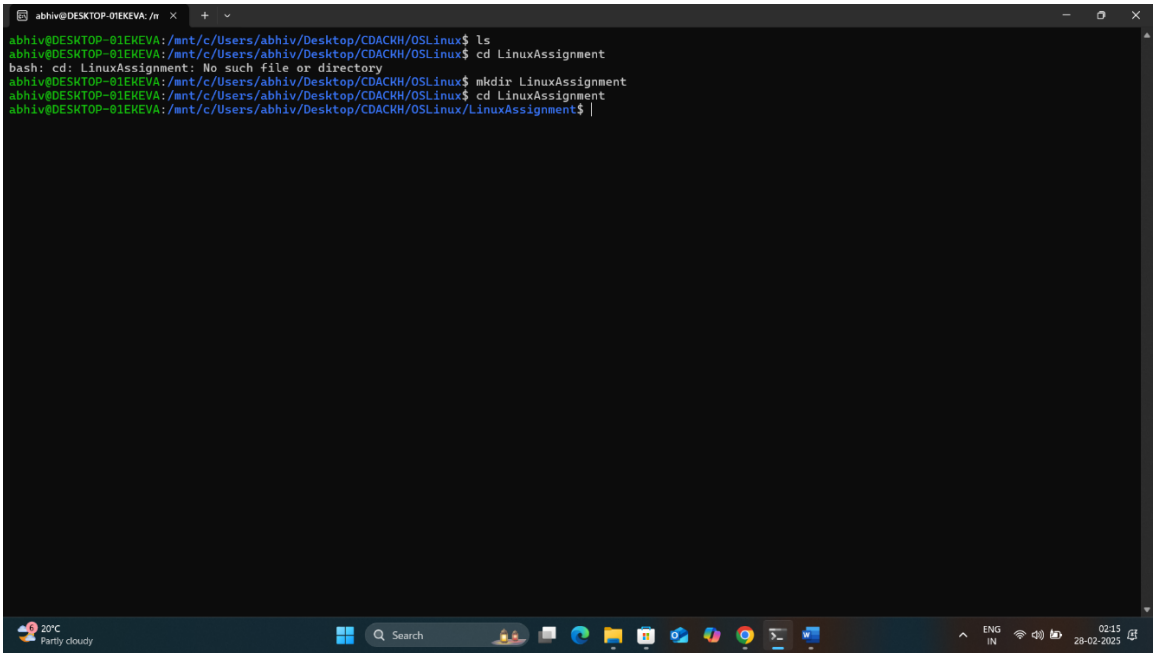
CDAC MUMBAI

Concepts of Operating System

Assignment 1

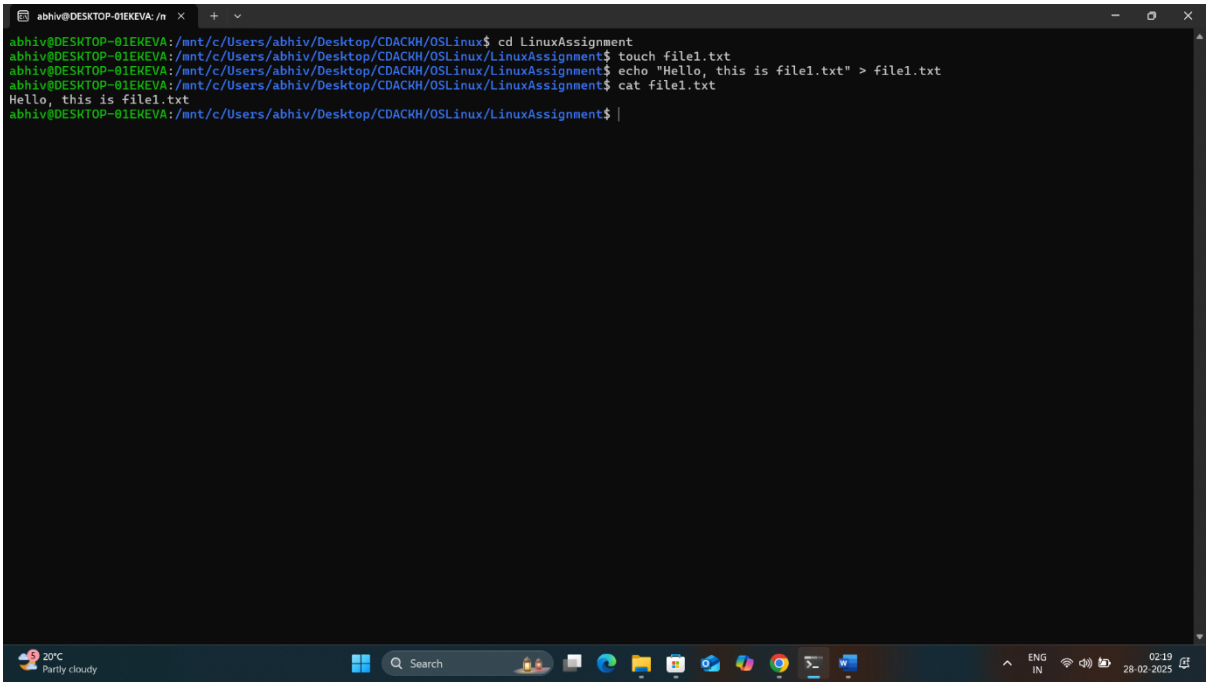
a) **Navigate and List: a. Start by navigating to your home directory and list its contents. Then, move into a directory named "LinuxAssignment" if it exists; otherwise, create it.**

abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux$ ls
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux$ cd LinuxAssignment
bash: cd: LinuxAssignment: No such file or directory
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux$ mkdir LinuxAssignment
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux$ cd LinuxAssignment



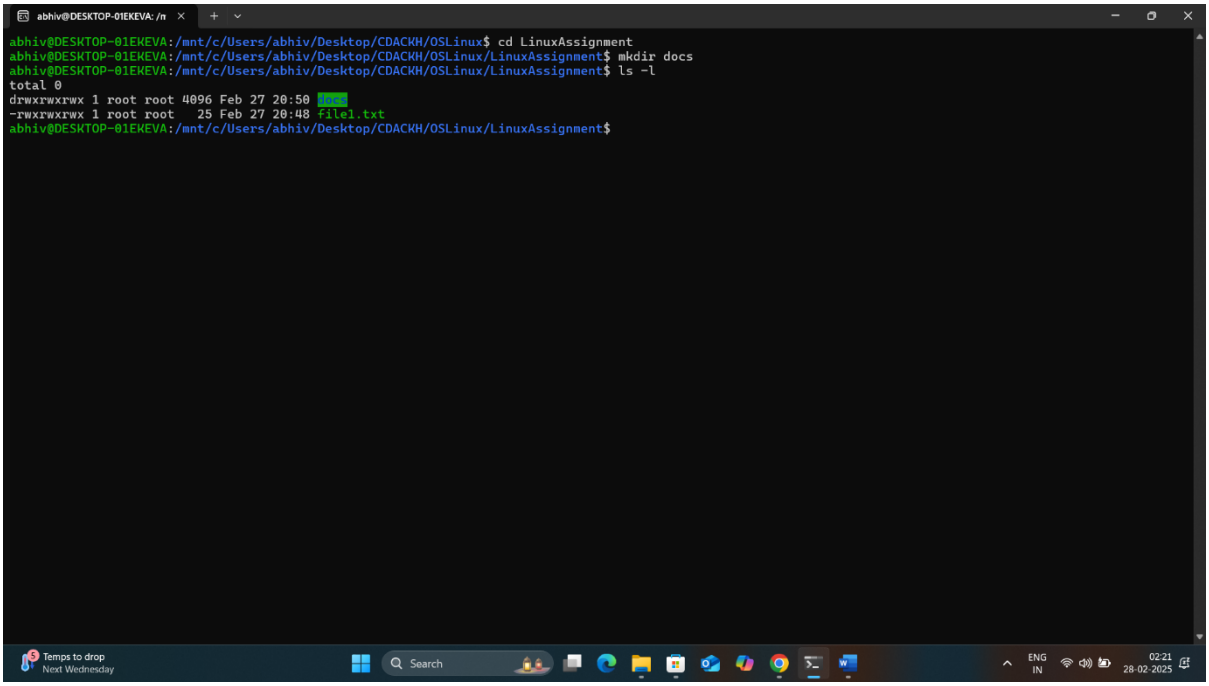
b) File Management: a. Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.

abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux$ cd LinuxAssignment
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ touch file1.txt
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ echo "Hello, this is file1.txt" > file1.txt
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ cat file1.txt
Hello, this is file1.txt



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

abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux$ cd LinuxAssignment
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ mkdir docs
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ ls -l
total 0
drwxrwxrwx 1 root root 4096 Feb 27 20:50 docs
-rwxrwxrwx 1 root root 25 Feb 27 20:48 file1.txt



d) Copy and Move Files: a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".

abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ cd ..

