Assignment 1

Problem 1: Read the instructions carefully and answer accordingly. If there isany 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 adirectory named "LinuxAssignment" if it exists; otherwise, create it.

```
cdac@LAPTOP-PVDF6M88: ~/LinuxAssignment
cdac@LAPTOP-PVDF6M88:~$ pwd
/home/cdac
cdac@LAPTOP-PVDF6M88:~$ ls
LinuxAssignment  dir2          file1.txt       file3.txt  input.txt    output.txt
dir1             duplicate.txt  file1.txt.save  fruit.txt  numbers.txt
cdac@LAPTOP-PVDF6M88:~$ cd LinuxAssignment
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$
```

b) File Management:

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

```
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ touch file1.txt
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ ls
docs  docs.zip  file1.txt  nredir
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ nano file1.txt
```

```
cdac@LAPTOP-PVDF6M88: ~/LinuxAssignment
  GNU nano 6.2                                                    file1.txt
This is file1.
```

c) Directory Management:

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

```
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ mkdir docs
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ ls
docs  file1.txt
```

d) Copy and Move Files:

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

```
docs  file1.txt
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ cp file1.txt docs
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ cd docs
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment/docs$ ls
file1.txt
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment/docs$ mv file1.txt file2.txt
cdac@LAPTOP-PVDF6M88:~/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" tothe current user.

```
-rw-r--r-- 1 cdac cdac 0 Aug 28 19:09 file2.txt
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment/docs$ chmod u+x file2.txt
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment/docs$ ls -l
total 0
-rwxr--r-- 1 cdac cdac 0 Aug 28 19:09 file2.txt
```

f) Final Checklist:
  a. Finally, list the contents of the "LinuxAssignment" directory and the root directory toensure that all operations were performed correctly.

```
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ ls -l
total 4
drwxr-xr-x 2 cdac cdac 4096 Aug 28 19:11 docs
-rw-r--r-- 1 cdac cdac    0 Aug 28 19:07 file1.txt
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ cd ..
cdac@LAPTOP-PVDF6M88:~$ pwd
/home/cdac
cdac@LAPTOP-PVDF6M88:~$ ls -l
total 24
drwxr-xr-x 3 cdac cdac 4096 Aug 28 19:07 LinuxAssignment
drwxr-xr-x 2 cdac cdac 4096 Aug 27 18:25 dir1
drwxr-xr-x 3 cdac cdac 4096 Aug 28 10:53 dir2
-rw-r--r-- 1 cdac cdac    9 Aug 27 18:26 file1.txt
-rw-r--r-- 1 cdac cdac   15 Aug 27 18:28 file1.txt.save
-rw-r--r-- 1 cdac cdac   24 Aug 28 10:51 file3.txt
cdac@LAPTOP-PVDF6M88:~$
```

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 specificword to search).

```
cdac@LAPTOP-PVDF6M88: ~
cdac@LAPTOP-PVDF6M88:~$ find . -name "*.txt"
./LinuxAssignment/docs/file2.txt
./LinuxAssignment/file1.txt
./file3.txt
./file1.txt
cdac@LAPTOP-PVDF6M88:~$
```

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

```
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ date
Thu Aug 29 20:56:50 IST 2024
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$
```

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).

```
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ hostname -i
127.0.1.1
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$
```

```
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ ping www.instagram.com
PING z-p42-instagram.c10r.instagram.com (163.70.144.174) 56(84) bytes of data.
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=1 ttl=54 time=56.8 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=2 ttl=54 time=5.19 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=3 ttl=54 time=15.7 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=4 ttl=54 time=4.46 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=5 ttl=54 time=5.50 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=6 ttl=54 time=4.21 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=7 ttl=54 time=4.22 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=8 ttl=54 time=5.89 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=9 ttl=54 time=7.62 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=10 ttl=54 time=7.65 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=11 ttl=54 time=4.60 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=12 ttl=54 time=6.79 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=13 ttl=54 time=6.03 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=14 ttl=54 time=4.45 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=15 ttl=54 time=3.91 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=16 ttl=54 time=4.74 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=17 ttl=54 time=2.90 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=18 ttl=54 time=4.49 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=19 ttl=54 time=6.34 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=20 ttl=54 time=7.56 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=21 ttl=54 time=4.34 ms
64 bytes from instagram-p42-shv-02-bom2.fbcdn.net (163.70.144.174): icmp_seq=22 ttl=54 time=3.51 ms
```

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@LAPTOP-PVDF6M88:~/LinuxAssignment$ zip docs.zip docs
  adding: docs/ (stored 0%)
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ ls
docs   docs.zip   file1.txt
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ mkdir nredir
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ unzip docs.zip -d nredir
Archive:   docs.zip
   creating: nredir/docs/
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ ls
docs   docs.zip   file1.txt   nredir
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment$ cd nredir
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment/nredir$ ls
docs
cdac@LAPTOP-PVDF6M88:~/LinuxAssignment/nredir$
```

a) 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 originalword and the word to replace it with).

Problem 2: Read the instructions carefully and answer accordingly. If there isany need to insert some data then do that as well.

   a. Suppose you have a file named "data.txt" containing important information. Display thefirst 10 lines of this file to quickly glance at its contents using a command.

```
cdac@LAPTOP-PVDF6M88: ~
  GNU nano 6.2                                                           file1.txt
Good morning
Good afternoon
Good evening
Cool
Good night
Juice
Fruits
Book
Pen
Paper
Laptop
Mouse
Keyboard
Charger
Hi
Hello
This is file1
```

```
cdac@LAPTOP-PVDF6M88:~$ head -10 file1.txt
Good morning
Good afternoon
Good evening
Cool
Good night
Juice
Fruits
Book
Pen
Paper
cdac@LAPTOP-PVDF6M88:~$
```

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

```
cdac@LAPTOP-PVDF6M88: ~
cdac@LAPTOP-PVDF6M88:~$ tail -5 file1.txt
Keyboard
Charger
Hi
Hello
This is file1
cdac@LAPTOP-PVDF6M88:~$
```

    a. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines ofthis file to analyze the initial data set.

```
cdac@LAPTOP-PVDF6M88: ~
  GNU nano 6.2                                                                    numbers.txt *
1
2
3
4
5
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
cdac@LAPTOP-PVDF6M88:~$ head -15 numbers.txt
1
2
3
4
5
5
6
7
8
9
10
11
12
13
14
cdac@LAPTOP-PVDF6M88:~$ 
```

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


```
cdac@LAPTOP-PVDF6M88: ~
(Ctrl+R) PTOP-PVDF6M88:~$ tail -3 numbers.txt
30
32
cdac@LAPTOP-PVDF6M88:~$
```

    a.   Imagine you have a file named "input.txt" with text content. Use a command to translateall lowercase letters to uppercase in "input.txt" and save the modified text in a new file named "output.txt."

a. 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."

a. In a file named "fruit.txt," there is a list of fruits, but some fruits are repeated. Use acommand to display each unique fruit along with the count of its occurrences in "fruit.txt."

```
cdac@LAPTOP-PVDF6M88: ~
cdac@LAPTOP-PVDF6M88:~$ uniq -c fruit.txt
      2 apple
      1 apple
      1 apple
      6 mango
      3 litchi
      2 grapes
      1
cdac@LAPTOP-PVDF6M88:~$ _
```