Problem 1

a) Navigate and List
b) File Management
c) Directory Management
d) Copy and Move

```
cdac@SOHELKHAN: ~/LinuxA
cdac@SOHELKHAN:~$ mkdir LinuxAssignment
cdac@SOHELKHAN:~$ cd LinuxAssignment/
cdac@SOHELKHAN:~/LinuxAssignment$ touch file.txt
cdac@SOHELKHAN:~/LinuxAssignment$ nano file.txt
cdac@SOHELKHAN:~/LinuxAssignment$ cat file.txt
Navigate and List
File Management
Directory Management
Copy and Move File
Permissions and Ownership
cdac@SOHELKHAN:~/LinuxAssignment$ mkdir docs
cdac@SOHELKHAN:~/LinuxAssignment$ cd docs
cdac@SOHELKHAN:~/LinuxAssignment/docs$ cp ../file.txt ./file2.txt
cdac@SOHELKHAN:~/LinuxAssignment/docs$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 100 Feb 27 18:07 file2.txt
cdac@SOHELKHAN:~/LinuxAssignment/docs$ cat file2.txt
Navigate and List
File Management
Directory Management
Copy and Move File
Permissions and Ownership
cdac@SOHELKHAN:~/LinuxAssignment/docs$
```

e) Permissions and Ownership
f) Final Checklist

```
cdac@SOHELKHAN:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@SOHELKHAN:~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 cdac cdac 100 Feb 27 18:07 file2.txt
cdac@SOHELKHAN:~/LinuxAssignment/docs$ echo $USER
cdac
cdac@SOHELKHAN:~/LinuxAssignment/docs$ whoami
cdac
cdac@SOHELKHAN:~/LinuxAssignment/docs$ chown $USER file2.txt
cdac@SOHELKHAN:~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 cdac cdac 100 Feb 27 18:07 file2.txt
cdac@SOHELKHAN:~/LinuxAssignment/docs$ cd ..
cdac@SOHELKHAN:~/LinuxAssignment$ ls -l
total 8
drwxr-xr-x 2 cdac cdac 4096 Feb 27 18:07 docs
-rw-r--r-- 1 cdac cdac  100 Feb 27 18:00 file.txt
cdac@SOHELKHAN:~/LinuxAssignment$ cd ..
cdac@SOHELKHAN:~$ ls -l
total 4
drwxr-xr-x 3 cdac cdac 4096 Feb 27 18:02 LinuxAssignment
cdac@SOHELKHAN:~$
```

g) File Searching

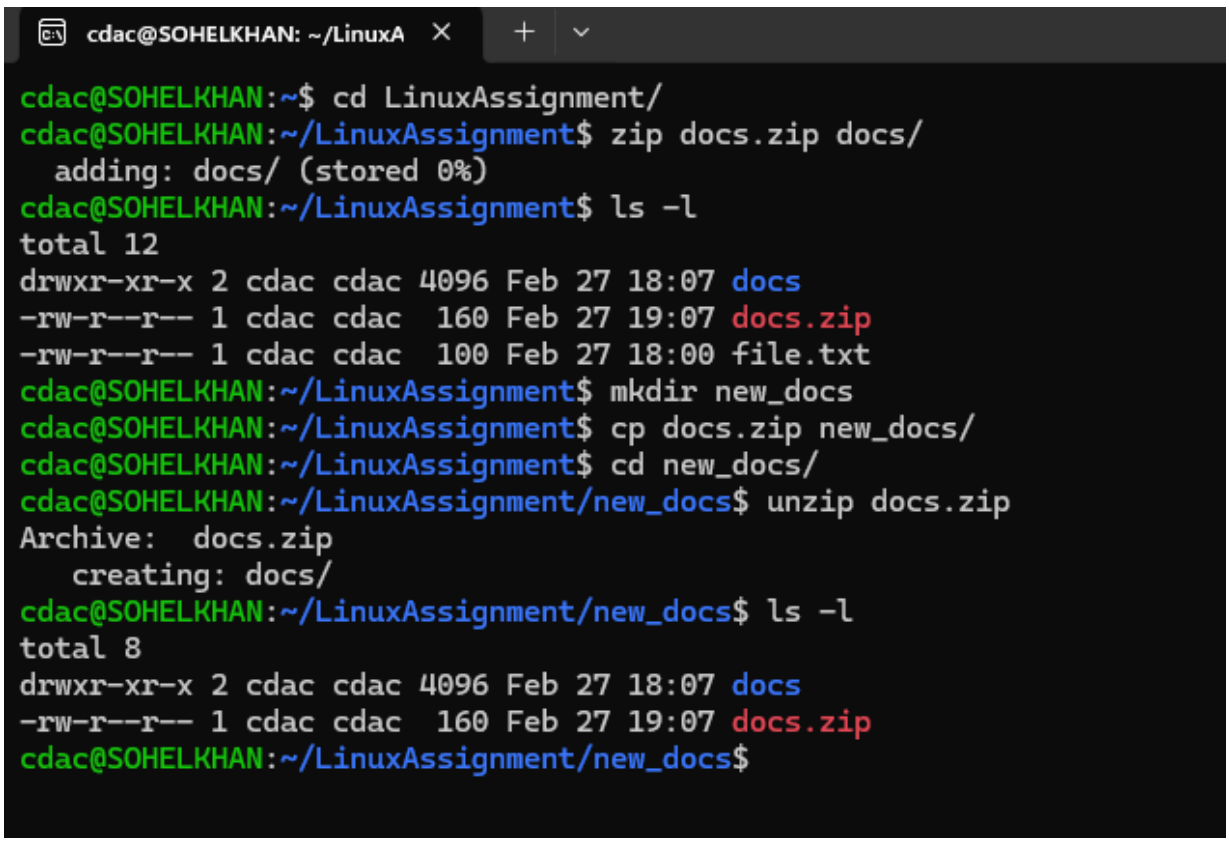
```
cdac@SOHELKHAN:~$ find . -name "*.txt"
./LinuxAssignment/file.txt
./LinuxAssignment/docs/file2.txt
cdac@SOHELKHAN:~$ cat LinuxAssignment/docs/file2.txt
Navigate and List
File Management
Directory Management
Copy and Move File
Permissions and Ownership
cdac@SOHELKHAN:~$ grep "Move" LinuxAssignment/docs/file2.txt
Copy and Move File
cdac@SOHELKHAN:~$
```

