

***** Assignment 1 *****

DATE : 26/02/25

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

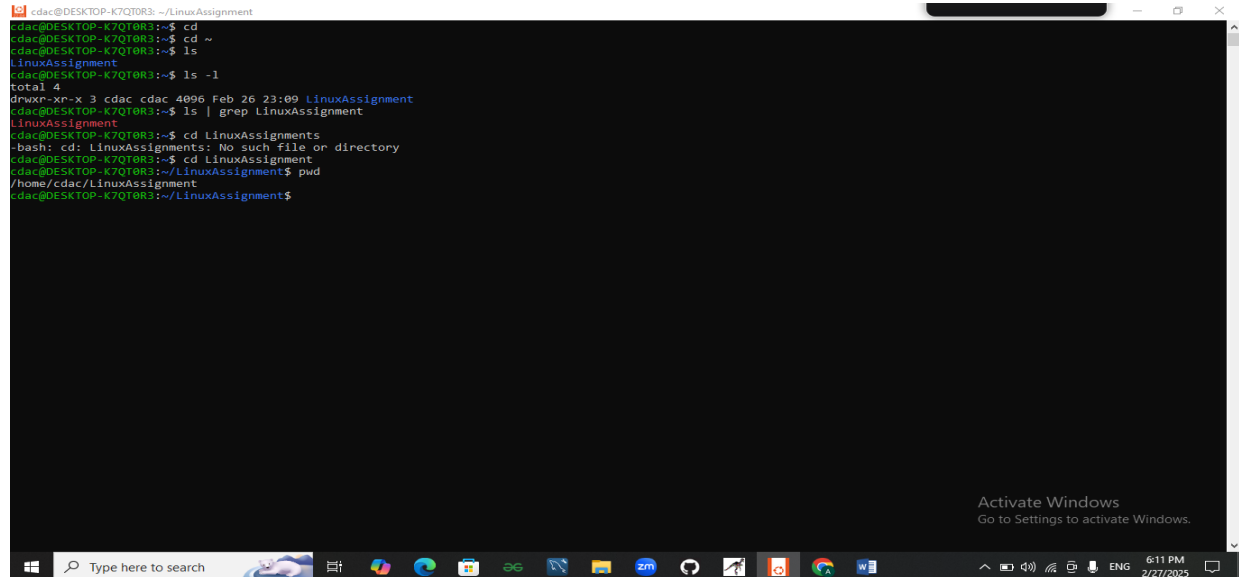
a) Navigate and List:

a. 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:

a)cd ~ - go to home directory ls -la - using it i print all detailed file and hidden file it give result

b)[-e "LinuxAssignment"] && echo "Exists" || echo "Does not exist" using it i check file exist or not then, mkdir LinuxAssignment - create directory



```
cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment
cdac@DESKTOP-K7QT0R3:~$ cd
cdac@DESKTOP-K7QT0R3:~$ cd ~
cdac@DESKTOP-K7QT0R3:~$ ls
LinuxAssignment
cdac@DESKTOP-K7QT0R3:~$ ls -l
total 4
drwxr-xr-x 3 cdac cdac 4096 Feb 26 23:09 LinuxAssignment
cdac@DESKTOP-K7QT0R3:~$ ls | grep LinuxAssignment
LinuxAssignment
cdac@DESKTOP-K7QT0R3:~$ cd LinuxAssignment
-bash: cd: LinuxAssignment: No such file or directory
cdac@DESKTOP-K7QT0R3:~$ cd LinuxAssignment
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$
```

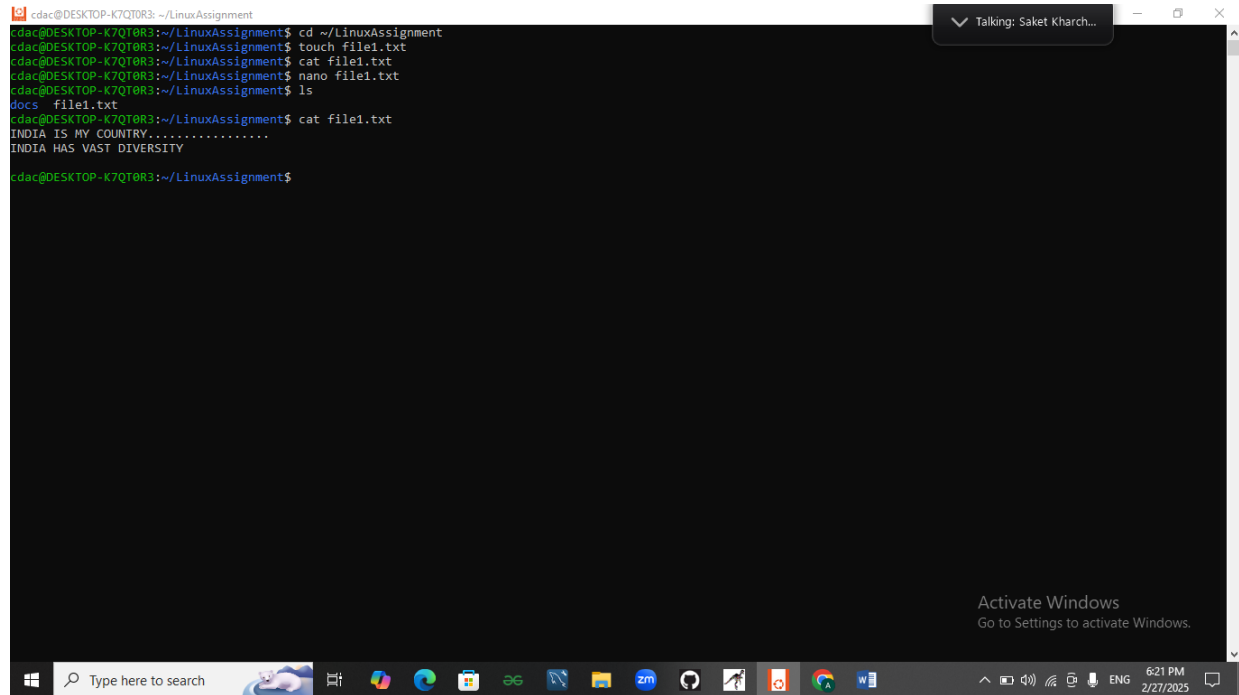
Activate Windows
Go to Settings to activate Windows.

b) File Management:

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

ans :

```
touch file1.txt - create file1
cat file1.txt   - display content
```



The screenshot shows a Windows terminal window titled "cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment". The terminal displays the following commands and output:

```
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ cd ~/LinuxAssignment
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ cat file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ nano file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ ls
docs file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ cat file1.txt
INDIA IS MY COUNTRY.....
INDIA HAS VAST DIVERSITY
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$
```

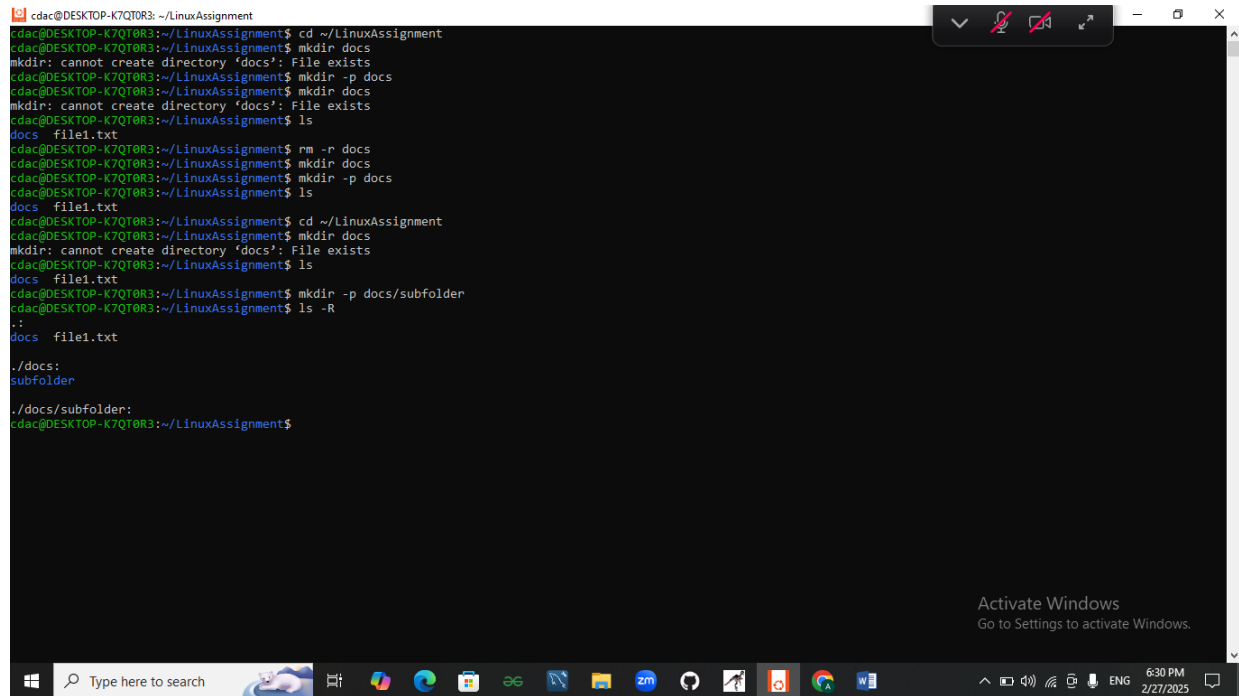
The terminal window has a taskbar at the bottom with various application icons and a system tray showing the time as 6:21 PM on 2/27/2025. An "Activate Windows" watermark is visible in the bottom right corner of the terminal window.

