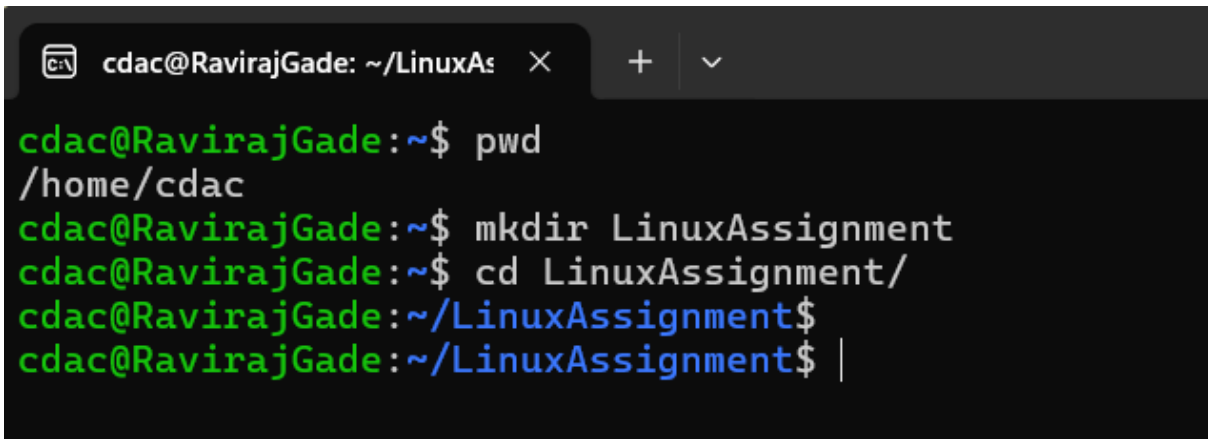
Assignment 1

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.



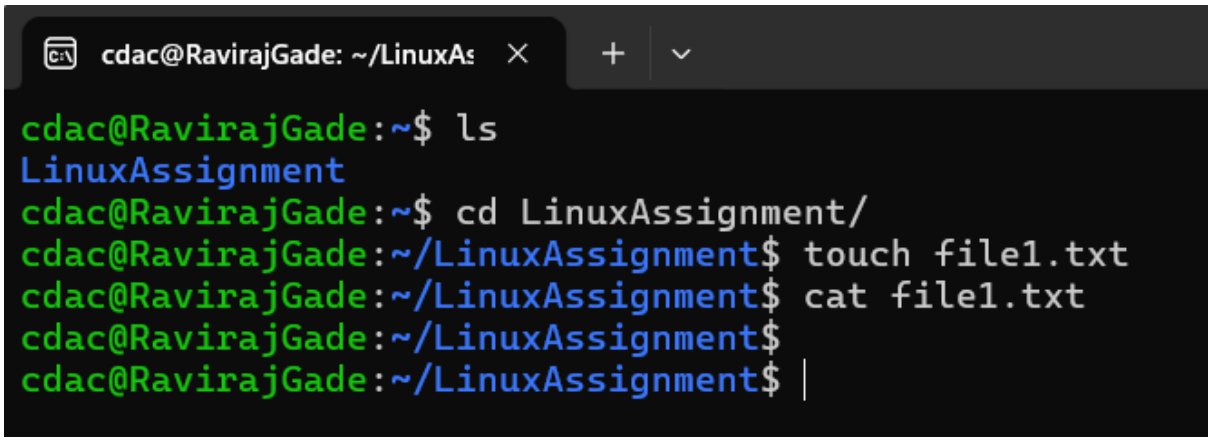
pwd Print Working directory

mkdir LinuxAssignment Create "LinuxAssignment" directory if it does not exist

cd LinuxAssignment Move into the "LinuxAssignment" directory

b) File Management:

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



ls Display the contents of a directory.

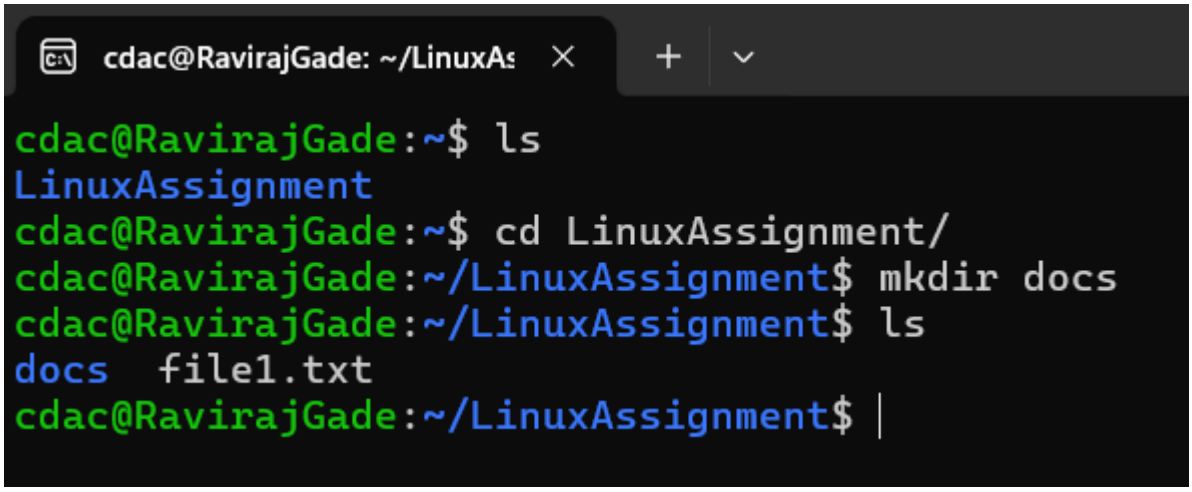
cd LinuxAssignment Move into the "LinuxAssignment" directory

touch file1.txt Create a new file named "file1.txt"

cat file1.txt Display its contents (empty by default)

