Concepts of OS
Assignment 1
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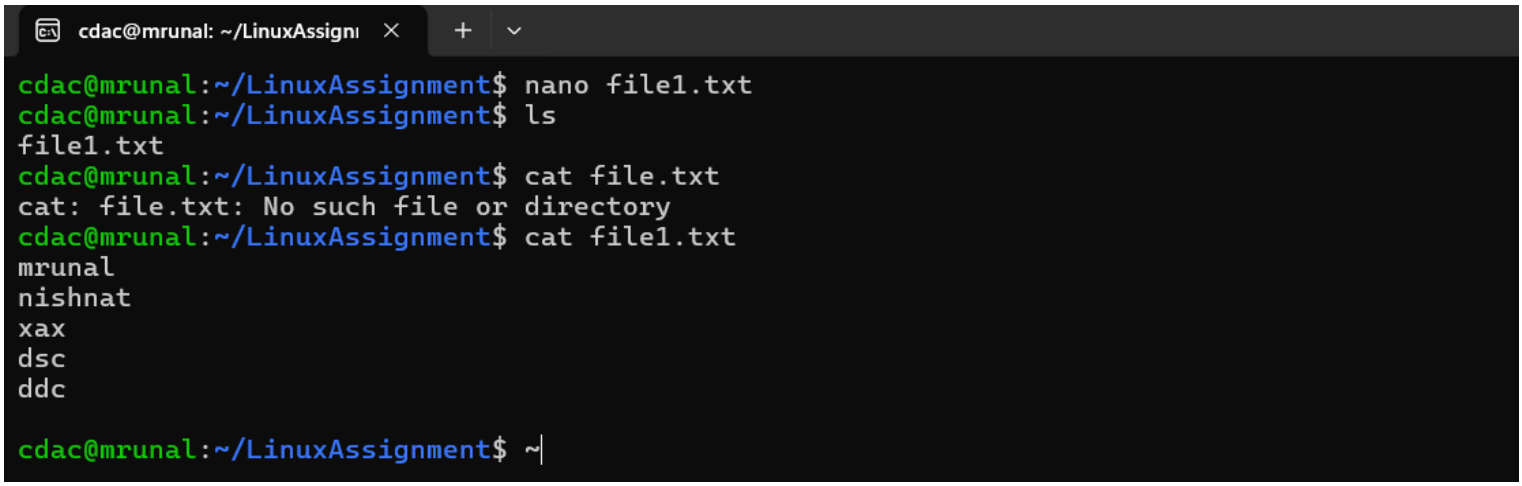
Problem 1: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

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.

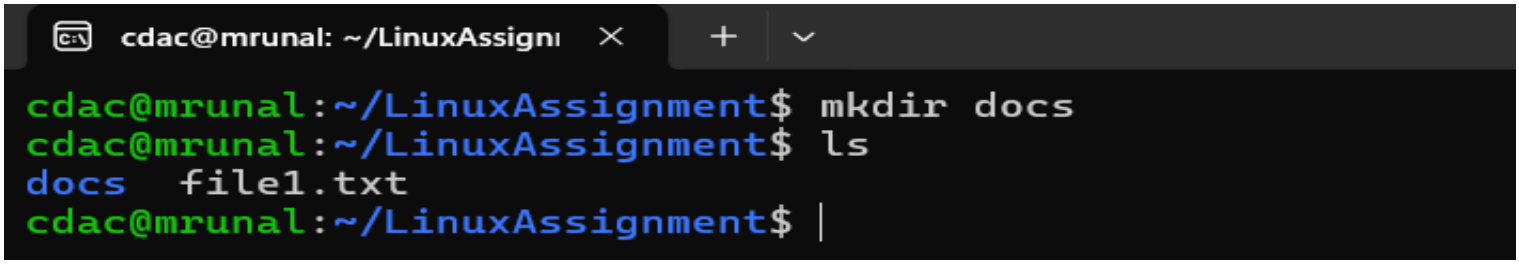
b) File Management:

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



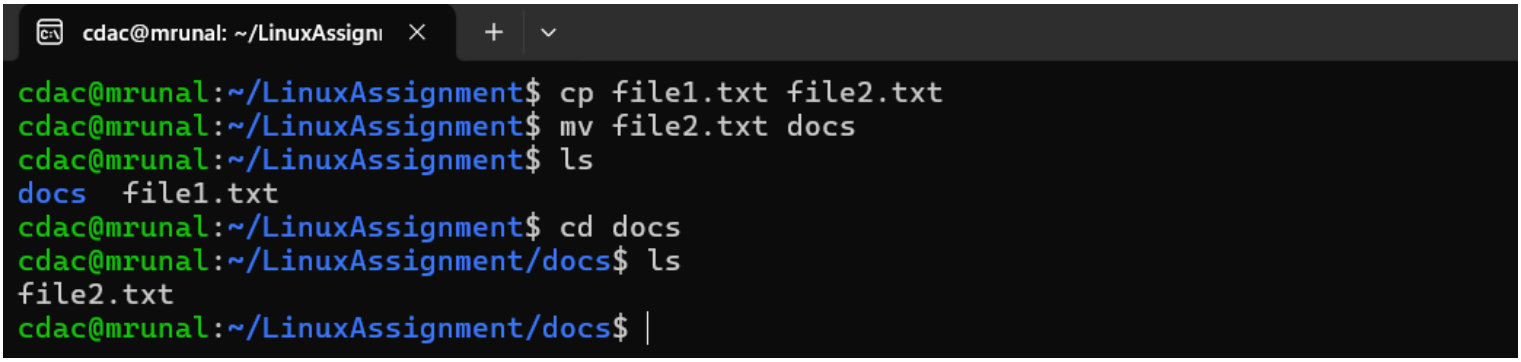
c) Directory Management:

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



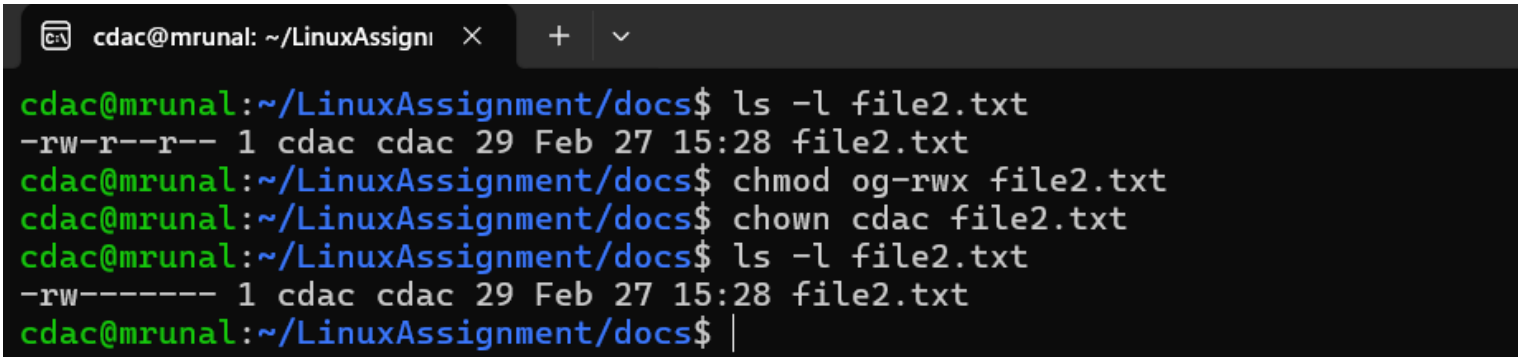
d) Copy and Move Files:

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



e) Permissions and Ownership:

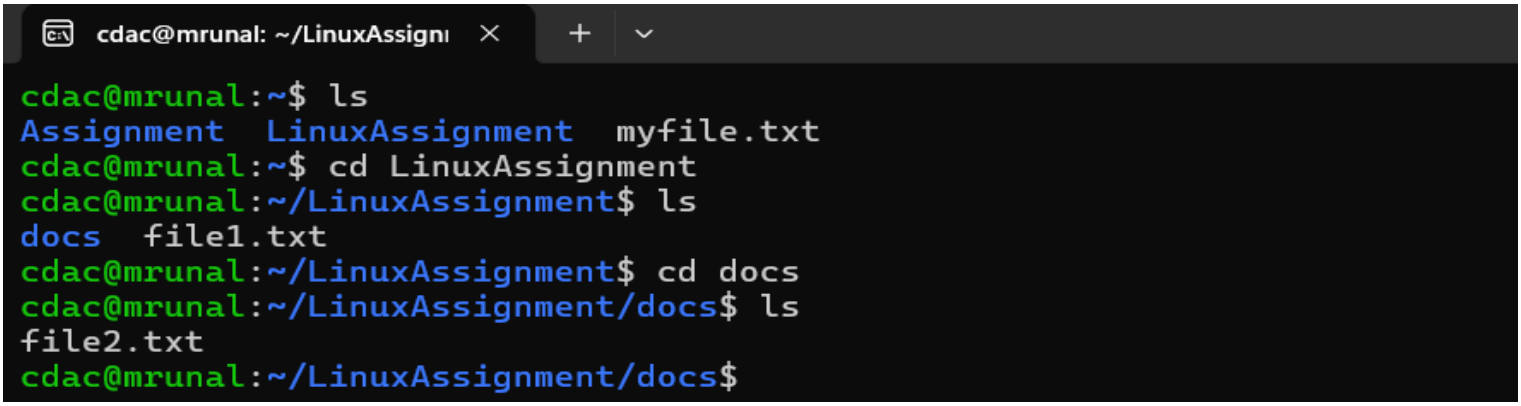
a. Change the permissions of "file2.txt" to allow read, write, and execute permissions for the owner and only read permissions for others. Then, change the owner of "file2.txt" to the current user.



f) Final Checklist:

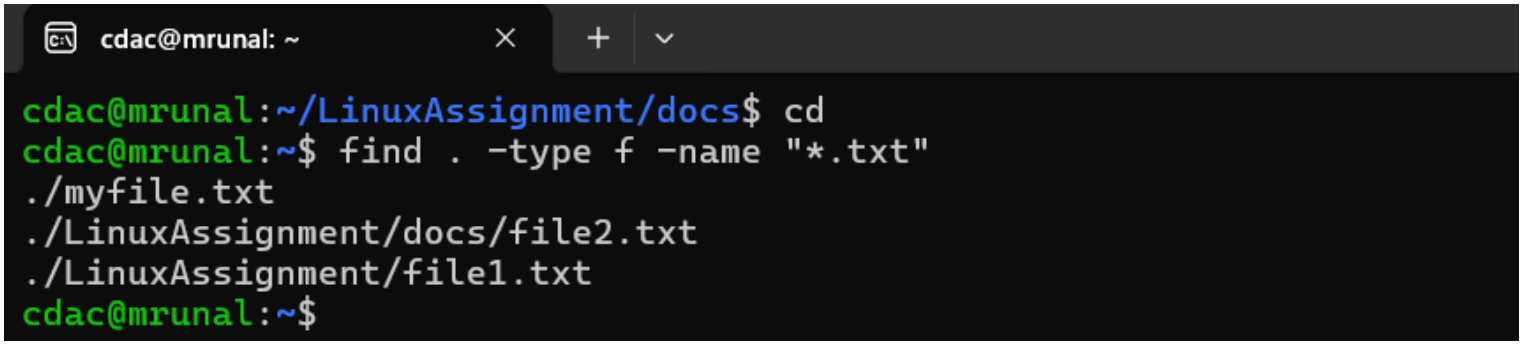
a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to

ensure that all operations were performed correctly.



g) File Searching:

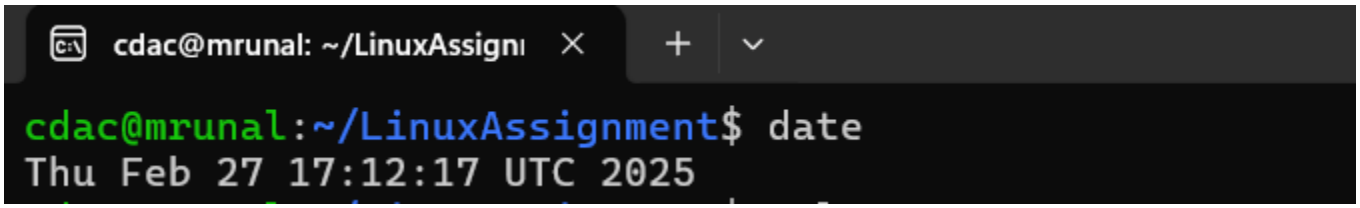
a. Search for all files with the extension ".txt" in the current directory and its subdirectories.