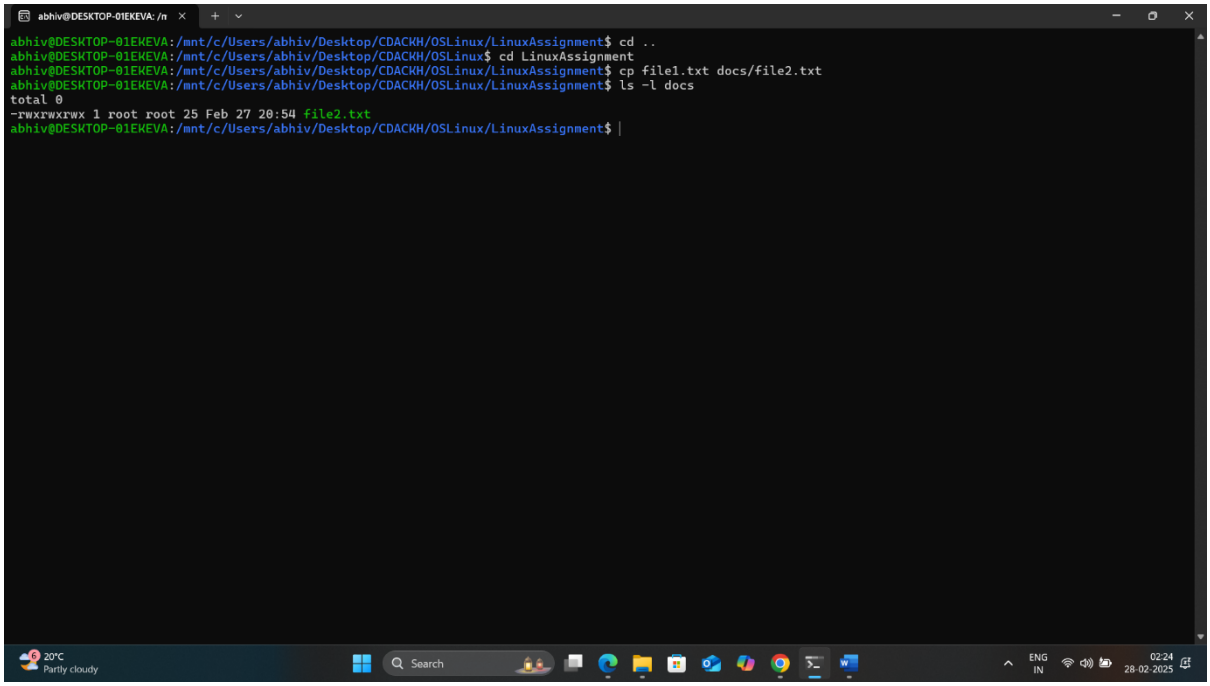
abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux$ cd LinuxAssignment

abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ cp file1.txt docs/file2.txt