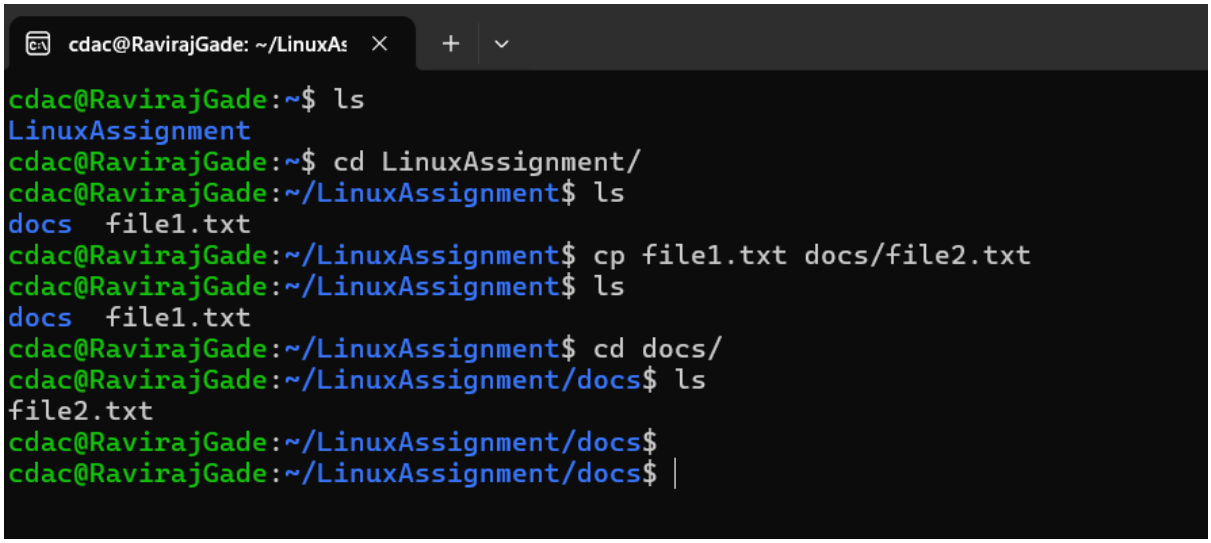
c) Directory Management:

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



d) Copy and Move Files:

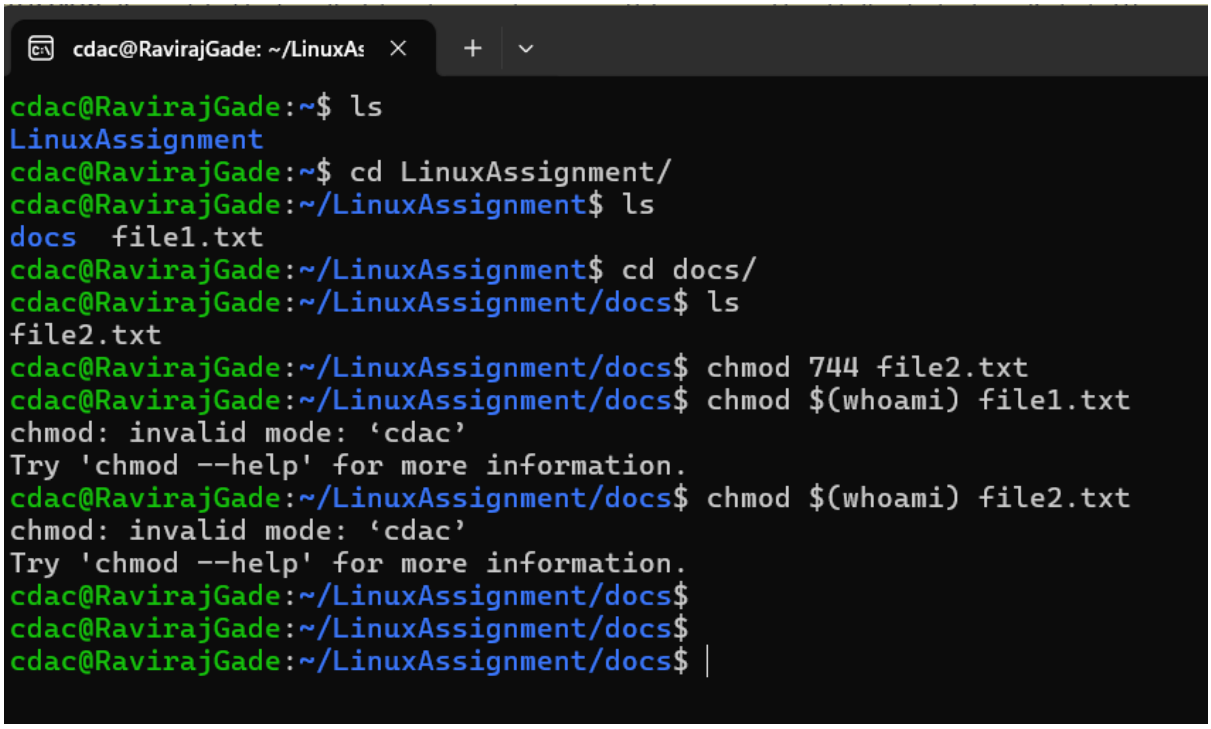
a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".



