********** 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.

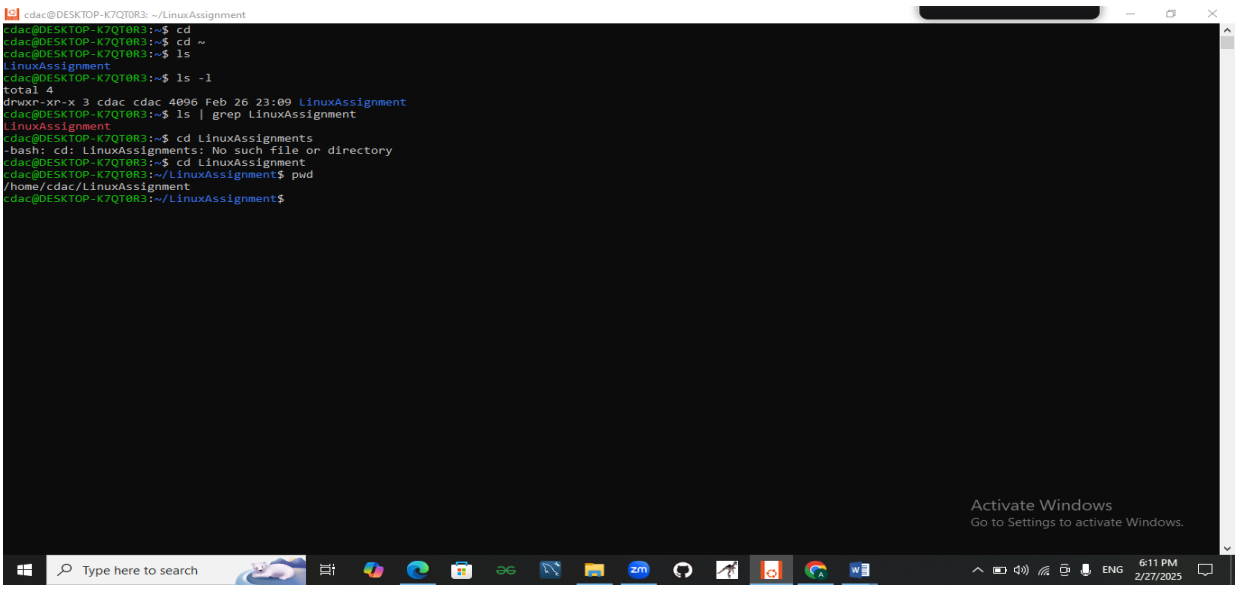
---

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

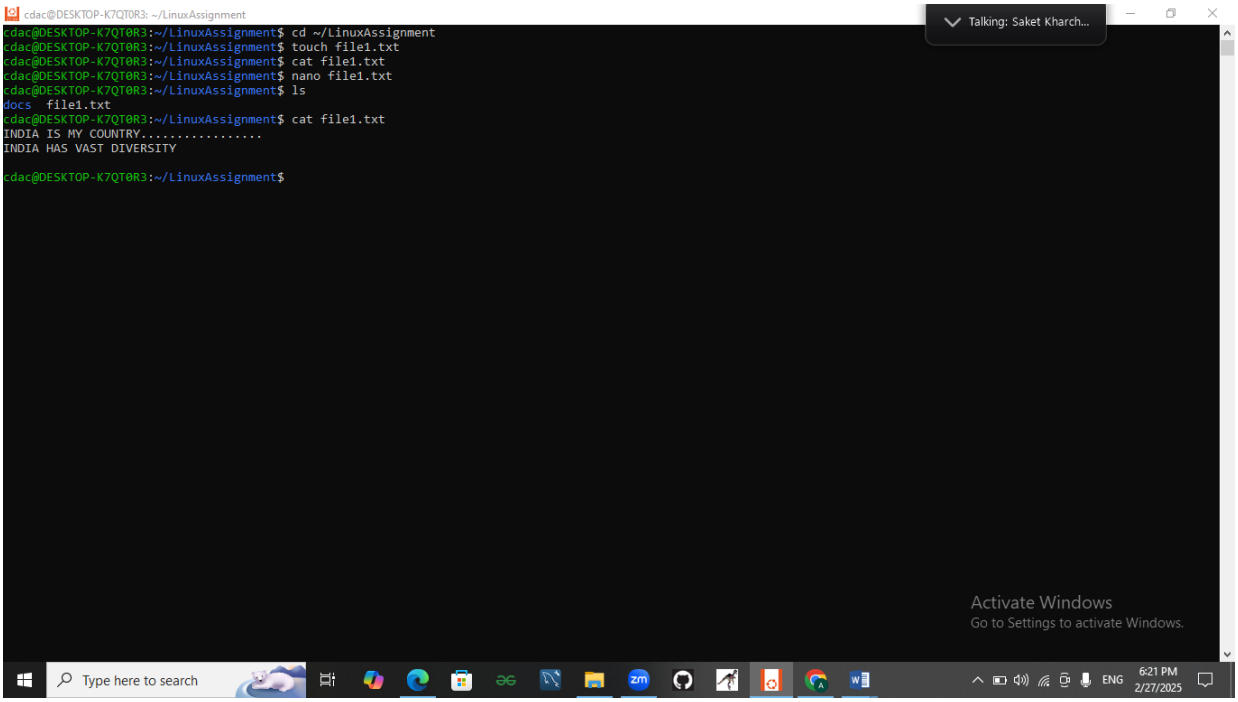
b)[-e "LinuxAssignment"] && echo "Exists" || echo "Does not exist" using it i check file exist or not then, mkdir LinuxAssignment - create directory



b) File Management:
a. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.

ans :

