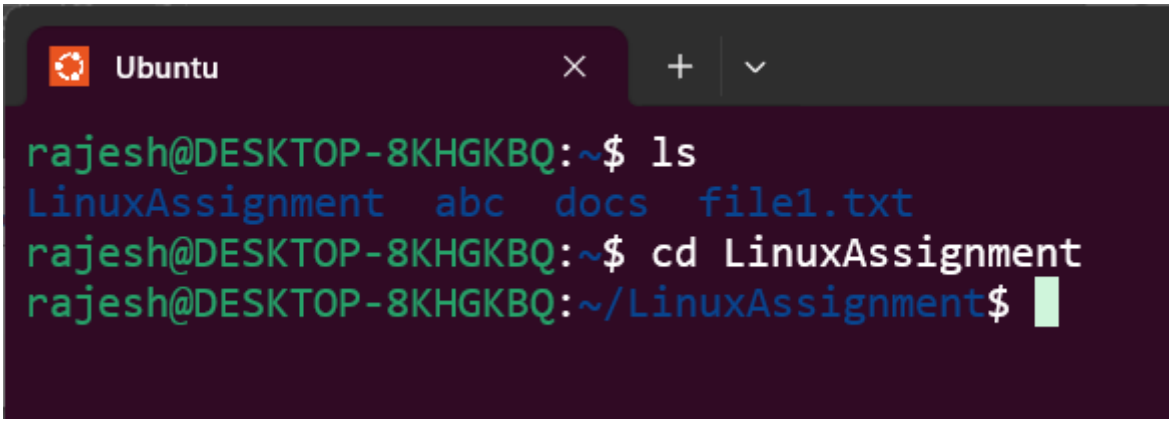
Assignment 1

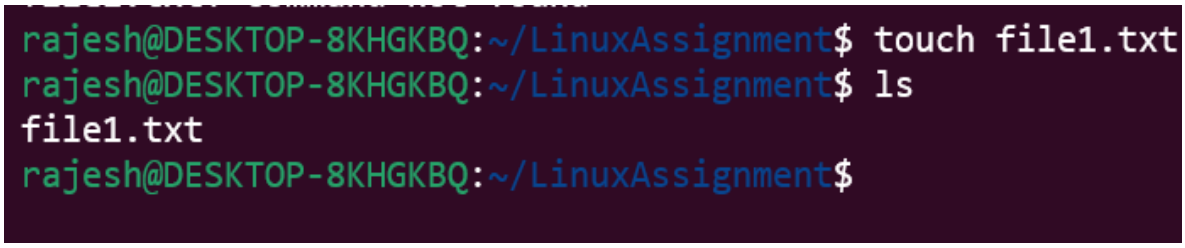
a) Navigate and List:

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.



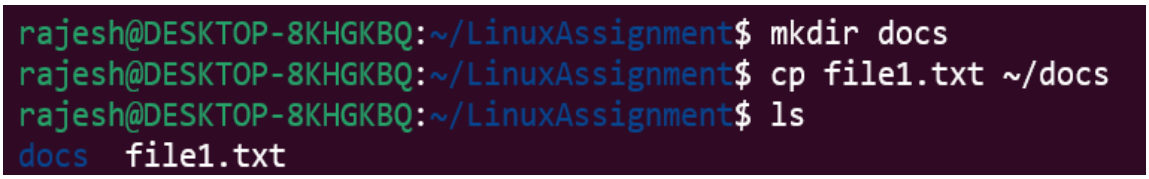
b) File Management:

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



c)Directory Management:

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



d) Copy and Move Files:

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

```
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ cp file1.txt ~/docs
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ls
docs  file1.txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ nano file1txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ mv file1.txt file
2.txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ls
docs  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" to the current user

```
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ chmod +rwx file2.
txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ chmod -rwx file2.
txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$
```

f) Final Checklist:

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

```
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ chmod +rwx file2.
txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ chmod -rwx file2.
txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$
```

g) File Searching:

a. Search for all files with the extension ".txt" in the current directory and its subdirectories.

```
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ls | grep -i ".tx
t"
file1.txt
file2.txt
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$
```

System Information:

a. Display the current system date and time

```
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ date -u
Thu Feb 27 14:11:39 UTC 2025
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$
```

Networking:

a. Display the IP address of the system.

