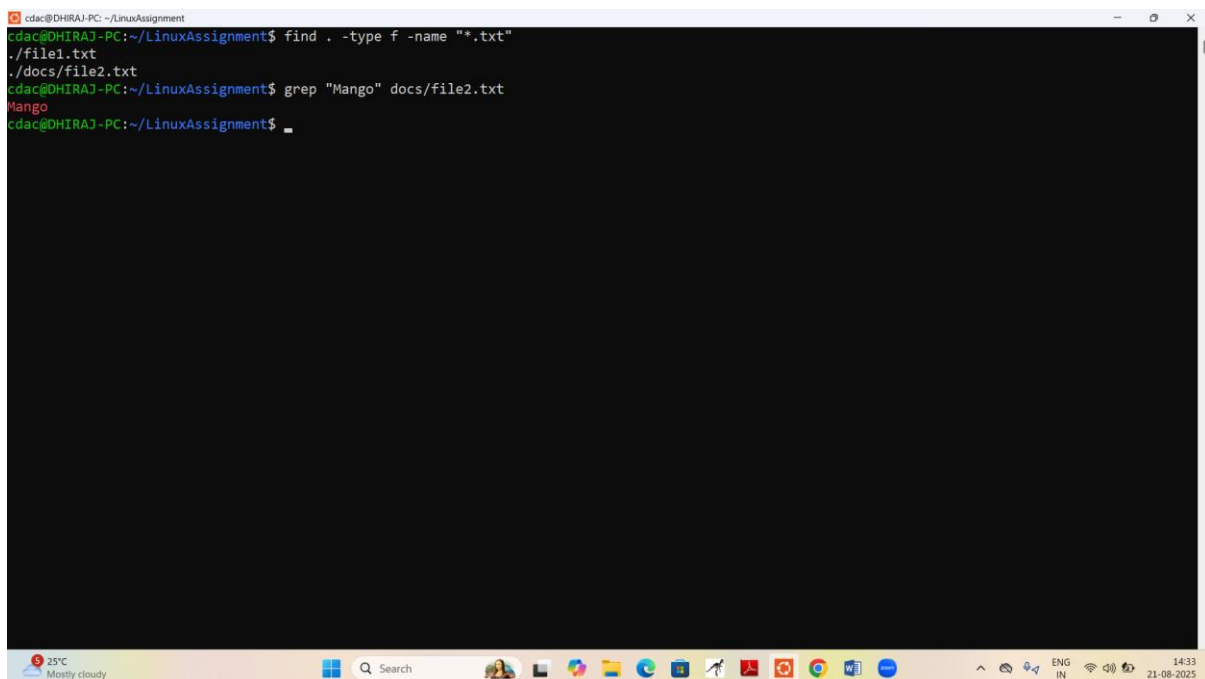
g) File Searching:

a. Search for all files with the extension ".txt" in the current directory and its subdirectories.

b. Display lines containing a specific word in a file (provide a file name and the specific word to search).