c) Directory Management:

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

ans:

`mkdir docs` - create docs directory



```
cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ cd ~/LinuxAssignment
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ mkdir docs
mkdir: cannot create directory 'docs': File exists
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ mkdir -p docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ mkdir docs
mkdir: cannot create directory 'docs': File exists
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ rm -r docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ mkdir docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ mkdir -p docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ cd ~/LinuxAssignment
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ mkdir docs
mkdir: cannot create directory 'docs': File exists
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ mkdir -p docs/subfolder
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ ls -R
.:
docs  file1.txt
./docs:
subfolder
./docs/subfolder:
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$
```

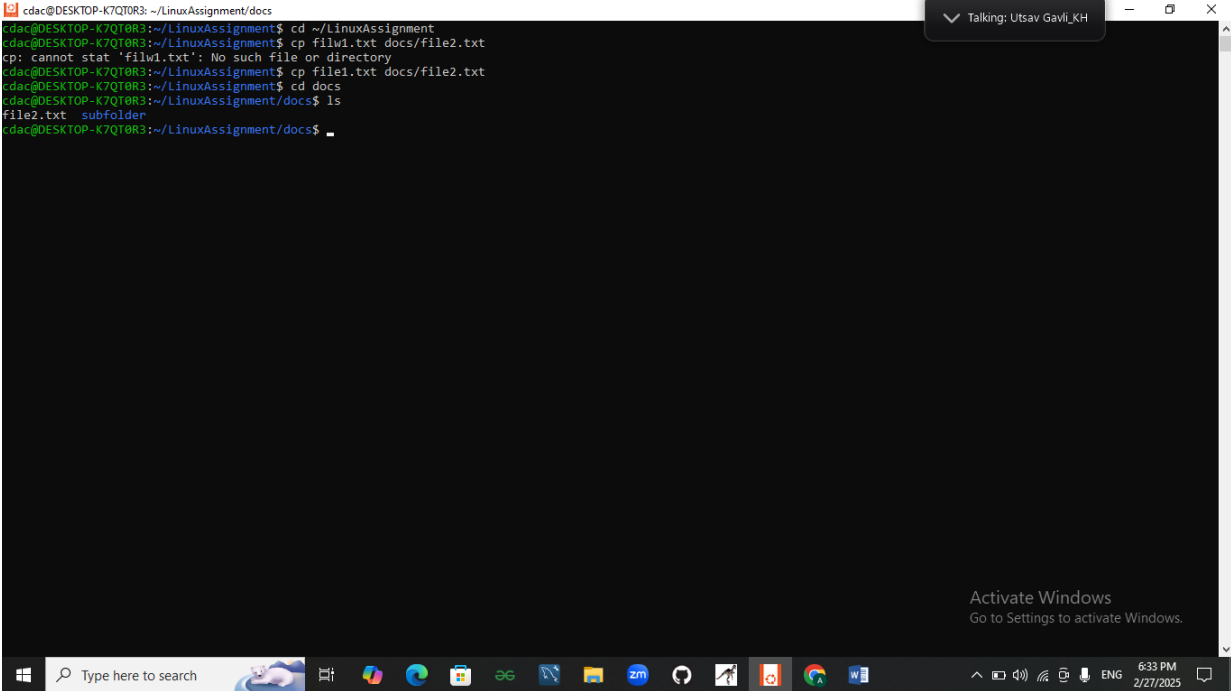
Activate Windows
Go to Settings to activate Windows.

d) Copy and Move Files:

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

ans :

cp file1.txt "/mnt/d/cdac/os module/LinuxAssignment/docs" - copy and paste the file
cd docs - go to docs directory
mv file1.txt file2.txt - rename using mv command



The screenshot shows a Windows terminal window titled "cdac@DESKTOP-K7Q10R3: ~/LinuxAssignment/docs". The terminal displays the following commands and output:

```
cdac@DESKTOP-K7Q10R3:~/LinuxAssignment$ cd ~/LinuxAssignment
cdac@DESKTOP-K7Q10R3:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cp: cannot stat 'file1.txt': No such file or directory
cdac@DESKTOP-K7Q10R3:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cdac@DESKTOP-K7Q10R3:~/LinuxAssignment$ cd docs
cdac@DESKTOP-K7Q10R3:~/LinuxAssignment/docs$ ls
file2.txt  subfolder
cdac@DESKTOP-K7Q10R3:~/LinuxAssignment/docs$
```

The terminal window has a taskbar at the bottom with various application icons and a system tray showing the time as 6:33 PM on 2/27/2025. An "Activate Windows" watermark is visible in the bottom right corner of the terminal window.

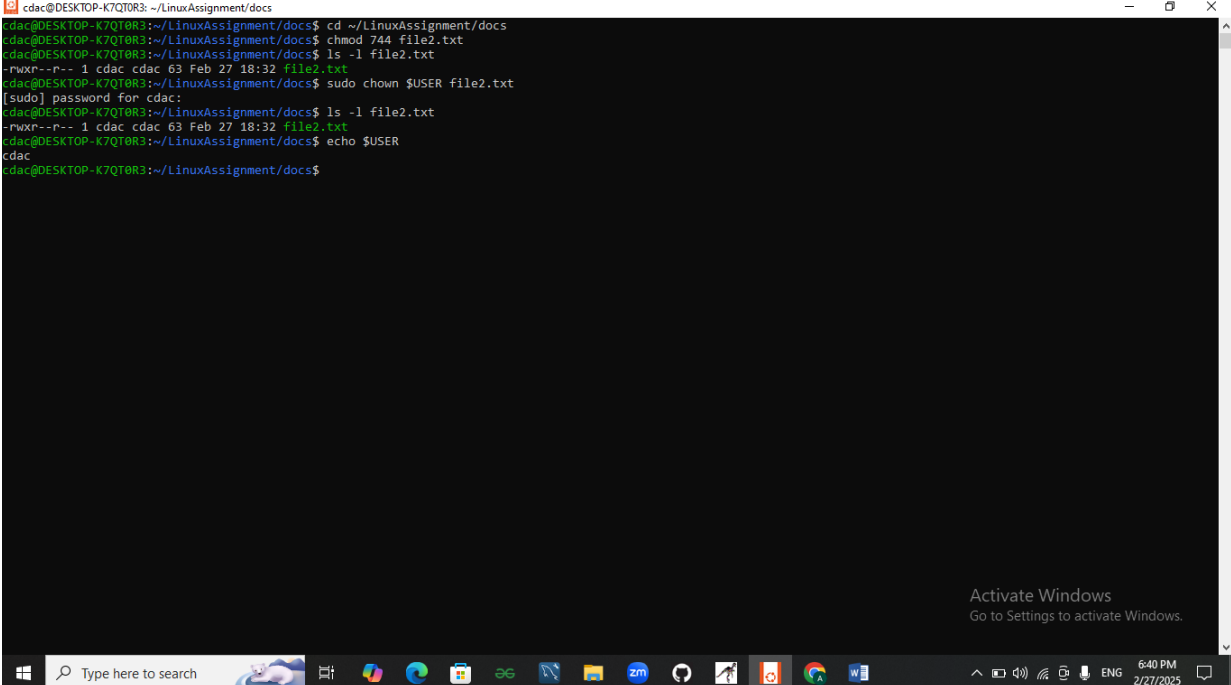
e) Permissions and Ownership:

a. 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 - change permission owner-7(read, write, and
execute) group and other -4 (only read)
chown $(whoami) file2.txt
```