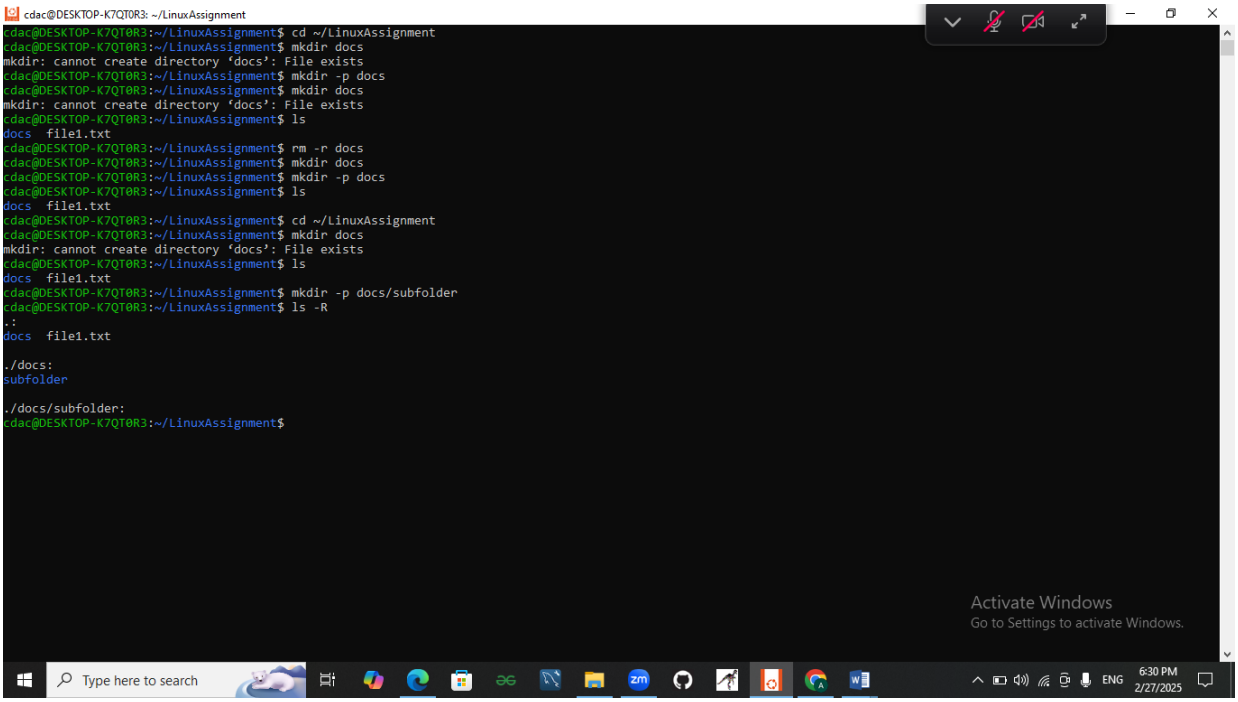
```
touch file1.txt - create file1
cat file1.txt   - display content
```



c) Directory Management:
a. Create a new directory named "docs" inside the "LinuxAssignment" directory.

ans:

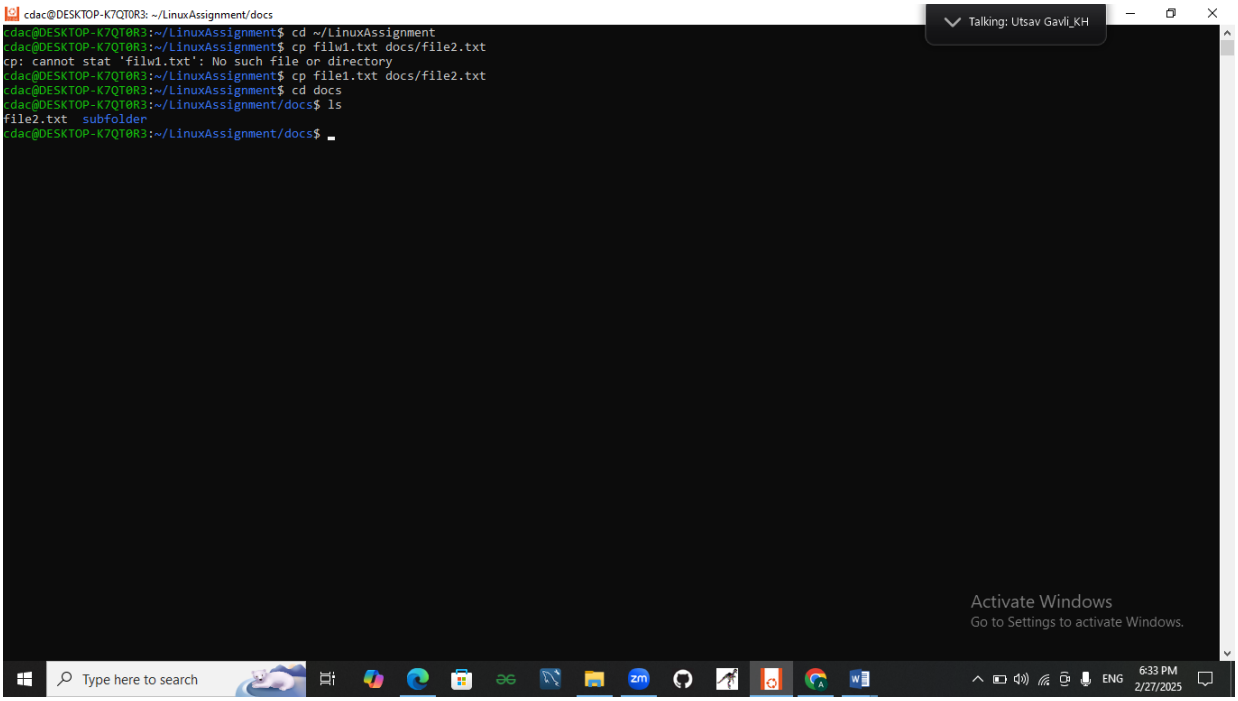
mkdir docs - create docs directory



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
```

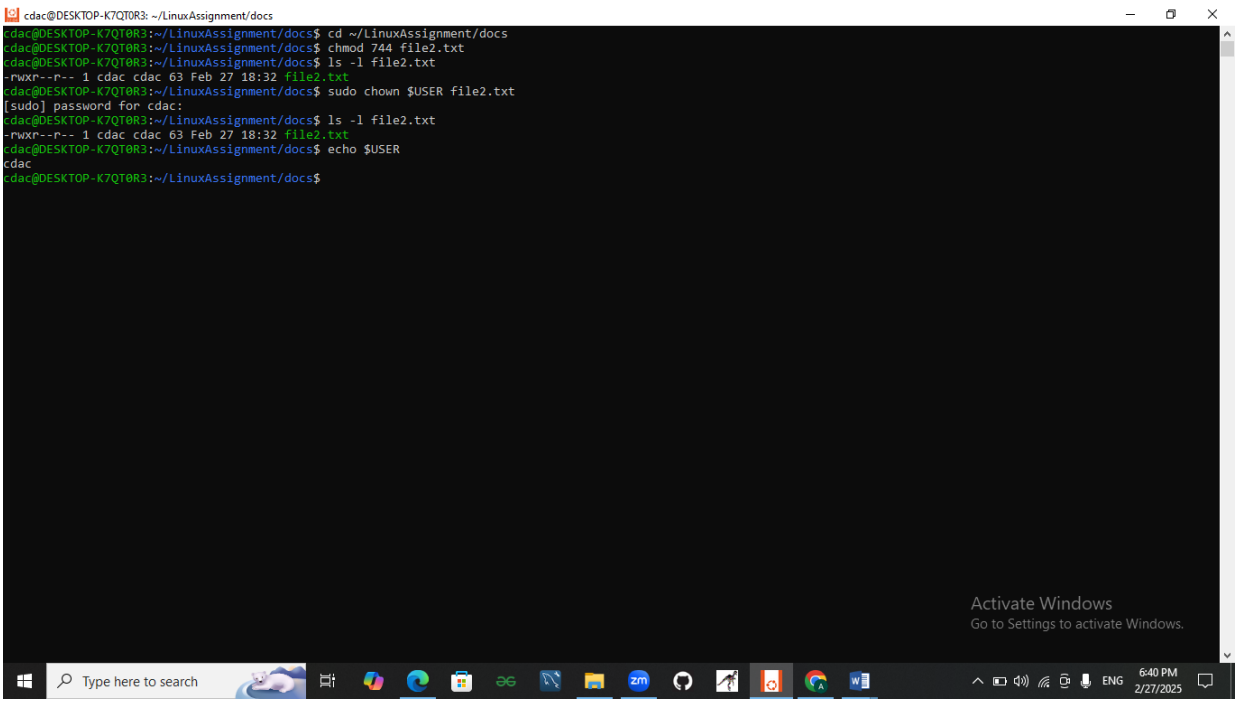


e) Permissions and Ownership:
a. Change the permissions of "file2.txt" to allow read, write, and execute permissions for
the owner and only read permissions for others. Then, change the owner of "file2.txt" to
the current user.

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 $USER
cdac
cdac@DESKTOP-K7QT0R3:~/LinuxAssignment/docs$
```

