

# Assignment 1

## COS

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**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:**

Commands:

**pwd:** for navigating to your home directory

**ls:** list its contents

**mkdir LinuxAssignment:** create a directory LinuxAssignment.

**cd LinuxAssignment:** move into a directory named "LinuxAssignment" if it exists

```
cdac@DESKTOP-5UQ52PL: ~/LinuxAssignment
Windows Subsystem for Linux is now available in the Microsoft Store!
You can upgrade by running 'wsl.exe --update' or by visiting https://aka.ms/wslstorepage
Installing WSL from the Microsoft Store will give you the latest WSL updates, faster.
For more information please visit https://aka.ms/wslstoreinfo

cdac@DESKTOP-5UQ52PL:~$ pwd
/home/cdac
cdac@DESKTOP-5UQ52PL:~$ ls
SP  abc.txt  bash  mukta  nano.32.save  nano.57.save  os  sh3  xyz.txt  yzx.txt
cdac@DESKTOP-5UQ52PL:~$ mkdir LinuxAssignment
cdac@DESKTOP-5UQ52PL:~$ ls
LinuxAssignment  SP  abc.txt  bash  mukta  nano.32.save  nano.57.save  os  sh3  xyz.txt  yzx.txt
cdac@DESKTOP-5UQ52PL:~$ cd LinuxAssignment
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$
```

## b) File Management:

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

**ANS:**

Commands:

**touch file1.txt:** create a new file

**cat file1.txt:** display the content of given file.

```
cdac@DESKTOP-5UQ52PL: ~/LinuxAssignment
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ nano file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cat file1.txt
Hello My name is Mukta Wagh. I am from Pune. Thank you .
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$
```

### c) Directory Management:

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

**mkdir docs:** Create a new directory

```
cdac@DESKTOP-5UQ52PL: ~/LinuxAssignment
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ nano file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cat file1.txt
Hello My name is Mukta Wagh. I am from Pune. Thank you .
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ mkdir docs
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$
```

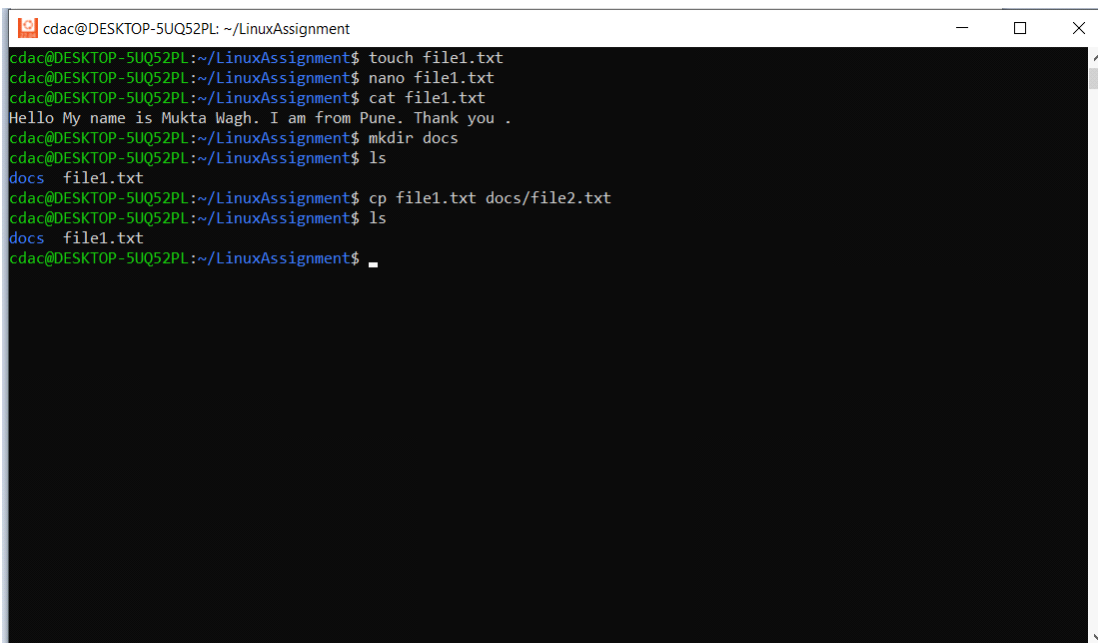
d) Copy and Move Files:

