CDAC MUMBAI

Name : Ankita Dhumal **Course : DAC Online**

Concepts of Operating System Assignment 1

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.

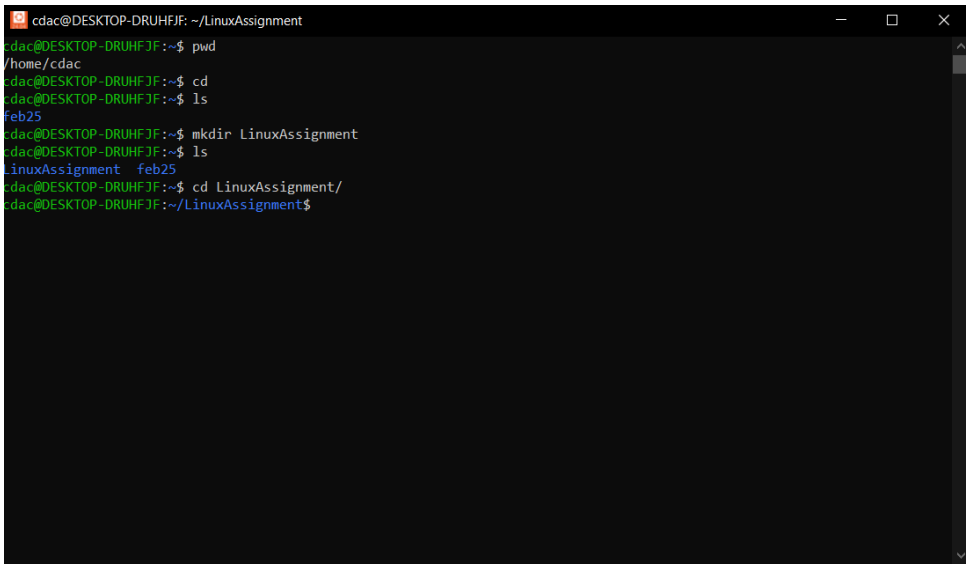
Ans :