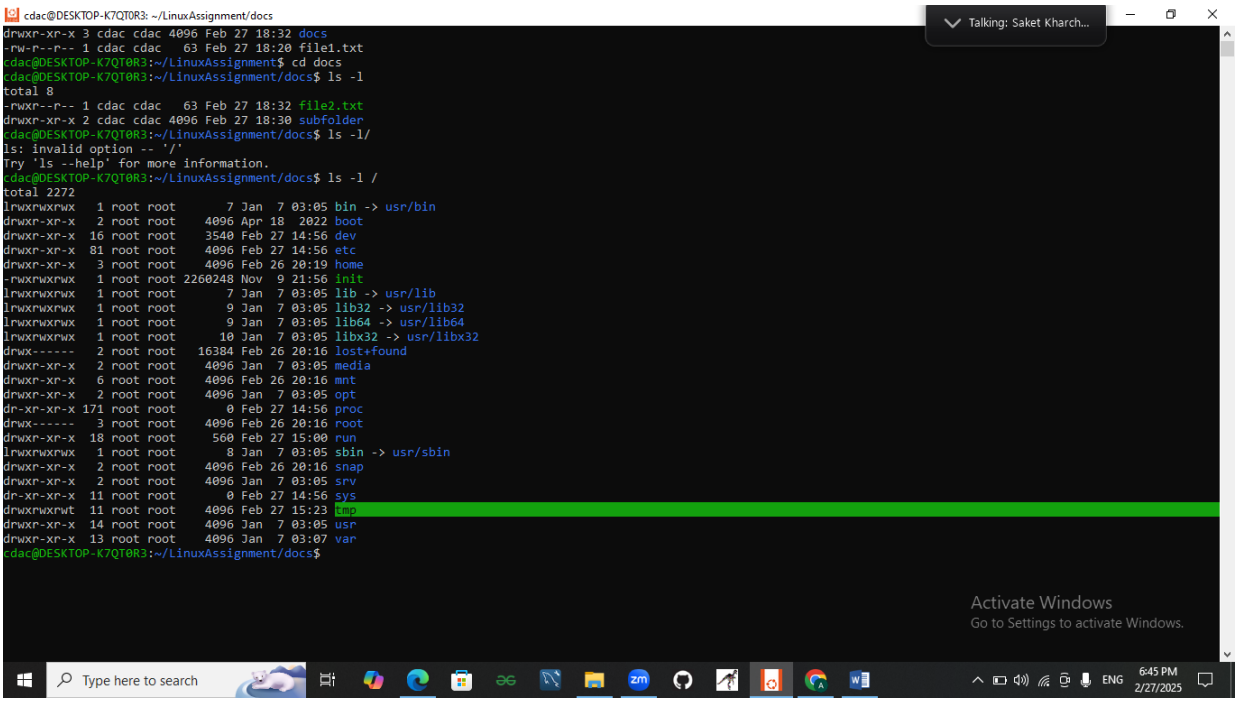


f) Final Checklist:
a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to
ensure that all operations were performed correctly.