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

**ans:**

Command :

cp: for copy

A terminal window titled "cdac@DESKTOP-5UQ52PL: ~/LinuxAssignment" with standard window controls. The terminal shows the following commands and their outputs:

```
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ nano file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cat file1.txt
Hello My name is Mukta Wagh. I am from Pune. Thank you .
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ mkdir docs
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-5UQ52PL:~/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.

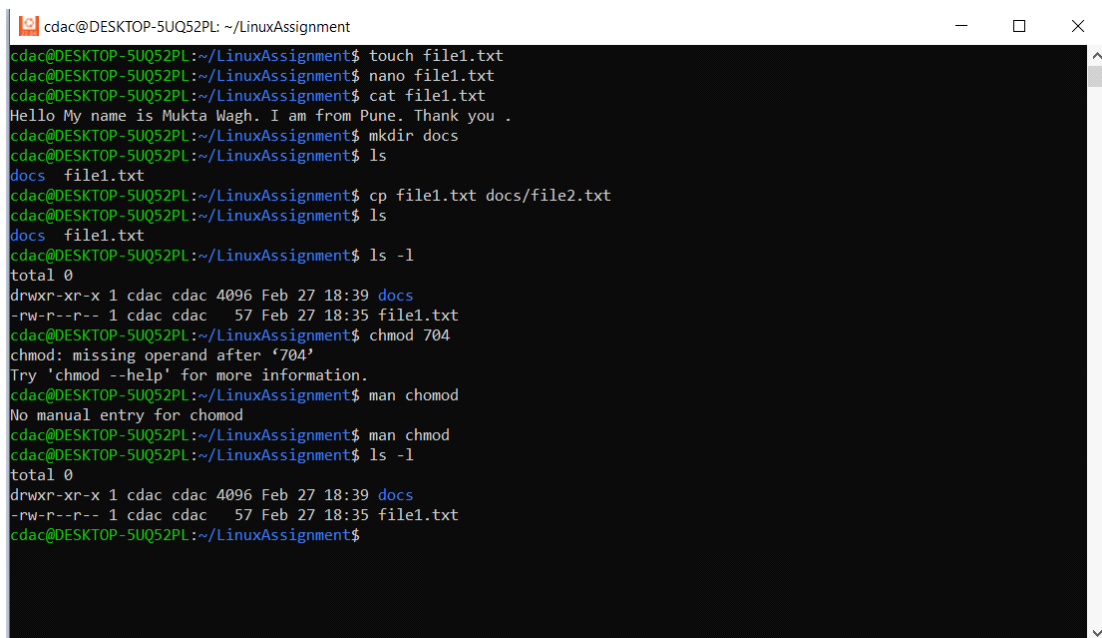
## f) Final Checklist:

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

ans:

command

**ls -l**



```
cdac@DESKTOP-5UQ52PL: ~/LinuxAssignment
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ nano file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cat file1.txt
Hello My name is Mukta Wagh. I am from Pune. Thank you .
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ mkdir docs
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls -l
total 0
drwxr-xr-x 1 cdac cdac 4096 Feb 27 18:39 docs
-rw-r--r-- 1 cdac cdac  57 Feb 27 18:35 file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ chmod 704
chmod: missing operand after '704'
Try 'chmod --help' for more information.
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ man chmod
No manual entry for chmod
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ man chmod
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls -l
total 0
drwxr-xr-x 1 cdac cdac 4096 Feb 27 18:39 docs
-rw-r--r-- 1 cdac cdac  57 Feb 27 18:35 file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$
```

## 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).

## h) System Information:

a. Display the current system date and time.

**ans:**

Command

**cal:** to display current month year

**date:** to display current data and time

```
cdac@DESKTOP-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ cal  
February 2025  
Su Mo Tu We Th Fr Sa  
1  
2 3 4 5 6 7 8  
9 10 11 12 13 14 15  
16 17 18 19 20 21 22  
23 24 25 26 27 28  
cdac@DESKTOP-5UQ52PL:~$ date  
Thu Feb 27 17:24:32 IST 2025  
cdac@DESKTOP-5UQ52PL:~$
```

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.

k) File Editing:

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