```
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ cd ~/LinuxAssignment/docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 63 Feb 27 18:32 file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ sudo chown $USER file2.txt
[sudo] password for cdac:
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 63 Feb 27 18:32 file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ echo $USER
cdac
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$
```



The screenshot shows a Windows terminal window with a black background and white text. The terminal displays the following commands and their outputs:

```
cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment/docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ cd ~/LinuxAssignment/docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 63 Feb 27 18:32 file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ sudo chown $USER file2.txt
[sudo] password for cdac:
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ls -l file2.txt
-rwxr--r-- 1 cdac cdac 63 Feb 27 18:32 file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ echo $USER
cdac
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$
```

The terminal window is titled "cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment/docs". The Windows taskbar is visible at the bottom, showing the Start button, search bar, and various application icons. The system tray on the right indicates the time as 6:40 PM on 2/27/2025.

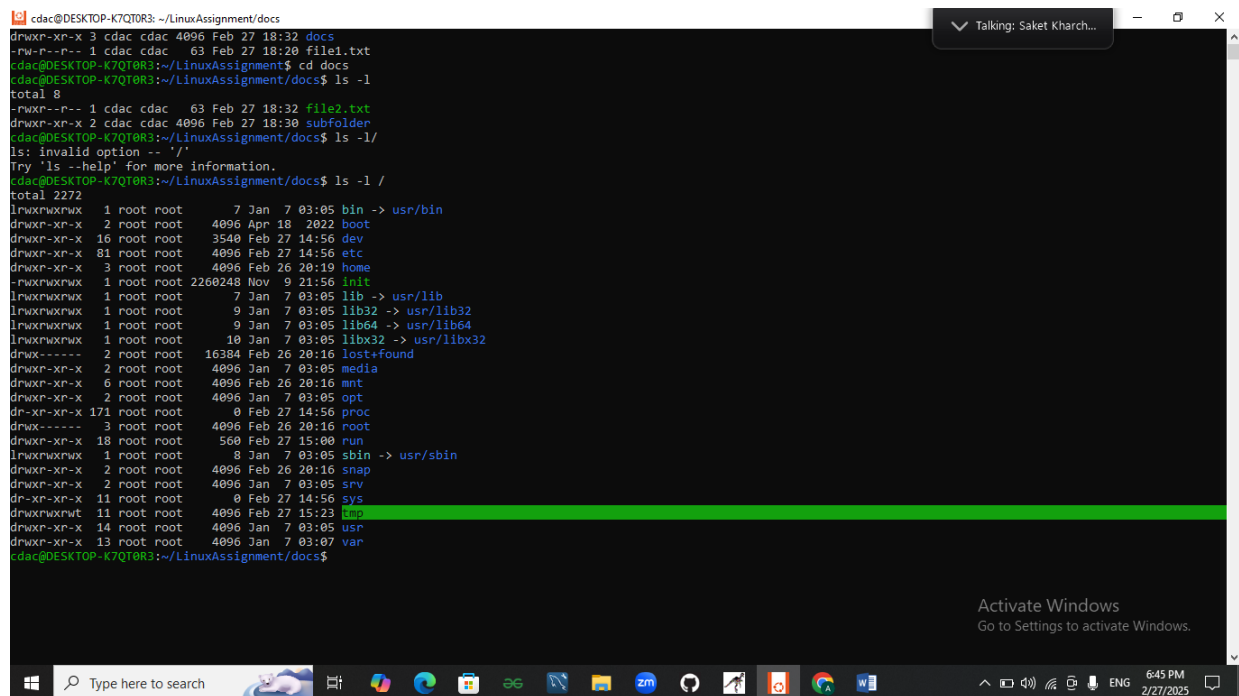
f) Final Checklist:

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

ans:

```
ls -l -> list all content of directory /LinuxAssignment
gives
total 8
drwxr-xr-x 2 cdac cdac 4096 Feb 26 22:34 docs
-rw-r--r-- 1 cdac cdac 10 Feb 26 22:32 file1.txt

cd ~ -> go to home directory
ls -l -> list all content of home directory
total 8
drwxr-xr-x 3 cdac cdac 4096 Feb 26 22:32 LinuxAssignment
-rw-r--r-- 1 cdac cdac 9 Feb 26 16:31 abc.txt
```



```
cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment/docs
drwxr-xr-x 3 cdac cdac 4096 Feb 27 18:32 docs
-rw-r--r-- 1 cdac cdac 63 Feb 27 18:20 file1.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment$ cd docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ls -l
total 8
-rwxr--r-- 1 cdac cdac 63 Feb 27 18:32 file2.txt
drwxr-xr-x 2 cdac cdac 4096 Feb 27 18:30 subfolder
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ls -l/
ls: invalid option -- '/'
Try 'ls --help' for more information.
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ls -l /
total 2272
lrwxrwxrwx 1 root root 7 Jan 7 03:05 bin -> usr/bin
lrwxr-xr-x 2 root root 4096 Apr 18 2022 boot
lrwxr-xr-x 16 root root 3540 Feb 27 14:56 dev
lrwxr-xr-x 81 root root 4096 Feb 27 14:56 etc
lrwxr-xr-x 3 root root 4096 Feb 26 20:19 home
lrwxrwxrwx 1 root root 2260248 Nov 9 21:56 init
lrwxrwxrwx 1 root root 7 Jan 7 03:05 lib -> usr/lib
lrwxrwxrwx 1 root root 9 Jan 7 03:05 lib32 -> usr/lib32
lrwxrwxrwx 1 root root 9 Jan 7 03:05 lib64 -> usr/lib64
lrwxrwxrwx 1 root root 10 Jan 7 03:05 libx32 -> usr/libx32
drwx----- 2 root root 16384 Feb 26 20:16 lost+found
drwxr-xr-x 2 root root 4096 Jan 7 03:05 media
drwxr-xr-x 6 root root 4096 Feb 26 20:16 mnt
drwxr-xr-x 2 root root 4096 Jan 7 03:05 opt
dr-xr-xr-x 171 root root 0 Feb 27 14:56 proc
drwx----- 3 root root 4096 Feb 26 20:16 root
drwxr-xr-x 18 root root 560 Feb 27 15:00 run
lrwxrwxrwx 1 root root 8 Jan 7 03:05 sbin -> usr/sbin
drwxr-xr-x 2 root root 4096 Feb 26 20:16 snap
drwxr-xr-x 2 root root 4096 Jan 7 03:05 srv
dr-xr-xr-x 11 root root 0 Feb 27 14:56 sys
drwxrwxrwt 11 root root 4096 Feb 27 15:23 tmp
drwxr-xr-x 14 root root 4096 Jan 7 03:05 usr
drwxr-xr-x 13 root root 4096 Jan 7 03:07 var
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$
```

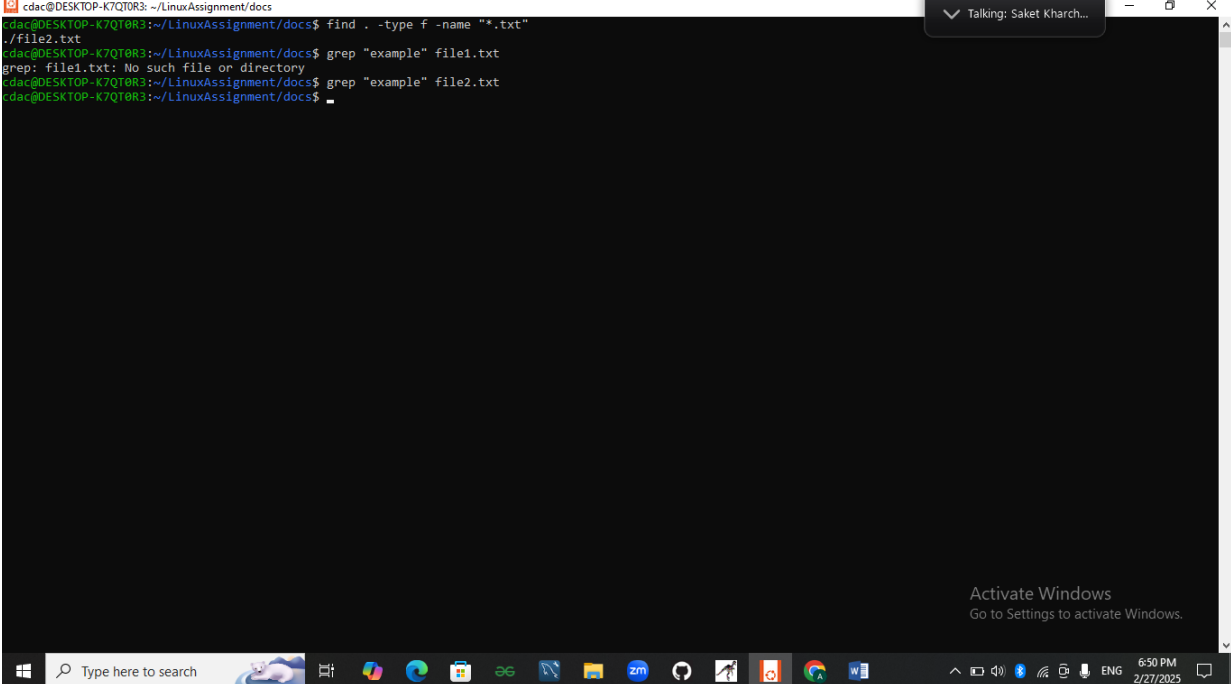
g) File Searching:

- 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" ---` Start searching from the current directory Search for files (not directories). Look for files ending with .txt.

`grep "Linux" file1.txt ---` This confirms that the word "Linux" was found in both files.



The screenshot shows a Windows terminal window with a dark background. The title bar indicates the window is titled "Talking: Saket Kharch...". The terminal content shows the following commands and output:

```
cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment/docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ find . -type f -name "*.txt"
./file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ grep "example" file1.txt
grep: file1.txt: No such file or directory
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ grep "example" file2.txt
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$
```

At the bottom of the terminal window, there is a watermark that says "Activate Windows Go to Settings to activate Windows." The Windows taskbar is visible at the bottom of the screen, showing the search bar, task view button, and several application icons including Edge, File Explorer, and Zoom. The system tray on the right shows the date and time as 6:50 PM on 2/27/2025.

h) System Information:

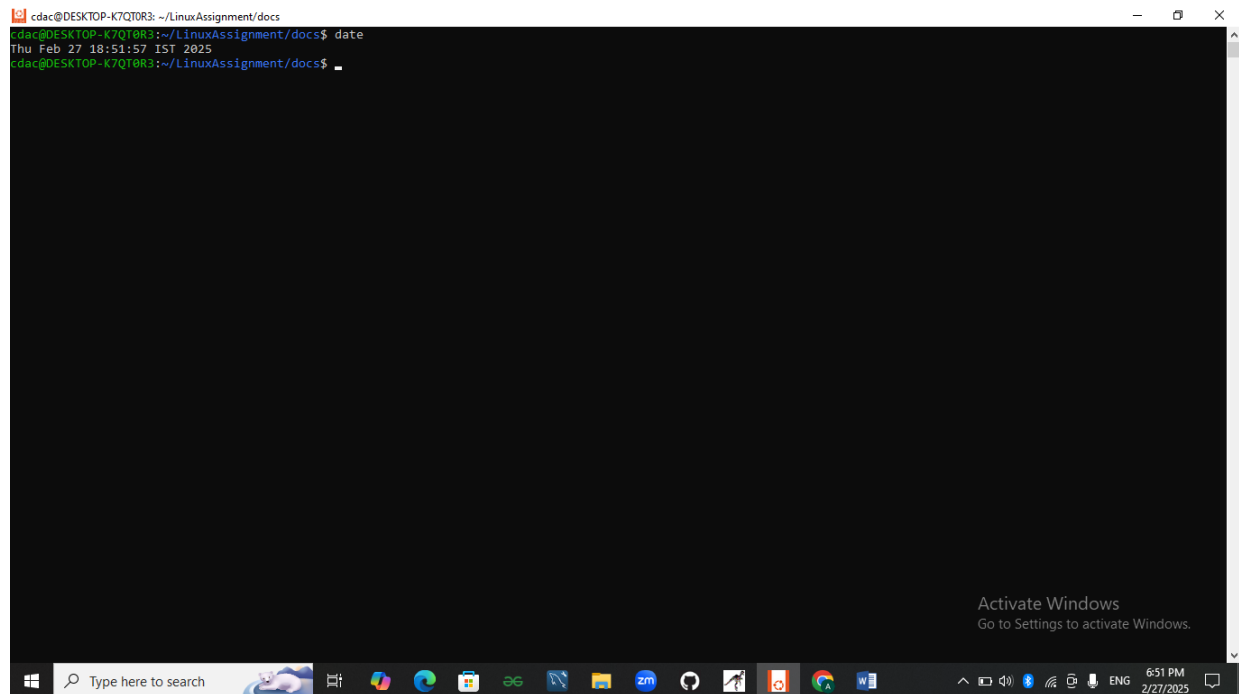
a. Display the current system date and time.

ans :

date -- Display the Current System Date and Time

output -- Tue Feb 26 14:30:15 IST 2025

This output shows the current day, month, date, time, timezone, and year.



The screenshot shows a Windows terminal window with a black background and white text. The title bar at the top reads "cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment/docs". The terminal content shows the command "date" being executed, resulting in the output "Thu Feb 27 18:51:57 IST 2025". The prompt "cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs\$" is visible. In the bottom right corner of the terminal window, there is a watermark that says "Activate Windows Go to Settings to activate Windows." The Windows taskbar is visible at the bottom of the screen, showing the Start button, a search bar, and several application icons. The system tray on the right shows the time as 6:51 PM on 2/27/2025.

```
cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment/docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ date
Thu Feb 27 18:51:57 IST 2025
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$
```


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).

ans :

a>

hostname -I --- Display the IP Address of the System.

output : 192.168.1.100 10.0.0.1

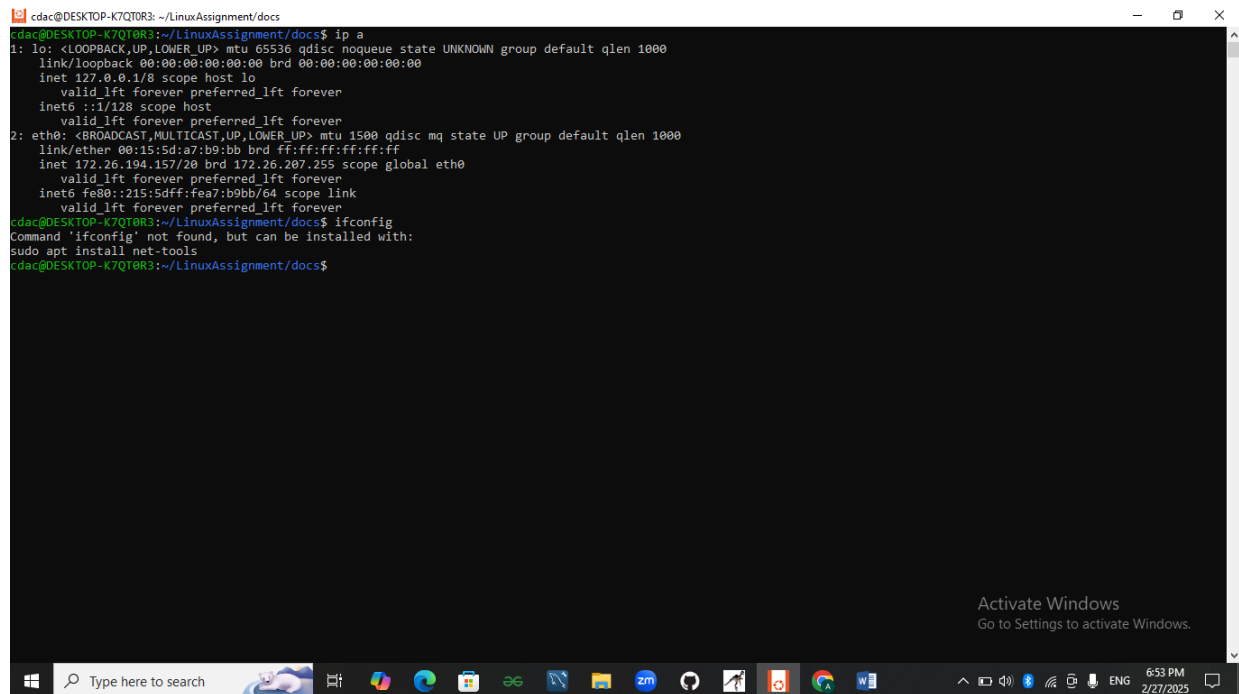
b>

ping -c 4 google.com --- Ping a Remote Server to Check Connectivity.

steps taken :

1- Checked IP Address

2- Checked network connectivity using Ping



