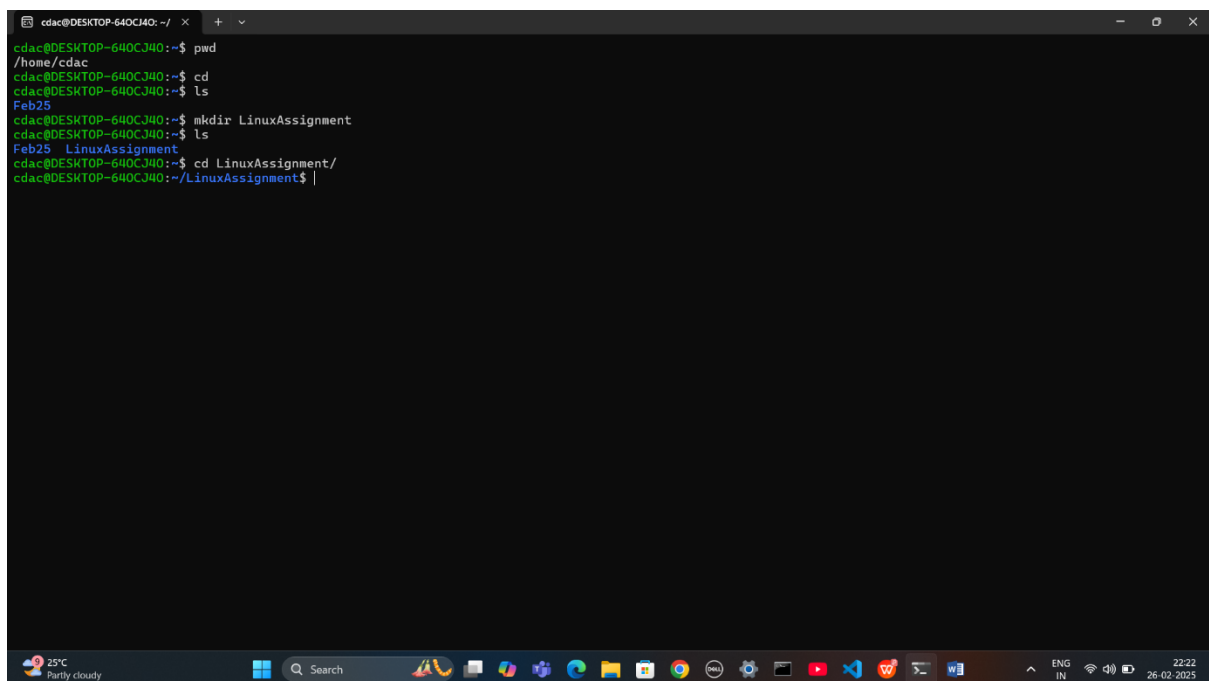


### a) Navigate and List:

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=

1. Use **Pwd** command to check the current directory.
2. Use **cd** to change the directory.
3. **ls** command is used to display the contents of a directory.
4. Now we want to create new directory use **mkdir** LinuxAssignment .
5. use **cd LinuxAssignment/** change to LinuxAssignment directory.



```
cdac@DESKTOP-640C340: ~/$ pwd
/home/cdac
cdac@DESKTOP-640C340:~/$ cd
cdac@DESKTOP-640C340:~/$ ls
Feb25
cdac@DESKTOP-640C340:~/$ mkdir LinuxAssignment
cdac@DESKTOP-640C340:~/$ ls
Feb25  LinuxAssignment
cdac@DESKTOP-640C340:~/$ cd LinuxAssignment/
cdac@DESKTOP-640C340:~/LinuxAssignment$ |
```

The screenshot shows a Windows terminal window with a dark background. The terminal displays a series of Linux commands and their outputs. The user starts in the home directory, checks the current directory with 'pwd', then changes to the home directory with 'cd'. They list the contents with 'ls', showing 'Feb25'. Then they create a new directory 'LinuxAssignment' with 'mkdir'. They list the contents again, showing 'Feb25' and 'LinuxAssignment'. Finally, they change to the 'LinuxAssignment' directory with 'cd LinuxAssignment/'. The terminal window has a title bar with the text 'cdac@DESKTOP-640C340: ~/' and standard Windows window controls. The Windows taskbar is visible at the bottom, showing the date and time as 22:22 on 26-02-2025.

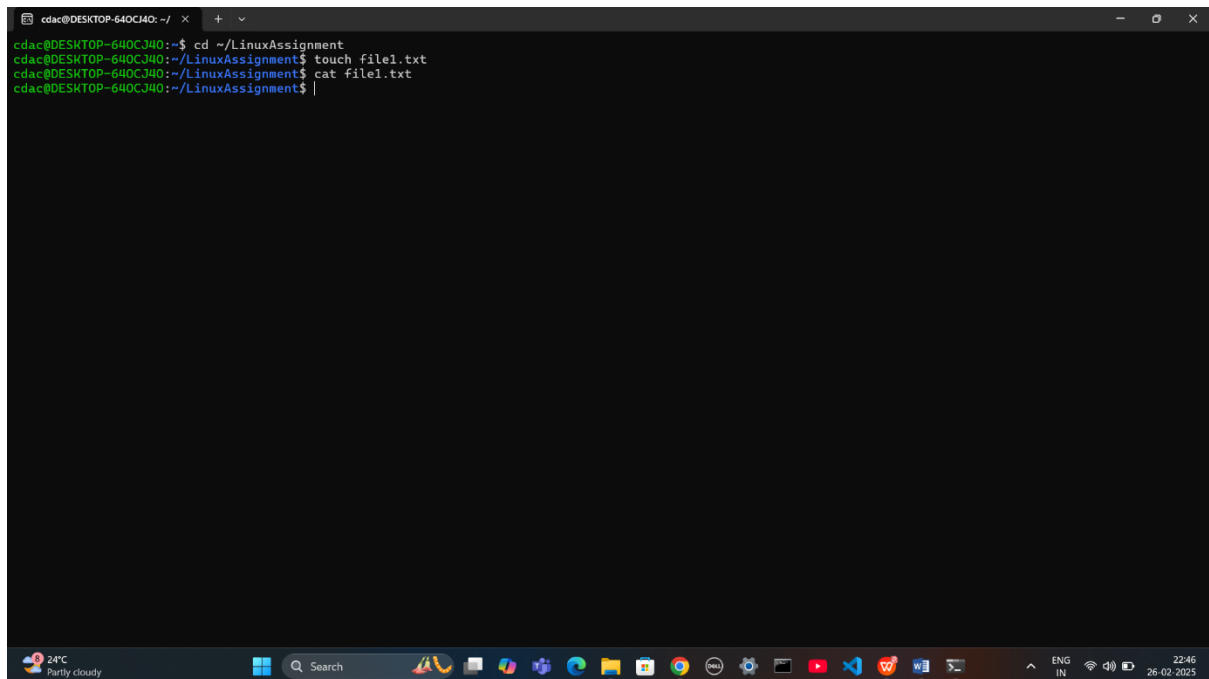
## 2. File Management:

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

Ans=

Go to first LinuxAssignment directory .

1. Use **cd ~/LinuxAssignment**
2. To create new file use **touch file1.txt**.
3. Use **cat file1.txt** to display its content.

A screenshot of a Windows terminal window with a dark background. The window title bar shows 'cdac@DESKTOP-640CJ40: ~/' and standard window controls. The terminal displays the following commands and their outputs:

```
cdac@DESKTOP-640CJ40:~$ cd ~/LinuxAssignment
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ cat file1.txt
cdac@DESKTOP-640CJ40:~/LinuxAssignment$
```

The terminal is currently at the prompt 'cdac@DESKTOP-640CJ40:~/LinuxAssignment\$'. The Windows taskbar is visible at the bottom, showing the Start button, a search bar, and various application icons. The system tray on the right indicates a temperature of 24°C, 'Partly cloudy' weather, and the date/time '22:46 26-02-2025'.

### c) Directory Management:

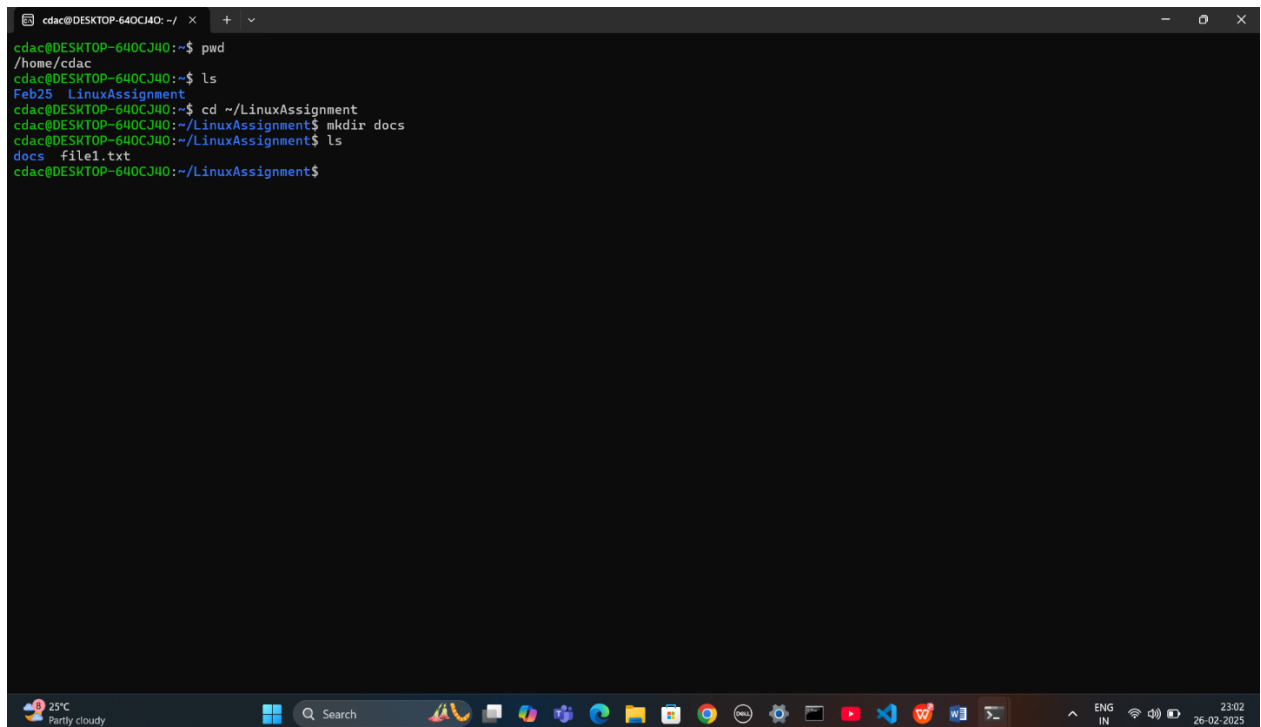
a. Create a new directory named "docs" inside the "LinuxAssignment" directory

ans=

go to the LinuxAssignment directory.

1. Use `cd ~/LinuxAssignment` directory.

2. use **mkdir docs** command it create the new directory.

A screenshot of a Windows terminal window with a dark background. The terminal shows a series of commands and their outputs. The user starts at the home directory, then navigates to the LinuxAssignment directory and creates a new subdirectory named 'docs'.

```
cdac@DESKTOP-640CJ40: ~ - [x] + [v]
cdac@DESKTOP-640CJ40:~$ pwd
/home/cdac
cdac@DESKTOP-640CJ40:~$ ls
Feb25 LinuxAssignment
cdac@DESKTOP-640CJ40:~$ cd ~/LinuxAssignment
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ mkdir docs
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ ls
docs file1.txt
cdac@DESKTOP-640CJ40:~/LinuxAssignment$
```

The terminal window has a title bar that reads "cdac@DESKTOP-640CJ40: ~ - [x] + [v]". The Windows taskbar is visible at the bottom, showing the date and time as 23:02 on 26-02-2025, along with various system icons and application shortcuts.