```
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.26.198.145  netmask 255.255.240.0  broadcast 172.26.207.255
        inet6 fe80::215:5dff:feb1:bbcd  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:b1:bb:cd  txqueuelen 1000  (Ethernet)
        RX packets 3341  bytes 942950 (942.9 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 1440  bytes 92243 (92.2 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 54  bytes 5928 (5.9 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 54  bytes 5928 (5.9 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$
```

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

```
ping: www.google.cpm: Name or service not known
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$ ping www.google.com
PING www.google.com (216.58.200.164) 56(84) bytes of data.
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=1 ttl=52 time=37.4 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=2 ttl=52 time=37.0 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=3 ttl=52 time=35.9 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=4 ttl=52 time=36.9 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=5 ttl=52 time=36.5 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=6 ttl=52 time=36.5 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=7 ttl=52 time=55.9 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=9 ttl=52 time=37.2 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=10 ttl=52 time=37.8 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=11 ttl=52 time=96.0 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=12 ttl=52 time=38.8 ms
64 bytes from nrt12s11-in-f164.1e100.net (216.58.200.164): icmp_seq=13 ttl=52 time=38.1 ms
^C
--- www.google.com ping statistics ---
13 packets transmitted, 12 received, 7.69231% packet loss, time 12128ms
rtt min/avg/max/mdev = 35.854/43.666/96.047/16.630 ms
rajesh@DESKTOP-8KHGKBQ:~/LinuxAssignment$
```

File Compression:

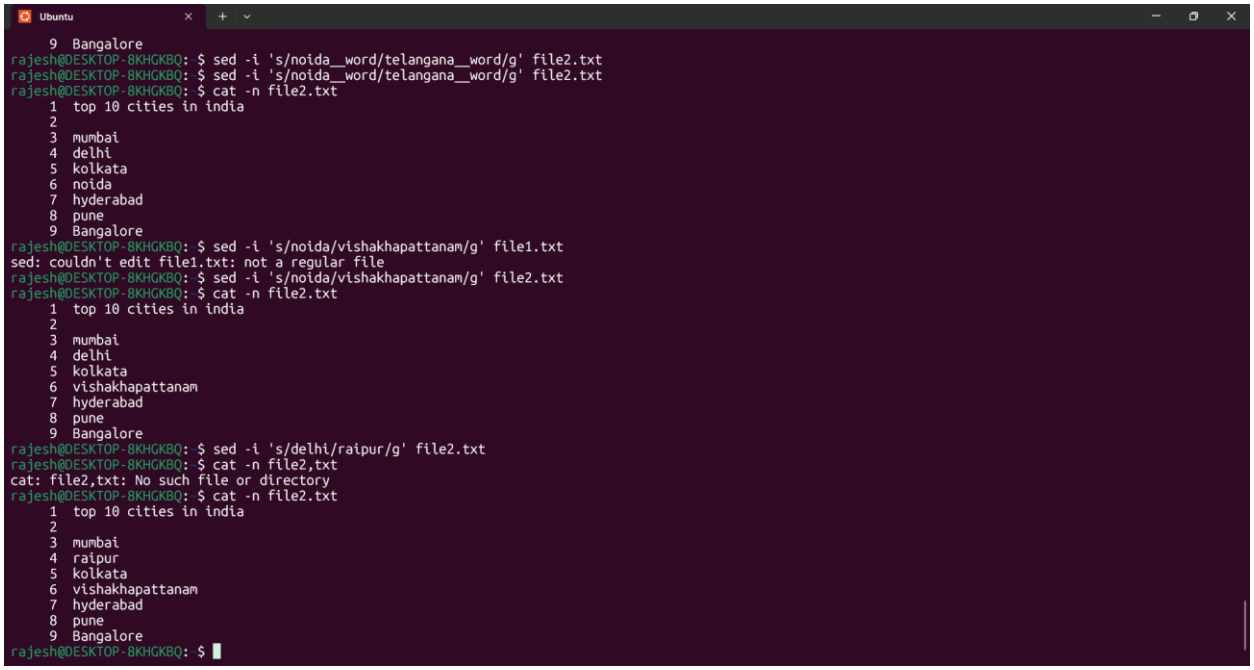
a. Compress the "docs" directory into a zip file.