abhiv@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment$ ls -l docs

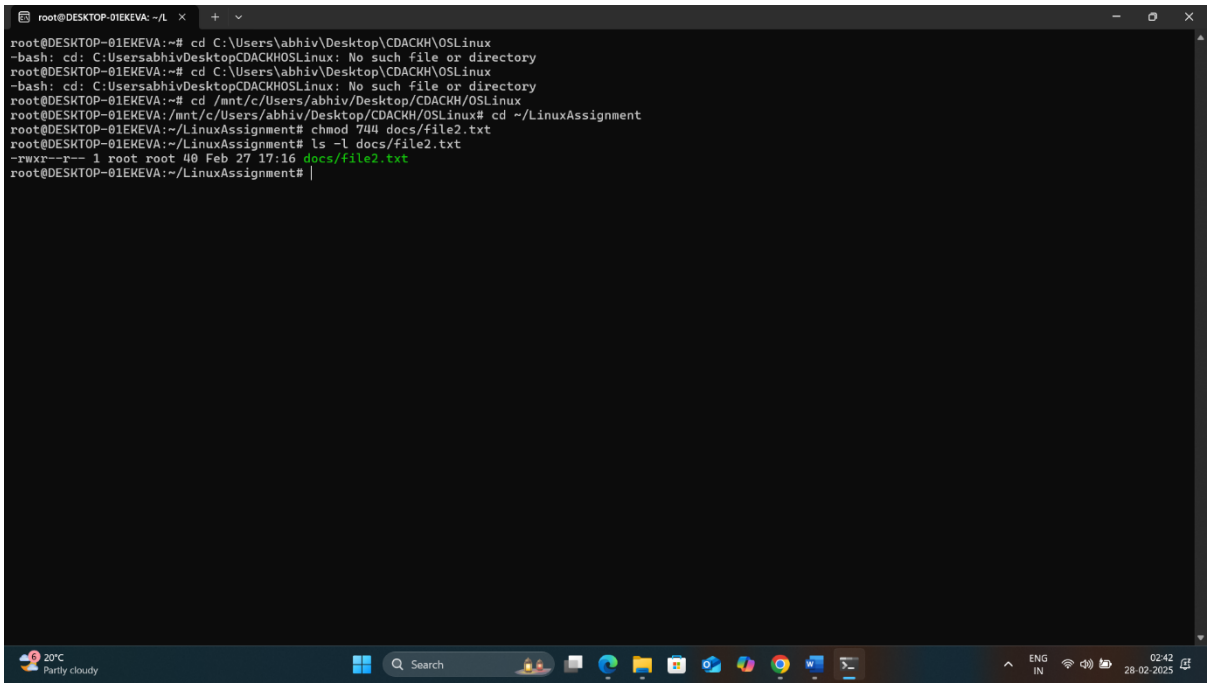
total 0

-rwxrwxrwx 1 root root 25 Feb 27 20:54 file2.txt



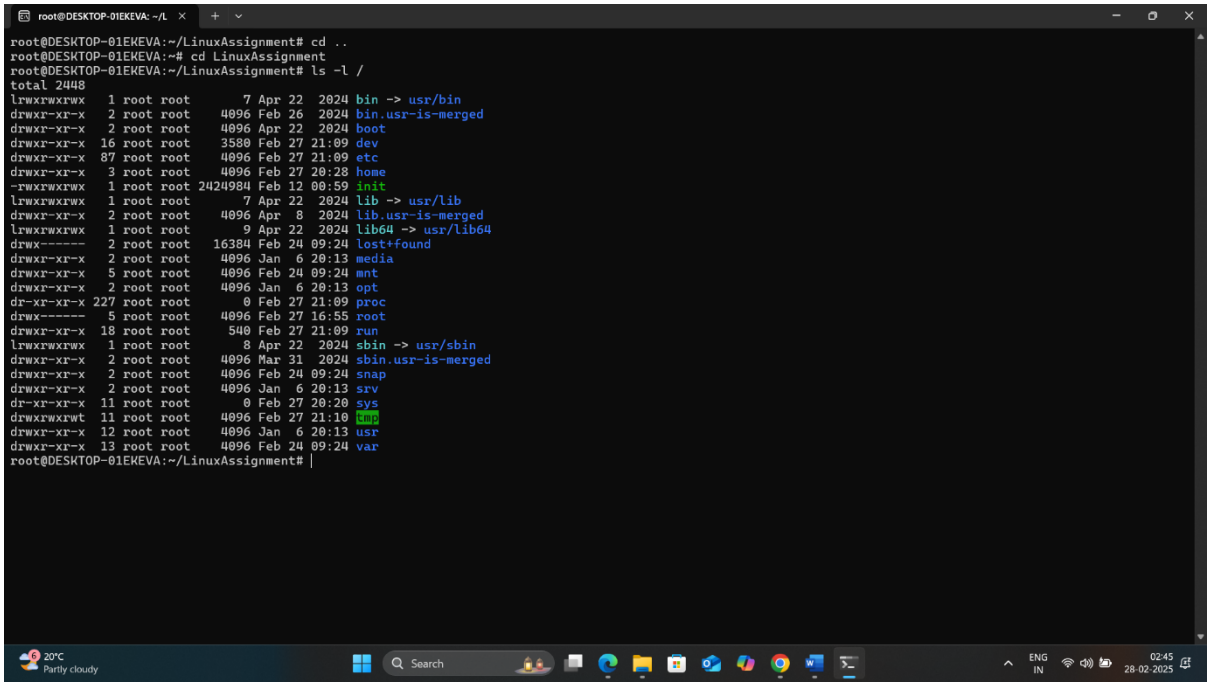
e) Permissions and Ownership: a. Change the permissions of "file2.txt" to allow read, write, and execute permissions for the owner and only read permissions for others. Then, change the owner of "file2.txt" to the current user.

root@DESKTOP-01EKEVA:~# cd C:\Users\abhiv\Desktop\CDACKH\OSLinux
-bash: cd: C:UsersabhivDesktopCDACKHOSLinux: No such file or directory
root@DESKTOP-01EKEVA:~# cd C:\Users\abhiv\Desktop\CDACKH\OSLinux
-bash: cd: C:UsersabhivDesktopCDACKHOSLinux: No such file or directory
root@DESKTOP-01EKEVA:~# cd /mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux
root@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux# cd ~/LinuxAssignment
root@DESKTOP-01EKEVA:~/LinuxAssignment# chmod 744 docs/file2.txt
root@DESKTOP-01EKEVA:~/LinuxAssignment# ls -l docs/file2.txt
-rwxr--r-- 1 root root 40 Feb 27 17:16 docs/file2.txt