cp file1.txt docs/file2.txt Copy "file1.txt" into "docs" and rename it to "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.

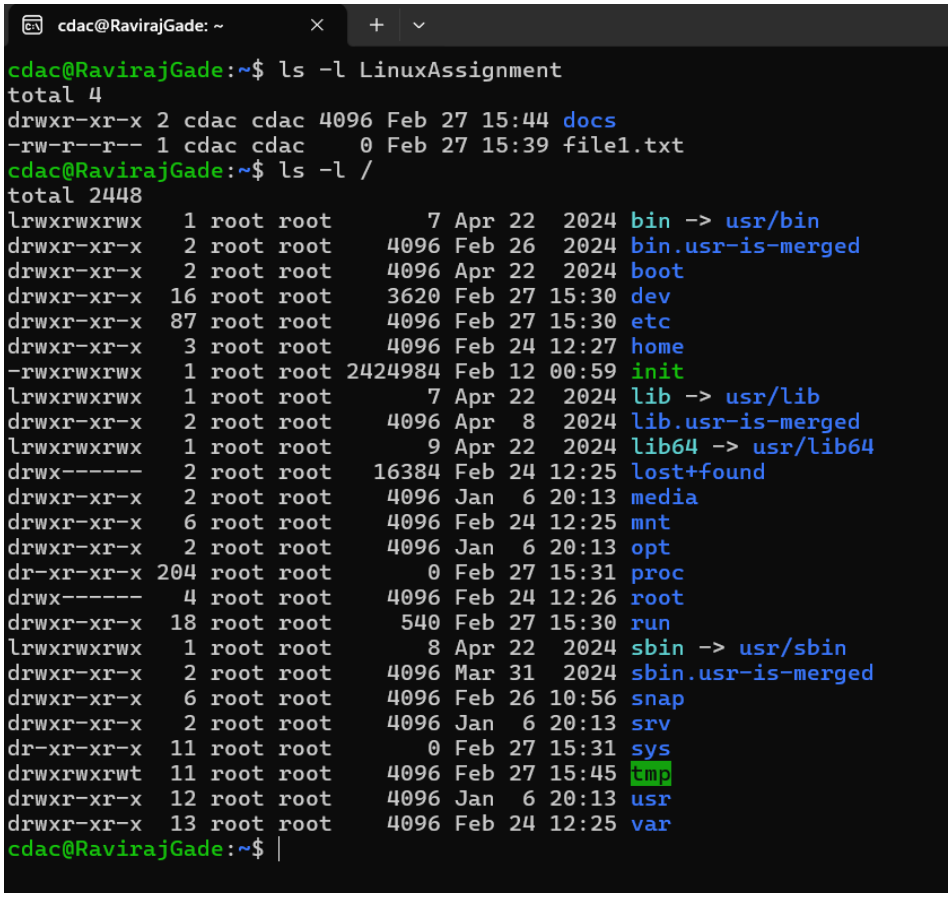


Breakdown of 744:

- The first digit 7 gives the owner read (4), write (2), and execute (1) permissions.
- The second digit 4 gives the group only read (4) permissions.
- The third digit 4 gives others only read (4) permissions.

f) Final Checklist:

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

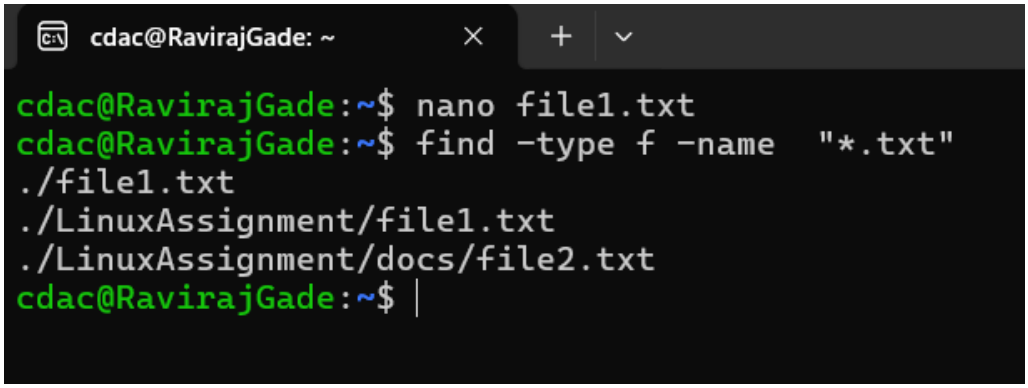


ls -l LinuxAssignment	List contents of "LinuxAssignment"
ls -l /	List contents of the root directory

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).