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
```

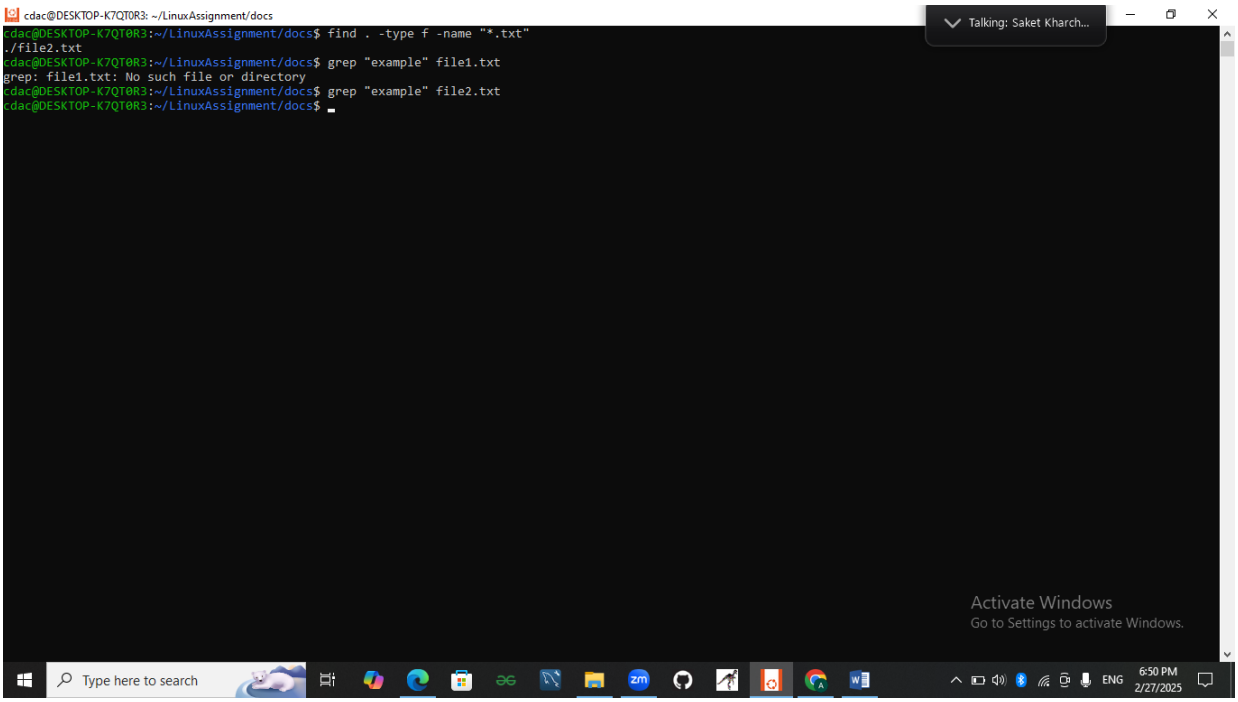


g) File Searching:
a. Search for all files with the extension ".txt" in the current directory and its subdirectories.
b. Display lines containing a specific word in a file (provide a file name and the specific word to search).

ans :

find . -type f -name "*.txt" --- Start searching from the current directory Search for files (not directories).Look for files ending with .txt.

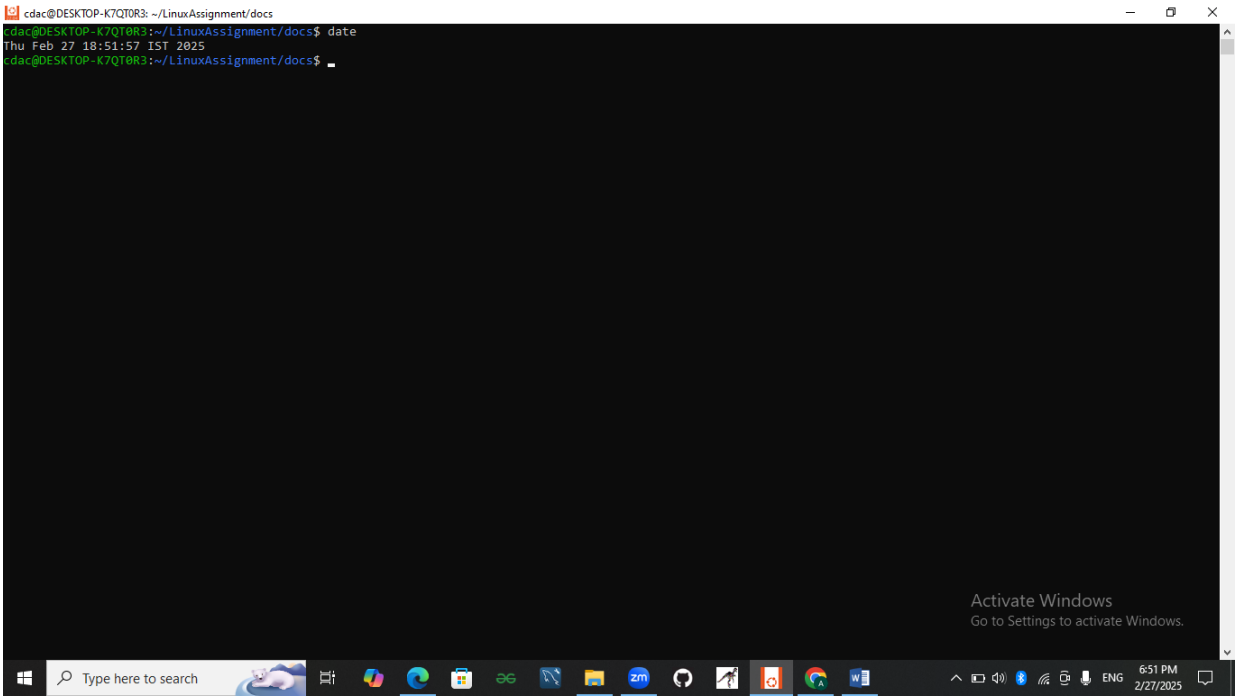
grep "Linux" file1.txt --- This confirms that the word "Linux" was found in both files.



h) System Information:
a. Display the current system date and time.

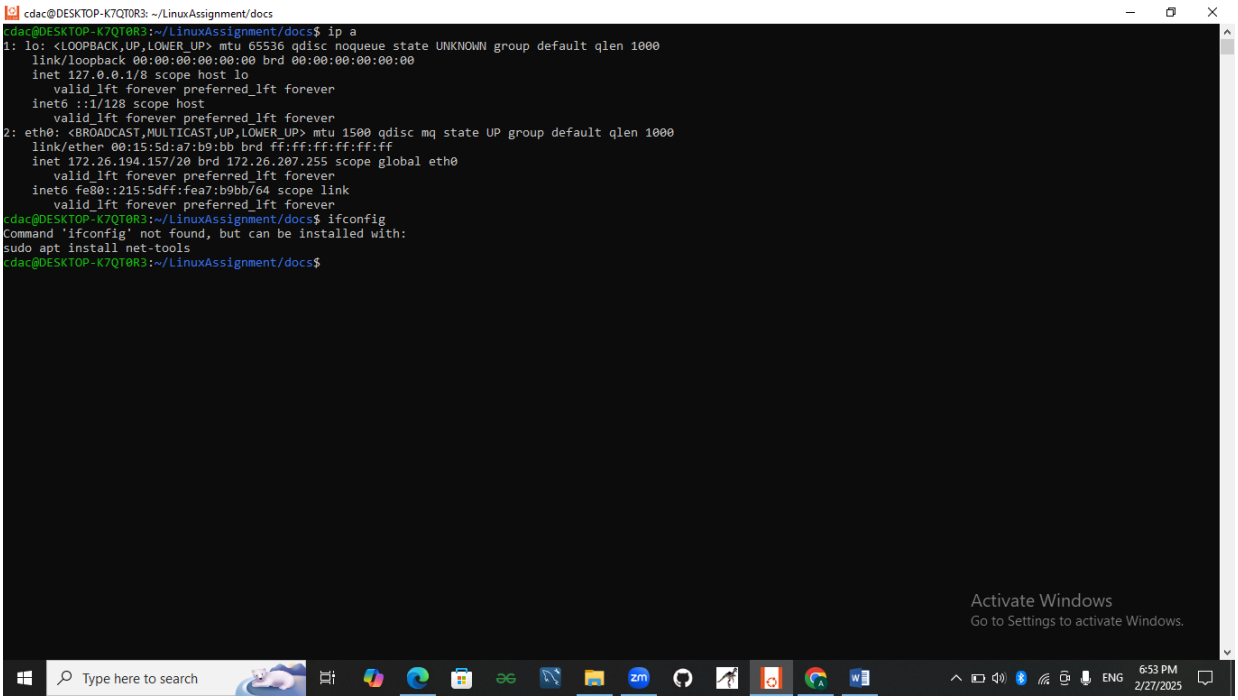
ans :

date -- Display the Current System Date and Time