1: Use pwd to navigating to home directory

2: Use cd ls to list contents

3:Use mkdir LinuxAssignment to cre Directory

4: Use ls to list its content

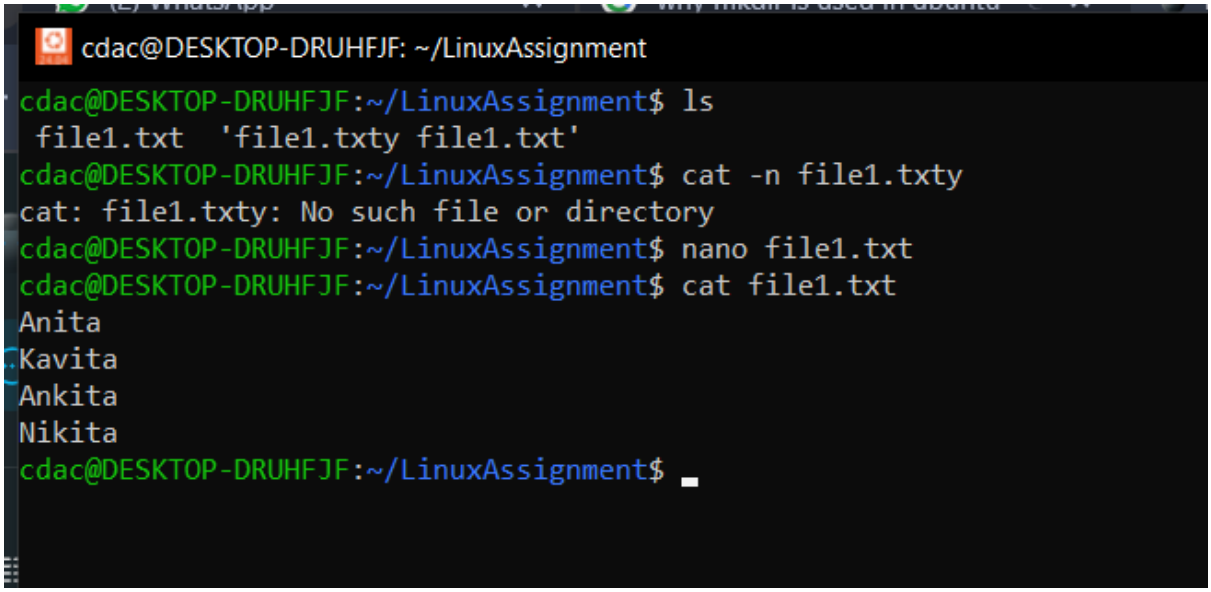


b) **File Management:**

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

Ans : 1: used ls to display content

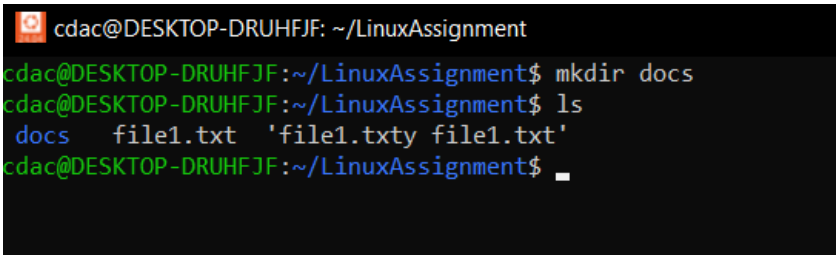
2: cat file1.txt used to display content of file



c) Directory Management:

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

Ans : 1: to create new directory : mkdir docs



d) Copy and Move Files:

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

Ans : 1: cp file1.txt docs/file2.txt

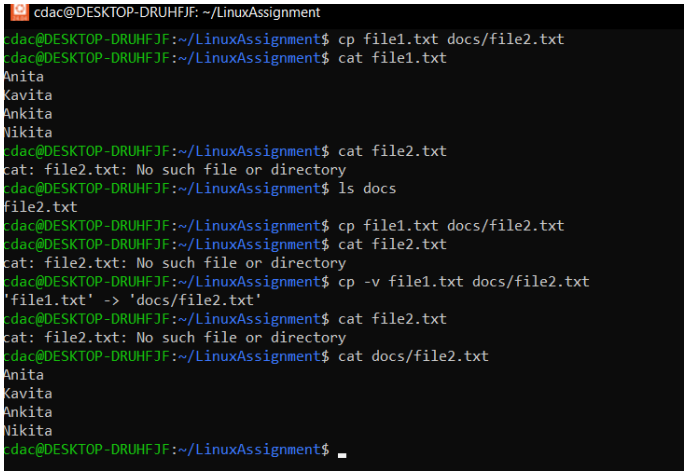
2:display file1.txt :cat file1.txt

3.display file2.txt: cat file2.txt

4.cat docs/file2.txt

Challenges Faced: I was tto access the file2.txt file from the wrong directory, not realizing it was located in the docs directory.

Solution: I used cat docs/file2.txt to access the file.

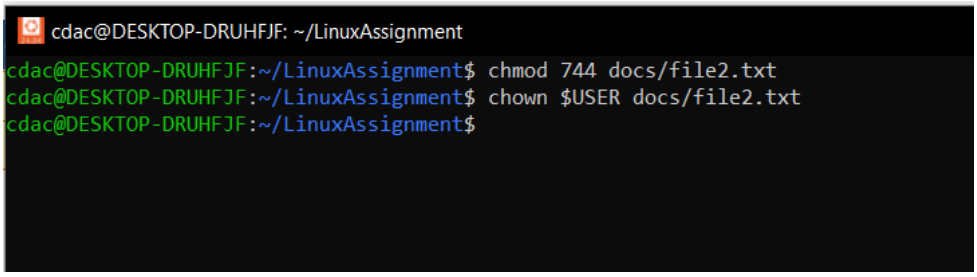


e) Permissions and Ownership:

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 : 1: 7 means read,write,execute of owner,4 means only read for other : chmod 744 docs/file2.txt