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

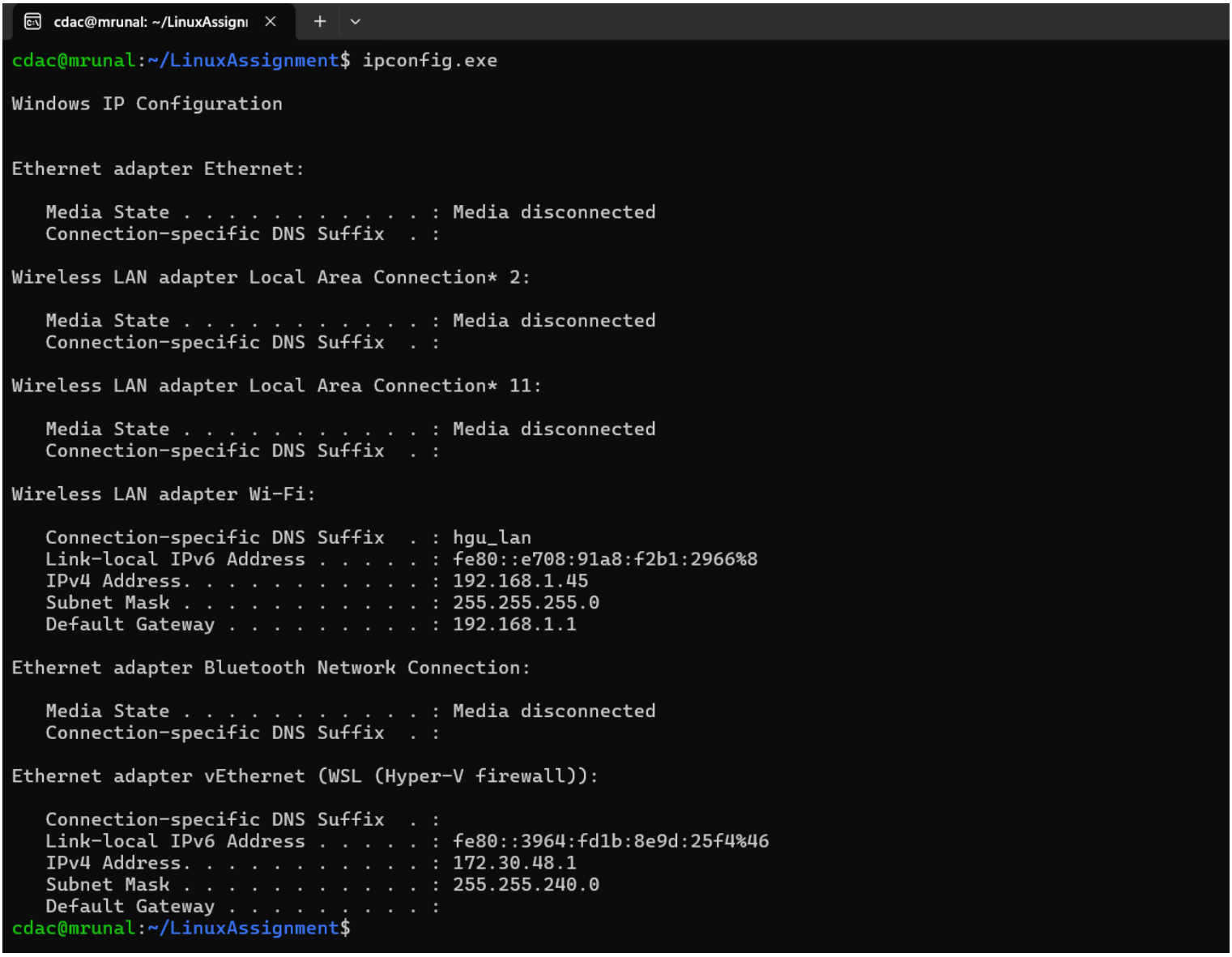
h) System Information:

a. Display the current system date and time.