ouput -- Tue Feb 26 14:30:15 IST 2025
This output shows the current day, month, date, time, timezone, and year.



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

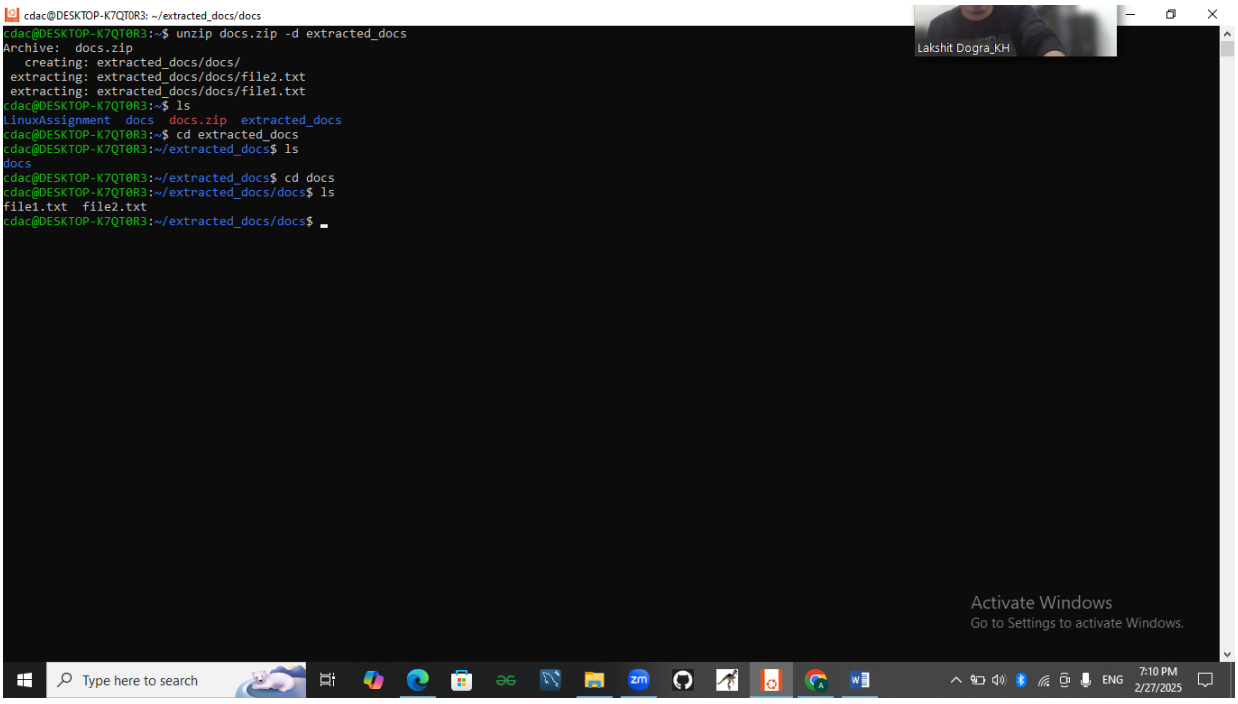


j) File Compression:
a. Compress the "docs" directory into a zip file.
b. Extract the contents of the zip file into a new directory

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:

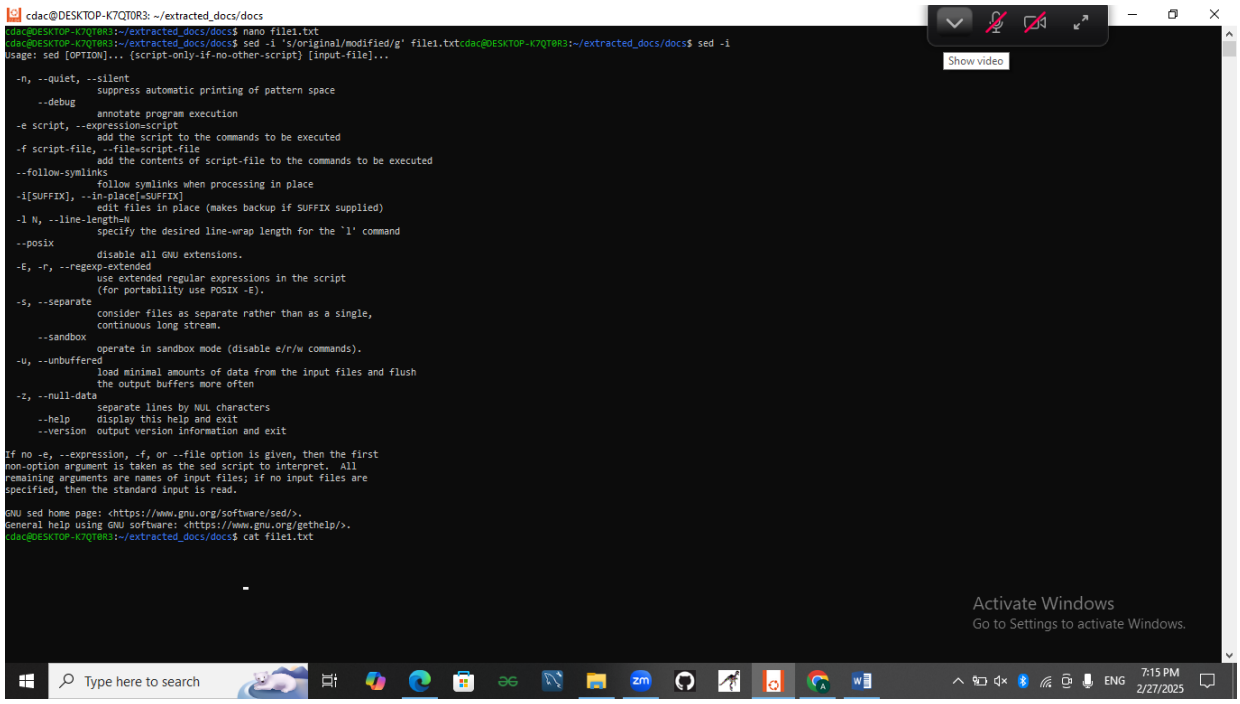


k) File Editing:
a. Open the "file1.txt" file in a text editor and add some text to it.
b. Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).

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.



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

---

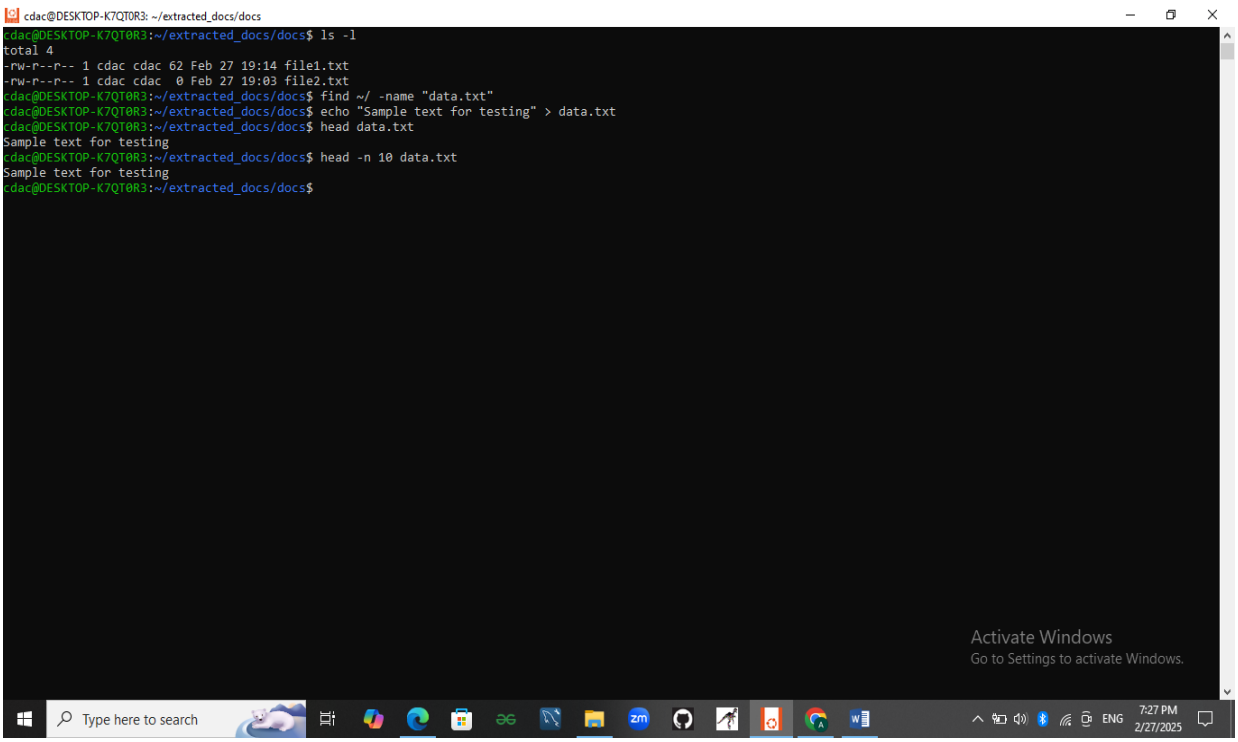
a. Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.

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
ENG
7:27 PM
2/27/2025

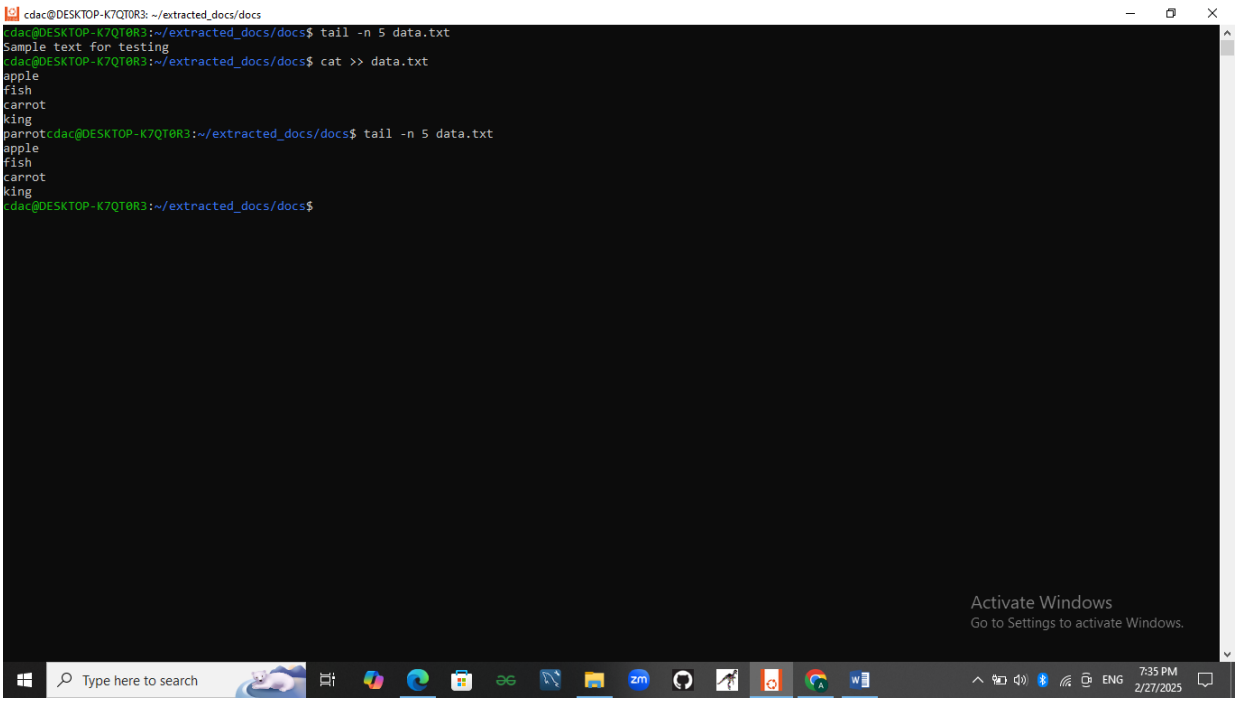
b. Now, to check the end of the file for any recent additions, display the last 5 lines of
"data.txt" using another command.

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 :

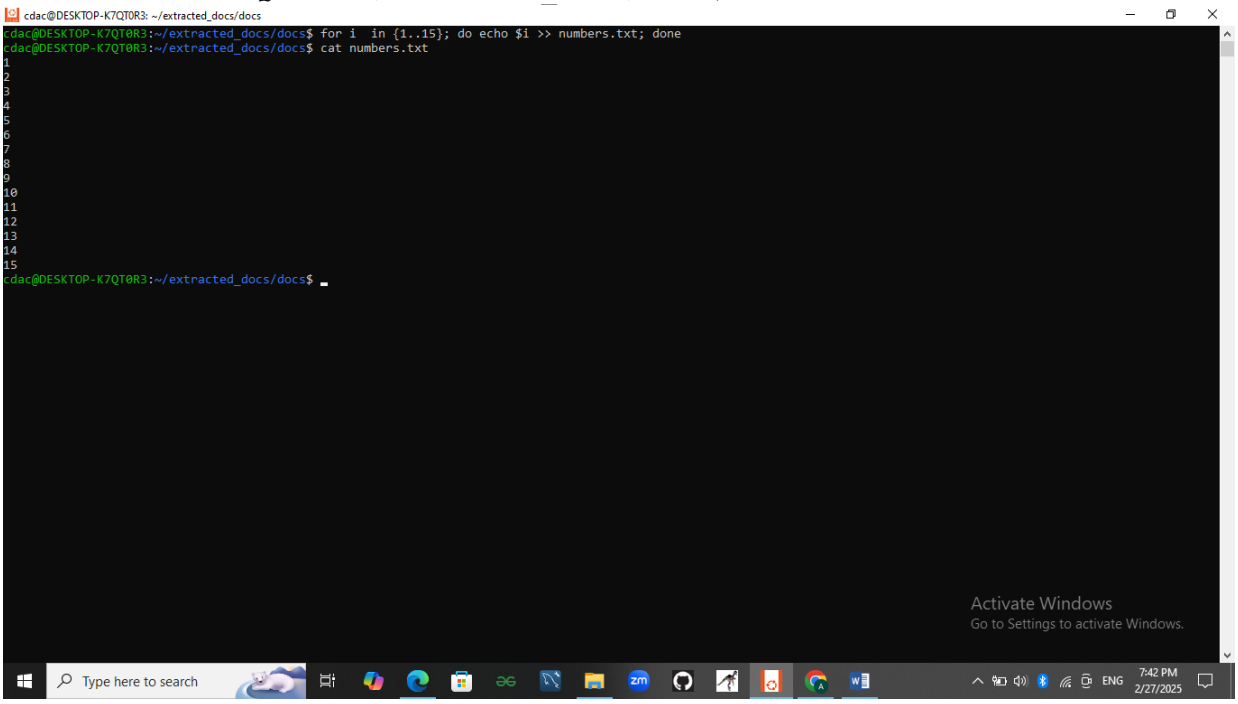
If the file has fewer than 5 lines, tail will display only the available



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 :

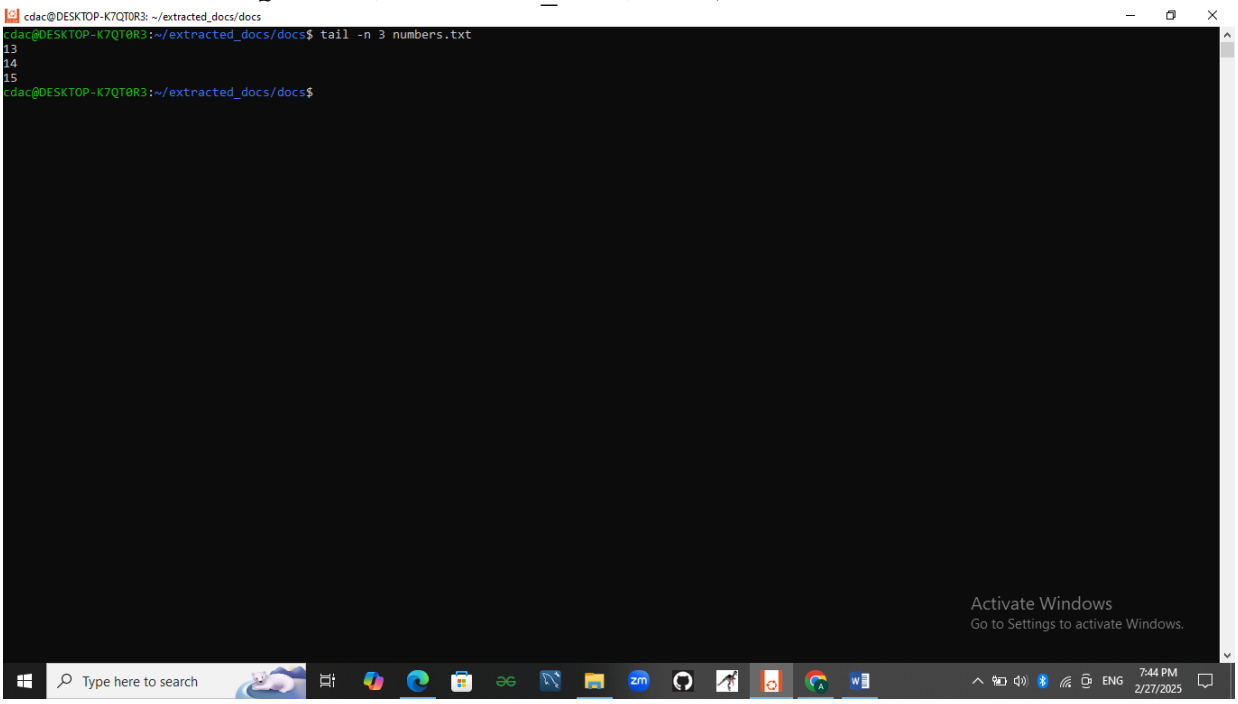
```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ for i  in {1..15}; do echo $i
>> numbers.txt; done
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ cat numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```