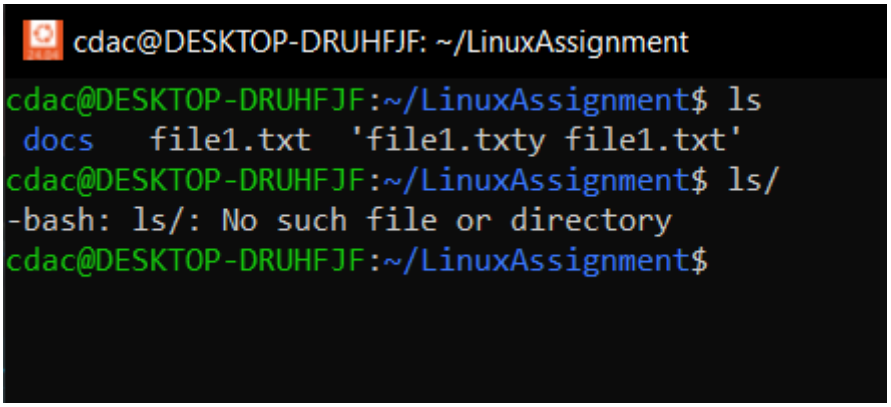
2: chown $USER docs/file2.txt



f) Final Checklist:

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

Ans : 1: ls



g) File Searching:

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

Ans :

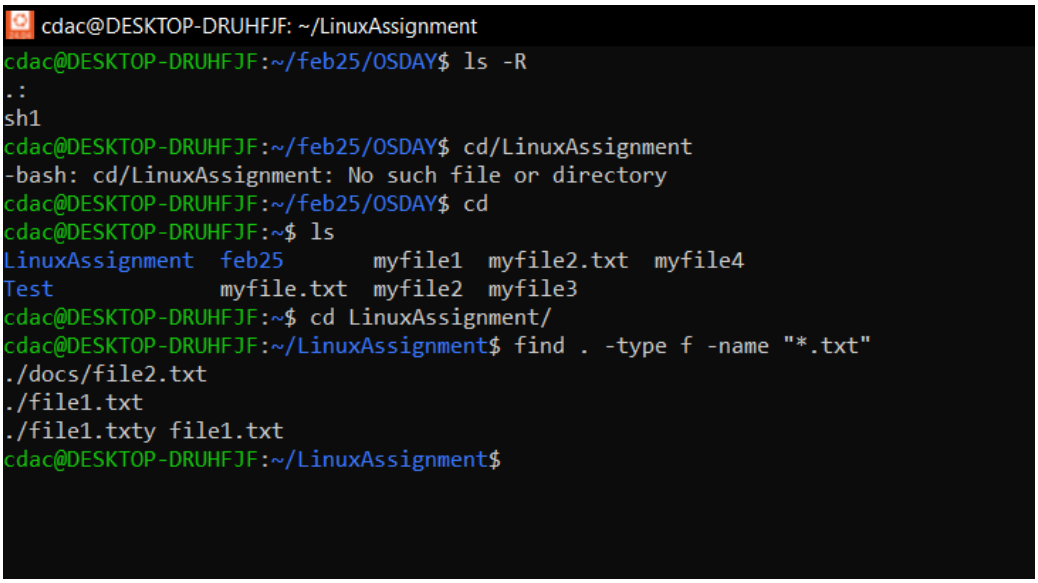
1: Goto Current directory : cd LinuxAssignment/

2: Used this command : find . -type f -name "*.txt"

challenges faced :

1: explored 2,3 commands but I was in different directory so not able to get the output

2: I was writing wrong indedtation.



b. Display lines containing a specific word in a file (provide a file name and the specific word to search).

Ans : **1: check files contants : cat file2.txt**

2: run above command to print exact line of word :

grep -n "Kavita" file2.txt

```
cdac@DESKTOP-DRUHFJF: ~/LinuxAssignment/docs
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment/docs$ ls
file2.txt
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment/docs$ cat file2.txt
Anita
Kavita
Ankita
Nikita
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment/docs$ grep Ankita docs/file2.txt
grep: docs/file2.txt: No such file or directory
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment/docs$ grep Ankita file2.txt
Ankita
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment/docs$ grep "Kavita" file2.txt
Kavita
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment/docs$ grep -n "Kavita" file2.txt
2:Kavita
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment/docs$
```

Challenges Faced : I was writing the commands without -n to find number of line of that word.

h) System Information:

a. Display the current system date and time.