#### d) Copy and Move Files:

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

Ans=

1.To copy the file use the **cp** command.

**cp file1.txt docs/file2.txt**

file1.txt is file rename to file2.txt in the docs directory.

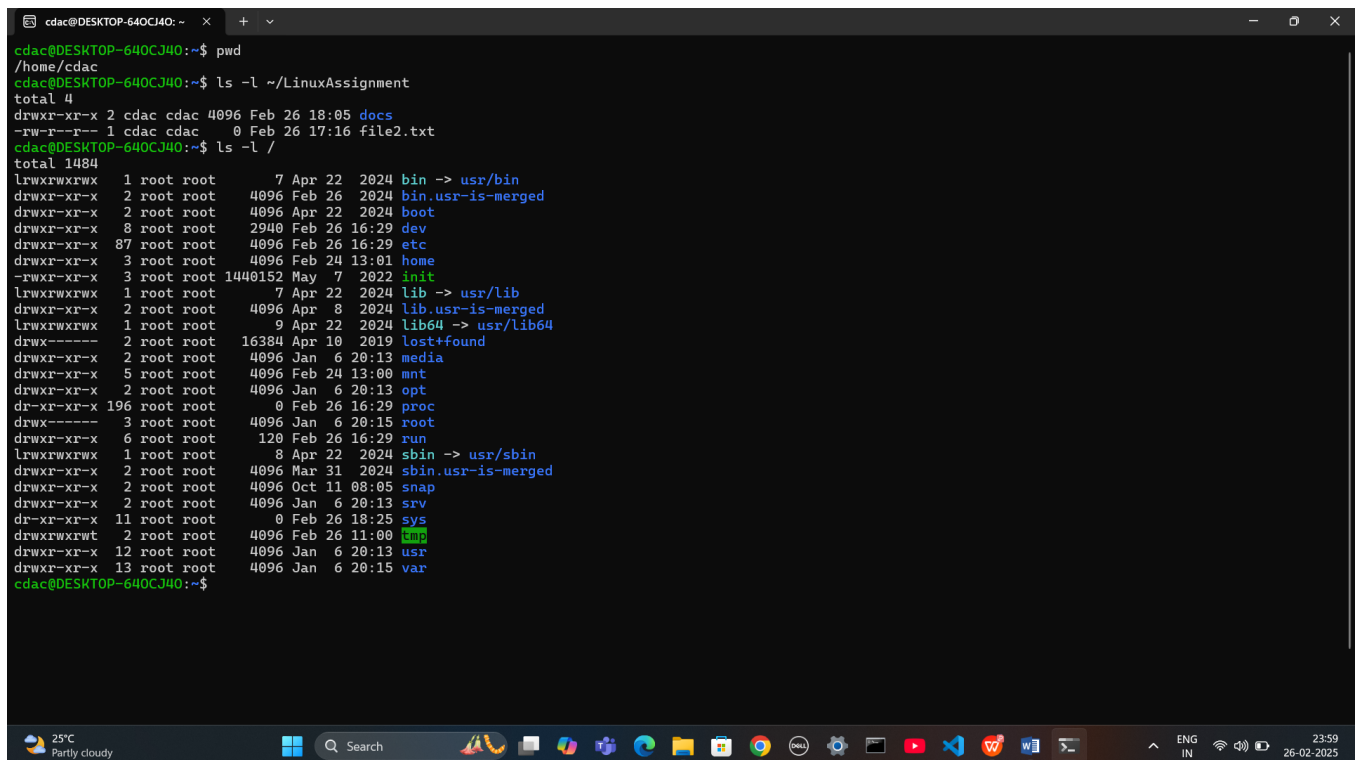
#### E)Final Checklist:

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

Ans=

1.use the **ls** command to see the content of LinuxAssignment directory.

2.use **ls -l ~/LinuxAssignment** show all the content of file which one is directory which one is file.



```
cdac@DESKTOP-640CJ40: ~$ pwd
/home/cdac
cdac@DESKTOP-640CJ40:~$ ls -l ~/LinuxAssignment
total 4
drwxr-xr-x 2 cdac cdac 4096 Feb 26 18:05 docs
-rw-r--r-- 1 cdac cdac   0 Feb 26 17:16 file2.txt
cdac@DESKTOP-640CJ40:~$ ls -l /
total 1484
lrwxrwxrwx 1 root root      7 Apr 22  2024 bin -> usr/bin
drwxr-xr-x 2 root root    4096 Feb 26  2024 bin.usr-is-merged
drwxr-xr-x 2 root root    4096 Apr 22  2024 boot
drwxr-xr-x 8 root root   2940 Feb 26  2024 dev
drwxr-xr-x 87 root root   4096 Feb 26  2024 etc
drwxr-xr-x 3 root root   4096 Feb 24  2024 home
-rwxr-xr-x 3 root root 1440152 May  7  2022 init
lrwxrwxrwx 1 root root      7 Apr 22  2024 lib -> usr/lib
drwxr-xr-x 2 root root    4096 Apr  8  2024 lib.usr-is-merged
lrwxrwxrwx 1 root root      9 Apr 22  2024 lib64 -> usr/lib64
drwx----- 2 root root   16384 Apr 10  2019 lost+found
drwxr-xr-x 2 root root    4096 Jan  6  20:13 media
drwxr-xr-x 5 root root    4096 Feb 24  2024 mnt
drwxr-xr-x 2 root root    4096 Jan  6  20:13 opt
dr-xr-xr-x 196 root root      0 Feb 26  2024 proc
drwx----- 3 root root    4096 Jan  6  20:15 root
drwx----- 6 root root    120 Feb 26  2024 run
lrwxrwxrwx 1 root root      8 Apr 22  2024 sbin -> usr/sbin
drwxr-xr-x 2 root root    4096 Mar 31  2024 sbin.usr-is-merged
drwxr-xr-x 2 root root    4096 Oct 11  08:05 snap
drwxr-xr-x 2 root root    4096 Jan  6  20:13 srv
dr-xr-xr-x 11 root root      0 Feb 26  2024 sys
drwxrwxrwt 2 root root    4096 Feb 26  11:00 tmp
drwxr-xr-x 12 root root    4096 Jan  6  20:13 usr
drwxr-xr-x 13 root root    4096 Jan  6  20:15 var
cdac@DESKTOP-640CJ40:~$
```

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= use pwd for checking the current directory

Use ls for display all the content.

