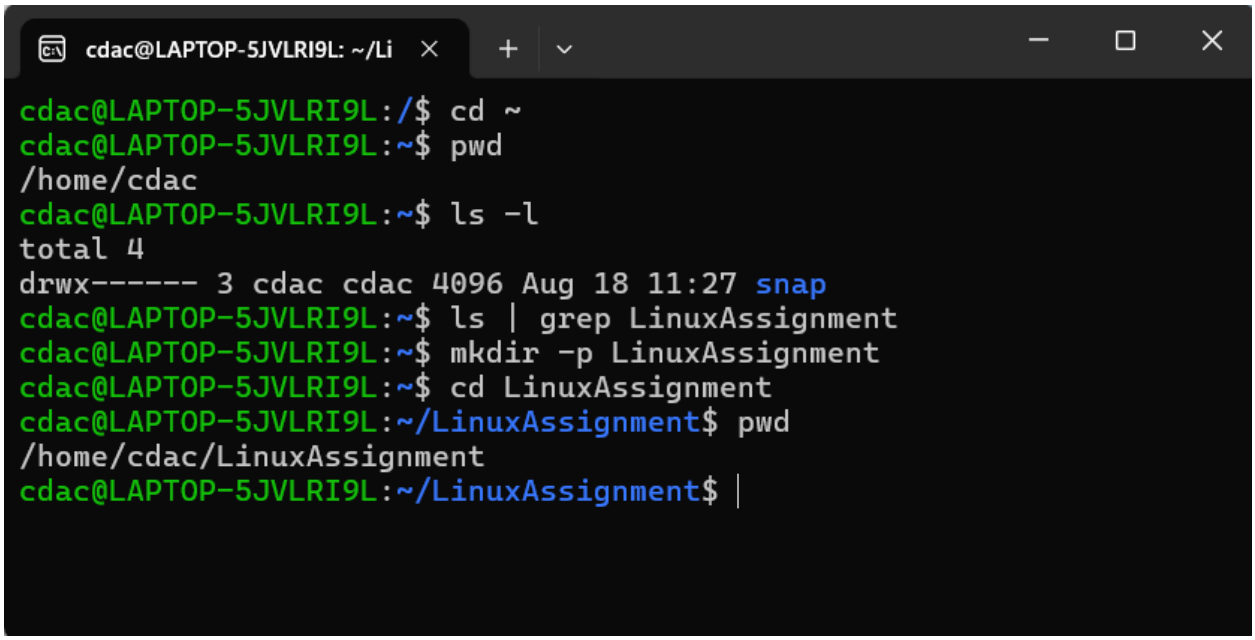
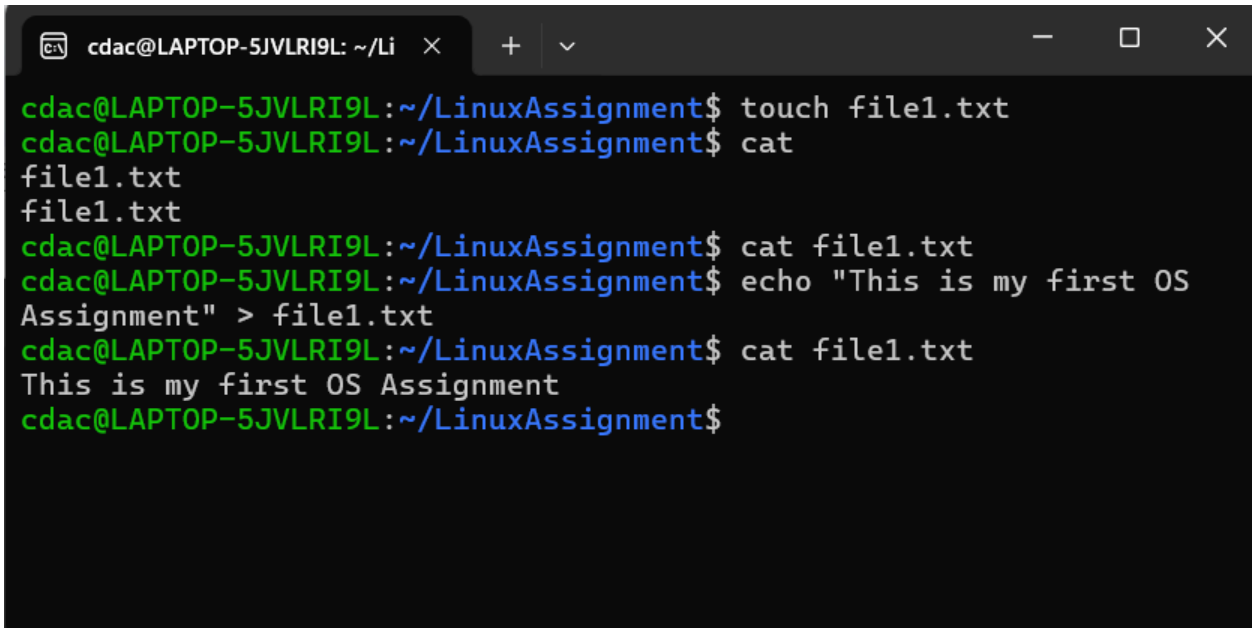
Problem 1

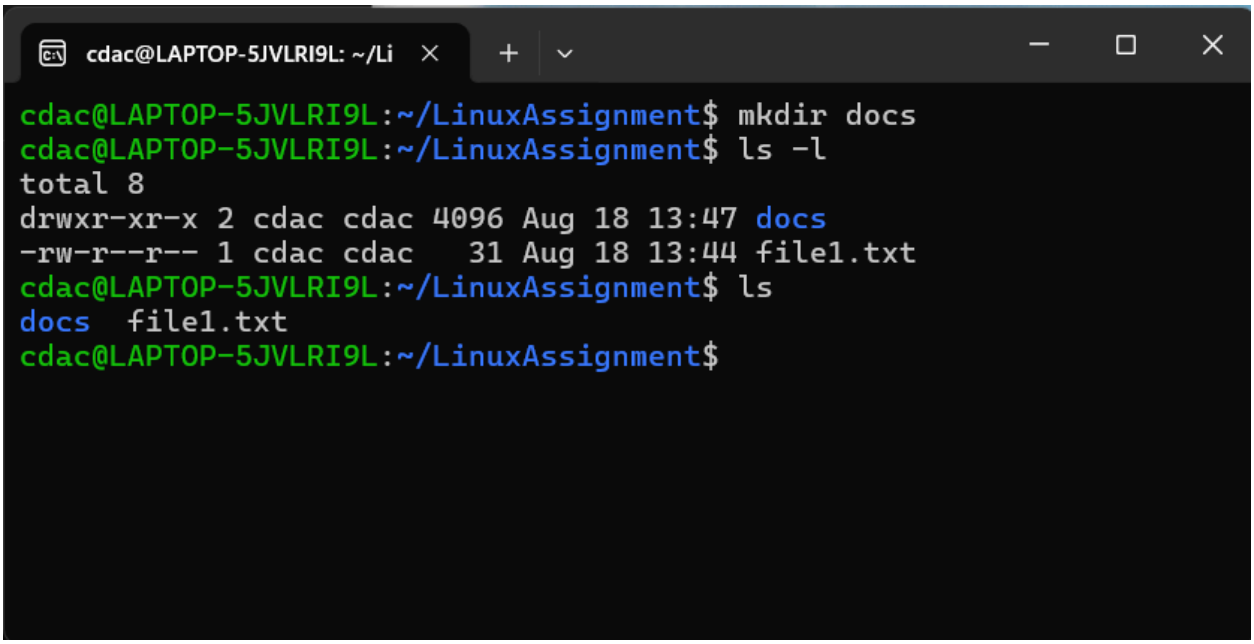
a) Start by navigating to your home directory and list its contents. Then, move into