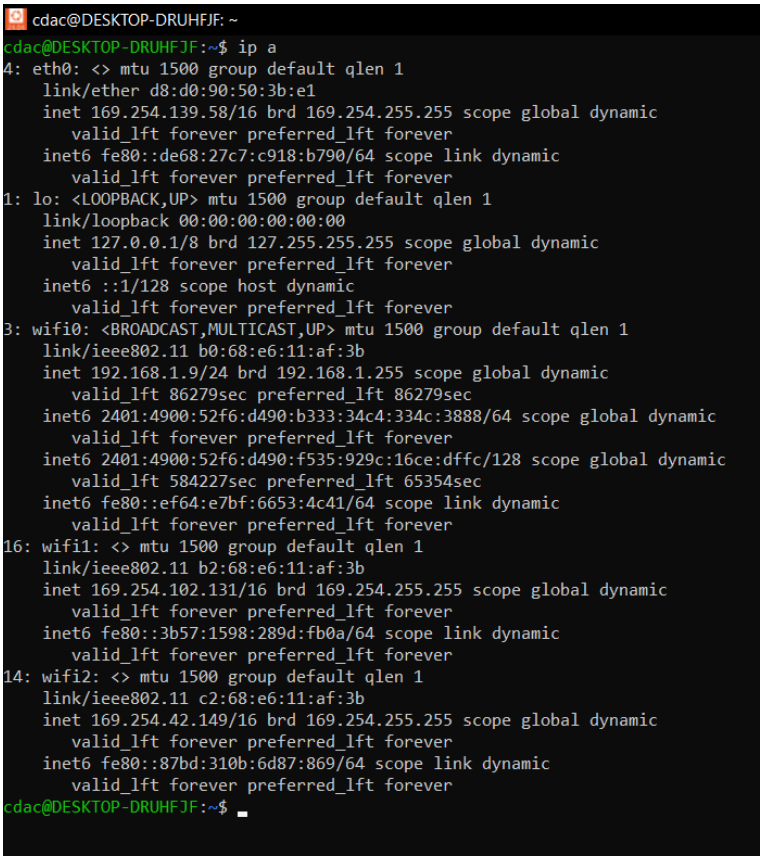
Ans : 1: Use date command

```
cdac@DESKTOP-DRUHFJF: ~
cdac@DESKTOP-DRUHFJF:~$ date
Thu Feb 27 14:47:17 UTC 2025
cdac@DESKTOP-DRUHFJF:~$
```

i) Networking:

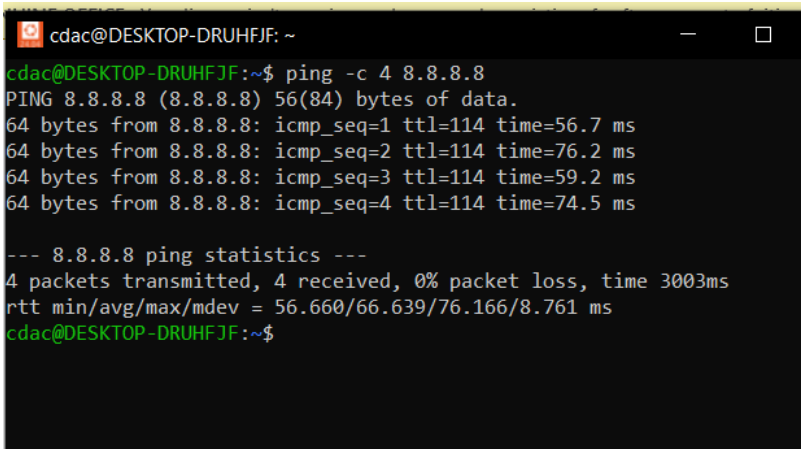
a. Display the IP address of the system.

Ans : **1: Used command : ip a.**



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

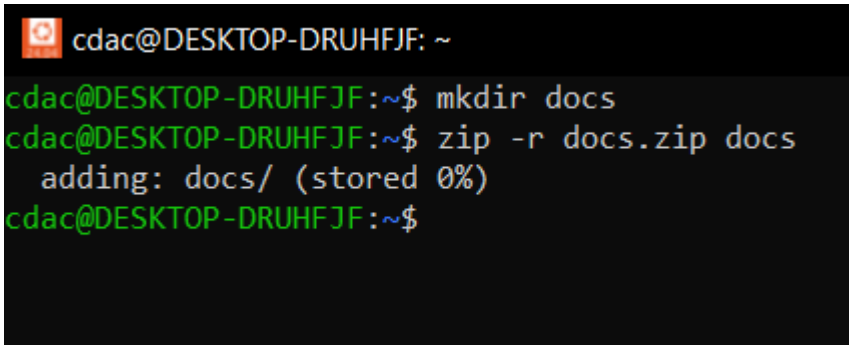
Ans : 1: use Command : ping -c 4 8.8.8.8



j) File Compression:

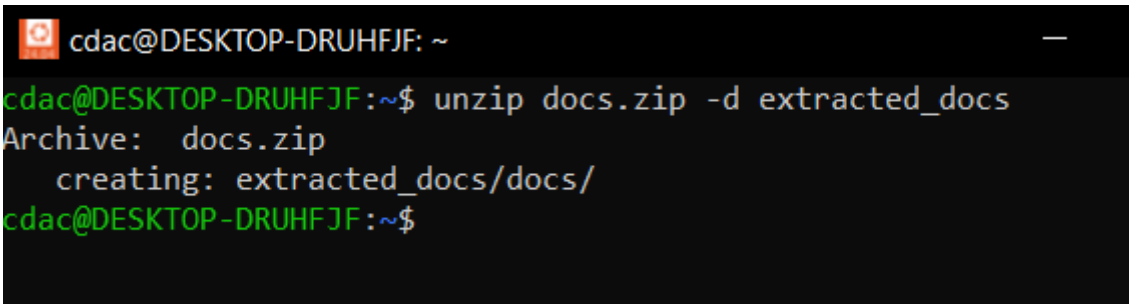
a. Compress the "docs" directory into a zip file.

Ans : 1: Use command : zip -r docs.zip .



b. Extract the contents of the zip file into a new directory.

Ans : **1: use this command : unzip docs.zip -d extracted_docs this will extract the docs file content into extracted_docs file.unzip will unzip docs -d use to specify where to extract content.**



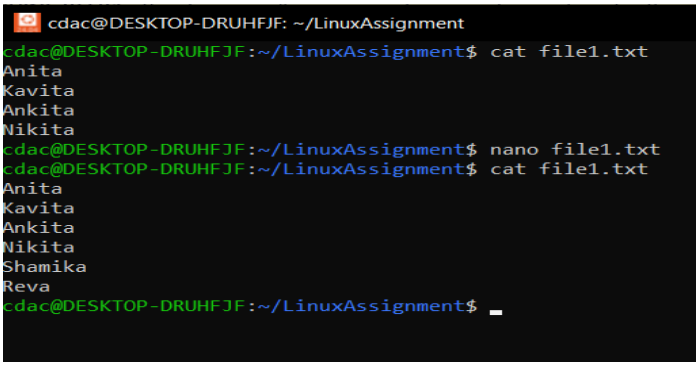
k) File Editing:

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

Ans : 1: **display the old data of file1.txt : cat file1.txt**

2: open text editor nano and edit the data : nano file1.txt

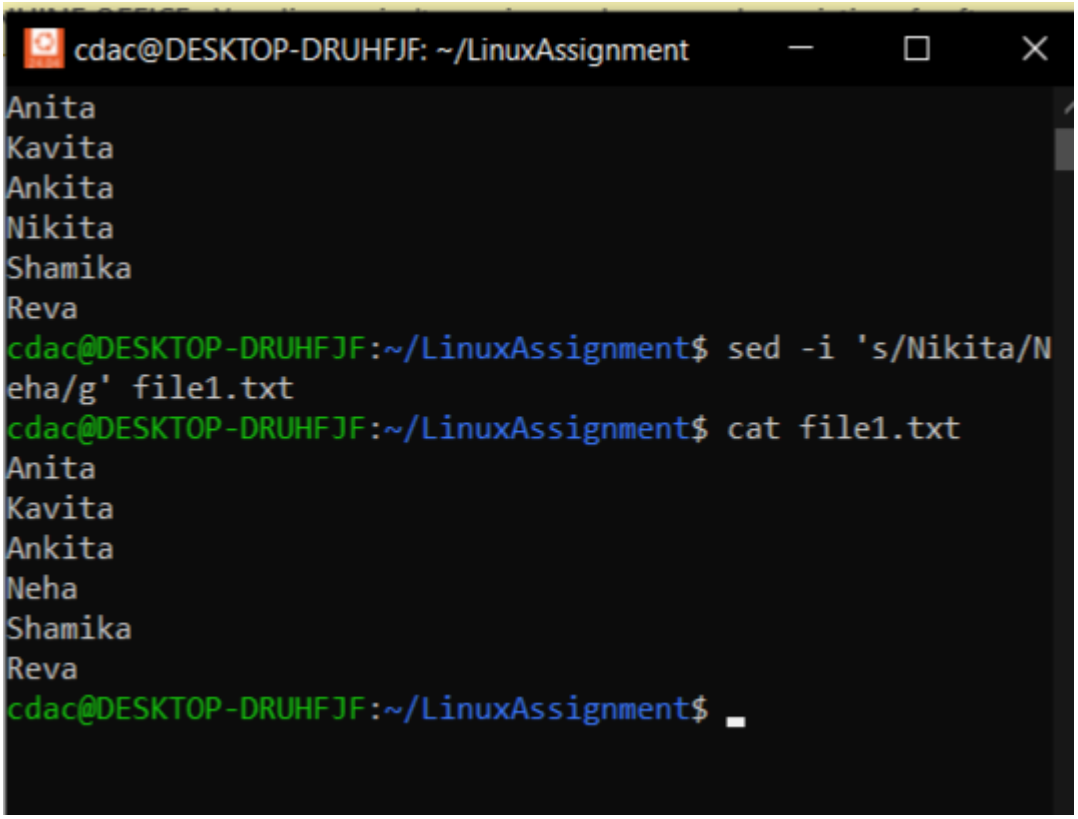
3: display edited content : cat file1.txt



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

Ans : 1: use : sed -i 's/Nikita/Neha/g' file1.txt. sed is stream editor,

-i Edits the file, s/old/new Substitutes words in file1.txt



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 : 1: first view data of data.txt : cat data.txt

2: use head which is use to print first values : head -10 data.txt

```
cdac@DESKTOP-DRUHFJF: ~/LinuxAssignment
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment$ cat data.txt
aasd sjkejdkjdf jkfejg
ajsdhjkf rfejrhg
rrggrth trhh hjuyj htterf
ert hthff ashdfhifherg giutowdm
wwjdjri vbhfyrti askeig yiyjknjh
dfffhhtigjjfjjjj
aajjjjff
hhijutiuuuuuuuuu hfhhhgg
whhehhhr tyiuiuiiiiiii gnvefrgtbvngjhk
shdhf vbghtymzjsiw juugjff fgrythvnmxs hjhku
dufutuut ffygttgg rhtgnvmw fgghtpwks dhedbewdebddbdssdddd jhdhjd
dhdh
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment$ head -10 data.txt
aasd sjkejdkjdf jkfejg
ajsdhjkf rfejrhg
rrggrth trhh hjuyj htterf
ert hthff ashdfhifherg giutowdm
wwjdjri vbhfyrti askeig yiyjknjh
dfffhhtigjjfjjjj
aajjjjff
hhijutiuuuuuuuuu hfhhhgg
whhehhhr tyiuiuiiiiiii gnvefrgtbvngjhk
shdhf vbghtymzjsiw juugjff fgrythvnmxs hjhku
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment$
```