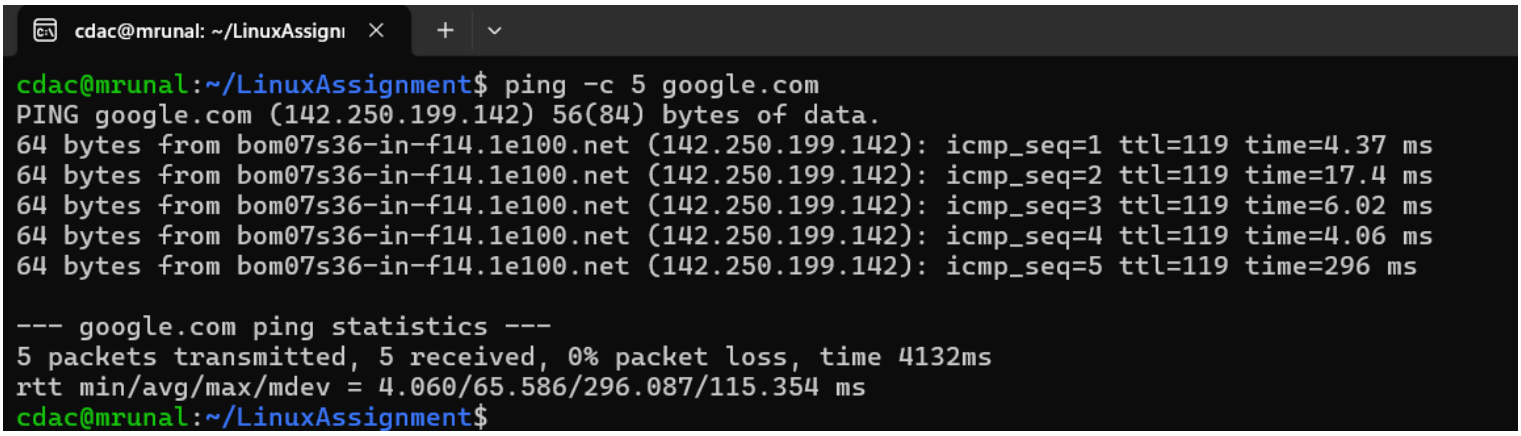


i) Networking:

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.

```
cdac@mrunal: ~/LinuxAssignı
cdac@mrunal:~/LinuxAssignment$ sudo apt install zip
[sudo] password for cdac:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  unzip
The following NEW packages will be installed:
  unzip zip
0 upgraded, 2 newly installed, 0 to remove and 0 not upgraded.
Need to get 350 kB of archives.
After this operation, 933 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 unzip amd64 6.0-28ubuntu4.1 [174 kB]
Err:2 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 zip amd64 3.0-13ubuntu0.1
  404  Not Found [IP: 91.189.91.82 80]
Fetched 174 kB in 2s (71.4 kB/s)
E: Failed to fetch http://archive.ubuntu.com/ubuntu/pool/main/z/zip/zip_3.0-13ubuntu0.1_amd64.deb  404  Not Found [IP: 91.189.91.82 80]
E: Unable to fetch some archives, maybe run apt-get update or try with --fix-missing?
cdac@mrunal:~/LinuxAssignment$
```

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

```
cdac@nobeuno:~/LinuxAssignments$ ls
data.txt  docs  docs1.zip  duplicate.txt  file1.txt  fruit.txt  input.txt  numbers.txt  output.txt
cdac@nobeuno:~/LinuxAssignments$ unzip docs1.zip -d newdocs
Archive:  docs1.zip
   creating: newdocs/docs/
  extracting: newdocs/docs/file2.txt
cdac@nobeuno:~/LinuxAssignments$ ls
data.txt  docs  docs1.zip  duplicate.txt  file1.txt  fruit.txt  input.txt  newdocs  numbers.txt  output.txt
cdac@nobeuno:~/LinuxAssignments$
```

k) File Editing:

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

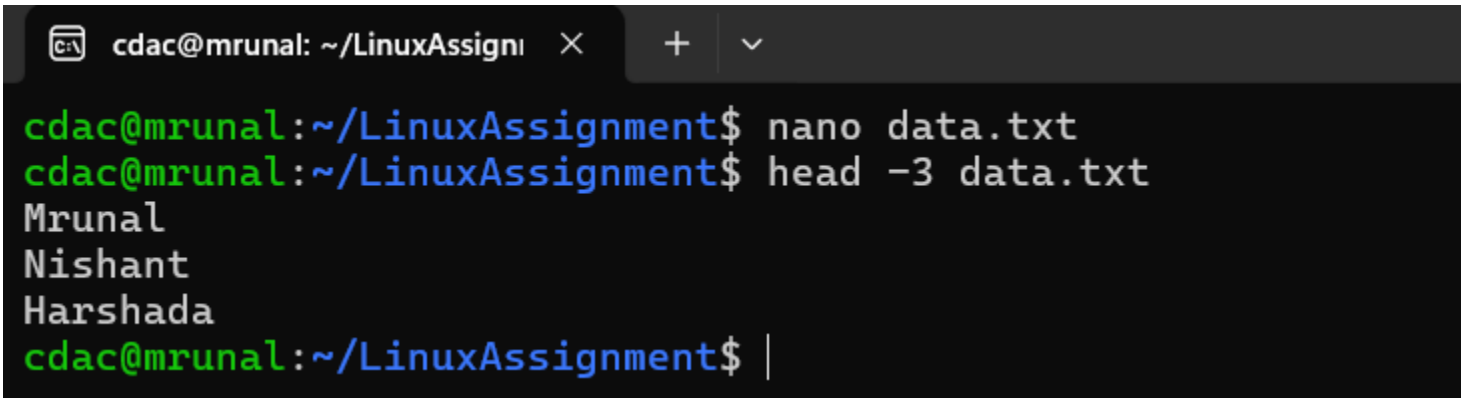
b. Replace a specific word in the "file1.txt" file with another word (provide the original word and the word to replace it with).

```
cdac@mrunal: ~/LinuxAssignı
cdac@mrunal:~/LinuxAssignment$ ls
Docs.gz  compressdemo  docs  file1.txt
cdac@mrunal:~/LinuxAssignment$ nano file1.txt
cdac@mrunal:~/LinuxAssignment$ cat.file1.txt
cat.file1.txt: command not found
cdac@mrunal:~/LinuxAssignment$ cat file1.txt
Hello my name is Mrunal Shedge
I'm 21 years old.
cdac@mrunal:~/LinuxAssignment$ sed -i 's/ahead/always/g' file.txt
sed: can't read file.txt: No such file or directory
cdac@mrunal:~/LinuxAssignment$ sed -i 's/ahead/always/g' file1.txt
cdac@mrunal:~/LinuxAssignment$ cat file1.txt
Hello my name is Mrunal Shedge
I'm 21 years old.
cdac@mrunal:~/LinuxAssignment$
```

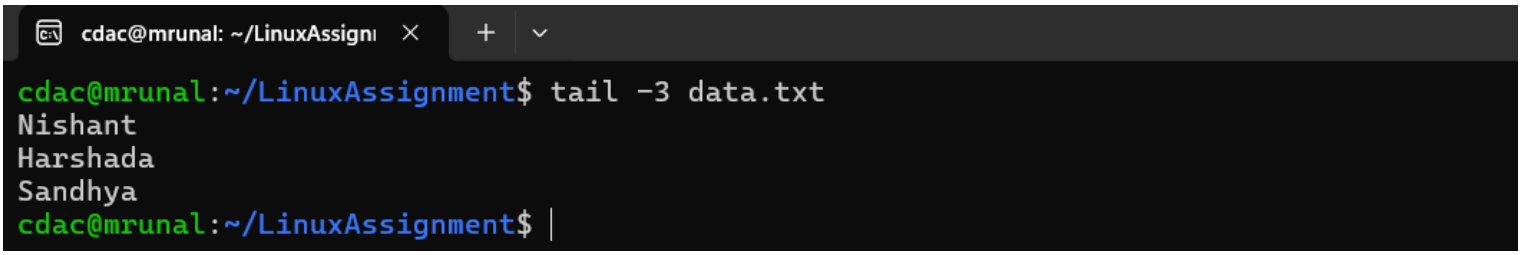
Problem 2:

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

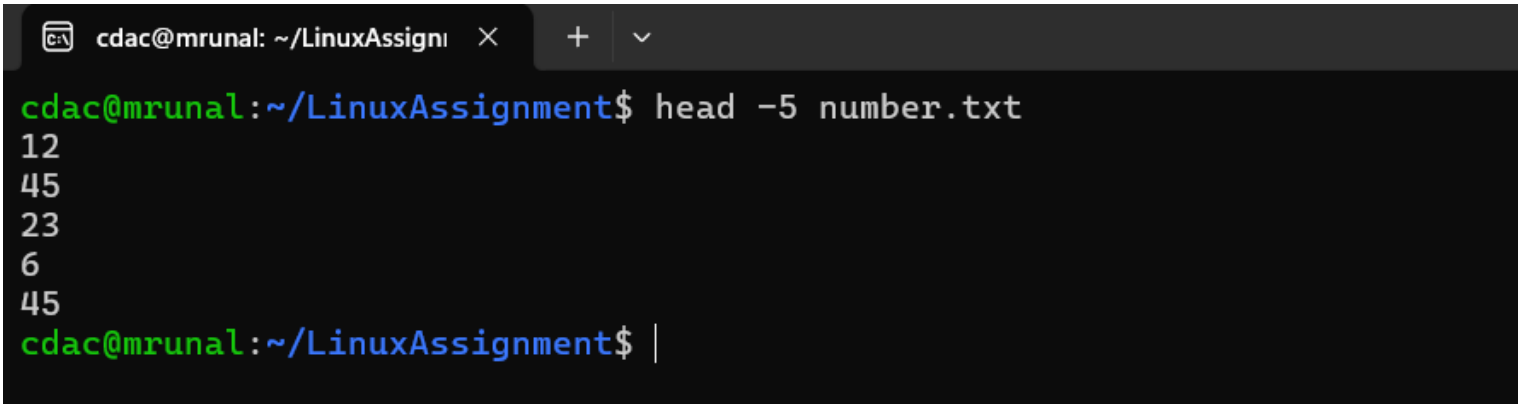
a. Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.



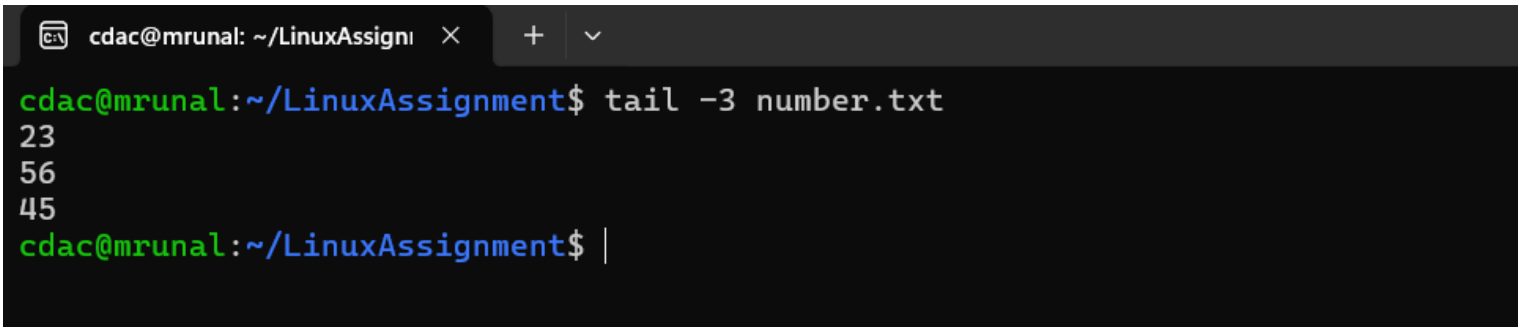
b. Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.



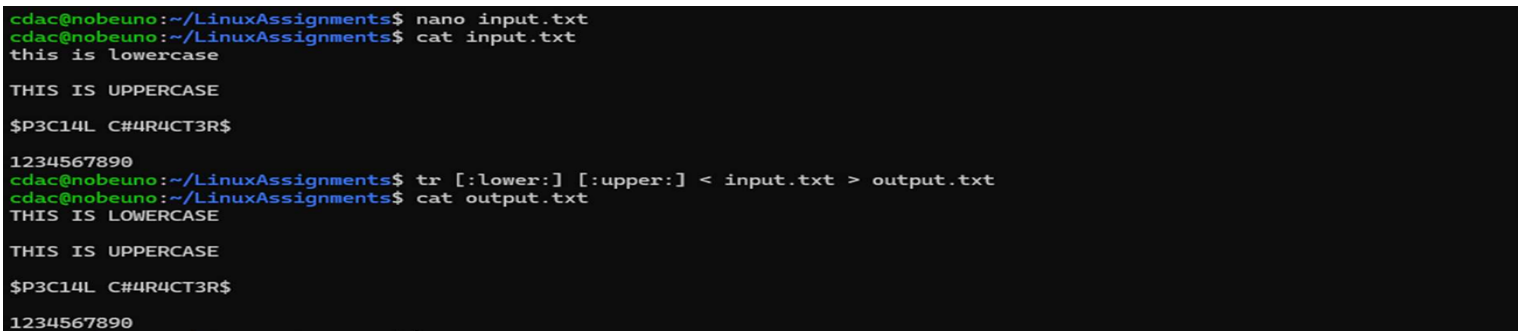
c. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of this file to analyze the initial data set.