1. **find** command is use for to search for files.
2. **.(dot)**is Searches in the current directory and its subdirectories.
3. **-type f:** Looks for files (not directories).
4. **-name "\*.txt"** is use for the finds files with the .txt extension.

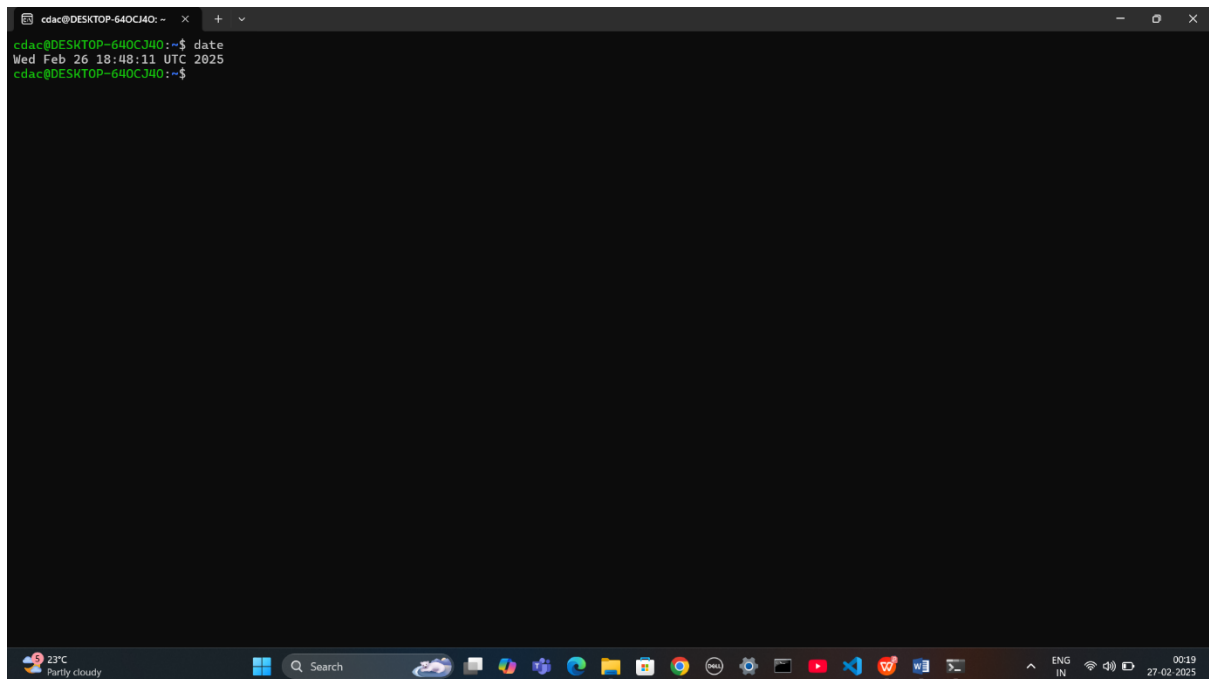
```
cdac@DESKTOP-640CJ40: ~  
cdac@DESKTOP-640CJ40:~$ pwd  
/home/cdac  
cdac@DESKTOP-640CJ40:~$ ls  
Feb25          data.txt  duplicate.txt  duplicate.txt  fruit.txt  numbers.txt  
LinuxAssignment data.txt  duplicat.txt   file100        input.txt  output.txt  
cdac@DESKTOP-640CJ40:~$ find . -type f -name "*.txt"  
./duplicate.txt  
./fruit.txt  
./data.txt  
./dulicate.txt  
./LinuxAssignment/docs/file1.txt  
./LinuxAssignment/docs/file2.txt  
./LinuxAssignment/file1.txt  
./LinuxAssignment/file2.txt  
./LinuxAssignment/new_docs/docs/file1.txt  
./LinuxAssignment/new_docs/docs/file2.txt  
./numbers.txt  
./output.txt  
./duplicat.txt  
./input.txt  
cdac@DESKTOP-640CJ40:~$ |
```

## h) System Information:

a. Display the current system date and time.

Ans= To check the system date and time use

1. Use **date** command it will show the current date and time of system.



```
cdac@DESKTOP-640CJ40: ~  
cdac@DESKTOP-640CJ40:~$ date  
Wed Feb 26 18:48:11 UTC 2025  
cdac@DESKTOP-640CJ40:~$
```

The screenshot shows a Windows terminal window with a dark background. The title bar indicates the user is 'cdac' on a desktop named 'DESKTOP-640CJ40'. The terminal shows the user entering the 'date' command, which returns 'Wed Feb 26 18:48:11 UTC 2025'. The Windows taskbar is visible at the bottom, showing the date as 27-02-2025 and time as 00:19.

## 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=

1. Use **hostname -I** to see the IP address of the system.
2. Use the **ping google.com** to check the connectivity of the server.

```
cdac@DESKTOP-640CJ40: ~$ hostname -I
172.23.115.36
cdac@DESKTOP-640CJ40:~$ ping google.com
PING google.com (142.250.183.14) 56(84) bytes of data:
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=1 ttl=58 time=27.1 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=2 ttl=58 time=26.8 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=3 ttl=58 time=28.7 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=4 ttl=58 time=30.5 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=5 ttl=58 time=26.3 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=6 ttl=58 time=27.0 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=7 ttl=58 time=30.0 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=8 ttl=58 time=29.7 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=9 ttl=58 time=27.9 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=10 ttl=58 time=28.8 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=11 ttl=58 time=41.3 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=12 ttl=58 time=29.2 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=13 ttl=58 time=29.6 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=14 ttl=58 time=25.8 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=15 ttl=58 time=29.9 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=16 ttl=58 time=28.9 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=17 ttl=58 time=30.0 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=18 ttl=58 time=28.7 ms
64 bytes from bom07s30-in-f14.1e100.net (142.250.183.14): icmp_seq=19 ttl=58 time=26.0 ms
^C
--- google.com ping statistics ---
19 packets transmitted, 19 received, 0% packet loss, time 1803ms
rtt min/avg/max/mdev = 25.787/29.048/41.269/3.215 ms
cdac@DESKTOP-640CJ40:~$
```