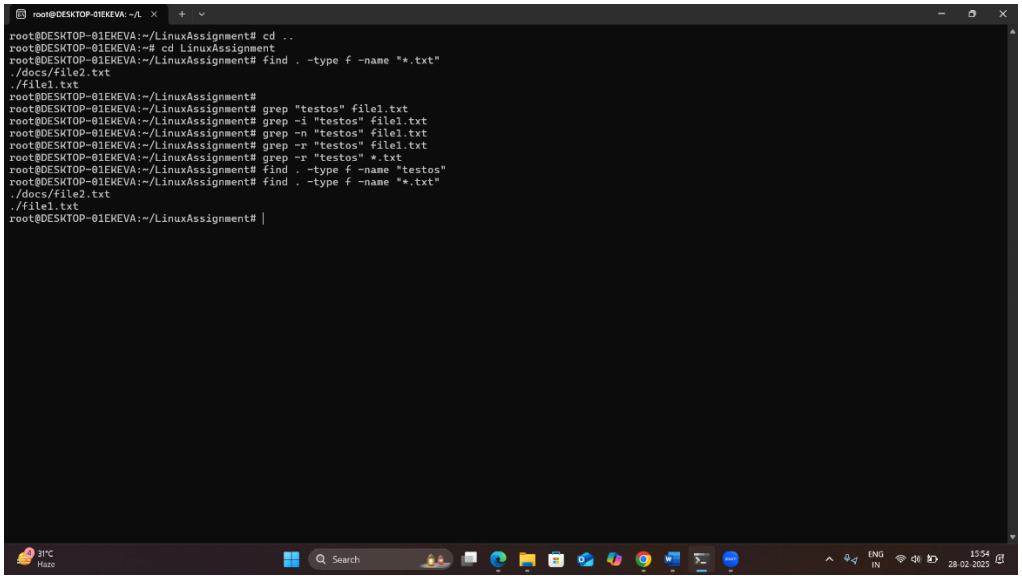
f) Final Checklist: a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly.

root@DESKTOP-01EKEVA:~/LinuxAssignment# cd ..
root@DESKTOP-01EKEVA:~# cd LinuxAssignment
root@DESKTOP-01EKEVA:~/LinuxAssignment# ls -l /



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).

root@DESKTOP-01EKEVA:~# cd LinuxAssignment
root@DESKTOP-01EKEVA:~/LinuxAssignment# find . -type f -name "*.txt"
./docs/file2.txt
./file1.txt
root@DESKTOP-01EKEVA:~/LinuxAssignment#
root@DESKTOP-01EKEVA:~/LinuxAssignment# grep "testos" file1.txt
root@DESKTOP-01EKEVA:~/LinuxAssignment# grep -i "testos" file1.txt
root@DESKTOP-01EKEVA:~/LinuxAssignment# grep -n "testos" file1.txt
root@DESKTOP-01EKEVA:~/LinuxAssignment# grep -r "testos" file1.txt
root@DESKTOP-01EKEVA:~/LinuxAssignment# grep -r "testos" *.txt
root@DESKTOP-01EKEVA:~/LinuxAssignment# find . -type f -name "testos"
root@DESKTOP-01EKEVA:~/LinuxAssignment# find . -type f -name "*.txt"
./docs/file2.txt
./file1.txt