Ans:- `find . -type f -name "*.txt"`

`Grep "Mango" docs/file2.txt`

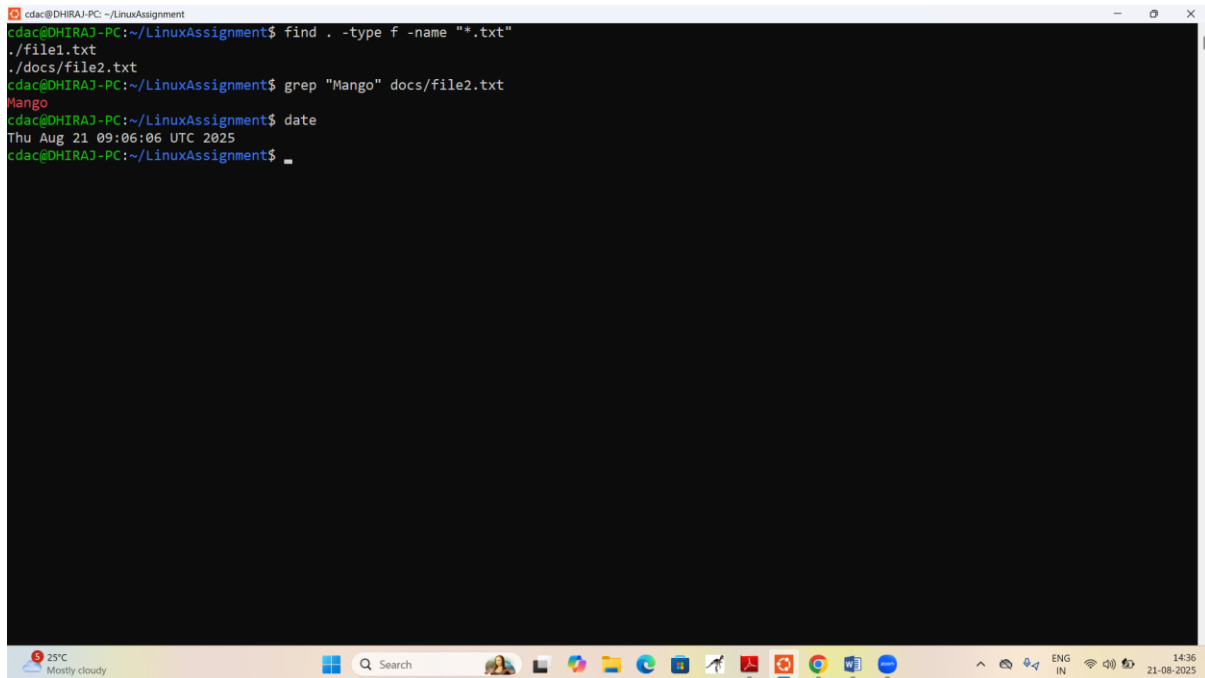


```
cdac@DHIRAJ-PC: ~/LinuxAssignment
cdac@DHIRAJ-PC:~/LinuxAssignment$ find . -type f -name "*.txt"
./file1.txt
./docs/file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment$ grep "Mango" docs/file2.txt
Mango
cdac@DHIRAJ-PC:~/LinuxAssignment$
```

h) System Information:

Display the current system date and time.