## j) File Compression:

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

Ans=

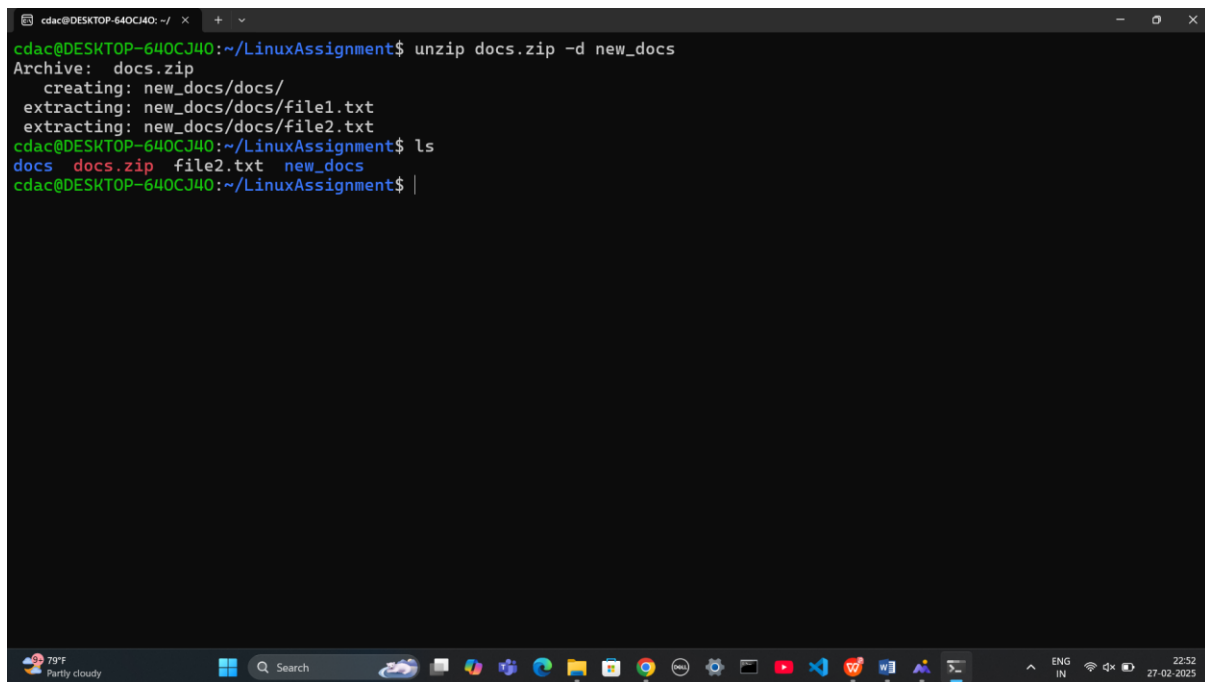
- use the `zip` → Command to create a zip file
- `-r` → Recursively includes all files and subdirectories
- `docs.zip` → Output zip file name
- `docs` → Directory to compress

```
cdac@DESKTOP-640CJ40: ~$ pwd
/home/cdac/LinuxAssignment
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ cd ~/LinuxAssignment
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ cat file2.txt
hello cdac Mumbai
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ zip -r docs.zip docs
updating: docs/ (stored 0%)
updating: docs/file1.txt (stored 0%)
updating: docs/file2.txt (stored 0%)
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ |
```

b. Extract the contents of the zip file into a new directory.

**Ans=**

1. Use the `docs.zip` to extract the file. Docs file extract
2. Use `-d new_docs` Extracts contents into `new_docs` directory.
3. Use the `unzip` command to extract files.

A screenshot of a Windows terminal window with a dark background. The window title bar shows 'cdac@DESKTOP-640CJ40: ~/' and standard window controls. The terminal text shows the execution of the 'unzip' command to extract 'docs.zip' into a 'new\_docs' directory. It lists the files being created and extracted: 'new\_docs/docs/' directory, 'new\_docs/docs/file1.txt', and 'new\_docs/docs/file2.txt'. After the extraction, the 'ls' command is run, showing the contents of the 'docs' directory: 'docs.zip', 'file2.txt', and 'new\_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 shows the date and time as 22:52 on 27-02-2025.

```
cdac@DESKTOP-640CJ40: ~/LinuxAssignment$ unzip docs.zip -d new_docs
Archive:  docs.zip
  creating: new_docs/docs/
  extracting: new_docs/docs/file1.txt
  extracting: new_docs/docs/file2.txt
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ ls
docs  docs.zip  file2.txt  new_docs
cdac@DESKTOP-640CJ40:~/LinuxAssignment$ |
```