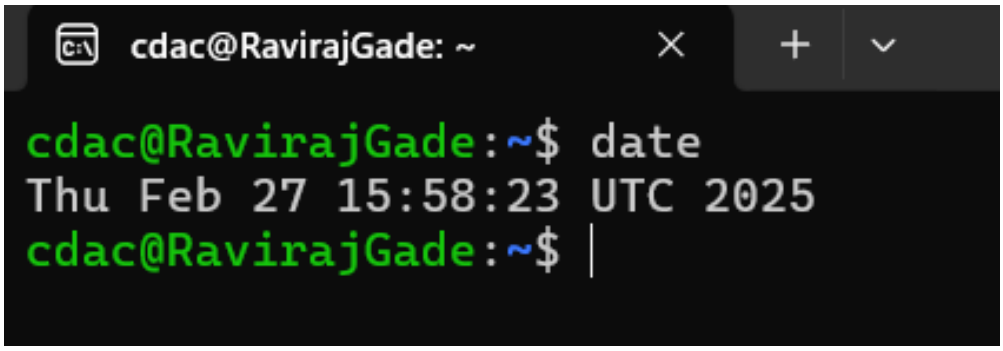


find . -type f -name "*.txt" Search for all ".txt" files in the current directory and subdirectories

grep "focused" file1.txt The word to search for in "file1.txt"

h) System Information:

a. Display the current system date and time.

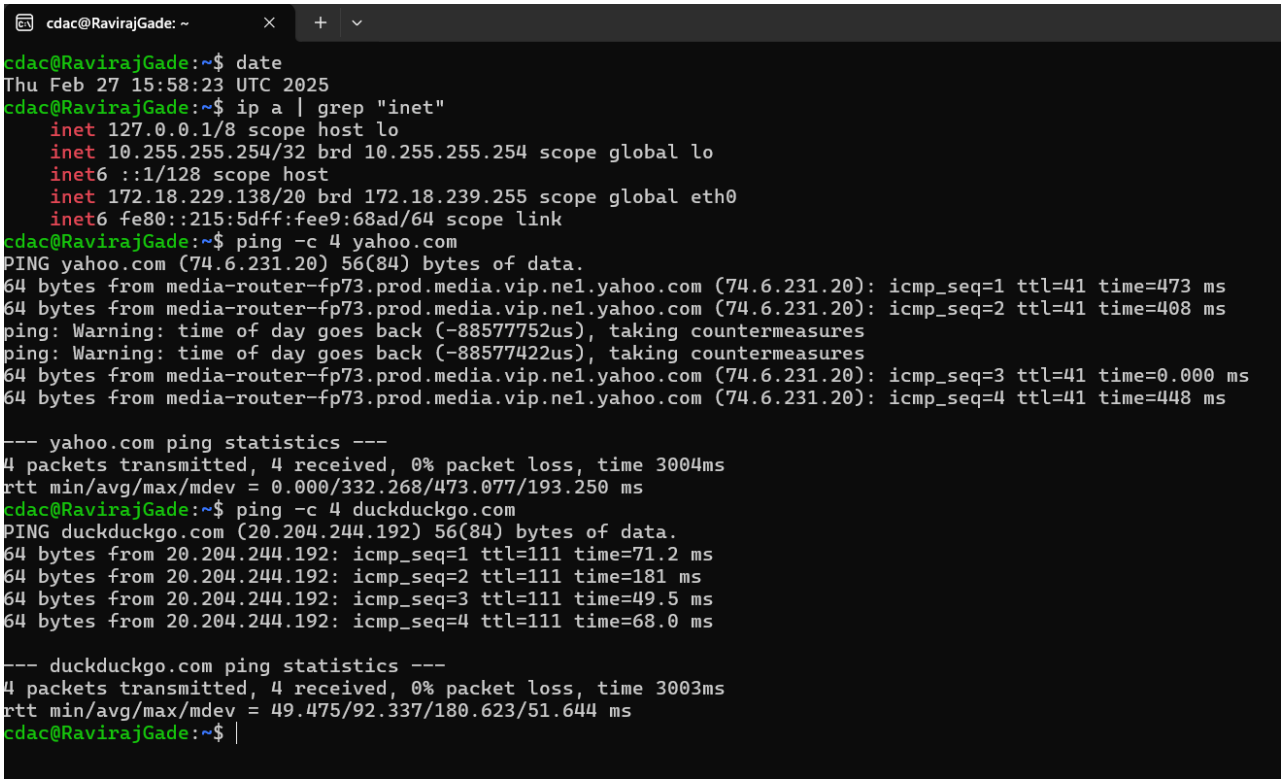


date Display current system date and time

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).



Command a

ip a

- ip is a Linux command used to manage networking.
- a is short for addr, meaning **show all network addresses** (IPv4 and IPv6).

grep "inet "

- grep is used to filter/search for a specific text pattern.
- "inet " matches only **IPv4 addresses** (because IPv6 addresses start with inet6).

Command b

ping Sends ICMP Echo Request packets to test network reachability.

