# 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.

**ANS**: FIRST make a command

**-Cd /home**

In home we will create the directory

**-Sudo mkdir LinxAssigment**

To checkk run this command

**-cd LinxAssigment**

```
cdac@Prakash:/$ cd /home
cdac@Prakash:/home$ ls -l
total 4
drwxr-x--- 4 cdac cdac 4096 Aug 29 08:55 cdac
cdac@Prakash:/home$ sudo mkdir LinxAssigment
cdac@Prakash:/home$ cd LinxAssigment
cdac@Prakash:/home/LinxAssigment$ nano file1.txt
```

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

**ANS:** for making file we will create a nano

**-Sudo nano file1.txt**

The file will open add our content i add here is the list of content

To display we will use "cat"

**-Sudo cat file1.txt**

```
cdac@Prakash:/home/LinxAssigment$ nano file1.txt
cdac@Prakash:/home/LinxAssigment$ ls -l
total 0
cdac@Prakash:/home/LinxAssigment$ sudo nano file1.txt
cdac@Prakash:/home/LinxAssigment$ sudo cat file1.txt
here is the list of content
```

**c) Directory Management:**

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

**Ans:for** Create a new directory named "docs" inside the "LinuxAssignment" directory. Inside LinuxAssignment

**-cd LinuxAssignment**

**-sudo mkdir docs**

```
he$?
cdac@Prakash:/home/LinxAssigment$ sudo mkdir docs
cdac@Prakash:/home/LinxAssigment$ cp ./file1.txt ./docs
```

**d) Copy and Move Files: a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".**
**Ans:**for copying the file we will use the **"cp"** command and rename we will use the **"mv "**command
**-sudo cp file1.txt ./docs**
For rename
**-sudo mv file1.txt file2.txt**

```
sudo] password for cdac:
ac@Prakash:/home/LinxAssigment$ cd docs



ac@Prakash:/home/LinxAssigment/docs$ sudo mv file2.txt file1.txt
ac@Prakash:/home/LinxAssigment/docs$ ls -l
tal 4
rwxr--r-- 1 root root 28 Aug 29 09:50 file1.txt
ac@Prakash:/home/LinxAssigment/docs$ sudo mv file1.txt file2.txt
ac@Prakash:/home/LinxAssigment/docs$ ls -l
tal 4
rwxr--r-- 1 root root 28 Aug 29 09:50 file2.txt
ac@Prakash:/home/LinxAssigment/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.**
**Ans:** For change the permissions of "file2.txt" to allow read, write, and execute permissions Use this command **"chmod"**
**-Sudo chmod u+rwx file2.txt**
For changing the owner
**-sudo chown user1 file2.txt**

```
dac@Prakash:/home/LinxAssigment/docs$ ls -l
otal 4
---r--r-- 1 root root 28    g 29 09:50 file2.txt
dac@Prakash:/home/LinxAssigment/docs$ sudo chmod u+rwx file2.txt
dac@Prakash:/home/LinxAssigment/docs$ ls -l
otal 4
rwxr--r-- 1 root root 28 Aug 29 09:50 file2.txt
dac@Prakash:/home/LinxAssigment/docs$
```

**g) File Searching:**
**a. Search for all files with the extension ".txt" in the current directory and its subdirectories.**
**ANS:**for all files with the extension ".txt" in the current directory and its subdirectories.
We will use the command

**-sudo find . -type f -name "*.txt"**
**.**: Refers to the current directory.
**-type f**: Specifies that you're looking for files.
**-name "*.txt"**: Matches files with the **.txt** extension.

```
cdac@Prakash:/home/LinxAssigment$ find . -type f -name "*.txt"
./file1.txt
./zipdir/docs/file2.txt
./docs/file2.txt
cdac@Prakash:/home/LinxAssigment$
```

**b. Display lines containing a specific word in a file (provide a filename and the specific word to search).**
**ANS:**for lines containing a specific word in a file
We will use the command
**-sudo grep "of" file1.txt**
Here 'of' our any content that we want to find and file name

```
add some text according to question
cdac@Prakash:/home/LinxAssigment$ grep "of" file1.txt
prakash is the list of content
cdac@Prakash:/home/LinxAssigment$
```

**h) System Information:**
**a. Display the current system date and time.**
**ANS:** the current system date and time using the command
**-sudo date**

```
dac@Prakash:/home/LinxAssigment$ date
hu Aug 29 13:36:22 IST 2024
```

**i) Networking:**
**a. Display the IP address of the system.**
**ANS** for IP Address
**-sudo ip addr**
Here **215:5dff:feb2:3093/64** is ip address