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

ans :

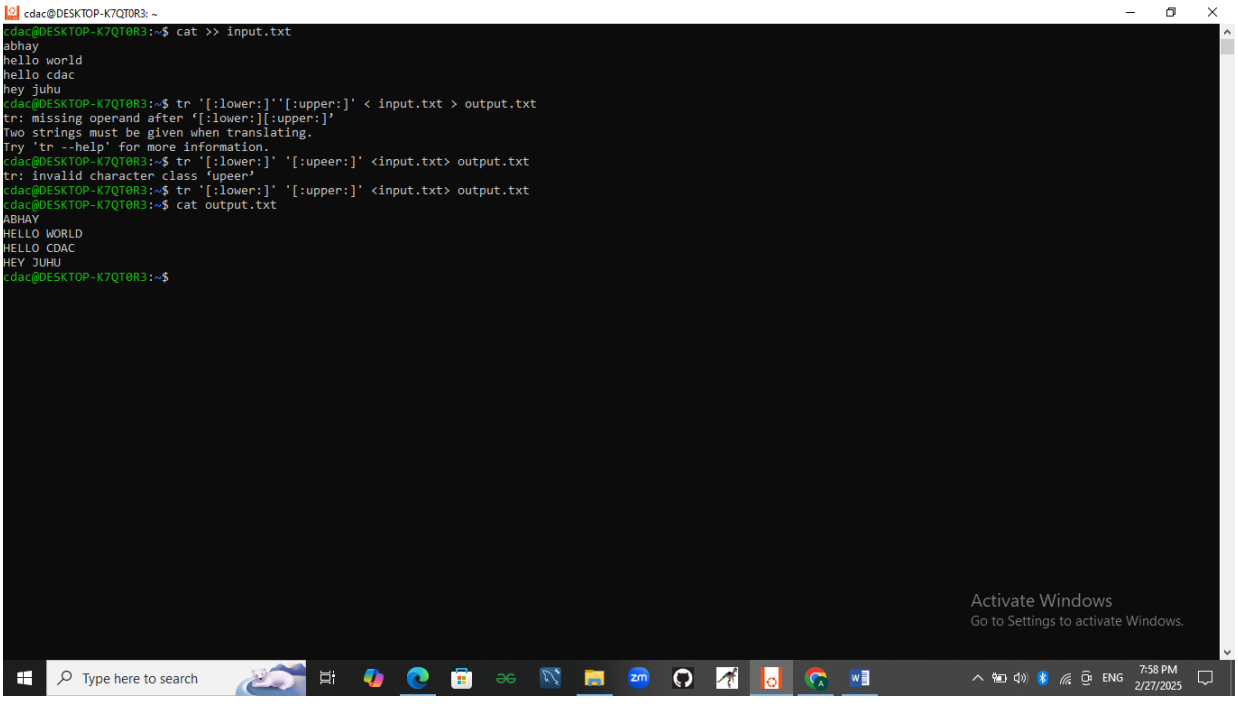
```
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$ tail -n 3 numbers.txt
13
14
15
cdac@DESKTOP-K7QT0R3:~/extracted_docs/docs$
```