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

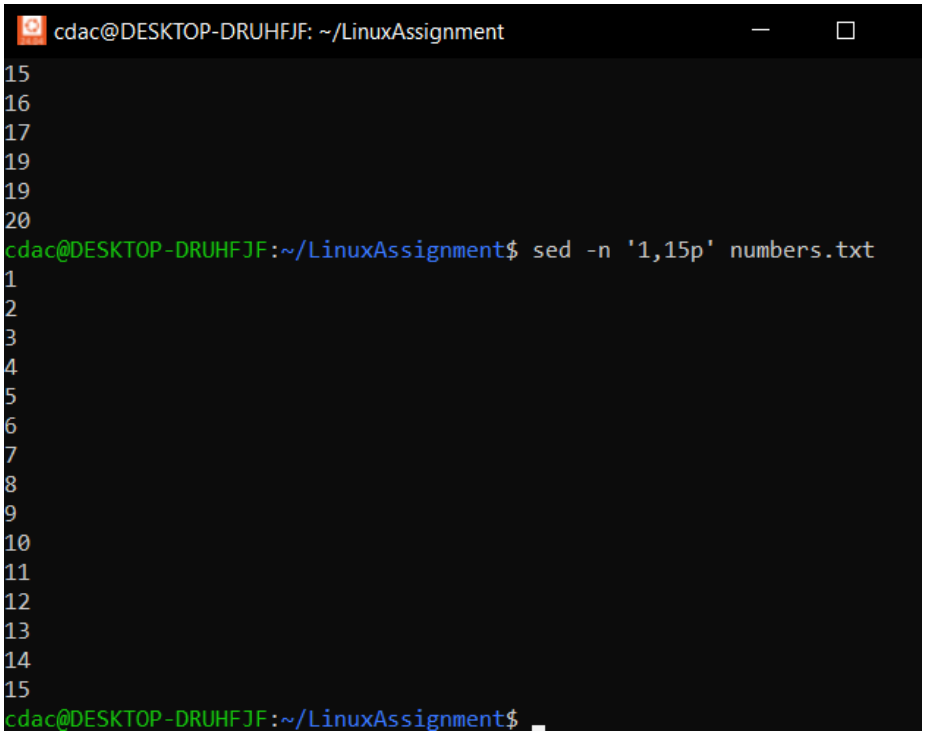
Ans : 1: used tail for print last 5 line tail - 5 data.txt

```
cdac@DESKTOP-DRUHFJF: ~/LinuxAssignment
aasd sjkejdkjdf jkfejg
ajsdhjkf rfejrhg
rrggrth trhh hjuyj htterf
ert hthff ashdfhifherg giutowdm
wwjdjri vbhfyrti askeig yiyjknjh
dfffhhtigjjfjjjj
aajjjjff
hhijutiuuuuuuuuu hfhhhgg
whhehhhr tyiuiuiiiiiii gnvefrgtbvngjhk
shdhf vbghtymzjsiw juugjff fgrythvnmxs hjhku
dufutuut ffygttgg rhtgnvmw fgghtpwks dhedbewdebddbdssdddd
jhdhjd
dhdh
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment$ tail -5 data.txt
hhijutiuuuuuuuuu hfhhhgg
whhehhhr tyiuiuiiiiiii gnvefrgtbvngjhk
shdhf vbghtymzjsiw juugjff fgrythvnmxs hjhku
dufutuut ffygttgg rhtgnvmw fgghtpwks dhedbewdebddbdssdddd
jhdhjd
dhdh
cdac@DESKTOP-DRUHFJF:~/LinuxAssignment$
```

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 : 1: use this command : sed -n '1,15p' numbers.txt.

Sed is stream editor, -n Suppress automatic printing, p is used to print.



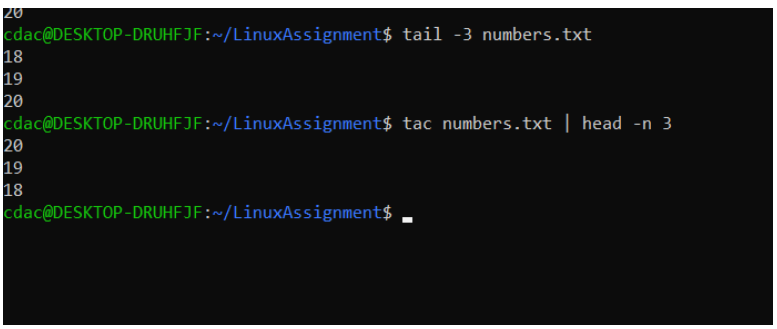
d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".