```
cdac@DESKTOP-K7QT0R3: ~/LinuxAssignment/docs
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ip a
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
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:15:5d:a7:b9:bb brd ff:ff:ff:ff:ff:ff
    inet 172.26.194.157/20 brd 172.26.207.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fea7:b9bb/64 scope link
        valid_lft forever preferred_lft forever
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$ ifconfig
Command 'ifconfig' not found, but can be installed with:
sudo apt install net-tools
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$
```

Activate Windows
Go to Settings to activate Windows.

j) File Compression:

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

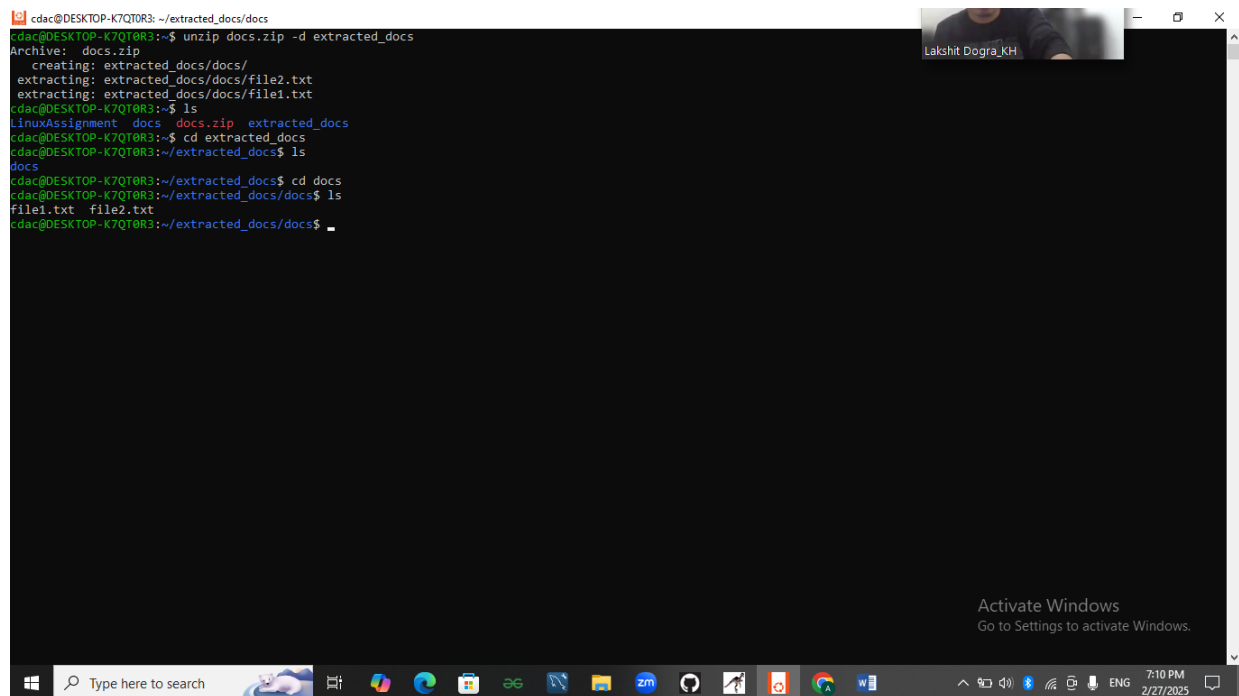
ans :

a> `zip -r docs.zip docs` --- `zip` → Command to create a compressed zip file. `-r` → Recursively include all files and subdirectories.
`docs.zip` → Name of the compressed zip file.
`docs` → The directory to compress.

b> `unzip docs.zip -d extracted_docs` --- `unzip` → Extracts files from a zip archive.
`docs.zip` → The zip file to extract. `-d extracted_docs` → Extracts the files into a new directory named `extracted_docs`.

steps taken :

- a> Navigated to LinuxAssignment directory
- b> Compressed the docs directory
- c> Verified that docs.zip was created
- d> Extracted docs.zip into extracted_docs
- e> Verified extraction by listing files:



```
cdac@DESKTOP-K7QT0R3: ~/extracted_docs/docs
cdac@DESKTOP-K7QT0R3:~$ unzip docs.zip -d extracted_docs
Archive: docs.zip
  creating: extracted_docs/docs/
  extracting: extracted_docs/docs/file2.txt
  extracting: extracted_docs/docs/file1.txt
cdac@DESKTOP-K7QT0R3:~$ ls
LinuxAssignment  docs  docs.zip  extracted_docs
cdac@DESKTOP-K7QT0R3:~$ cd extracted_docs
cdac@DESKTOP-K7QT0R3:~/extracted_docs$ ls
docs
cdac@DESKTOP-K7QT0R3:~/extracted_docs$ cd docs
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ ls
file1.txt  file2.txt
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```

Activate Windows
Go to Settings to activate Windows.

k) File Editing:

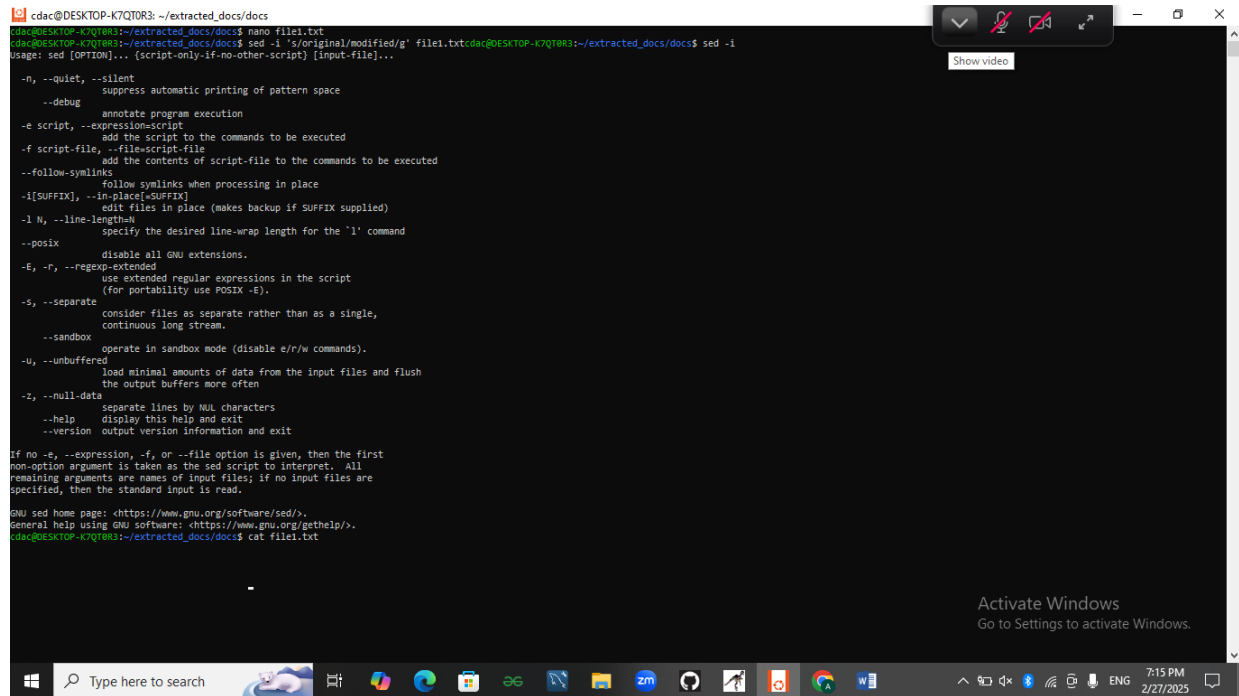
- a. Open the "file1.txt" file in a text editor and add some text to it.
- b. Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).

ans :

```
a> nano file1.txt -- 2 -- add some text :  
ex : Linux is an open-source operating system.  
b> sed -i 's/Linux/Unix/g' file1.txt ---  
ex : Unix is an open-source operating system.
```

steps taken :

- a> Opened file1.txt in a text editor
- b> Added some text and saved the file.
- c> Verified the file content.
- d> Replaced a word inside the file.
- e> Checked if the replacement was successful.