a directory named "LinuxAssignment" if it exists; otherwise, create it.



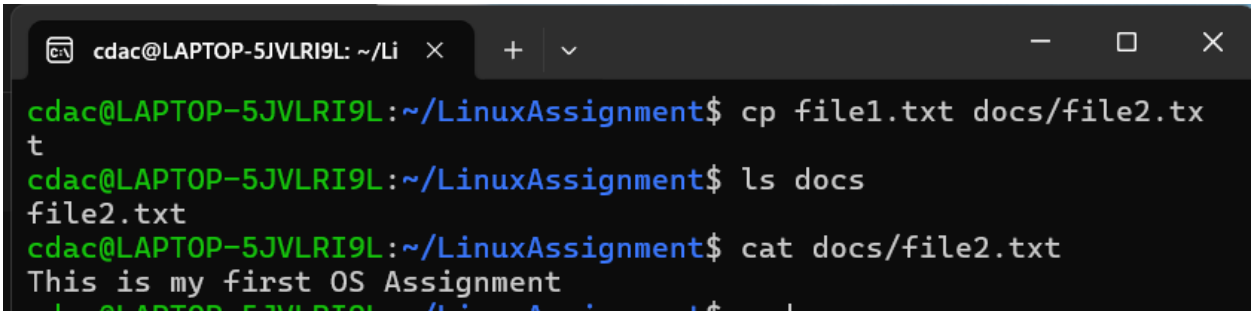
b) Inside the "LinuxAssignment" directory, create a new file named "file1.txt". Display its contents.