```
cdac@Prakash:/home/LinxAssigment$ ip addr
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:b2:30:93 brd ff:ff:ff:ff:ff:ff
    inet 192.168.124.183/20 brd 192.168.127.255 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:feb2:3093/64 scope link
       valid_lft forever preferred_lft forever
cdac@Prakash:/home/LinxAssigment$
```

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

**Ans:** ping server it will give same ip address as above because it is remote

**. j) File Compression:**
**a. Compress the "docs" directory into a zip file.**

**Ans :** Compress the "docs" directory into a zip file we use the command
**-Sudo zip -r docs.zip docs/**
Here **-r include the all the file present in the docs**
**Docs.zip is the name of the file**

```
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (stored 0%)
cdac@Prakash:/home/LinxAssigment$ cd docs
cdac@Prakash:/home/LinxAssigment/docs$ ls -l
total 4
-rwxr--r-- 1 root root 28 Aug 29 09:50 file2.txt
cdac@Prakash:/home/LinxAssigment/docs$ cd ..
cdac@Prakash:/home/LinxAssigment$ ls -l
total 12
drwxr-xr-x 2 root root 4096 Aug 29 09:56 docs
-rw-r--r-- 1 root root   28 Aug 29 09:46 file1.txt
-rw-r--r-- 1 root root  344 Aug 29 12:26 zipfile.zip
```

**b. Extract the contents of the zip file into a new directory.**
**ANS:** make a directory
**-Sudo mkdir zipdir**
Now extract all the file in the new directory command
**-Sudo unzip zipfile.zip -d ./zipdir**

**Here zipfile.zip** is the file name want to extract
**./zipdir i**s directory name its destination

```
cdac@Prakash:/home/LinxAssigment$ sudo mkdir zipdir
cdac@Prakash:/home/LinxAssigment$ cd zipdir
```

```
cdac@Prakash:/home/LinxAssigment$ sudo unzip zipfile.zip -d ./zipdir
Archive:  zipfile.zip
   creating: ./zipdir/docs/
 extracting: ./zipdir/docs/file2.txt
cdac@Prakash:/home/LinxAssigment$ cd zipdir
cdac@Prakash:/home/LinxAssigment/zipdir$ ls -l
total 4
drwxr-xr-x 2 root root 4096 Aug 29 09:56 docs
```

**k) File Editing:**

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

**Ans:**Nano command for open the file

**-sudo nano file1.txt**

```
cdac@Prakash:/home/LinxAssigment/zipdir$ cd ..
cdac@Prakash:/home/LinxAssigment$ nano file1.txt
cdac@Prakash:/home/LinxAssigment$ sudo nano file1.txt
cdac@Prakash:/home/LinxAssigment$ sudo cat file1.txt
here is the list of content
add some text according to question
```

**b. Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).**

**Ans:**Replace the words "Here" by "Prakash"

And display by command

**-sudo cat file1.txt**

```
cdac@Prakash:/home/LinxAssigment$ sudo nano file1.txt
cdac@Prakash:/home/LinxAssigment$ sudo cat file1.txt
prakash is the list of content
add some text according to question
```

# 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.**
**Ans:sudo head -10 data.txt**

```
cdac@Prakash:/home$ cd LinxAssigment
cdac@Prakash:/home/LinxAssigment$ sudo nano data.txt
[sudo] password for cdac:
cdac@Prakash:/home/LinxAssigment$ sudo head 10 data.txt
head: cannot open '10' for reading: No such file or directory
==> data.txt <==
hii
my
name
is
prakash
i
am
student
of
cdac
```

**b. Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.**
**Ans:sudo tail -5 data.txt**

```
cdac@Prakash:/home/LinxAssigment$ sudo tail -5 data.txt
is
os
just
completing the
assigment
```

**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.**
**Ans sudo head -15 number.txt**

```
cdac@Prakash:/home/LinxAssigment$ sudo head -15 number.txt
1 my
2 you
3 mcmc
4 mnndfj
5 mmbgdb
6 mxju
7 i dont
8 know
9 just
10 type
11 the
12 random
13 number
15 as
16 you
```

**d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".**
**Ans:sudo tails -3 numbers .txt**

```
cdac@Prakash:/home/LinxAssigment$ sudo tail -3 number.txt
16 you
17 think
18 hmmm
```

**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."**
**Ans:Sudo Sort -u duplicate.txt**
**Here -u means unique**

```
cdac@Prakash:/home/LinxAssigment$ sudo sort -u duplicate.txt
is
my
name
prakash
```

**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."**

**Ans sudo sort fruits.txt|uniq -c**

```
cdac@Prakash:/home/LinxAssigment$ sudo sort fruits.txt | uniq -c
      2 apples
      2 mango
      2 oranges
```