

### 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.

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

cdac@DESKTOP-8ES0JS4:~$ mkdir LinuxAssignment
cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

### b) File Management:

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

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

cdac@DESKTOP-8ES0JS4:~$ mkdir LinuxAssignment
cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat file1.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

### c) Directory Management:

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

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

### d) Copy and Move Files:

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

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat file1.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cp file1.txt docs
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ mv file2.txt
mv: missing destination file operand after 'file2.txt'
Try 'mv --help' for more information.
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ mv file1.txt file2.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ls
docs  file2.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$
```

### 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-8ES0JS4: ~/L × + v
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ls
docs  file2.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ chmod 722 file.txt
chmod: cannot access 'file.txt': No such file or directory
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ chmod 722 docs
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ chmod 722 file2.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ls
docs  file2.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$
```

### 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-8ES0JS4: ~/L × + v
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ls
docs  file2.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

**g) File Searching:**

- a. Search for all files with the extension ".txt" in the current directory and its subdirectories.

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ find */ -name "*.txt"
abc.txt/
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

- b. Display lines containing a specific word in a file (provide a file name and the specific word to search).

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat file3.txt
Indore
Mumbai
Banglore
Chennai
Hyderabad
Bhopal
Ahmedabad
Pune
Kanpur
Surat
Vadodara
India
Pakistan

cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ grep "India" file3.txt
India
```

## h) System Information:

- a. Display the current system date and time.

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ date
Thu Feb 27 19:43:33 IST 2025
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

## i) Networking:

- a. Display the IP address of the system.

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ date
Thu Feb 27 19:43:33 IST 2025
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ip addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet 10.255.255.254/32 brd 10.255.255.254 scope global lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:15:5d:d4:cd:ca brd ff:ff:ff:ff:ff:ff
    inet 172.26.27.226/20 brd 172.26.31.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fed4:cdca/64 scope link
        valid_lft forever preferred_lft forever
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ip -4 addr show
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet 10.255.255.254/32 brd 10.255.255.254 scope global lo
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    inet 172.26.27.226/20 brd 172.26.31.255 scope global eth0
        valid_lft forever preferred_lft forever
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

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

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ ping -c 3 comptia.org
PING comptia.org (104.18.35.29) 56(84) bytes of data.
64 bytes from 104.18.35.29 (104.18.35.29): icmp_seq=1 ttl=51 time=19.0 ms
64 bytes from 104.18.35.29 (104.18.35.29): icmp_seq=2 ttl=51 time=14.6 ms
64 bytes from 104.18.35.29 (104.18.35.29): icmp_seq=3 ttl=51 time=20.9 ms

--- comptia.org ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2095ms
rtt min/avg/max/mdev = 14.632/18.189/20.946/2.639 ms
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

**j) File Compression:**

- a. Compress the "docs" directory into a zip file.

```
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ zip -r docs.zip docs
adding: docs (stored 0%)
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$
```

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

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ unzip docs.zip -d abc.txt
Archive:  docs.zip
  extracting: abc.txt/docs
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

**k) File Editing:**

- a. Open the "file1.txt" file in a text editor and add some text to it.



A screenshot of a terminal window with a dark background. The window title bar shows 'cdac@DESKTOP-8E50JS4: ~/L' and a close button. The terminal content displays a list of names: 'Ram', 'shyam', 'geeta', 'sita', and 'krishna Namrata' on separate lines.

```
cdac@DESKTOP-8E50JS4: ~/L × + v  
Ram  
shyam  
geeta  
sita  
krishna Namrata
```

**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.

```
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ nano file3.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat file3.txt
Indore
Mumbai
Banglore
Chennai
Hyderabad
Bhopal
Ahmedabad
Pune
Kanpur
Surat
Vadodara
India
Pakistan

cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ head -10 file3.txt
Indore
Mumbai
Banglore
Chennai
Hyderabad
Bhopal
Ahmedabad
Pune
Kanpur
Surat
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

- b.



- 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-8ES0JS4: ~/L × + ∨  
cdac@DESKTOP-8ES0JS4:~$ cd LinuxAssignment  
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ nano file3.txt  
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat file3.txt  
Indore  
Mumbai  
Banglore  
Chennai  
Hyderabad  
Bhopal  
Ahmedabad  
Pune  
Kanpur  
Surat  
Vadodara  
India  
Pakistan  
  
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ tail -5 file3.txt  
Surat  
Vadodara  
India  
Pakistan  
  
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

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-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ head -15 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

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

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ tail -3 numbers.txt
16
17
18
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```

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."

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-8ES0JS4: ~/L × + ∨
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ nano duplicate.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat duplicate.txt
Ram
Sita
Geeta
Krishna
Lata
Aayush
Sarthak

cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ sort duplicate.txt ! uniq
sort: cannot read: '!': No such file or directory
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat duplicate.txt!sort!uniq
-bash: !sort!uniq: event not found
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat duplicate.txt|sort|uniq

Aayush
Geeta
Krishna
Lata
Ram
Sarthak
Sita
```

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

```
cdac@DESKTOP-8ES0JS4: ~/L × + v
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ nano fruit.txt
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ cat fruit.txt
Apple
Mango
Orangle
Banana
Banana
Grapes
Apple
Guava
Guava
Apple
Orangge
Mango
Mango
Orange
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ sort fruit.txt | uniq -c
      3 Apple
      2 Banana
      1 Grapes
      2 Guava
      3 Mango
      1 Orange
      1 Orangge
      1 Orangle
cdac@DESKTOP-8ES0JS4:~/LinuxAssignment$ |
```