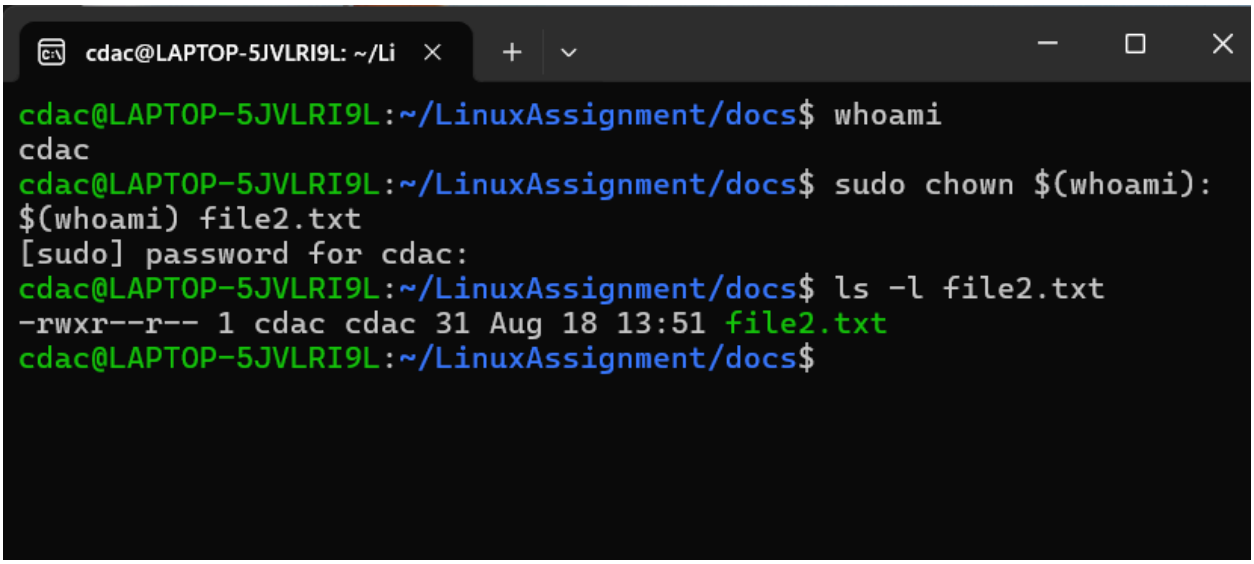
c) Create a new directory named "docs" inside the "LinuxAssignment" directory.



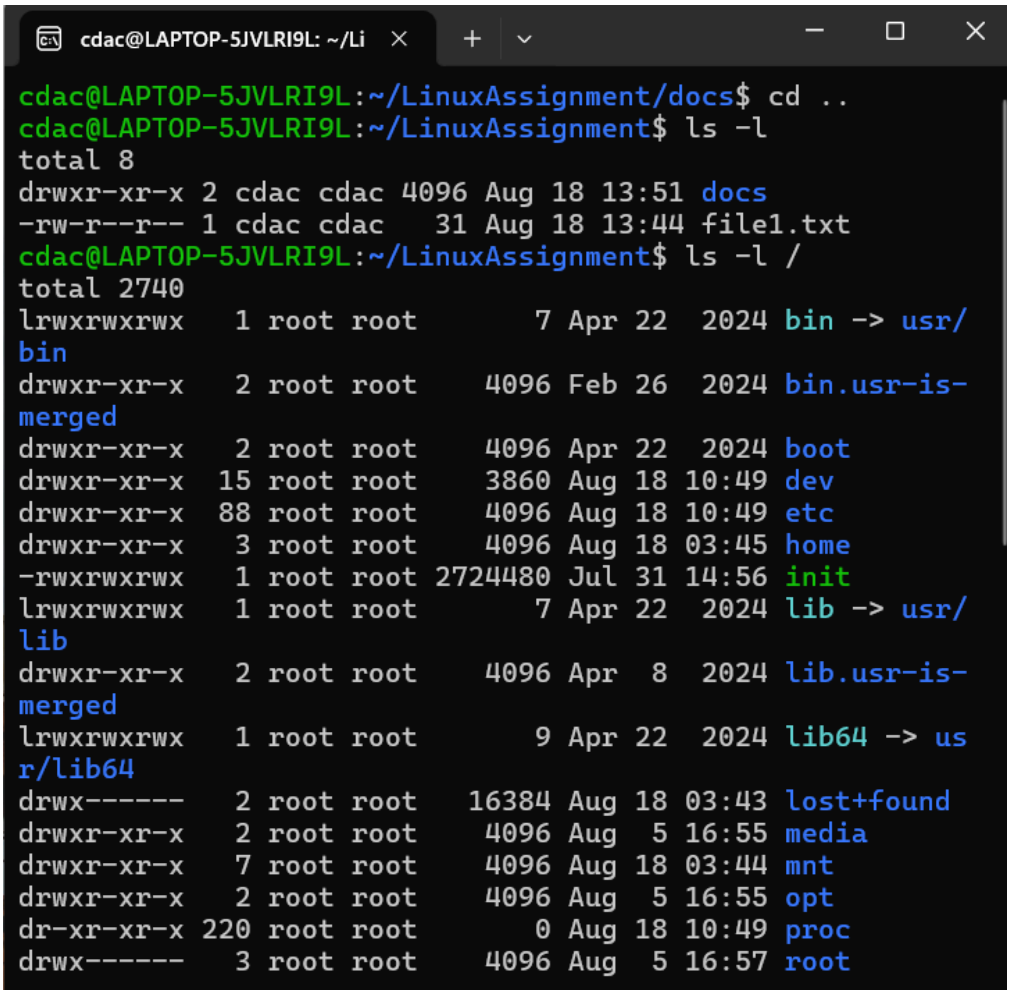
d) Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".