Ans:- date

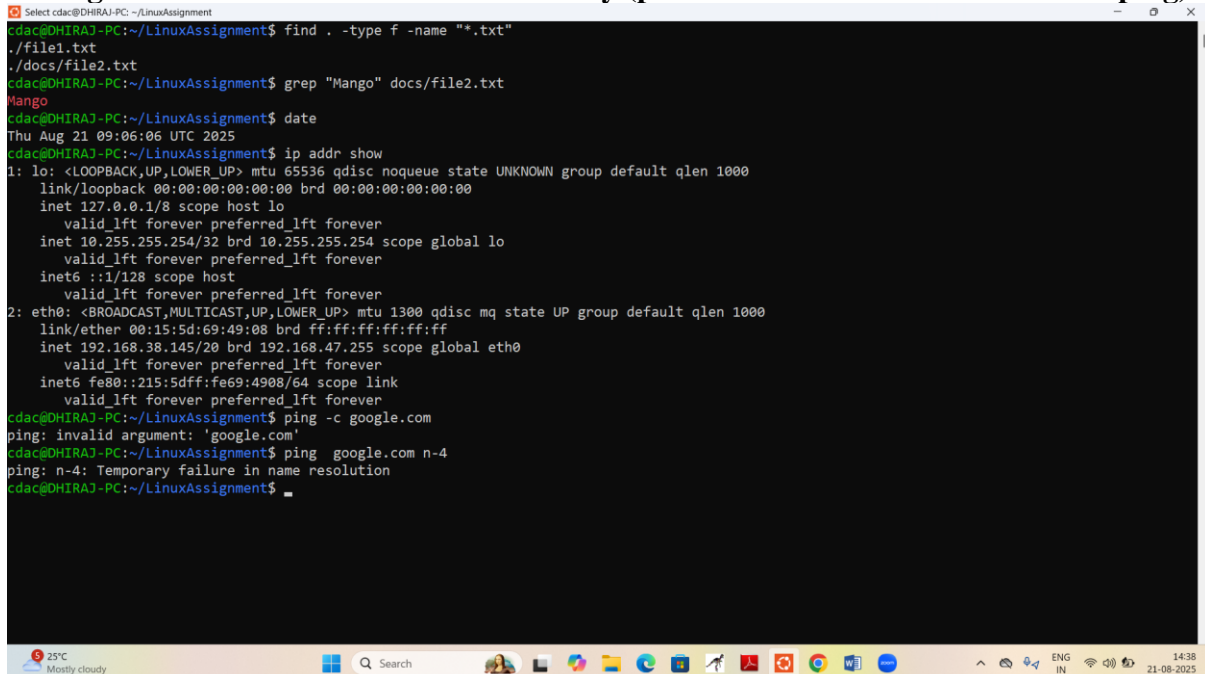
A terminal window titled 'cdac@DHIRAJ-PC: ~/LinuxAssignment' showing a series of commands and their outputs. The commands include 'find . -type f -name "*.txt"', 'grep "Mango" docs/file2.txt', and 'date'. The 'date' command outputs 'Thu Aug 21 09:06:06 UTC 2025'. The terminal is running on a Windows desktop with a taskbar at the bottom showing various application icons and system status information like '25°C Mostly cloudy' and '14:36 21-08-2025'.

```
cdac@DHIRAJ-PC: ~/LinuxAssignment
cdac@DHIRAJ-PC:~/LinuxAssignment$ find . -type f -name "*.txt"
./file1.txt
./docs/file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment$ grep "Mango" docs/file2.txt
Mango
cdac@DHIRAJ-PC:~/LinuxAssignment$ date
Thu Aug 21 09:06:06 UTC 2025
cdac@DHIRAJ-PC:~/LinuxAssignment$
```

i) Networking:

a. Display the IP address of the system.

b. Ping a remote server to check connectivity (provide a remote server address to ping).

A terminal window titled 'Select cdac@DHIRAJ-PC: ~/LinuxAssignment' showing commands and their outputs. The commands include 'ip addr show' and 'ping -c google.com'. The 'ip addr show' command displays details for the loopback interface 'lo' and the ethernet interface 'eth0'. The 'ping' command shows a failure to resolve 'google.com'. The terminal is running on a Windows desktop with a taskbar at the bottom showing various application icons and system status information like '25°C Mostly cloudy' and '14:38 21-08-2025'.

```
Select cdac@DHIRAJ-PC: ~/LinuxAssignment
cdac@DHIRAJ-PC:~/LinuxAssignment$ find . -type f -name "*.txt"
./file1.txt
./docs/file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment$ grep "Mango" docs/file2.txt
Mango
cdac@DHIRAJ-PC:~/LinuxAssignment$ date
Thu Aug 21 09:06:06 UTC 2025
cdac@DHIRAJ-PC:~/LinuxAssignment$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet 10.255.255.254/32 brd 10.255.255.254 scope global lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1300 qdisc mq state UP group default qlen 1000
    link/ether 00:15:5d:69:49:08 brd ff:ff:ff:ff:ff:ff
    inet 192.168.38.145/20 brd 192.168.47.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe69:4908/64 scope link
        valid_lft forever preferred_lft forever
cdac@DHIRAJ-PC:~/LinuxAssignment$ ping -c google.com
ping: invalid argument: 'google.com'
cdac@DHIRAJ-PC:~/LinuxAssignment$ ping google.com n-4
ping: n-4: Temporary failure in name resolution
cdac@DHIRAJ-PC:~/LinuxAssignment$
```

