Problem 1: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

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.

```
This message is shown once a day. To disable it please create the
/home/cdac/.hushlogin file.
cdac@HP:~$ pwd
/home/cdac
cdac@HP:~$ cd
cdac@HP:~$ ls
dac25
cdac@HP:~$ mkdir LinuxAssignment
cdac@HP:~$ ls
LinuxAssignment  dac25
cdac@HP:~$ cd LinuxAssignment/
cdac@HP:~/LinuxAssignment$
```

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

```
cdac@HP:~$ ls
LinuxAssignment  dac25
cdac@HP:~$ cd LinuxAssignment/
cdac@HP:~/LinuxAssignment$ nano file1.txt
cdac@HP:~/LinuxAssignment$ cat file1.txt
Hello , This is my Assignment
Janhavi Nirmal
cdac@HP:~/LinuxAssignment$
```

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

```
cdac@HP:~/LinuxAssignment$ ls
docs  file1.txt
cdac@HP:~/LinuxAssignment$
```

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

```
cdac@HP:~$ cd LinuxAssignment/
cdac@HP:~/LinuxAssignment$ cp file1.txt docs/
cdac@HP:~/LinuxAssignment$ cd docs/
cdac@HP:~/LinuxAssignment/docs$ ls
file1.txt
cdac@HP:~/LinuxAssignment/docs$ cp file1.txt file2.txt docs/
cp: target 'docs/': No such file or directory
cdac@HP:~/LinuxAssignment/docs$ cp file1.txt  docs/
cp: cannot create regular file 'docs/': Not a directory
cdac@HP:~/LinuxAssignment/docs$ ls
file1.txt
cdac@HP:~/LinuxAssignment/docs$ mv file1.txt file2.txt
cdac@HP:~/LinuxAssignment/docs$ ls
file2.txt
cdac@HP:~/LinuxAssignment/docs$ |
```

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@HP:~/LinuxAssignment/docs$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 45 Feb 27 11:50 file2.txt
cdac@HP:~/LinuxAssignment/docs$ chmod 777
chmod: missing operand after '777'
Try 'chmod --help' for more information.
cdac@HP:~/LinuxAssignment/docs$ |
```

f) Final Checklist:

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

```
total 2456
drwxr-xr-x   22 root root      4096 Feb 27 15:30 .
drwxr-xr-x   22 root root      4096 Feb 27 15:30 ..
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   16 root root      3580 Feb 27 15:30 dev
drwxr-xr-x   88 root root      4096 Feb 27 15:30 etc
drwxr-xr-x    3 root root      4096 Feb 24 13:25 home
-rwxrwxrwx    1 root root   2424984 Feb 12 00:59 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 Feb 24 13:23 lost+found
drwxr-xr-x    2 root root      4096 Jan 23 15:57 media
drwxr-xr-x    5 root root      4096 Feb 24 13:24 mnt
drwxr-xr-x    2 root root      4096 Jan 23 15:57 opt
dr-xr-xr-x  236 root root         0 Feb 27 15:30 proc
drwx------    3 root root      4096 Jan 23 15:59 root
drwxr-xr-x   18 root root       540 Feb 27 15:30 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 Feb 24 13:24 snap
drwxr-xr-x    2 root root      4096 Jan 23 15:57 srv
dr-xr-xr-x   11 root root         0 Feb 27 15:30 sys
drwxrwxrwt   11 root root      4096 Feb 27 15:30 tmp
drwxr-xr-x   12 root root      4096 Jan 23 15:57 usr
drwxr-xr-x   13 root root      4096 Feb 24 13:24 var
cdac@HP:~/LinuxAssignment$
```

f) 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@HP:~/LinuxAssignment$ find . -name'*.txt'
find: unknown predicate `-name*.txt'
cdac@HP:~/LinuxAssignment$ find . -name '*.txt'
./docs/file2.txt
./file1.txt
cdac@HP:~/LinuxAssignment$
```

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

```
cdac@HP:~/LinuxAssignment$ date
Thu Feb 27 15:43:45 UTC 2025
cdac@HP:~/LinuxAssignment$
```

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

```
 64 bytes from pnbomb-ab-in-f14.1e100.net (142.250.70.78): icmp_seq=33 ttl=117 time=26.7 ms
 64 bytes from pnbomb-ab-in-f14.1e100.net (142.250.70.78): icmp_seq=34 ttl=117 time=23.1 ms
 64 bytes from pnbomb-ab-in-f14.1e100.net (142.250.70.78): icmp_seq=35 ttl=117 time=31.6 ms
 ^C
 --- google.com ping statistics ---
 35 packets transmitted, 35 received, 0% packet loss, time 33974ms
 rtt min/avg/max/mdev = 23.072/29.727/35.177/2.599 ms
 cdac@HP:~/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:08:4a:78 brd ff:ff:ff:ff:ff:ff
     inet 172.30.143.224/20 brd 172.30.143.255 scope global eth0
        valid_lft forever preferred_lft forever
     inet6 fe80::215:5dff:fe08:4a78/64 scope link
        valid_lft forever preferred_lft forever
 cdac@HP:~/LinuxAssignment$
```

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

```
cdac@HP:~/LinuxAssignment/docs$ nano file2.txt
cdac@HP:~/LinuxAssignment/docs$ nano file4.txt
cdac@HP:~/LinuxAssignment/docs$ zip -r file2.zip docs
        zip warning: name not matched: docs

zip error: Nothing to do! (try: zip -r file2.zip . -i docs)
cdac@HP:~/LinuxAssignment/docs$ zip -r file2.zip . -i docs
        zip warning: zip file empty
cdac@HP:~/LinuxAssignment/docs$
```

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@HP:~$ mkdir docs1
cdac@HP:~$ ls
LinuxAssignment  dac25  docs1
cdac@HP:~$ cd docs1
cdac@HP:~/docs1$ nano data.txt
cdac@HP:~/docs1$ cat data.txt
hello
my name is janhavi
i got addmission in cdac
1
2
3
4
5
6
7
8

cdac@HP:~/docs1$ head -10 data.txt
hello
my name is janhavi
i got addmission in cdac
1
2
3
4
5
6
7
```

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

```
cdac@HP:~/docs1$ nano data.txt
cdac@HP:~/docs1$ tail -5 data.txt
12
13
14
15

cdac@HP:~/docs1$
```

b. 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@HP:~/docs1$ head number.txt
1
2
3
4
5
6
7
8
9
10
```

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

```
cdac@HP:~/docs1$ tail -3 number.txt
13
14
15
cdac@HP:~/docs1$
```