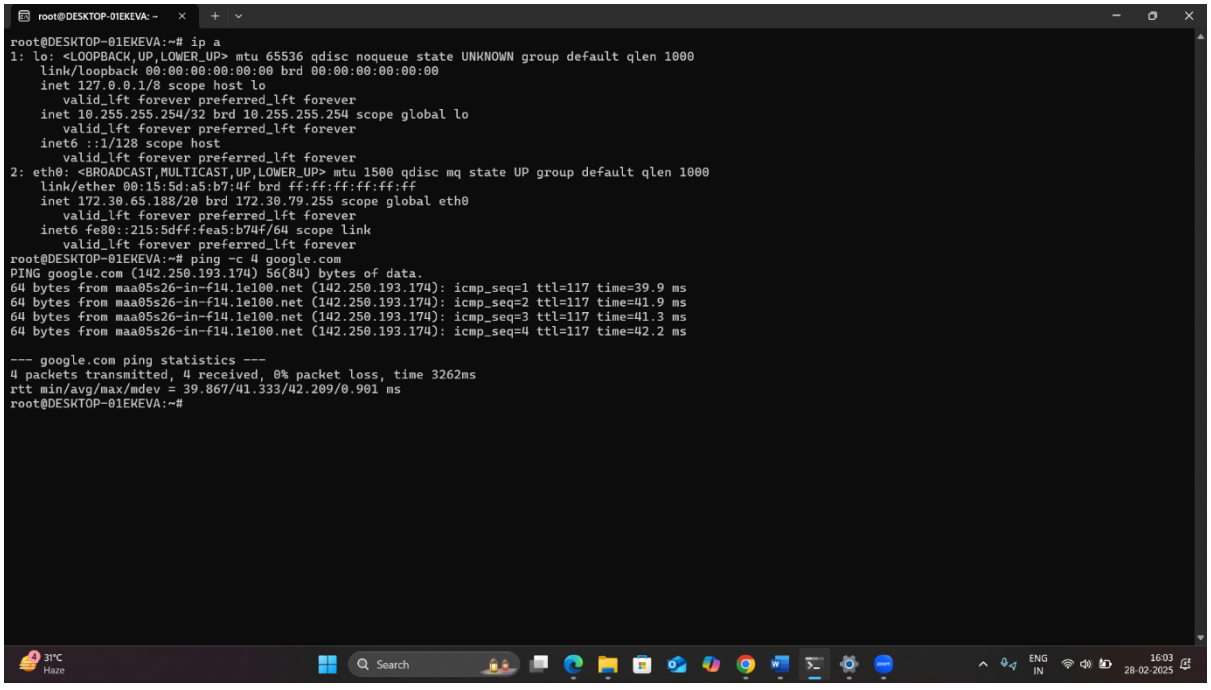


h) System Information: a. Display the current system date and time.

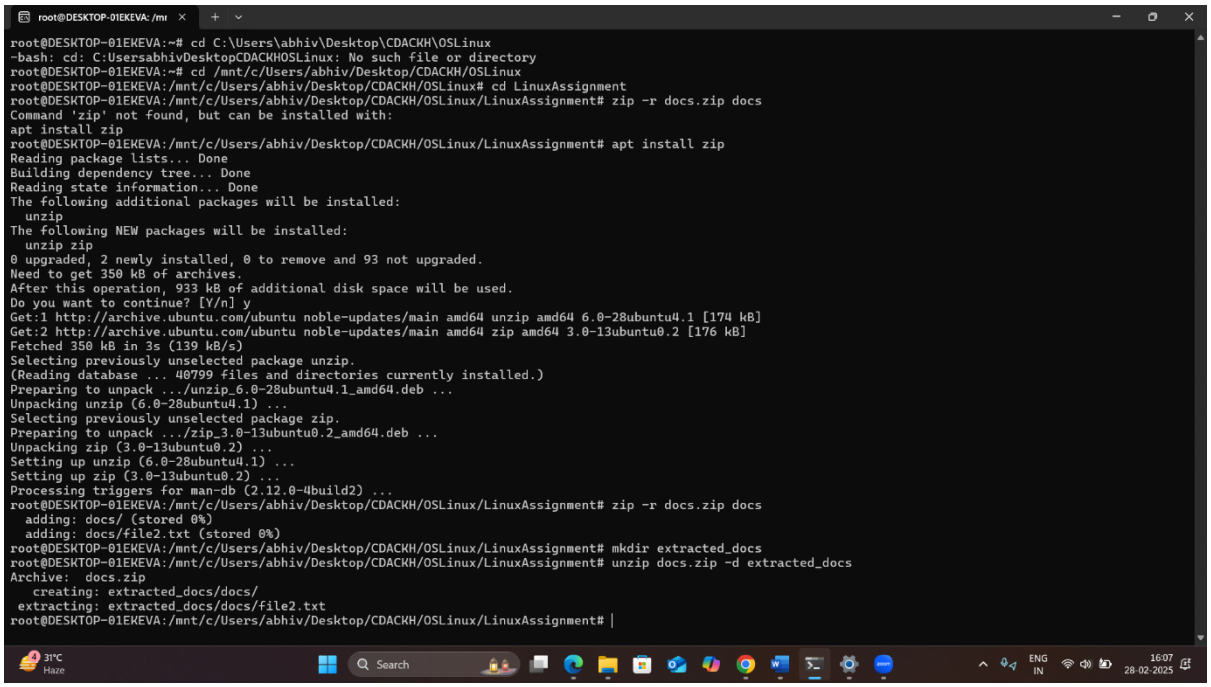
root@DESKTOP-01EKEVA:~/LinuxAssignment# date