```
cdac@DESKTOP-5UQ52PL: ~/LinuxAssignment
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ touch file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ nano file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cat file1.txt
Hello My name is Mukta Wagh, I am from Pune. Thank you .
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ mkdir docs
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ cp file1.txt docs/file2.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ ls
docs  file1.txt
cdac@DESKTOP-5UQ52PL:~/LinuxAssignment$ _
```

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

**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.

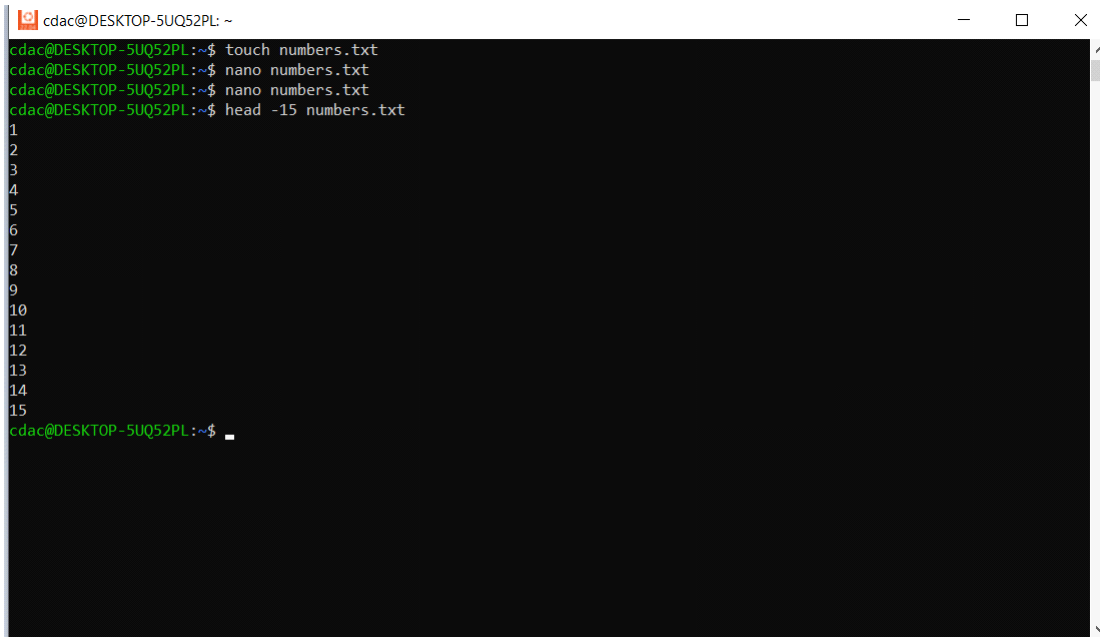
```
cdac@DESKTOP-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ touch data.txt  
cdac@DESKTOP-5UQ52PL:~$ nano data.txt  
cdac@DESKTOP-5UQ52PL:~$  
cdac@DESKTOP-5UQ52PL:~$ cat data.txt  
1)  
2)  
3)  
4)  
5)  
6)  
7)  
8)  
9)  
10)  
cdac@DESKTOP-5UQ52PL:~$
```

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-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ cat data.txt  
1)  
2)  
3)  
4)  
5)  
6)  
7)  
8)  
9)  
10)  
cdac@DESKTOP-5UQ52PL:~$ nano data.txt  
cdac@DESKTOP-5UQ52PL:~$ cat data.txt  
1)mukta  
2)suresh  
3>wagh  
4)seeta  
5)siddharth  
6)nikita  
7)prathmesh  
8)dnyanesh  
9)lucky  
10)dolly  
cdac@DESKTOP-5UQ52PL:~$ tail -5 data.txt  
6)nikita  
7)prathmesh  
8)dnyanesh  
9)lucky  
10)dolly  
cdac@DESKTOP-5UQ52PL:~$
```