```
rajesh@DESKTOP-8KHGKBQ:~$ man zip
rajesh@DESKTOP-8KHGKBQ:~$ zip -r zippeddocs.zip docs/
  adding: docs/ (stored 0%)
  adding: docs/file1.txt (stored 0%)
rajesh@DESKTOP-8KHGKBQ:~$ ls -lh
total 24K
drwxr-xr-x 4 rajesh rajesh 4.0K Feb 27 13:24 LinuxAssignment
drwxr-xr-x 3 rajesh rajesh 4.0K Feb 27 09:55 abc
drwxr-xr-x 2 rajesh rajesh 4.0K Feb 27 12:38 docs
drwxr-xr-x 2 rajesh rajesh 4.0K Feb 27 13:25 file1.txt
drwx------ 3 rajesh rajesh 4.0K Feb 27 16:38 snap
-rw-r--r-- 1 rajesh rajesh  316 Feb 27 17:12 zippeddocs.zip
rajesh@DESKTOP-8KHGKBQ:~$
```

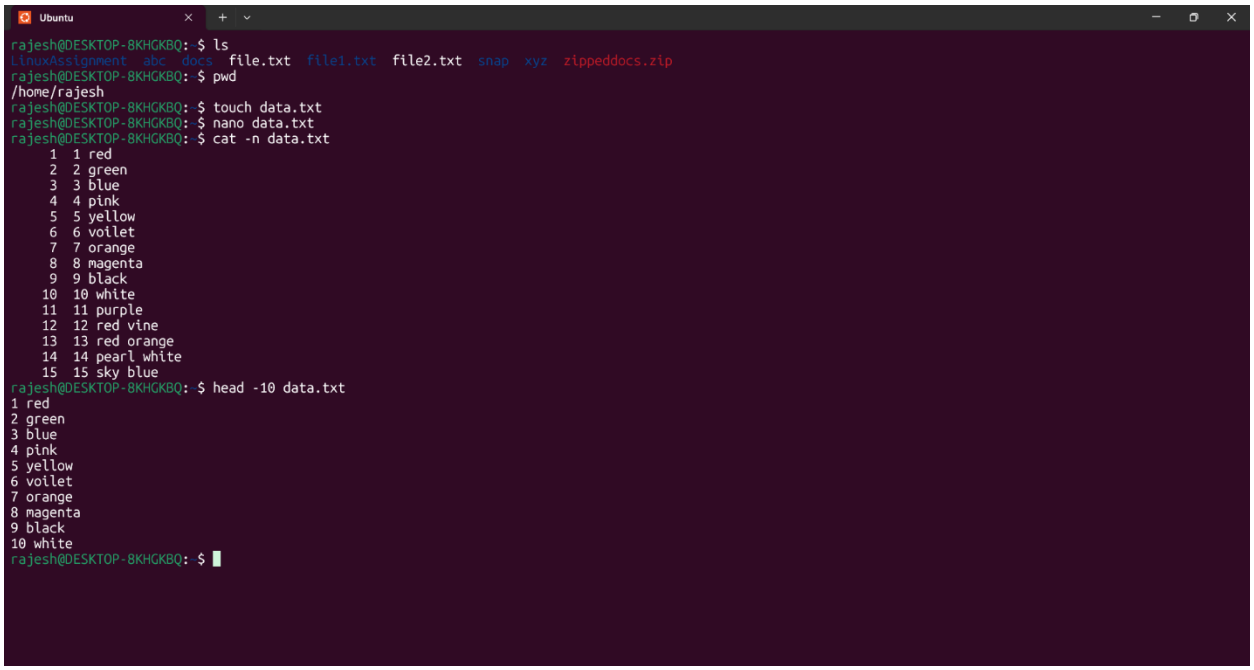
Extract the contents of the zip file into a new directory