Fri Feb 28 10:30:53 UTC 2025

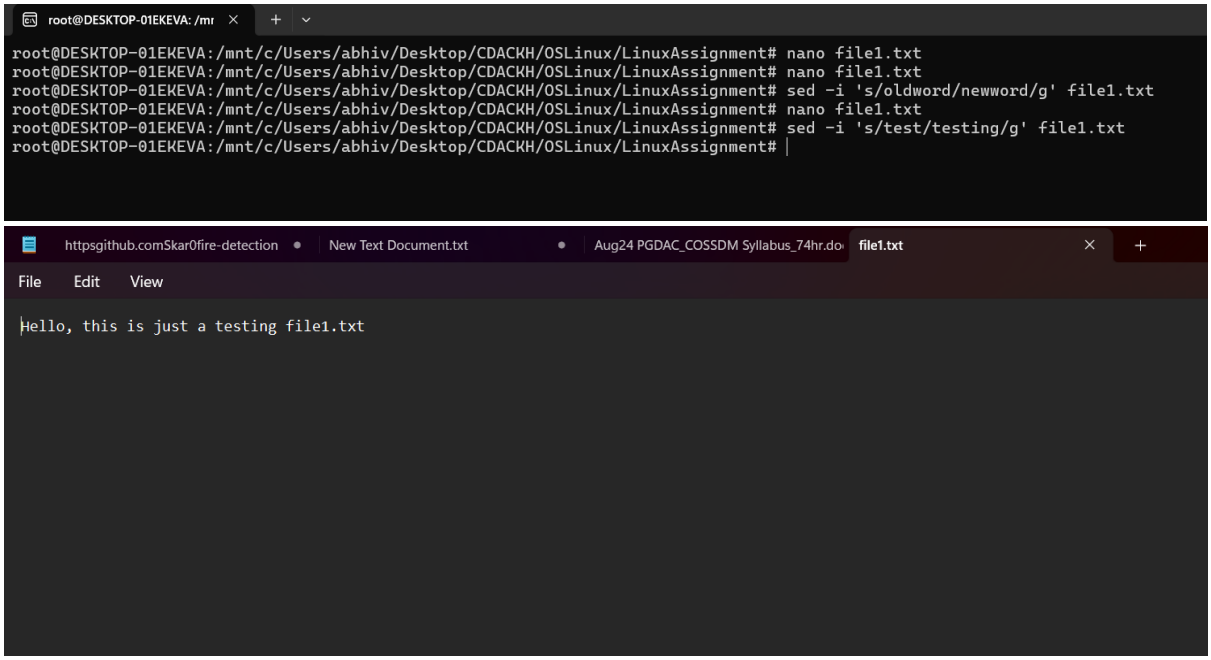
i) Networking: a. Display the IP address of the system. b. Ping a remote server to check connectivity (provide a remote server address to ping).



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

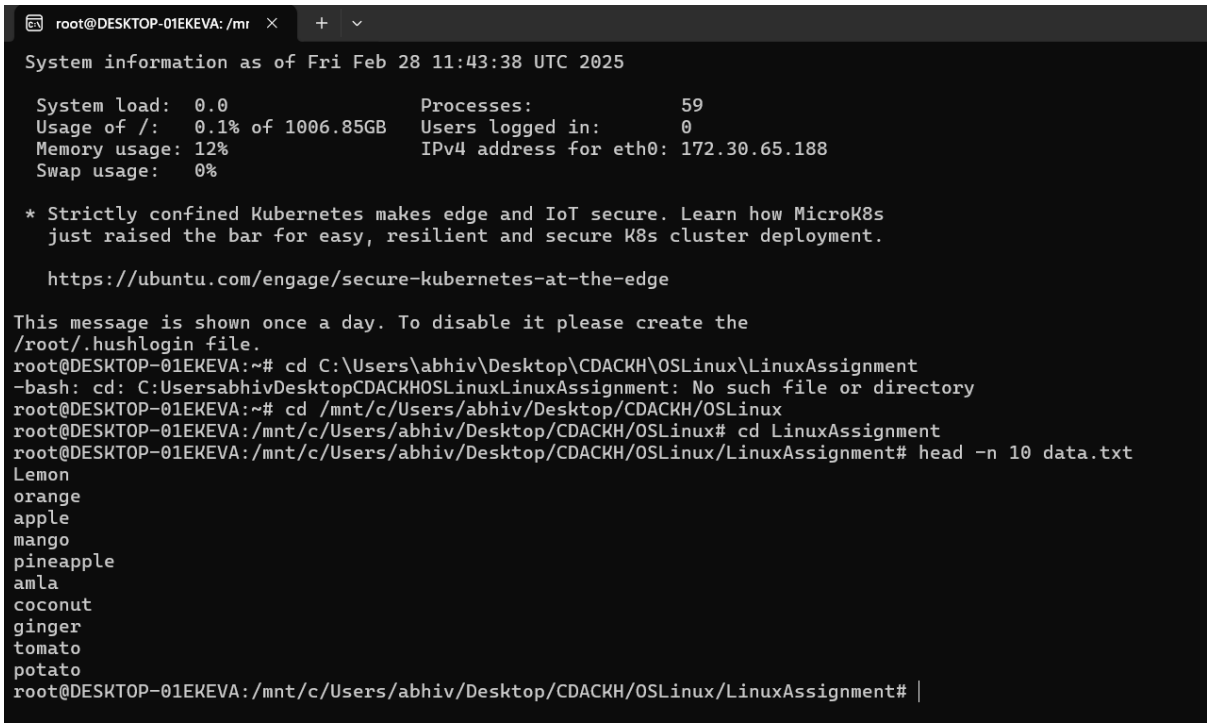


k) File Editing: a. Open the "file1.txt" file in a text editor and add some text to it. b. Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).