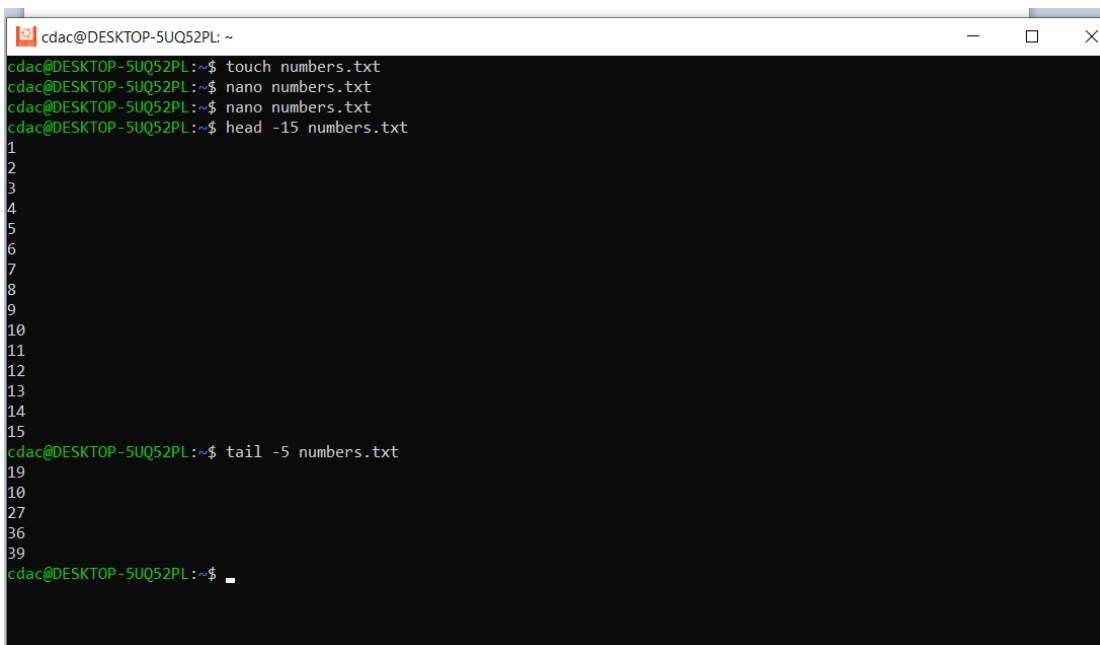


c. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of this file to analyze the initial data set.



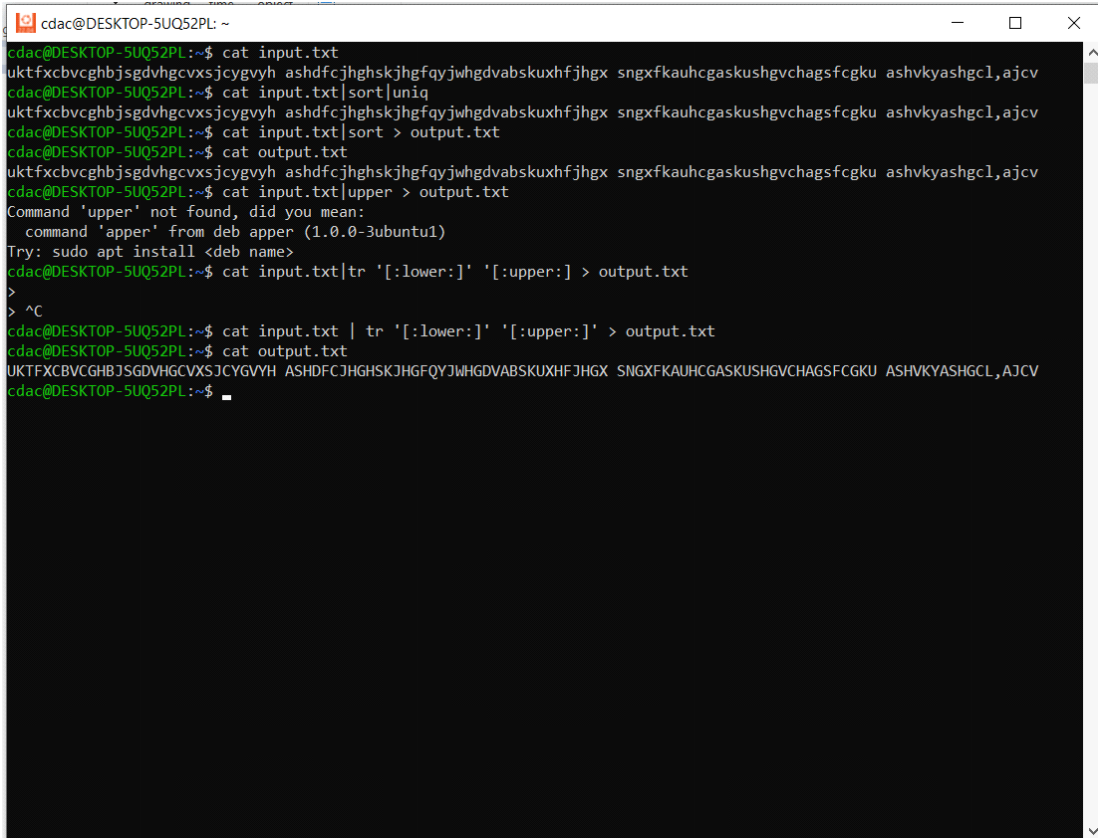
```
cdac@DESKTOP-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ touch numbers.txt  
cdac@DESKTOP-5UQ52PL:~$ nano numbers.txt  
cdac@DESKTOP-5UQ52PL:~$ nano numbers.txt  
cdac@DESKTOP-5UQ52PL:~$ head -15 numbers.txt  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
cdac@DESKTOP-5UQ52PL:~$
```

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



```
cdac@DESKTOP-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ touch numbers.txt  
cdac@DESKTOP-5UQ52PL:~$ nano numbers.txt  
cdac@DESKTOP-5UQ52PL:~$ nano numbers.txt  
cdac@DESKTOP-5UQ52PL:~$ head -15 numbers.txt  
1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
cdac@DESKTOP-5UQ52PL:~$ tail -5 numbers.txt  
19  
10  
27  
36  
39  
cdac@DESKTOP-5UQ52PL:~$
```

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."