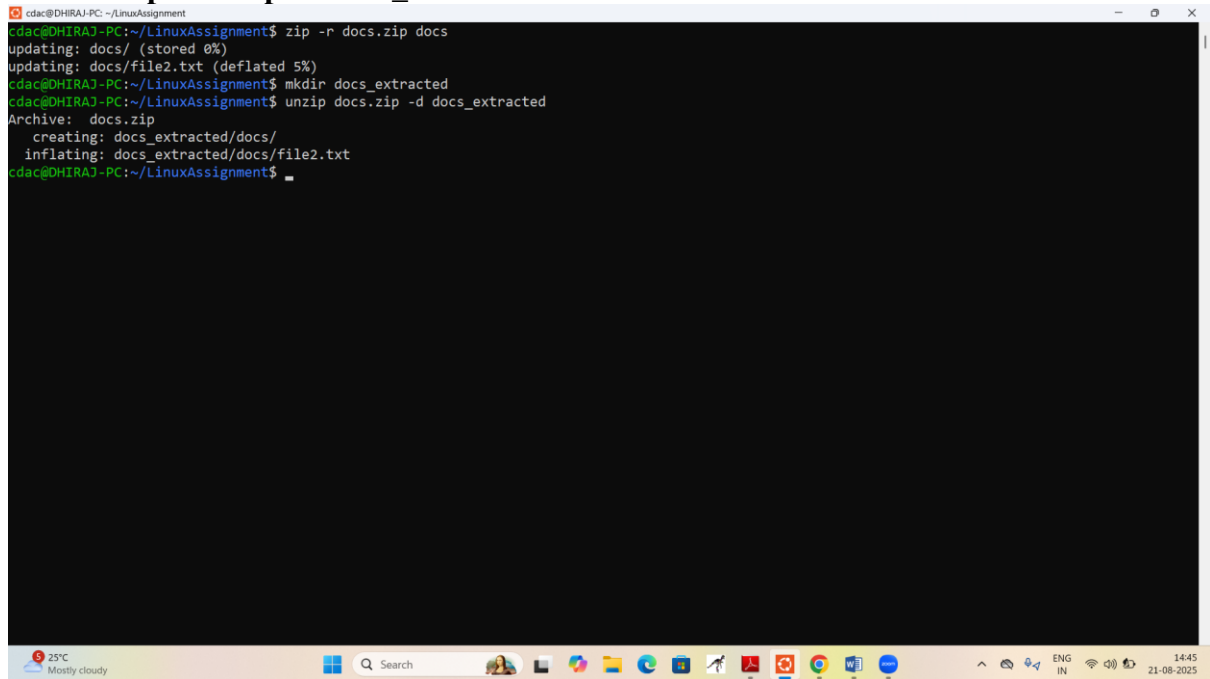
j) File Compression:

- a. Compress the "docs" directory into a zip file.**
- b. Extract the contents of the zip file into a new directory.**

Ans:- `zip -r docs.zip docs`

`mkdir docs_extracted`

`unzip docs.zip -d docs_extracted`



The screenshot shows a terminal window titled 'cdac@DHIRAJ-PC: ~/LinuxAssignment'. The user enters the command `zip -r docs.zip docs`, which outputs 'updating: docs/ (stored 0%)' and 'updating: docs/file2.txt (deflated 5%)'. Then, the user enters `mkdir docs_extracted`. Finally, the user enters `unzip docs.zip -d docs_extracted`, which outputs 'Archive: docs.zip', 'creating: docs_extracted/docs/', and 'inflating: docs_extracted/docs/file2.txt'. The terminal window is overlaid on a Windows desktop environment. The taskbar at the bottom shows the Start button, a search bar, and several application icons including File Explorer, Edge, and various utilities. The system tray on the right shows the date and time as '14:45 21-08-2025'.

```
cdac@DHIRAJ-PC: ~/LinuxAssignment$ zip -r docs.zip docs
updating: docs/ (stored 0%)
updating: docs/file2.txt (deflated 5%)
cdac@DHIRAJ-PC:~/LinuxAssignment$ mkdir docs_extracted
cdac@DHIRAJ-PC:~/LinuxAssignment$ unzip docs.zip -d docs_extracted
Archive: docs.zip
  creating: docs_extracted/docs/
  inflating: docs_extracted/docs/file2.txt
cdac@DHIRAJ-PC:~/LinuxAssignment$
```