The screenshot shows a Windows terminal window with a dark background. The command prompt shows the user is in the directory `cdac@DESKTOP-K7Q7WR3: ~/extracted_docs/docs`. The user has executed `nano file1.txt`, and the terminal displays the nano editor's help text. The user then executes `sed -i 's/Linux/Unix/g' file1.txt`, and the terminal shows the sed command's usage and options. The user then executes `cat file1.txt`, and the terminal shows the contents of the file, which is `Unix is an open-source operating system.`

```
cdac@DESKTOP-K7Q7WR3: ~/extracted_docs/docs  
cdac@DESKTOP-K7Q7WR3:~/extracted_docs/docs$ nano file1.txt  
cdac@DESKTOP-K7Q7WR3:~/extracted_docs/docs$ sed -i 's/Linux/Unix/g' file1.txt  
cdac@DESKTOP-K7Q7WR3:~/extracted_docs/docs$ cat file1.txt  
Unix is an open-source operating system.
```

Problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

a. Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.

Ans :

```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 62 Feb 27 19:14 file1.txt
-rw-r--r-- 1 cdac cdac  0 Feb 27 19:03 file2.txt
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ find ~/ -name "data.txt"
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ echo "Sample text for
testing" > data.txt
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ head data.txt
Sample text for testing
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ head -n 10 data.txt
Sample text for testing
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```

Challenges Faced :

```
head: cannot open 'data.txt' for reading: No such file or directory
```

```
cdac@DESKTOP-K7QT0R3: ~/extracted_docs/docs
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 62 Feb 27 19:14 file1.txt
-rw-r--r-- 1 cdac cdac 0 Feb 27 19:03 file2.txt
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ find ~/ -name "data.txt"
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ echo "Sample text for testing" > data.txt
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ head data.txt
Sample text for testing
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ head -n 10 data.txt
Sample text for testing
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```

Activate Windows
Go to Settings to activate Windows.

Type here to search

7:27 PM
2/27/2025

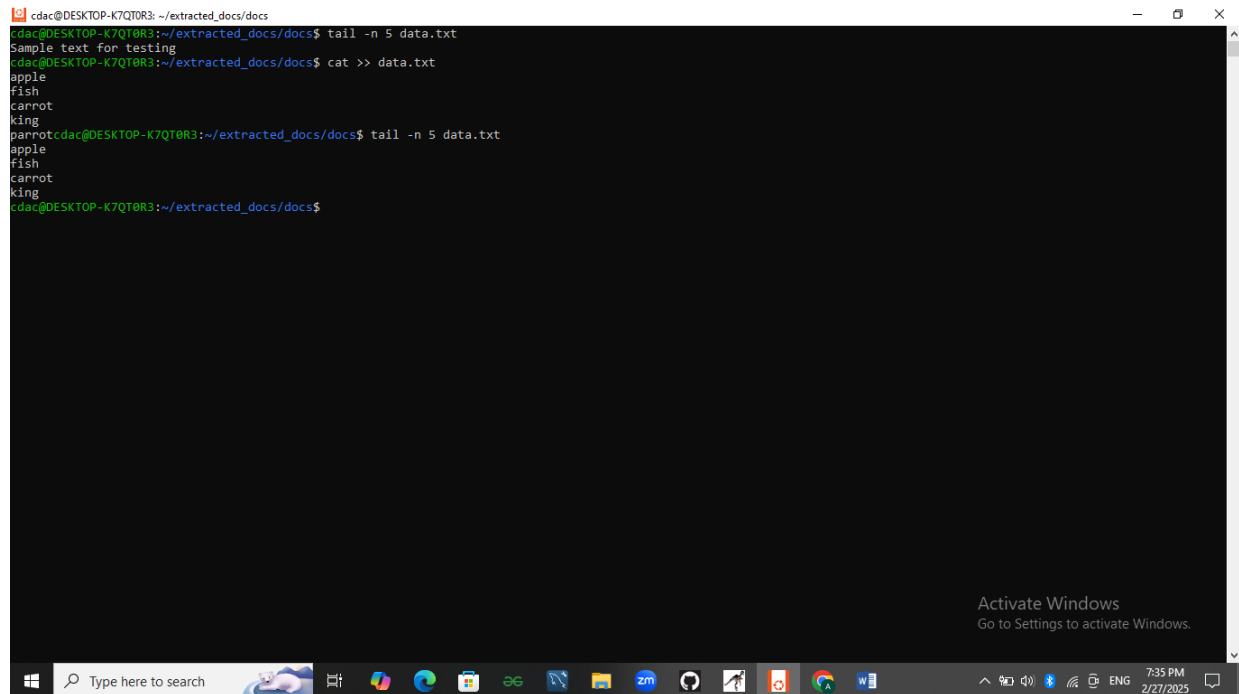
b. Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.

Ans :

```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ cat >> data.txt
apple
fish
carrot
king
parrotcdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ tail -n 5 data.txt
apple
fish
carrot
king
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```

Challenges Faced :

If the file has fewer than 5 lines, tail will display only the available



The screenshot shows a Windows terminal window with a black background and white text. The terminal displays the following commands and their outputs:

```
cdac@DESKTOP-K7QT0R3: ~/extracted_docs/docs
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ tail -n 5 data.txt
Sample text for testing
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ cat >> data.txt
apple
fish
carrot
king
parrotcdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ tail -n 5 data.txt
apple
fish
carrot
king
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```

The terminal window is titled "cdac@DESKTOP-K7QT0R3: ~/extracted_docs/docs". The Windows taskbar is visible at the bottom, showing the search bar, task view button, and several application icons. The system tray on the right shows the time as 7:35 PM on 2/27/2025 and the language as ENG. An "Activate Windows" watermark is visible in the bottom right corner of the terminal window.

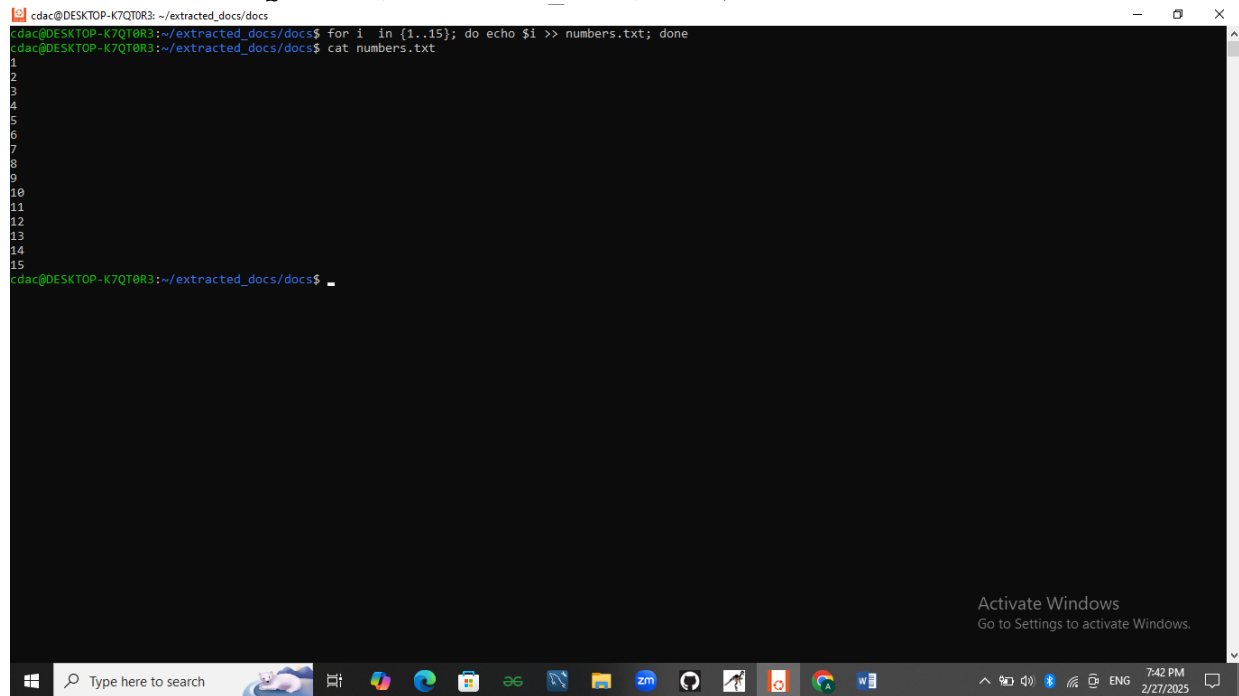
c. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of this file to analyze the initial data set.