A terminal window titled 'cdac@DESKTOP-5UQ52PL: ~' with standard window controls. The terminal shows a series of commands and their outputs. The user first displays the contents of 'input.txt', which contains two identical lines of random alphanumeric characters. Then, they attempt to sort the file and use the 'upper' command, which results in an error. Finally, they use the 'tr' command to convert all lowercase letters to uppercase and save the result to 'output.txt'. The output of 'cat output.txt' shows the same two lines of text, but all lowercase letters have been converted to uppercase.

```
cdac@DESKTOP-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ cat input.txt  
uktfxcbvcghbjsgdvhgcvxsjcygvvh ashdfcjhghskjhgfqyjwhgdvabskuxhfjhgx sngxfkauhcgaskushgvchagsfcgku ashvkyashgcl,ajcv  
cdac@DESKTOP-5UQ52PL:~$ cat input.txt|sort|uniq  
uktfxcbvcghbjsgdvhgcvxsjcygvvh ashdfcjhghskjhgfqyjwhgdvabskuxhfjhgx sngxfkauhcgaskushgvchagsfcgku ashvkyashgcl,ajcv  
cdac@DESKTOP-5UQ52PL:~$ cat input.txt|sort > output.txt  
cdac@DESKTOP-5UQ52PL:~$ cat output.txt  
uktfxcbvcghbjsgdvhgcvxsjcygvvh ashdfcjhghskjhgfqyjwhgdvabskuxhfjhgx sngxfkauhcgaskushgvchagsfcgku ashvkyashgcl,ajcv  
cdac@DESKTOP-5UQ52PL:~$ cat input.txt|upper > output.txt  
Command 'upper' not found, did you mean:  
  command 'apper' from deb apper (1.0.0-3ubuntu1)  
Try: sudo apt install <deb name>  
cdac@DESKTOP-5UQ52PL:~$ cat input.txt|tr '[:lower:]' '[:upper:]' > output.txt  
>  
> ^C  
cdac@DESKTOP-5UQ52PL:~$ cat input.txt | tr '[:lower:]' '[:upper:]' > output.txt  
cdac@DESKTOP-5UQ52PL:~$ cat output.txt  
UKTFXCBVCGHBJSGDVHGCXVSJCYGVYH ASHDFCJHGHSKJHGFQYJWHGDVABSKUXHFJHG X SNGXFKAUHCGASKUSHGVCHAGSFCGKU ASHVKYASHGCL,AJCV  
cdac@DESKTOP-5UQ52PL:~$
```

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-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ touch duplicate.txt  
cdac@DESKTOP-5UQ52PL:~$ nano duplicate.txt  
cdac@DESKTOP-5UQ52PL:~$ cat duplicate.txt  
abc  
xyz  
abc  
xyz  
mno  
pqr  
abc  
abc  
xyz  
cdac@DESKTOP-5UQ52PL:~$ cat duplicate.txt | uniq  
abc  
xyz  
abc  
xyz  
mno  
pqr  
abc  
xyz  
cdac@DESKTOP-5UQ52PL:~$
```

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@DESKTOP-5UQ52PL: ~  
cdac@DESKTOP-5UQ52PL:~$ touch fruit.txt  
cdac@DESKTOP-5UQ52PL:~$ nano fruit.txt  
cdac@DESKTOP-5UQ52PL:~$ cat fruit.txt  
Apple  
Banana  
Cherry  
Mango  
Orange  
Coconut  
Pineapple  
Apple  
Orange  
Apple  
Apple  
Cherry  
Banana  
Banana  
Mango  
Mango  
Apple  
Mango  
cdac@DESKTOP-5UQ52PL:~$ cat fruit.txt | sort | uniq -c  
  5 Apple  
  3 Banana  
  2 Cherry  
  1 Coconut  
  4 Mango  
  2 Orange  
  1 Pineapple  
cdac@DESKTOP-5UQ52PL:~$
```

Thank you!