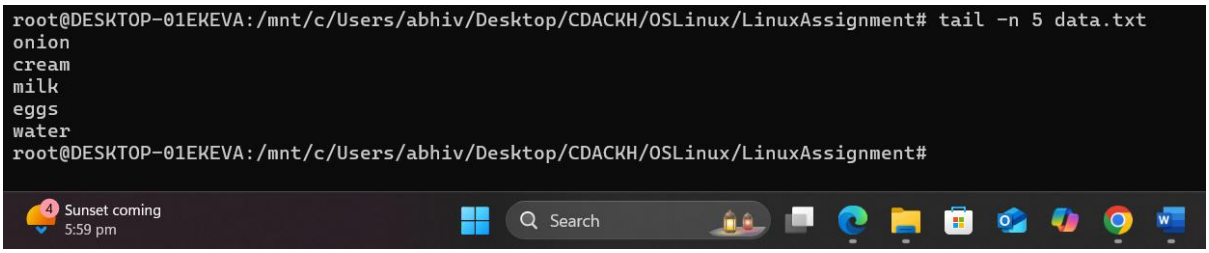


Problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

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.



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



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.

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

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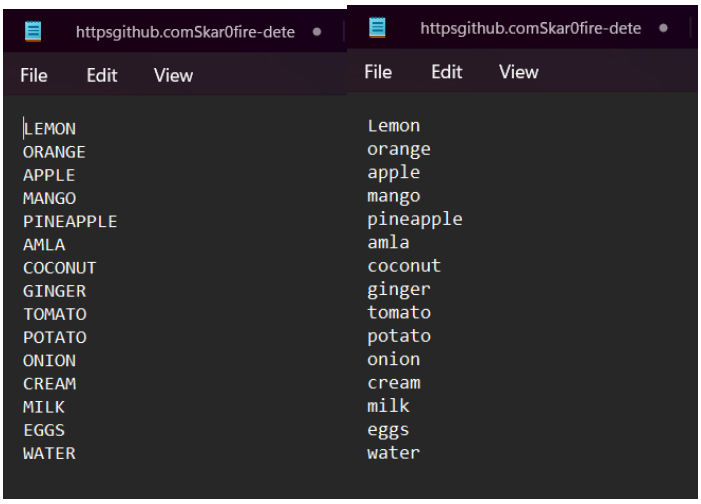
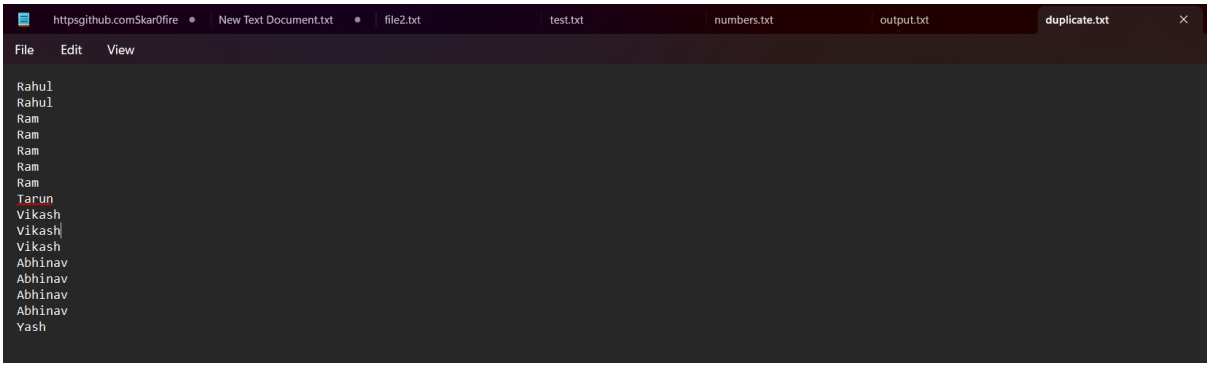
15
root@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment# tail -n 3 numbers.txt
13
14
15
```

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."
Command - tr 'a-z' 'A-Z' < input.txt > output.txt



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."

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root@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment# tr 'a-z' 'A-Z' < test.txt > output.txt
root@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment# sort duplicate.txt | uniq
Abhinav
Rahul
Ram
Tarun
Vikash
Yash
root@DESKTOP-01EKEVA:/mnt/c/Users/abhiv/Desktop/CDACKH/OSLinux/LinuxAssignment#
```

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."