h) System Information

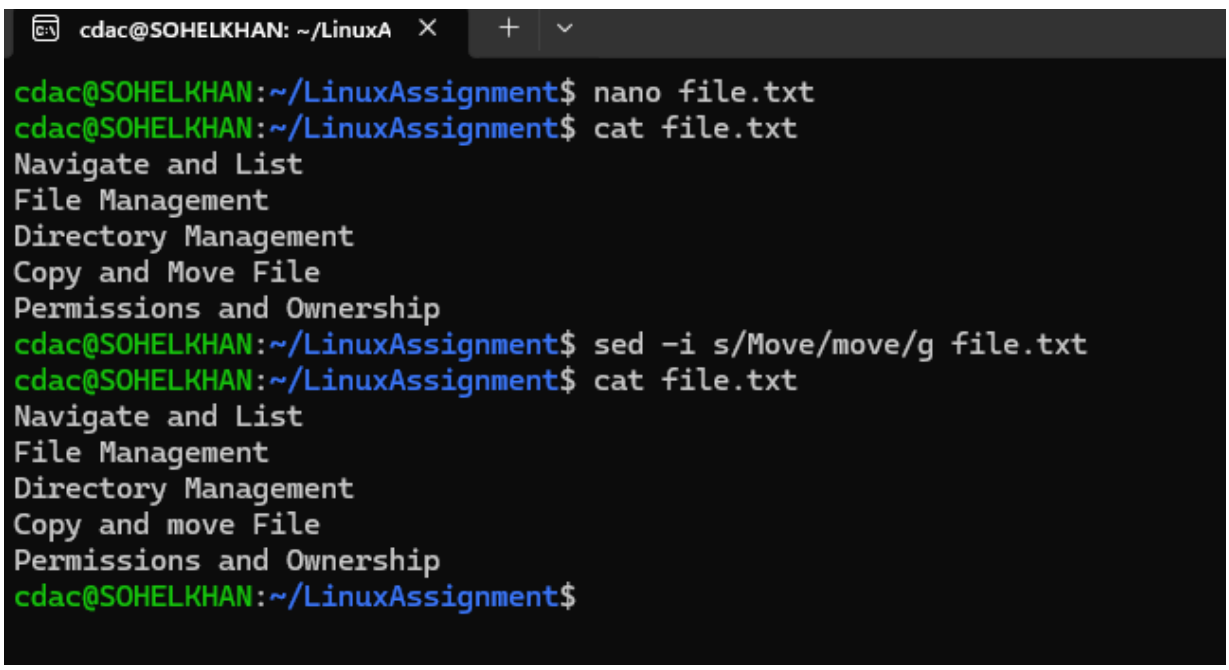
i) Networking

```
cdac@SOHELKHAN:~$ date
Thu Feb 27 18:44:55 UTC 2025
cdac@SOHELKHAN:~$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.22.134.190  netmask 255.255.240.0  broadcast 172.22.143.255
        inet6 fe80::215:5dff:fec0:8453  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:c0:84:53  txqueuelen 1000  (Ethernet)
        RX packets 8896  bytes 4651873 (4.6 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 3684  bytes 251900 (251.9 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (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

cdac@SOHELKHAN:~$ ping google.com
PING google.com (142.250.199.174) 56(84) bytes of data.
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=1 ttl=58 time=12.3 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=2 ttl=58 time=10.8 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=3 ttl=58 time=10.0 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=4 ttl=58 time=10.7 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=5 ttl=58 time=11.3 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=6 ttl=58 time=10.4 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=7 ttl=58 time=10.6 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=8 ttl=58 time=10.1 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=9 ttl=58 time=10.2 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=10 ttl=58 time=10.5 ms
64 bytes from bom07s37-in-f14.1e100.net (142.250.199.174): icmp_seq=11 ttl=58 time=10.2 ms
^C
--- google.com ping statistics ---
11 packets transmitted, 11 received, 0% packet loss, time 10033ms
rtt min/avg/max/mdev = 10.046/10.673/12.344/0.636 ms
cdac@SOHELKHAN:~$
```

j) File Compression



k) File Editing



Problem 2

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.

head data.txt

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

tail -n 5 data.txt

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.

head -n 15 numbers.txt

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

tail -n 3 numbers.txt

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."

cat input.txt |tr [:lower:][:upper:] > 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."

uniq duplicate.txt

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."

uniq -c fruit.txt