-c 4 Limits the ping to 4 packets (otherwise, ping runs indefinitely).

yahoo.com This is the **remote server** we are testing connectivity to.

duckduckgo.com This is the **Search Engine** we are testing connectivity to.

j) File Compression:

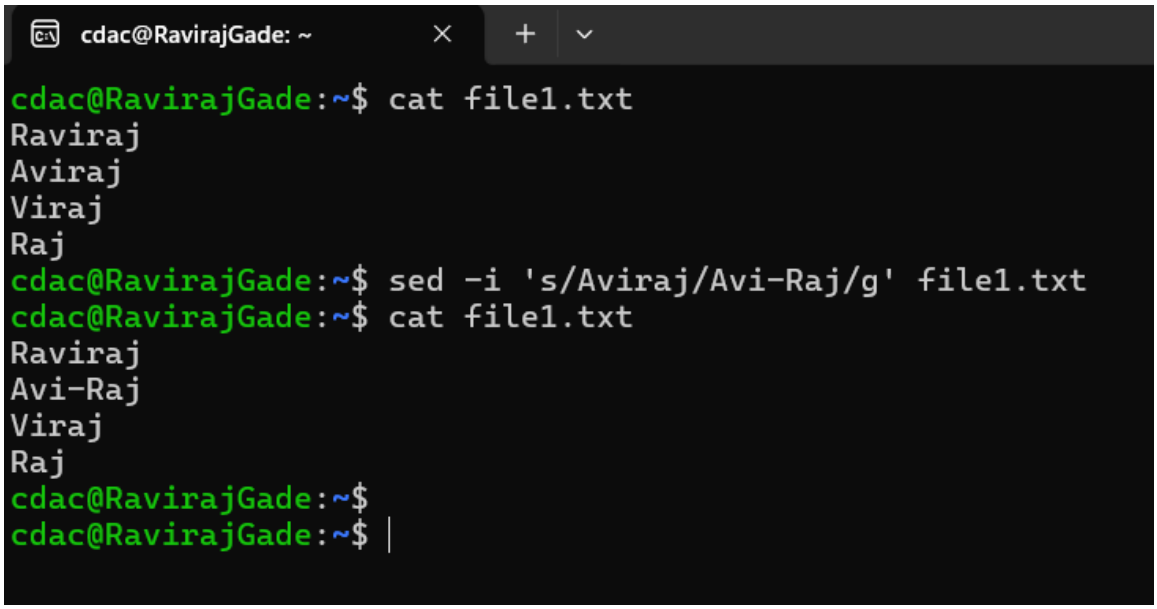
a. Compress the "docs" directory into a zip file.

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

k) File Editing:

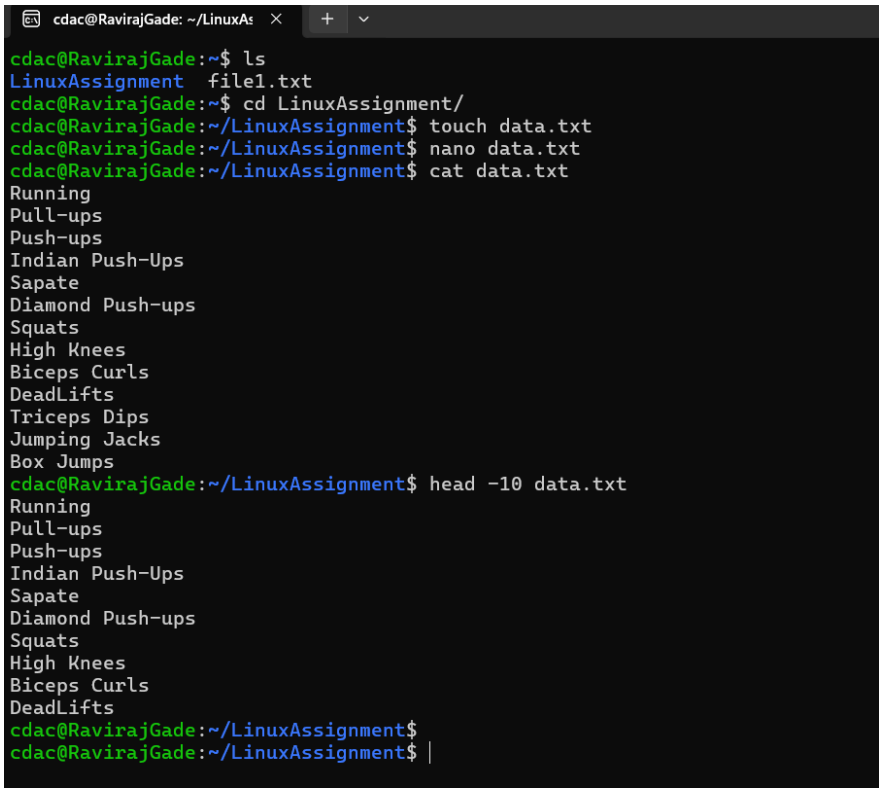
a. Open the "file1.txt" file in a text editor and add some text to it.