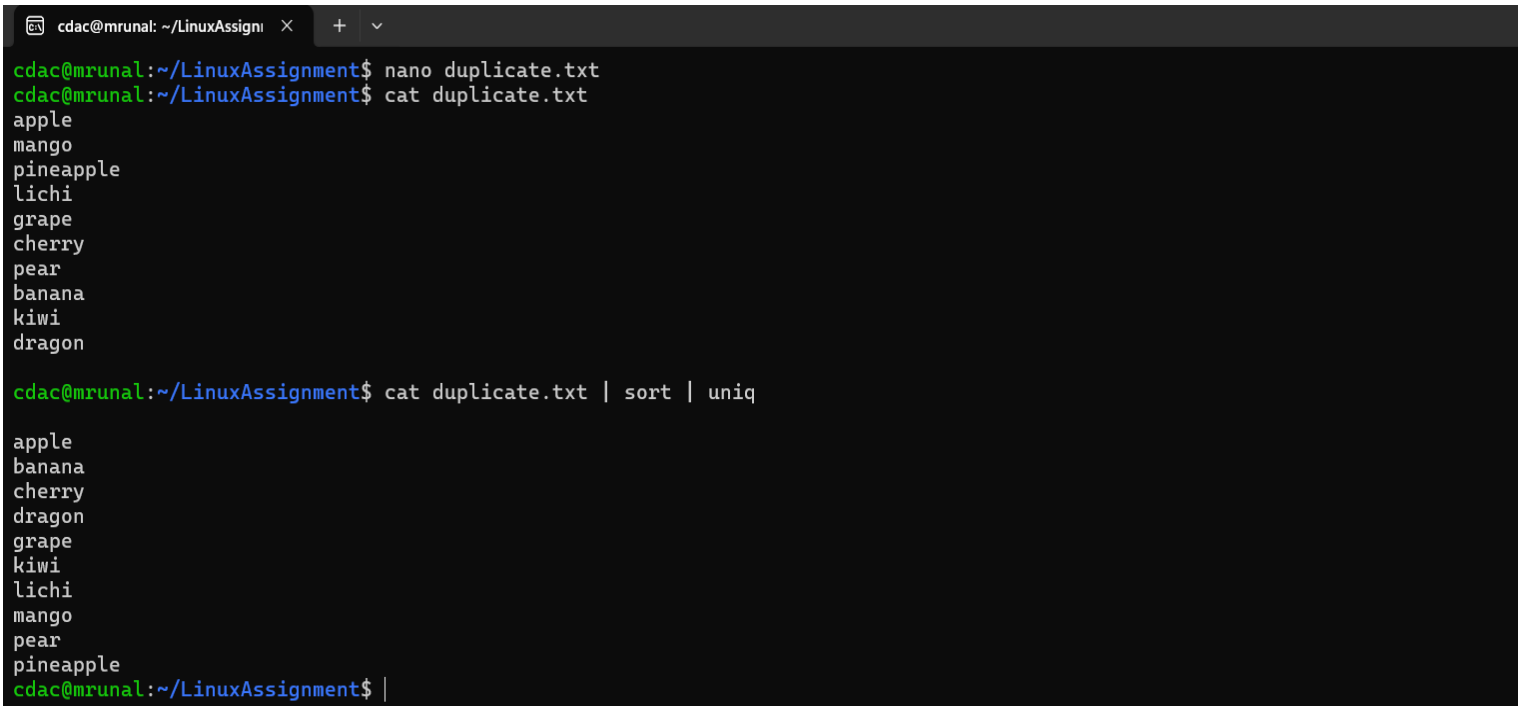
d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".



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."