```
rajesh@DESKTOP-8KHGKBQ:~$ unzip zippeddocs.zip -d xyz/
Archive:  zippeddocs.zip
   creating: xyz/docs/
 extracting: xyz/docs/file1.txt
rajesh@DESKTOP-8KHGKBQ:~$ ls -lh
total 28K
```

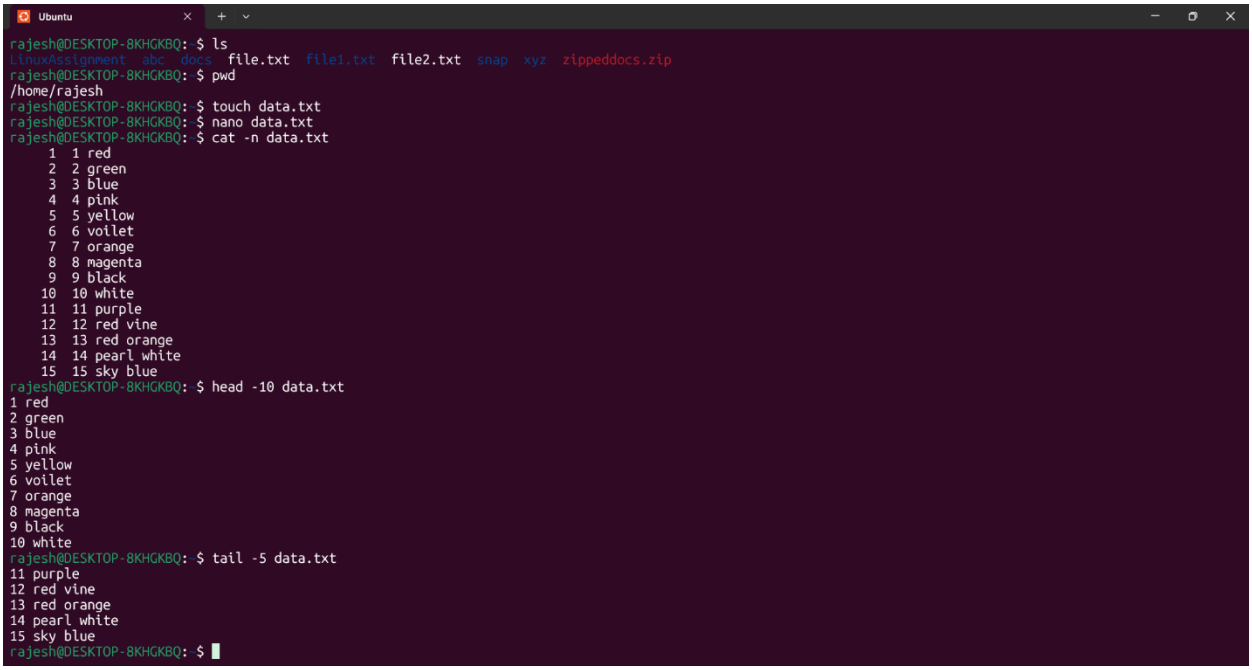
Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).



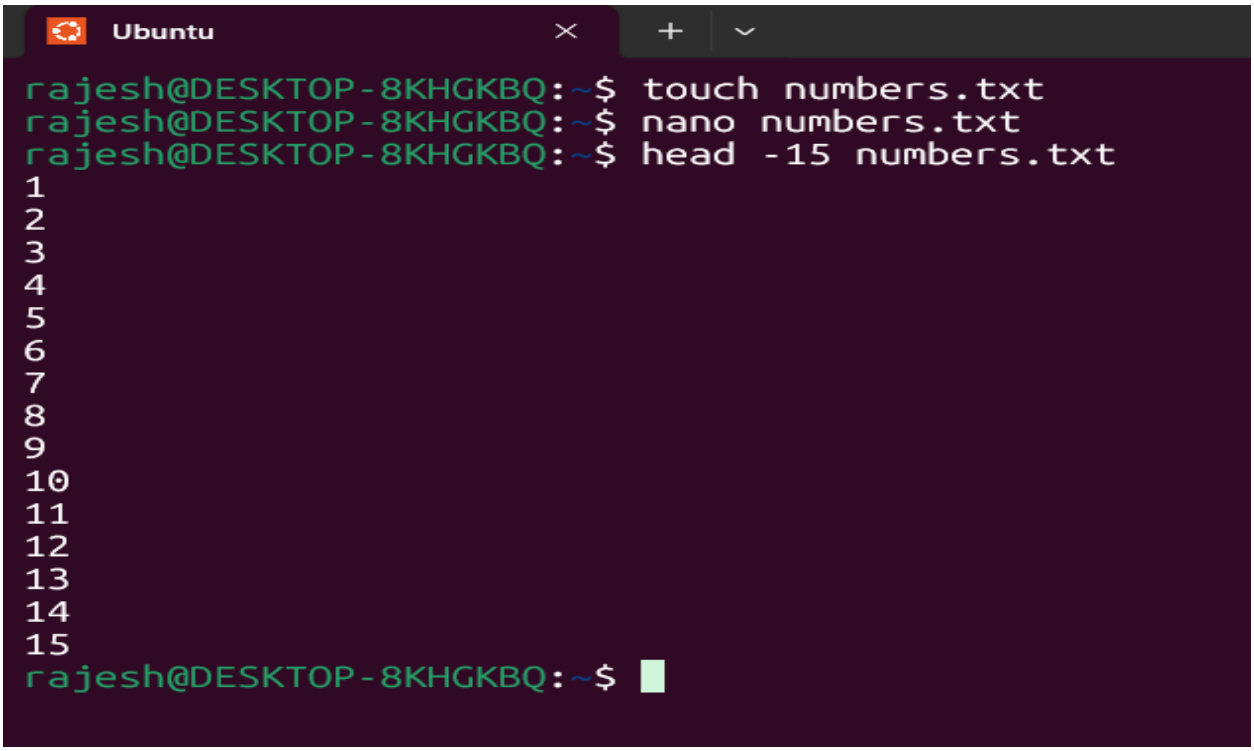
a. Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.



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



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



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

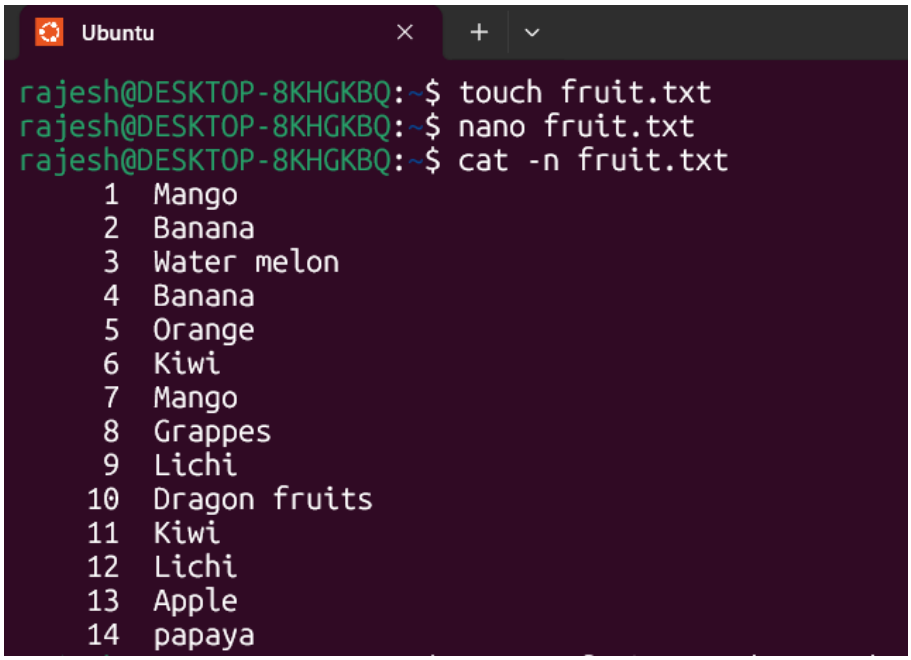
```
rajesh@DESKTOP-8KHGKBQ:~$ tail -3 numbers.txt
18
19
20
rajesh@DESKTOP-8KHGKBQ:~$
```

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."