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

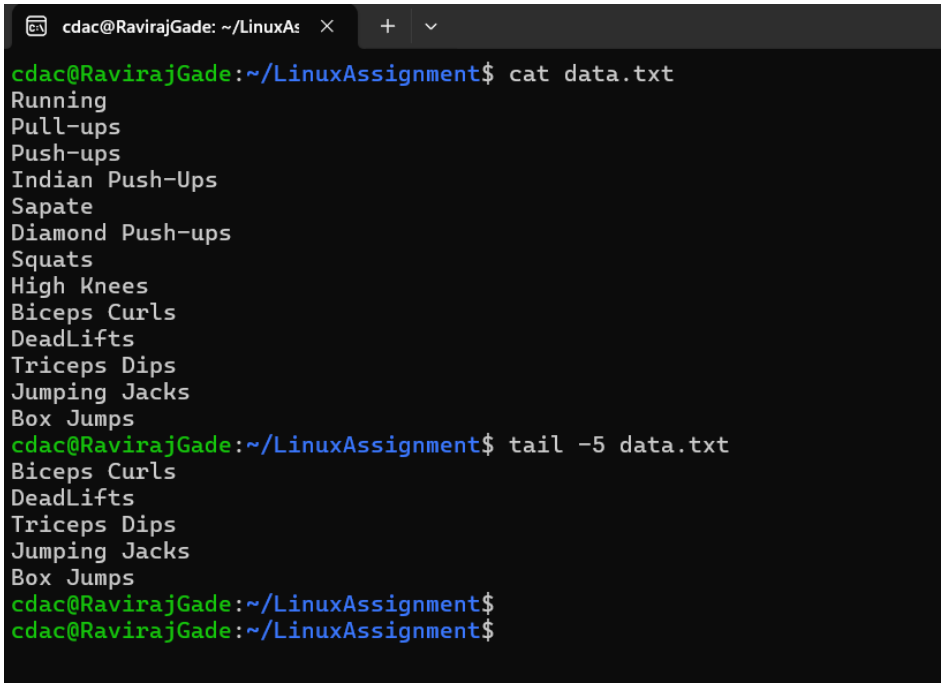


Problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

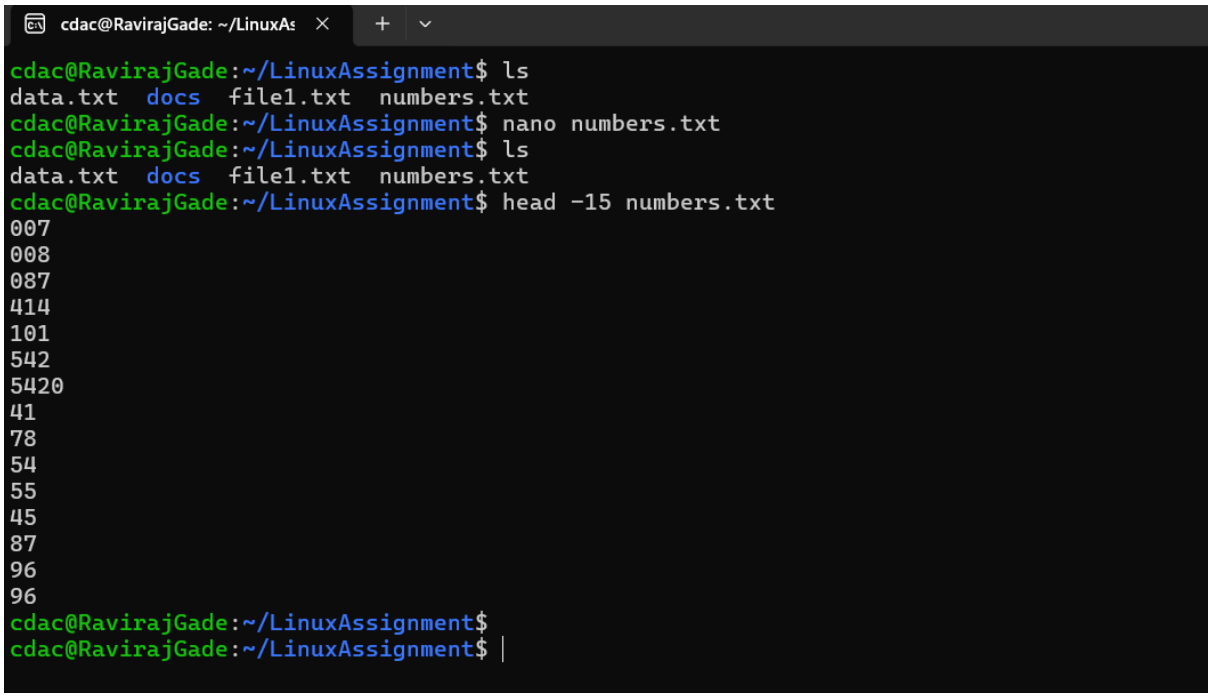
a. Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.



