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@LAPTOP-CVPV6KG4:/home$ cd cdac
cdac@LAPTOP-CVPV6KG4:~$ ls
cdac@LAPTOP-CVPV6KG4:~$ mkdir LinuxAssignment
cdac@LAPTOP-CVPV6KG4:~$ pwd
/home/cdac
cdac@LAPTOP-CVPV6KG4:~$ ls
LinuxAssignment
cdac@LAPTOP-CVPV6KG4:~$
```

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

```
cdac@LAPTOP-CVPV6KG4:~$ touch file1.txt
cdac@LAPTOP-CVPV6KG4:~$ ls
LinuxAssignment  file1.txt
cdac@LAPTOP-CVPV6KG4:~$ cd LinuxAssignment
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ touch file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ vi file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ more file1.txt
Hello World!!!!

cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$
```

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

```
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ mkdir docs
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ ls
docs  file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$
```

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

```
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ cp file1.txt docs
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ cd docs
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ ls
file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ mv file1.txt file2.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ ls
file2.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ pwd
/home/cdac/LinuxAssignment/docs
cdac@LAPTOP-CVPV6KG4:~/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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 17 Aug 28 20:43 file2.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ chmod u+rwx file2.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 cdac cdac 17 Aug 28 20:43 file2.txt
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ cd ..
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ ls
docs  file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ cd docs
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ ls
file2.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ more file2.txt
Hello World!!!!

cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ pwd
/home/cdac/LinuxAssignment/docs
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ cd /
cdac@LAPTOP-CVPV6KG4:/$ ls
bin  boot  dev  etc  home  init  lib  lib32  lib64  libx32  lost+found  media  mnt  opt  proc  root  run  sbin  snap  srv  sys  tmp  usr  var
cdac@LAPTOP-CVPV6KG4:/$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment$ find -type f -name "*.txt"
./file5.txt
./docs/file2.txt
./file1.txt
./file2.txt
./file3.txt
./file4.txt
```

```
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ more file1.txt
Hello World!!!!
My name is Vaishnodevi Ghodake.
I am a computer engineer.
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ grep world file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ grep World file1.txt
Hello World!!!!
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ grep -i vaishnodevi
^C
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ grep -i vaishnodevi file1.txt
My name is Vaishnodevi Ghodake.
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$
```

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

```
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ date
Wed Aug 28 21:42:47 IST 2024
cdac@LAPTOP-CVPV6KG4:~/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).

j) 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-CVPV6KG4:~/LinuxAssignment$ zip docs.zip docs
  adding: docs/ (stored 0%)
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ ls
docs  docs.zip  file1.txt  file2.txt  file3.txt  file4.txt  file5.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ mkdir docs2
```

```
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ ls
docs  docs.zip  docs2  file1.txt  file2.txt  file3.txt  file4.txt  file5.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ unzip docs.zip -d docs2
Archive:  docs.zip
   creating: docs2/docs/
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ cd docs2
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs2$ ls
docs
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs2$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment$ more file1.txt
Hello World!!!!
My name is Vaishnodevi Ghodake.
I am a computer engineer.
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ sed -i 's/computer/Computer/g' file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ ls
docs  docs.zip  docs2  file1.txt  file2.txt  file3.txt  file4.txt  file5.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ more file1.txt
Hello World!!!!
My name is Vaishnodevi Ghodake.
I am a Computer engineer.
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ sed -i 's/engineer/Engineer/g' file1.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$ more file1.txt
Hello World!!!!
My name is Vaishnodevi Ghodake.
I am a Computer Engineer.
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ more data.txt
one
two
three
four
five
seven
eight
nine
ten
eleven
twelve


cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ head data.txt
one
two
three
four
five
seven
eight
nine
ten
eleven
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ tail -5 data.txt
eleven
twelve
thirteen
fourteen
fifteen
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ head -15 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$
```

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

```
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ tail -3 numbers.txt
18
19
20
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ tr 'a-z' 'A-Z' <input.txt>output.txt
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ more output.txt
VAISHNODEVI GHODAKE
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ more input.txt
vaishnodevi ghodake
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ uniq duplicate.txt
1
2
3
5
7
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ more duplicate.txt
1
1
2
3
5
5
7
7
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$
```

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@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ sort fruit.txt | uniq -c
      2 Banana
      4 apple
      1 grapes
      3 orange
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$ more fruit.txt
orange
orange
orange
Banana
Banana
grapes
apple
apple
apple
apple
cdac@LAPTOP-CVPV6KG4:~/LinuxAssignment/docs$
```