```
Ubuntu
rajesh@DESKTOP-8KHGKBQ:~$ touch input.txt
rajesh@DESKTOP-8KHGKBQ:~$ nano input.txt
rajesh@DESKTOP-8KHGKBQ:~$ cat input.txt
India, officially the Republic of India, is a country in South Asia.
 It is the seventh-largest country by area;
 the most populous country from June 2023 onwards;
 and since its independence in 1947,
 the world's most populous democracy
rajesh@DESKTOP-8KHGKBQ:~$ cat input.txt | tr '[:lower:]' '[:upper:]' > output.txt
rajesh@DESKTOP-8KHGKBQ:~$ cat output.txt
INDIA, OFFICIALLY THE REPUBLIC OF INDIA, IS A COUNTRY IN SOUTH ASIA.
 IT IS THE SEVENTH-LARGEST COUNTRY BY AREA;
 THE MOST POPULOUS COUNTRY FROM JUNE 2023 ONWARDS;
 AND SINCE ITS INDEPENDENCE IN 1947,
 THE WORLD'S MOST POPULOUS DEMOCRACY
rajesh@DESKTOP-8KHGKBQ:~$
```

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."

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."



```
rajesh@DESKTOP-8KHGKBQ:~$ cat fruit.txt | sort | uniq
Apple
Banana
Dragon fruits
Grappes
Kiwi
Lichi
Mango
Orange
Water melon
papaya
```