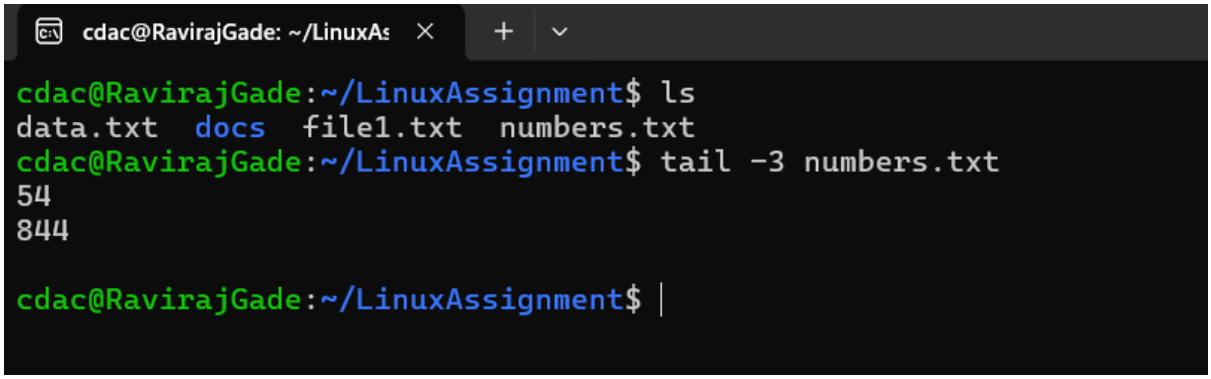
b. Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.



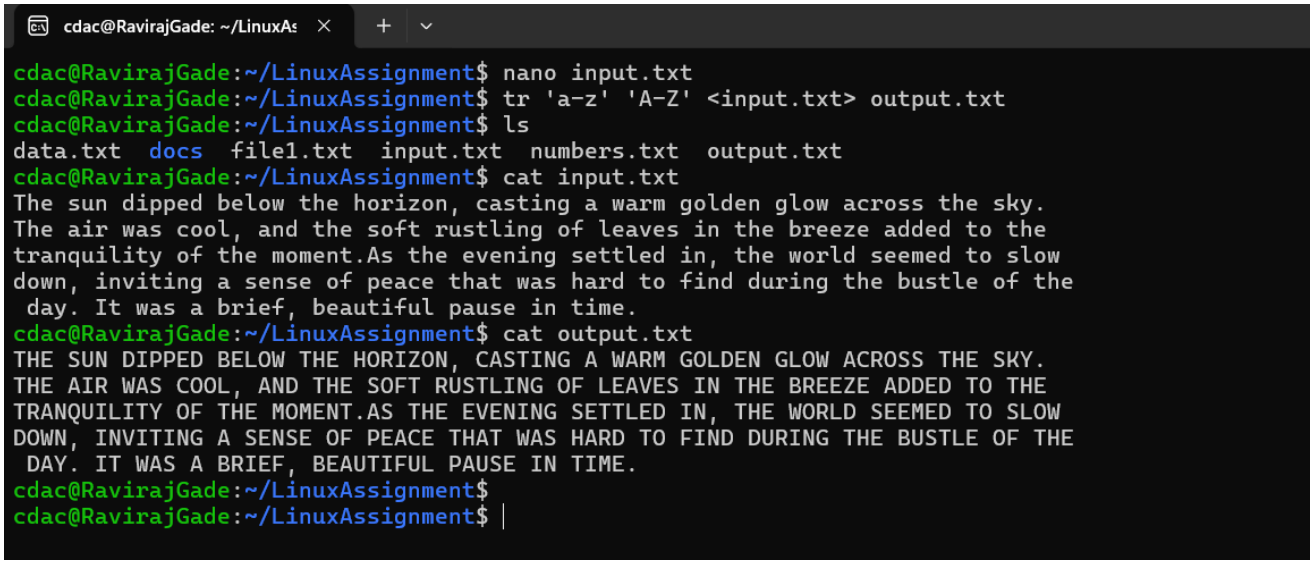
c. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of this file to analyze the initial data set.



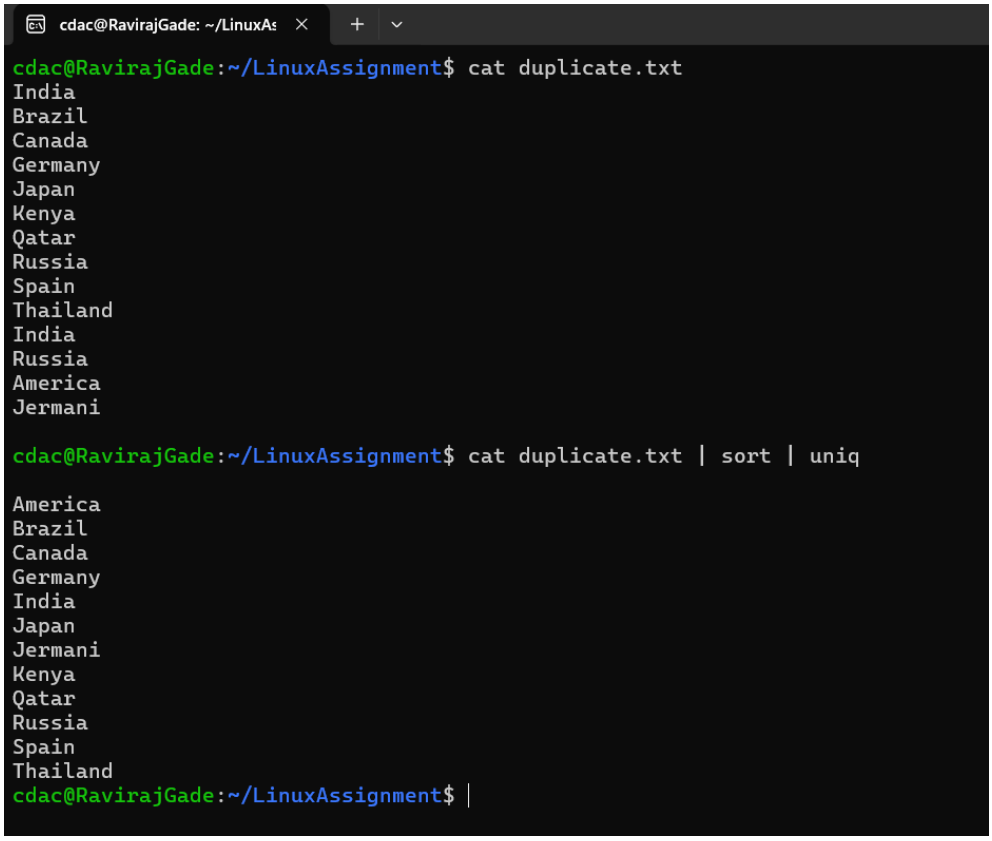
d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".