ans :

```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ for i in {1..15}; do echo $i  
>> numbers.txt; done  
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ cat numbers.txt
```

```
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15
```

```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```



The screenshot shows a Windows terminal window with a black background and green text. The terminal displays the following commands and output:

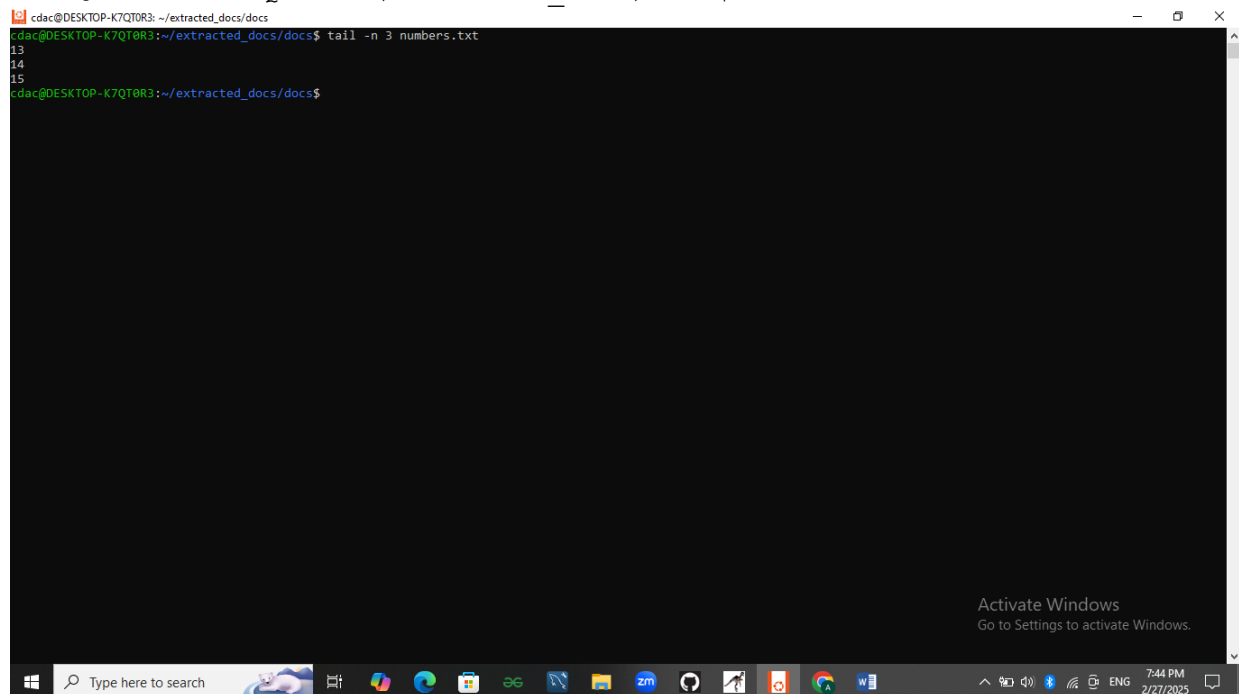
```
cdac@DESKTOP-K7QT0R3: ~/extracted_docs/docs  
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ for i in {1..15}; do echo $i >> numbers.txt; done  
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ cat numbers.txt  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```

The terminal window has a title bar with standard Windows window controls (minimize, maximize, close). At the bottom, there is a taskbar with various application icons and a system tray showing the time as 7:42 PM on 2/21/2025. An "Activate Windows" watermark is visible in the bottom right corner of the terminal window.

d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".

ans :

```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ tail -n 3 numbers.txt
13
14
15
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```



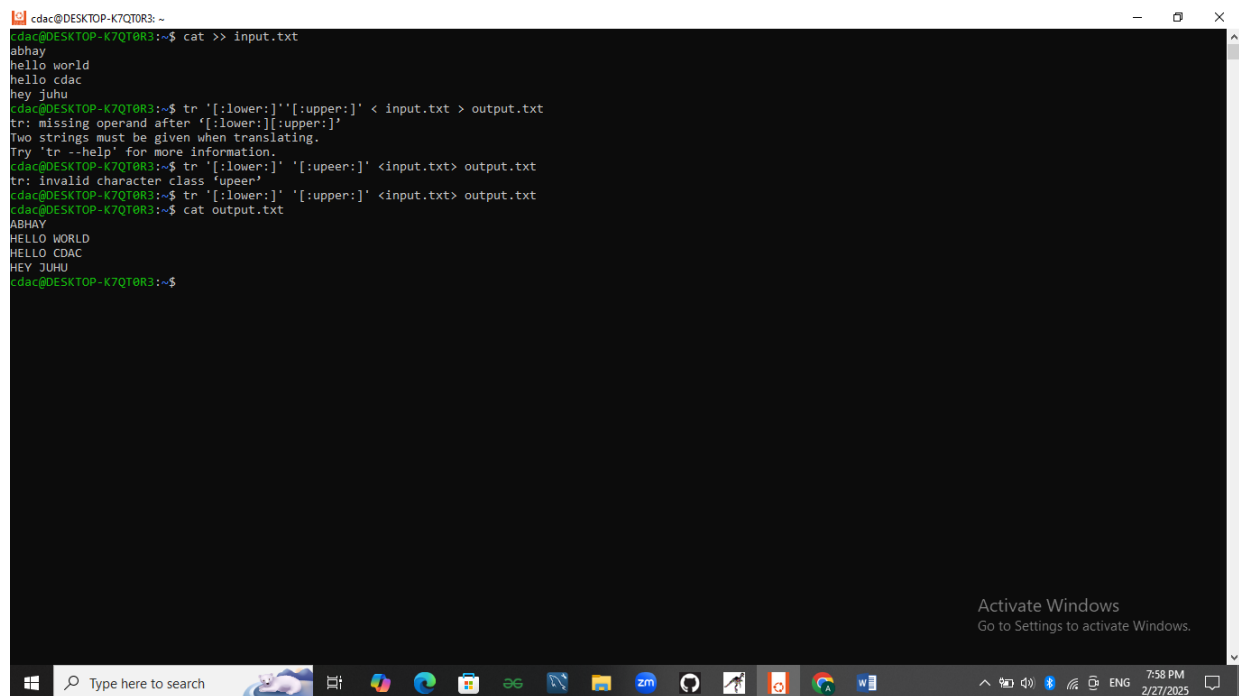
The screenshot shows a Windows terminal window with a black background and white text. The command prompt is 'cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs'. The command 'tail -n 3 numbers.txt' has been entered and executed, resulting in the output '13', '14', and '15' on separate lines. The terminal window has standard Windows window controls (minimize, maximize, close) in the top right corner. At the bottom of the screen, the Windows taskbar is visible, showing the search bar, task view button, and several application icons. The system tray in the bottom right corner displays the time '7:44 PM' and the date '2/27/2025'. An 'Activate Windows' watermark is visible in the bottom right corner of the terminal window.