#### 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=**

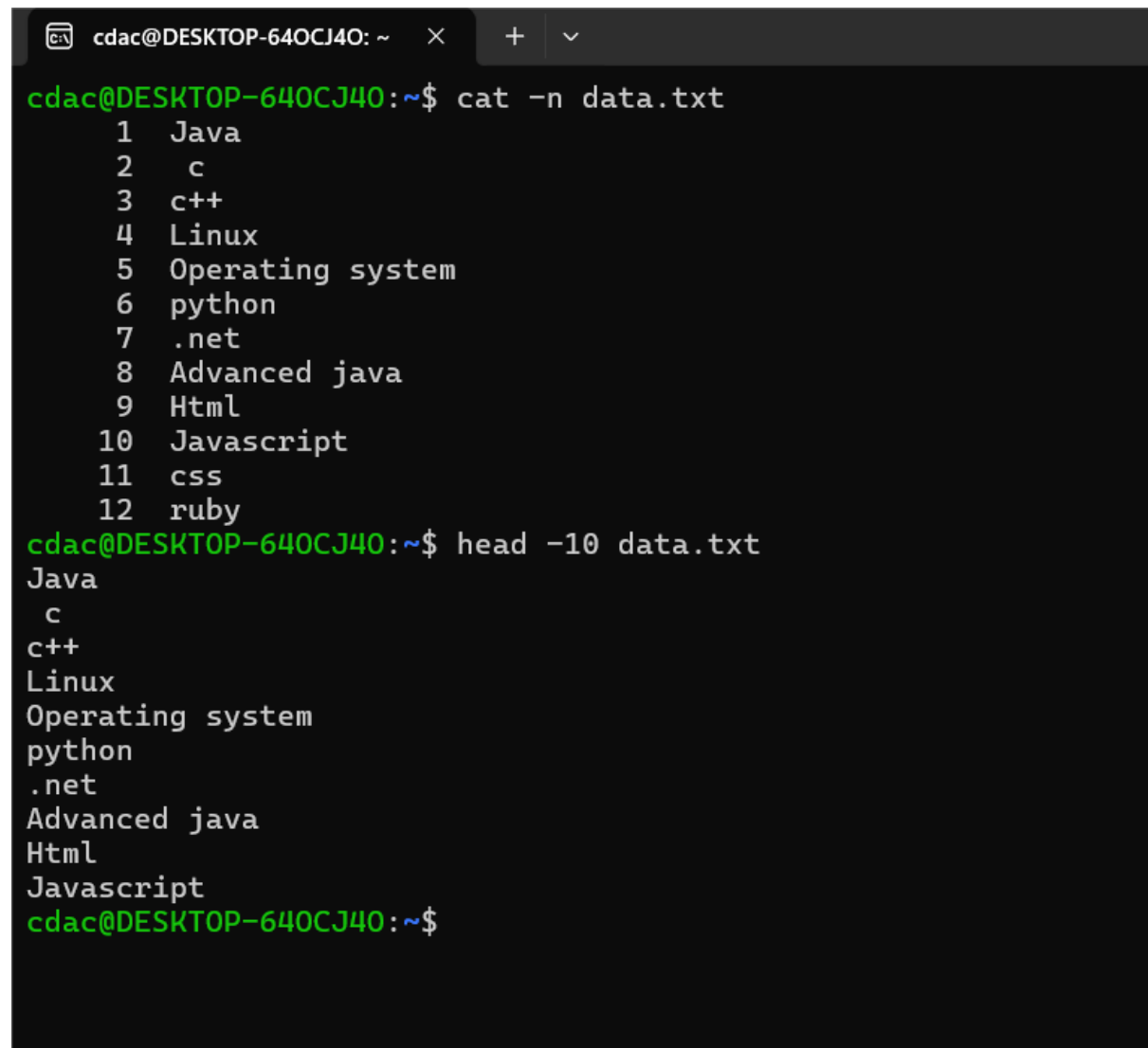


**problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.**

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=

For reading the first 10 line of the file use the **head -10 data.txt** command.it will read the first 10 line of the file.

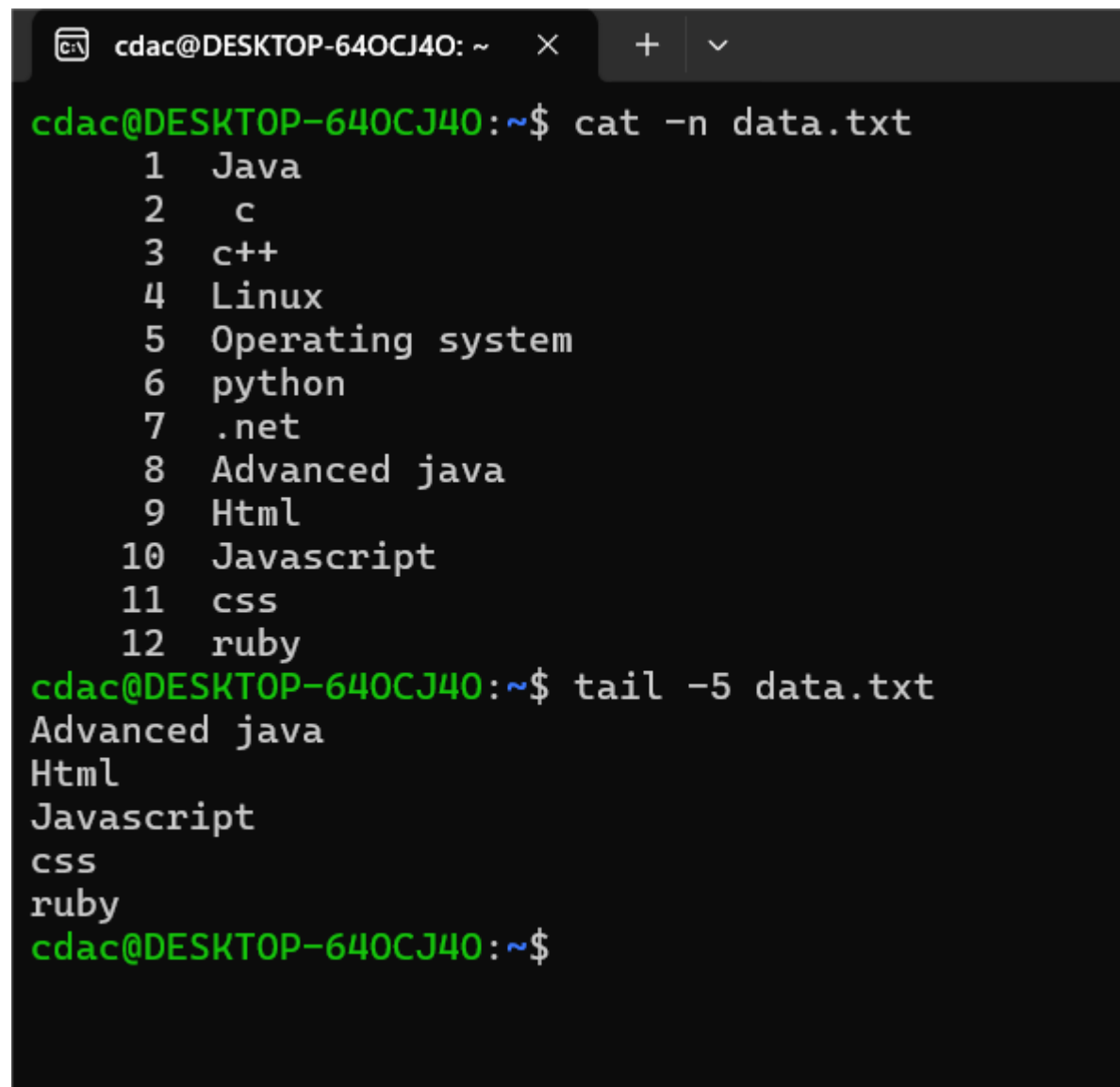
A terminal window with a dark background and light green text. The window title bar shows 'cdac@DESKTOP-640CJ40: ~' and standard window controls. The terminal shows two commands being executed. The first command is 'cat -n data.txt', which outputs a list of 12 programming languages and technologies, each preceded by a line number from 1 to 12. The second command is 'head -10 data.txt', which outputs the first 10 lines of the same list, without line numbers. The prompt 'cdac@DESKTOP-640CJ40:~\$' is visible at the end of each command line.

```
cdac@DESKTOP-640CJ40: ~ × + v
cdac@DESKTOP-640CJ40:~$ cat -n data.txt
 1 Java
 2 c
 3 c++
 4 Linux
 5 Operating system
 6 python
 7 .net
 8 Advanced java
 9 Html
10 Javascript
11 css
12 ruby
cdac@DESKTOP-640CJ40:~$ head -10 data.txt
Java
c
c++
Linux
Operating system
python
.net
Advanced java
Html
Javascript
cdac@DESKTOP-640CJ40:~$
```