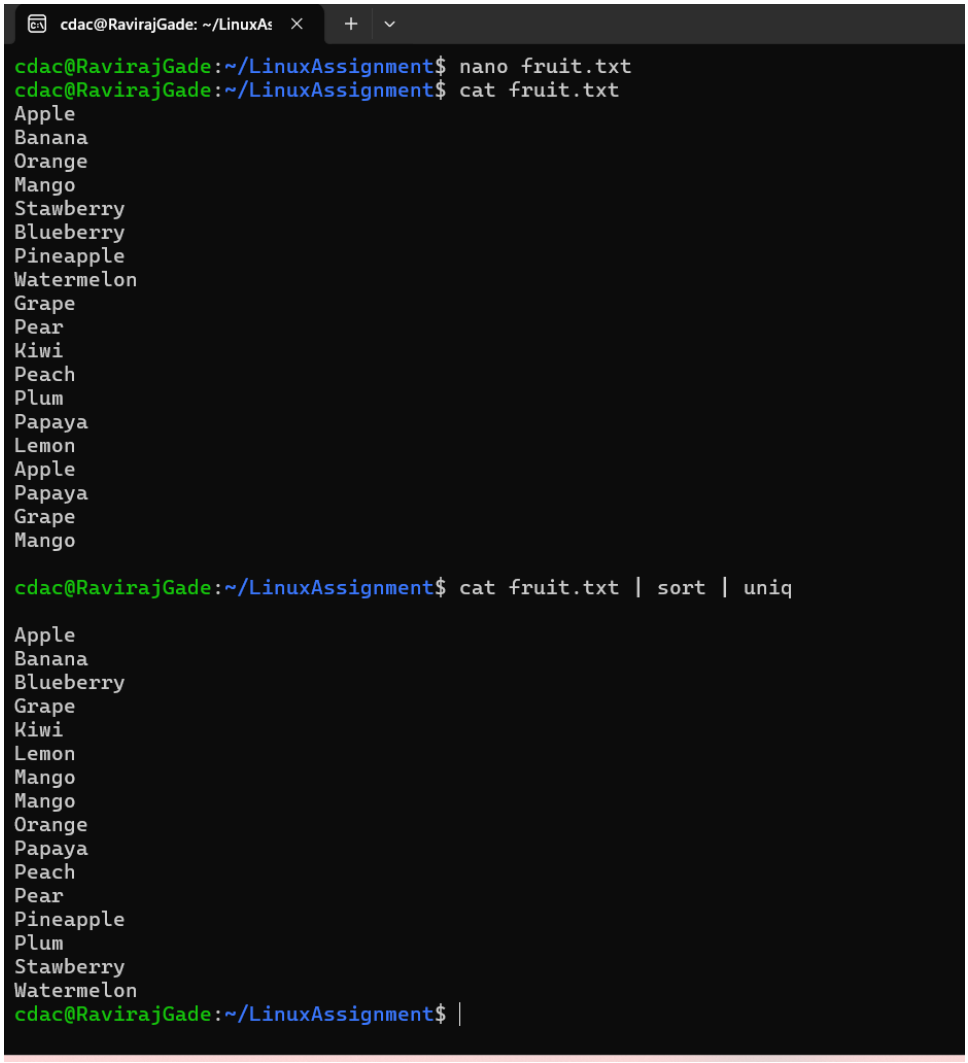
e. Imagine you have a file named "input.txt" with text content. Use a command to translate all lowercase letters to uppercase in "input.txt" and save the modified text in a new file named "output.txt."



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."


cdac@RavirajGade: ~/LinuxAs
cdac@RavirajGade:~/LinuxAssignment$ nano fruit.txt
cdac@RavirajGade:~/LinuxAssignment$ cat fruit.txt
Apple
Banana
Orange
Mango
Stawberry
Blueberry
Pineapple
Watermelon
Grape
Pear
Kiwi
Peach
Plum
Papaya
Lemon
Apple
Papaya
Grape
Mango
cdac@RavirajGade:~/LinuxAssignment$ cat fruit.txt | sort | uniq
Apple
Banana
Blueberry
Grape
Kiwi
Lemon
Mango
Mango
Orange
Papaya
Peach
Pear
Pineapple
Plum
Stawberry
Watermelon
cdac@RavirajGade:~/LinuxAssignment$