```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ tail -n 3 numbers.txt
13
14
15
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```


e. Imagine you have a file named "input.txt" with text content. Use a command to translate all lowercase letters to uppercase in "input.txt" and save the modified text in a new file named "output.txt."

ans :

```
cdac@DESKTOP-K7QT0R3:~$ cat >> input.txt
abhay
hello world
hello cdac
hey juhu
cdac@DESKTOP-K7QT0R3:~$ tr '[:lower:]' '[:upper:]' < input.txt >
output.txt
tr: missing operand after '[:lower:][:upper:]'
Two strings must be given when translating.
Try 'tr --help' for more information.
cdac@DESKTOP-K7QT0R3:~$ tr '[:lower:]' '[:upeer:]' <input.txt> output.txt
tr: invalid character class 'upeer'
cdac@DESKTOP-K7QT0R3:~$ tr '[:lower:]' '[:upper:]' <input.txt> output.txt
cdac@DESKTOP-K7QT0R3:~$ cat output.txt
ABHAY
HELLO WORLD
HELLO CDAC
HEY JUHU
cdac@DESKTOP-K7QT0R3:~$
```



The screenshot shows a Windows terminal window with a black background and white text. The terminal displays the following commands and their outputs:

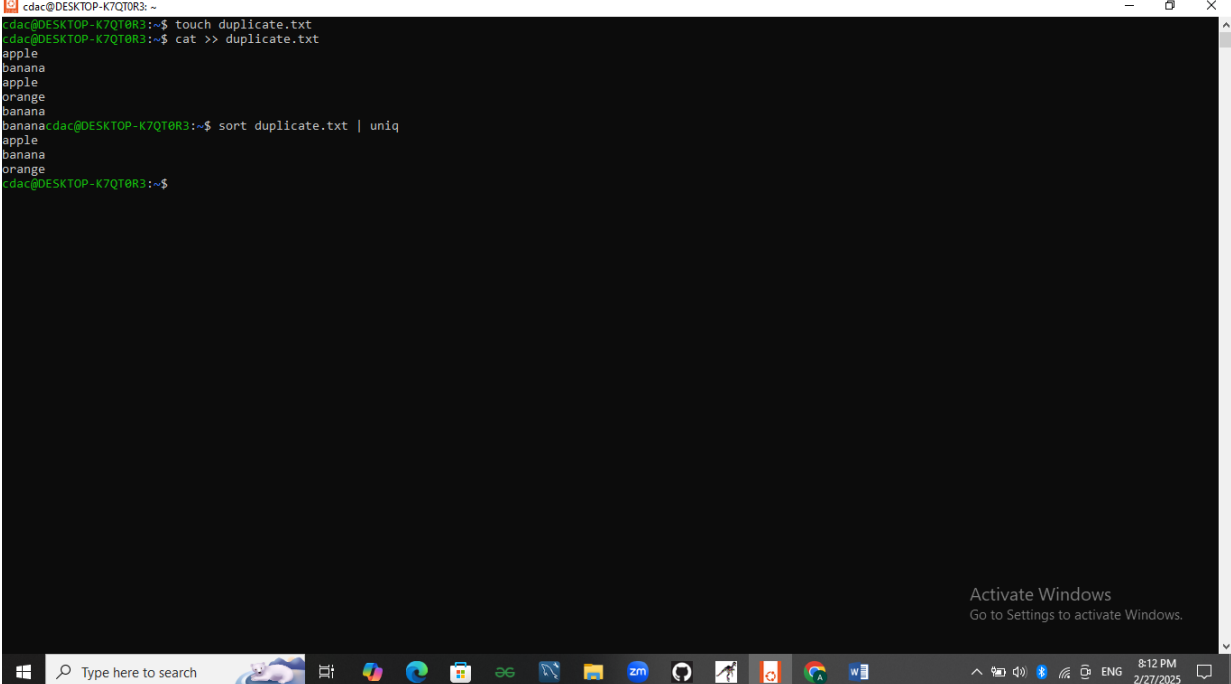
```
cdac@DESKTOP-K7QT0R3:~$ cat >> input.txt
abhay
hello world
hello cdac
hey juhu
cdac@DESKTOP-K7QT0R3:~$ tr '[:lower:]' '[:upper:]' < input.txt > output.txt
tr: missing operand after '[:lower:][:upper:]'
Two strings must be given when translating.
Try 'tr --help' for more information.
cdac@DESKTOP-K7QT0R3:~$ tr '[:lower:]' '[:upeer:]' <input.txt> output.txt
tr: invalid character class 'upeer'
cdac@DESKTOP-K7QT0R3:~$ tr '[:lower:]' '[:upper:]' <input.txt> output.txt
cdac@DESKTOP-K7QT0R3:~$ cat output.txt
ABHAY
HELLO WORLD
HELLO CDAC
HEY JUHU
cdac@DESKTOP-K7QT0R3:~$
```

The terminal window has a title bar with the text "cdac@DESKTOP-K7QT0R3: ~". The Windows taskbar is visible at the bottom, showing the search bar, task view button, and several application icons. The system tray on the right shows the date and time as "7:58 PM 2/21/2025".

f. In a file named "duplicate.txt," there are several lines of text, some of which are duplicates. Use a command to display only the unique lines from "duplicate.txt."

ans :

```
cdac@DESKTOP-K7QT0R3:~$ touch duplicate.txt
cdac@DESKTOP-K7QT0R3:~$ cat >> duplicate.txt
apple
banana
apple
orange
banana
cdac@DESKTOP-K7QT0R3:~$ sort duplicate.txt | uniq
apple
banana
orange
cdac@DESKTOP-K7QT0R3:~$
```



```
cdac@DESKTOP-K7QT0R3:~$ touch duplicate.txt
cdac@DESKTOP-K7QT0R3:~$ cat >> duplicate.txt
apple
banana
apple
orange
banana
cdac@DESKTOP-K7QT0R3:~$ sort duplicate.txt | uniq
apple
banana
orange
cdac@DESKTOP-K7QT0R3:~$
```

The screenshot shows a Windows terminal window with a black background and green text. The terminal displays the execution of the following commands and their output:

- `cdac@DESKTOP-K7QT0R3:~$ touch duplicate.txt`
- `cdac@DESKTOP-K7QT0R3:~$ cat >> duplicate.txt`
- The file `duplicate.txt` contains the following lines: `apple`, `banana`, `apple`, `orange`, and `banana`.
- `cdac@DESKTOP-K7QT0R3:~$ sort duplicate.txt | uniq`
- The output of the `sort | uniq` command is: `apple`, `banana`, and `orange`.
- The prompt `cdac@DESKTOP-K7QT0R3:~$` is shown at the end of the output.

The Windows taskbar is visible at the bottom, showing the search bar, task view button, and several application icons. The system tray on the right shows the date and time as 8:12 PM on 2/21/2025. An "Activate Windows" watermark is visible in the bottom right corner of the terminal window.

g. In a file named "fruit.txt," there is a list of fruits, but some fruits are repeated. Use a command to display each unique fruit along with the count of its occurrences in "fruit.txt."

Ans :

```
cdac@DESKTOP-K7QT0R3:~$ touch fruit.txt
```

```
cdac@DESKTOP-K7QT0R3:~$ cat fruit.txt
```

```
cdac@DESKTOP-K7QT0R3:~$ cat >> fruit.txt
```

```
apple
```

```
banana
```

```
apple
```

```
orange
```

```
banana
```

```
bananacdac@DESKTOP-K7QT0R3:~$ sortfruit.txt | uniq -c
```

```
sortfruit.txt: command not found
```

```
cdac@DESKTOP-K7QT0R3:~$ sort fruit.txt | uniq -c
```

```
2 apple
```

```
3 banana
```

```
1 orange
```

```
cdac@DESKTOP-K7QT0R3:~$
```

```
cdac@DESKTOP-K7QT0R3: ~  
cdac@DESKTOP-K7QT0R3:~$ touch fruit.txt  
cdac@DESKTOP-K7QT0R3:~$ cat fruit.txt  
cdac@DESKTOP-K7QT0R3:~$ cat >> fruit.txt  
apple  
banana  
apple  
orange  
banana  
cdac@DESKTOP-K7QT0R3:~$ sortfruit.txt | uniq -c  
sortfruit.txt: command not found  
cdac@DESKTOP-K7QT0R3:~$ sort fruit.txt | uniq -c  
  2 apple  
  3 banana  
  1 orange  
cdac@DESKTOP-K7QT0R3:~$
```

Activate Windows
Go to Settings to activate Windows.

Type here to search

8:07 PM
2/27/2025