Ans : 1 : used tail to print last numbers : tail -3 numbers.txt,

also used another option : tac numbers.txt | head -n 3,

tac numbers.txt reverses used order of the lines and display

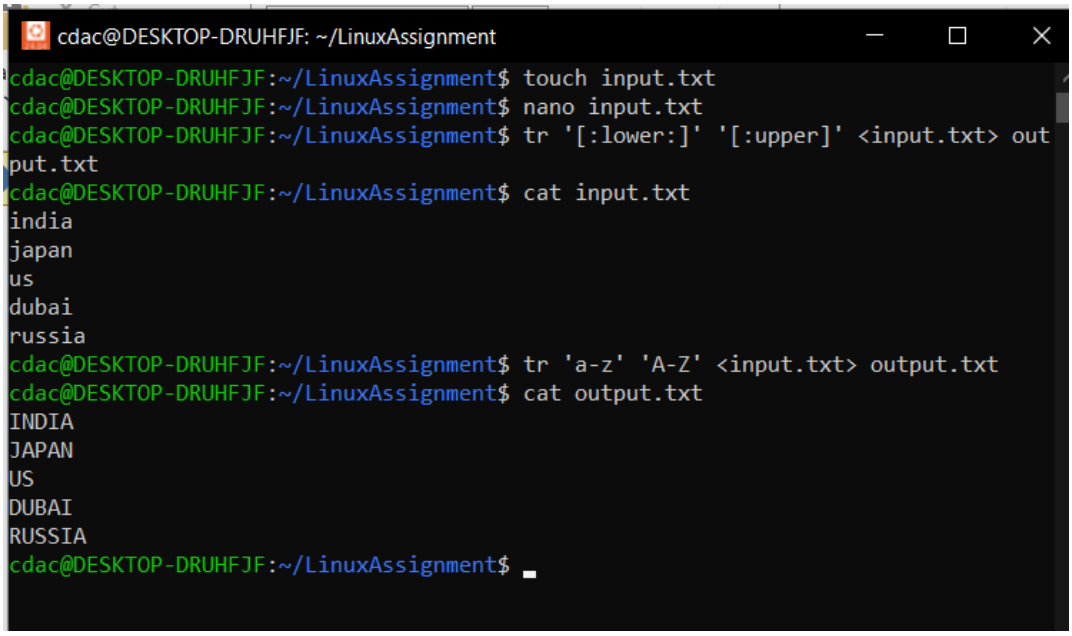
and reversed output is piped to head -n 3.



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."

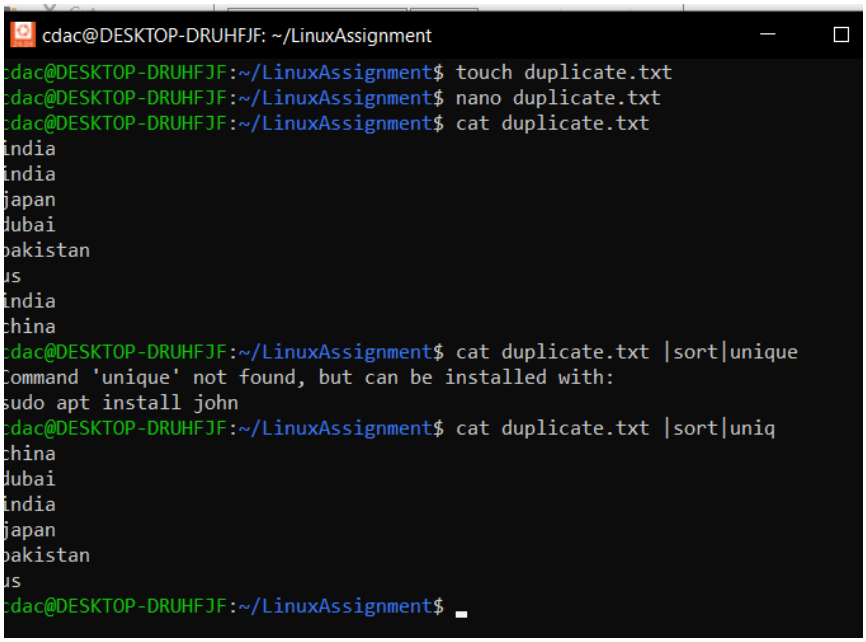
Ans : 1: used tr 'a-z' 'A-Z' < input.txt > output.txt command to print one files lowercase content transfer into output.txt.

tr 'a-z' 'A-Z' used to Converts lowercase to uppercase,< input.txt used read from input.txt, output, txt used to save the result in output.txt.



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 : 1: used : cat duplicate.txt |sort|uniq



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 : 1 : used : sort fruits.txt | uniq -c

sort fruit.txt: This sorts the lines in the file alphabetically, uniq -c: This counts the occurrences of each line and displays the count with line.