

- 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.

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment
cdac@DESKTOP-H1BLVT9:~$ mkdir LinuxAssignment
cdac@DESKTOP-H1BLVT9:~$ ls
LinuxAssignment
cdac@DESKTOP-H1BLVT9:~$ cd LinuxAssignment
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$
```

**b) File Management:**

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

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment
cdac@DESKTOP-H1BLVT9:~$ mkdir LinuxAssignment
cdac@DESKTOP-H1BLVT9:~$ ls
LinuxAssignment
cdac@DESKTOP-H1BLVT9:~$ cd LinuxAssignment
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ nano file1.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat file1.txt
Hello
VishalPawar
PG DAC
Kharghar
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$
```

**c) Directory Management:**

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

```
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ mkdir docs
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ ls docs
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cd docs
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$
```

**d) Copy and Move Files:**

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

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment/docs
docs file1.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ mv file1.txt docs | mv file1.txt file2.txt
mv: cannot stat 'file1.txt': No such file or directory
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ mv file1.txt docs
mv: cannot stat 'file1.txt': No such file or directory
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ ls
docs
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cd docs
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ls
file1.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ mv file1.txt file2.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ls
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.

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment/docs
file2.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ls-l
ls-l: command not found
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 34 Feb 28 14:17 file2.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ chown $(whoami) file2.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 34 Feb 28 14:17 file2.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ cd
```

**f) Final Checklist:**

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

```
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ cd ..  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ ls  
docs  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ find . -name "*.txt"  
./docs/file2.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).

```
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cd docs  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ nano file2.txt  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ y  
y: command not found  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ grep vishal file2.txt  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ cat file2.txt  
Hello  
VishalPawar  
PG DAC  
Kharghar  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ grep Hello file2.txt  
Hello
```

**h) System Information:**

- a. Display the current system date and time.

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment/docs  
Hello  
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ date  
Fri Feb 28 15:16:49 UTC 2025
```

## i) Networking:

### a. Display the IP address of the system.

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment/docs
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ifconfig
lo: flags=73<UP,LOOPBACK,RUNNING> mtu 1500
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0xfe<compat,link,site,host>
    loop (Local Loopback)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

wifio: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 192.168.1.4 netmask 255.255.255.0 broadcast 192.168.1.255
    inet6 fe80::4ff:cc19:83c6:2513 prefixlen 64 scopeid 0xfd<compat,link,site,host>
    ether ac:d1:b8:da:1f:21 (Ethernet)
    RX packets 0 bytes 0 (0.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 0 bytes 0 (0.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

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

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment/docs
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ping google.com
PING google.com (142.250.71.110) 56(84) bytes of data:
64 bytes from pnbomb-ad-in-f14.1e100.net (142.250.71.110): icmp_seq=1 ttl=58 time=8.22 ms
64 bytes from pnbomb-ad-in-f14.1e100.net (142.250.71.110): icmp_seq=2 ttl=58 time=14.5 ms
64 bytes from pnbomb-ad-in-f14.1e100.net (142.250.71.110): icmp_seq=3 ttl=58 time=7.49 ms
64 bytes from pnbomb-ad-in-f14.1e100.net (142.250.71.110): icmp_seq=4 ttl=58 time=7.62 ms
64 bytes from pnbomb-ad-in-f14.1e100.net (142.250.71.110): icmp_seq=5 ttl=58 time=8.62 ms
64 bytes from pnbomb-ad-in-f14.1e100.net (142.250.71.110): icmp_seq=6 ttl=58 time=7.85 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5006ms
rtt min/avg/max/mdev = 7.485/9.054/14.533/2.479 ms
```

**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).

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment/docs
rtt min/avg/max/mdev = 7.485/9.054/14.533/2.479 ms
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ nano file1.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ cat file1.txt
Hello
vishal
pgdac
nashik
monday
sunday
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ sed -i 's/Hello/Hii/g' file1.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ ^C
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ cat file1.txt
Hii
vishal
pgdac
nashik
monday
sunday
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ _
```

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

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment/docs$ cd ..
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ nano data.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat data.txt
Hello
Vishal
Pg Dac
Kharghar
Nashik
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Jan
Feb
Mar
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ nano data.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ xxxxxxxx
xxxxxxx: command not found
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ head -10 file2.txt
head: cannot open 'file2.txt' for reading: No such file or directory
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ head -10 data.txt
Hello
Vishal
Pg Dac
Kharghar
Nashik
Monday
Tuesday
Wednesday
Thursday
Friday
```

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

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment
Friday
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat data.txt
Hello
Vishal
Pg Dac
Kharghar
Nashik
Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday
Jan
Feb
Mar
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ tail -5 data.txt
Saturday
Sunday
Jan
Feb
Mar
```

- 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.

```
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ head -10 numbers.txt
1
2
3
4
5
6
7
8
9
10
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$
```



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

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ tail -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."

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment
Maharashtra
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ nano input1.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat input1.txt
hello
vishalpawar
pgdac
kharghar
nashik
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat input1.txt | tr '[:lower:]' '[:upper:]' > output.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat output.txt
HELLO
VISHALPAWAR
PGDAC
KHARGHAR
NASHIK
```

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."

```
cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ nano duplicate.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat duplicate.txt
hii
hii
vishal
vishal
PG DAC
pawar
pawar
Kharghar
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ sort duplicate.txt | uniq
Kharghar
PG DAC
hii
pawar
vishal
```

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."

 cdac@DESKTOP-H1BLVT9: ~/LinuxAssignment

```
vishal
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ nano fruit.txt
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ cat fruit.txt
apple
apple
mango
mango
mango
grapes
orange
orange
cdac@DESKTOP-H1BLVT9:~/LinuxAssignment$ sort fruit.txt | uniq -c
  2 apple
  1 grapes
  3 mango
  2 orange
```