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=

To display the last 5 line of the file **use the tail -5 data.txt.**

A terminal window with a dark background and light green text. The window title bar shows 'cdac@DESKTOP-640CJ40: ~' and standard window controls. The terminal shows the command 'cat -n data.txt' being executed, resulting in a numbered list of 12 items: Java, c, c++, Linux, Operating system, python, .net, Advanced java, Html, Javascript, css, and ruby. Below this, the command 'tail -5 data.txt' is executed, displaying the last five items of the list: Advanced java, Html, Javascript, css, and ruby. The prompt 'cdac@DESKTOP-640CJ40: ~\$' is visible at the end of the output.

```
cdac@DESKTOP-640CJ40: ~$ cat -n data.txt
 1  Java
 2   c
 3  c++
 4  Linux
 5  Operating system
 6  python
 7  .net
 8  Advanced java
 9  Html
10  Javascript
11  css
12  ruby
cdac@DESKTOP-640CJ40: ~$ tail -5 data.txt
Advanced java
Html
Javascript
css
ruby
cdac@DESKTOP-640CJ40: ~$
```

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=

1. First create file numbers.txt use the command **touch numbers.txt**
2. Use **cat numbers.txt** for read entire file.
3. To show the first 15 line of the file use **head -10 numbers.txt**.

```
cdac@DESKTOP-640CJ40: ~  
cdac@DESKTOP-640CJ40:~$ ls  
Feb25 LinuxAssignment data.txt data.txt file100 numbers.txt  
cdac@DESKTOP-640CJ40:~$ cat numbers.txt  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
cdac@DESKTOP-640CJ40:~$ head -15 numbers.txt  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
cdac@DESKTOP-640CJ40:~$ |
```

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

Ans=

Use the **tail -3 numbers.txt** it will show the last 3 line.

```
cdac@DESKTOP-640CJ40: ~  
cdac@DESKTOP-640CJ40:~$ cat numbers.txt  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
cdac@DESKTOP-640CJ40:~$ tail -3 numbers.txt  
16  
17  
18  
cdac@DESKTOP-640CJ40:~$ |
```

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=

- 1.create the file "input.txt" to create use command **touch input.txt**
2. use **nano input.txt** to write in that.
- 3.Use cat input.txt to read the file.
- 4.use **tr 'a-z' 'A-Z' < input.txt > output.txt** commad to convert the lower case letter into the Upper case letter
  - a. tr 'a-z' 'A-Z': converts lowercase letters to uppercase.
  - b. < input.txt: Reads input from input.txt.
  - c.>output.txt: Save the output.txt in that file.