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 :

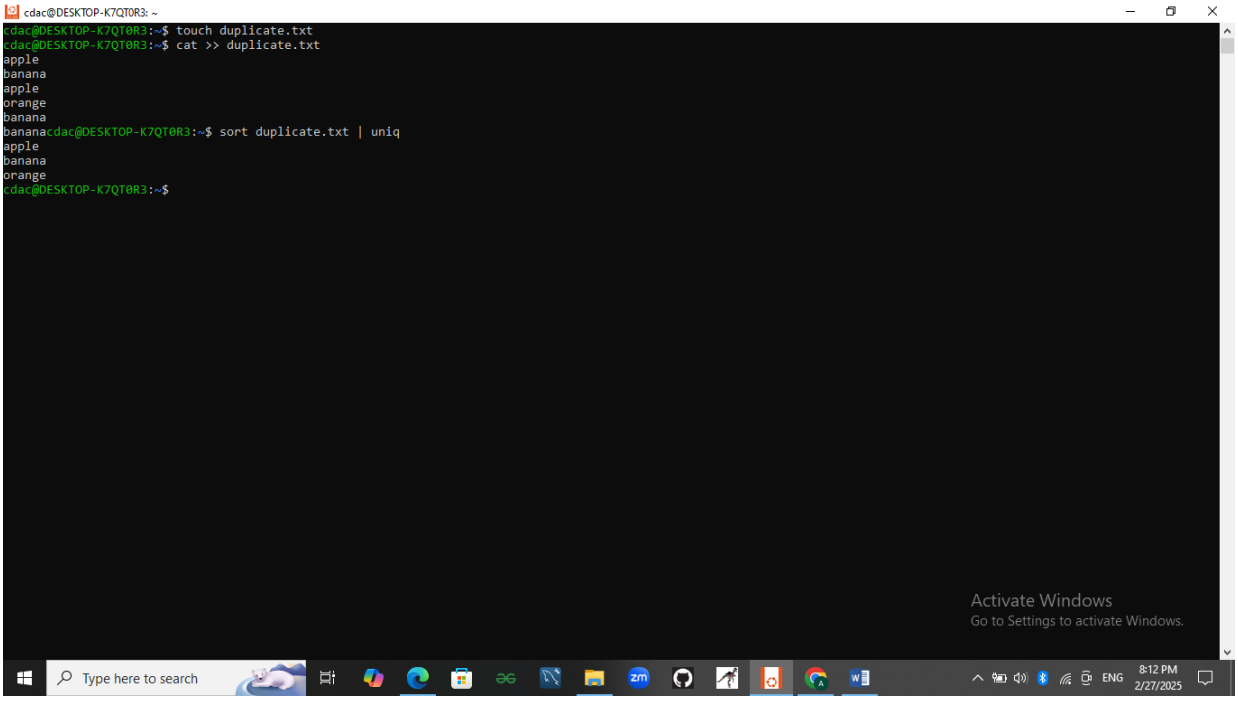
```
cdac@DESKTOP-K7QT0R3:~$ cat >> input.txt
abhay
hello world
hello cdac
hey juhu
cdac@DESKTOP-K7QT0R3:~$ tr '[:lower:]''[:upper:]' < input.txt >
output.txt
tr: missing operand after ‘[:lower:][:upper:]’
Two strings must be given when translating.
Try 'tr --help' for more information.
cdac@DESKTOP-K7QT0R3:~$ 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:~$
```



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 :

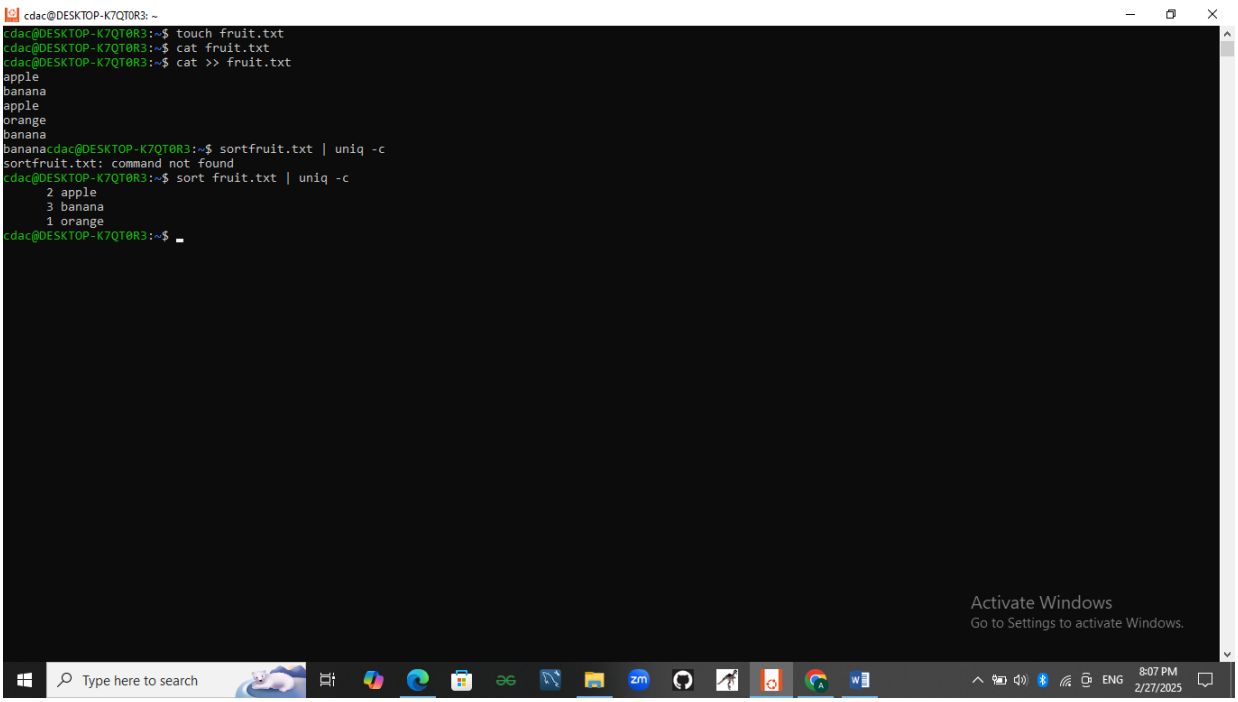
```
cdac@DESKTOP-K7QT0R3:~$ touch duplicate.txt
cdac@DESKTOP-K7QT0R3:~$ cat >> duplicate.txt
apple
banana
apple
orange
banana
bananacdac@DESKTOP-K7QT0R3:~$ sort duplicate.txt | uniq
apple
banana
orange
cdac@DESKTOP-K7QT0R3:~$
```



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
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:~$
Activate Windows
Go to Settings to activate Windows.
Type here to search
ENG
8:07 PM
2/27/2025