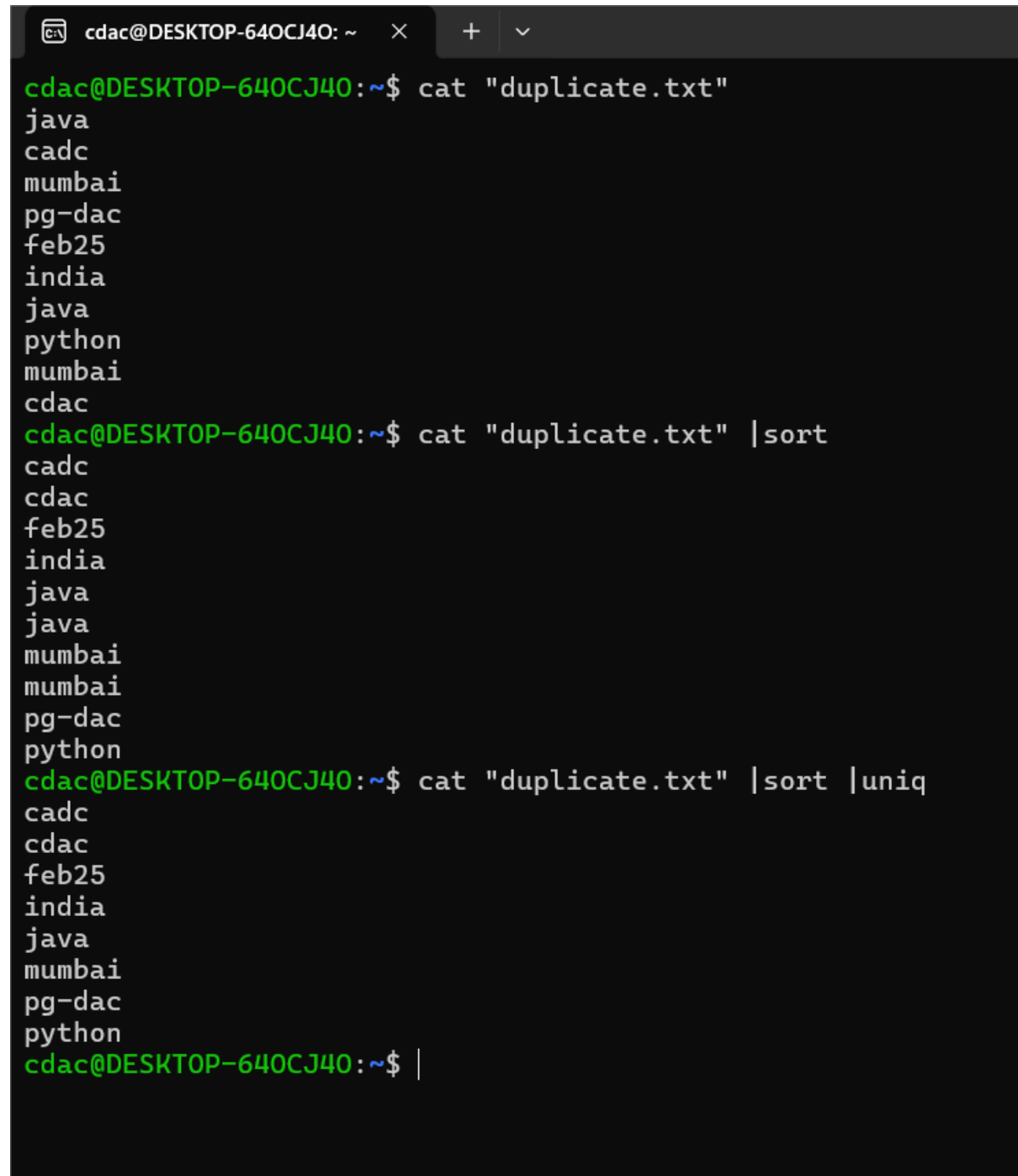
```
cdac@DESKTOP-640CJ40: ~  
cdac@DESKTOP-640CJ40:~$ touch input.txt  
cdac@DESKTOP-640CJ40:~$ nano input.txt  
cdac@DESKTOP-640CJ40:~$ cat input.txt  
Hello  
PG-DAC  
Feb25  
Mumbai  
cdac@DESKTOP-640CJ40:~$ tr 'a-z' 'A-Z' < input.txt  
HELLO  
PG-DAC  
FEB25  
MUMBAI  
cdac@DESKTOP-640CJ40:~$ cat input.txt  
Hello  
PG-DAC  
Feb25  
Mumbai  
cdac@DESKTOP-640CJ40:~$ tr 'a-z' 'A-Z' < input.txt > output.txt  
cdac@DESKTOP-640CJ40:~$ cat output.txt  
HELLO  
PG-DAC  
FEB25  
MUMBAI  
cdac@DESKTOP-640CJ40:~$ cat input.txt  
Hello  
PG-DAC  
Feb25  
Mumbai  
cdac@DESKTOP-640CJ40:~$ |
```

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=

1.create the "duplicate.txt" file use command touch "duplicate.txt"

2.Read that file using cat command and |sort .sort command is use for the sorting the element alphabetically we want a unique record then use cat "duplicate.txt" |sort |uniq.

A terminal window with a dark background and green text. The window title bar shows 'cdac@DESKTOP-640CJ40: ~' and standard window controls. The terminal shows the following sequence of commands and outputs:  
1. Command: `cat "duplicate.txt"`  
Output: `java`, `cadc`, `mumbai`, `pg-dac`, `feb25`, `india`, `java`, `python`, `mumbai`, `cdac`  
2. Command: `cat "duplicate.txt" |sort`  
Output: `cadc`, `cadc`, `feb25`, `india`, `java`, `java`, `mumbai`, `mumbai`, `pg-dac`, `python`  
3. Command: `cat "duplicate.txt" |sort |uniq`  
Output: `cadc`, `cadc`, `feb25`, `india`, `java`, `mumbai`, `pg-dac`, `python`  
The prompt `cdac@DESKTOP-640CJ40:~$` is visible at the end of the last command.

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=1. Create the file "fruit.txt" to create the file use command **touch "fruit.txt"**.

2. Use **nano "fruit.txt"** to write the fruits name in that.

3. Some fruits name are repeated in that file so first use the sort command

All the fruits sorted alphabetically.

4. Use the **uniq** command to repeated element remove from that.

5. Then use the **uniq -c** command to counts occurrences of each unique fruit.

cdac@DESKTOP-640CJ40: ~

```
cdac@DESKTOP-640CJ40:~$ nano "fruit.txt"
```

```
cdac@DESKTOP-640CJ40:~$
```

```
cdac@DESKTOP-640CJ40:~$ cat "fruit.txt"
```

```
Apple
Mango
Banana
lichi
Grapes
Apple
Mango
lichi
Apple
Mango
Banana
```

```
cdac@DESKTOP-640CJ40:~$ sort "fruit.txt"
```

```
Apple
Apple
Apple
Banana
Banana
Grapes
Mango
Mango
Mango
lichi
lichi
```

```
cdac@DESKTOP-640CJ40:~$ sort fruit.txt | uniq
```

```
Apple
Banana
Grapes
Mango
lichi
```

```
cdac@DESKTOP-640CJ40:~$ sort fruit.txt | uniq -c
```

```
1
3 Apple
2 Banana
1 Grapes
3 Mango
2 lichi
```

```
cdac@DESKTOP-640CJ40:~$ |
```