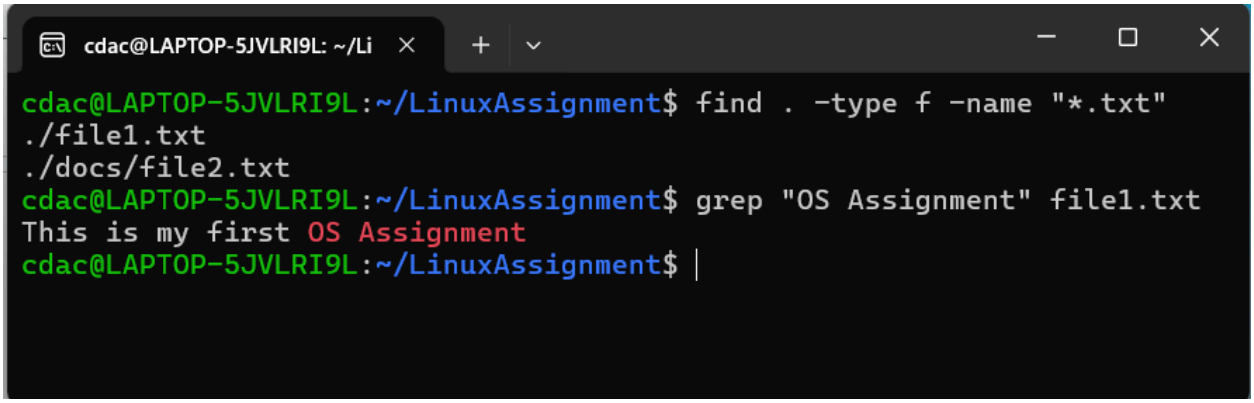
e) Change the permissions of "file2.txt" to allow read, write, and execute permissions for the owner and only read permissions for others. Then, change the owner of "file2.txt" to the current user.



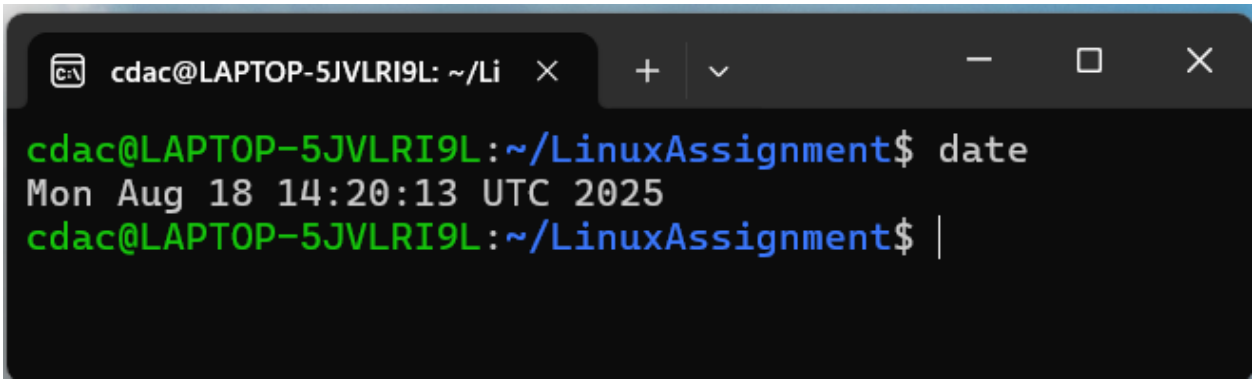
f) Finally, list the contents of the "LinuxAssignment" directory and the root directory to ensure that all operations were performed correctly.



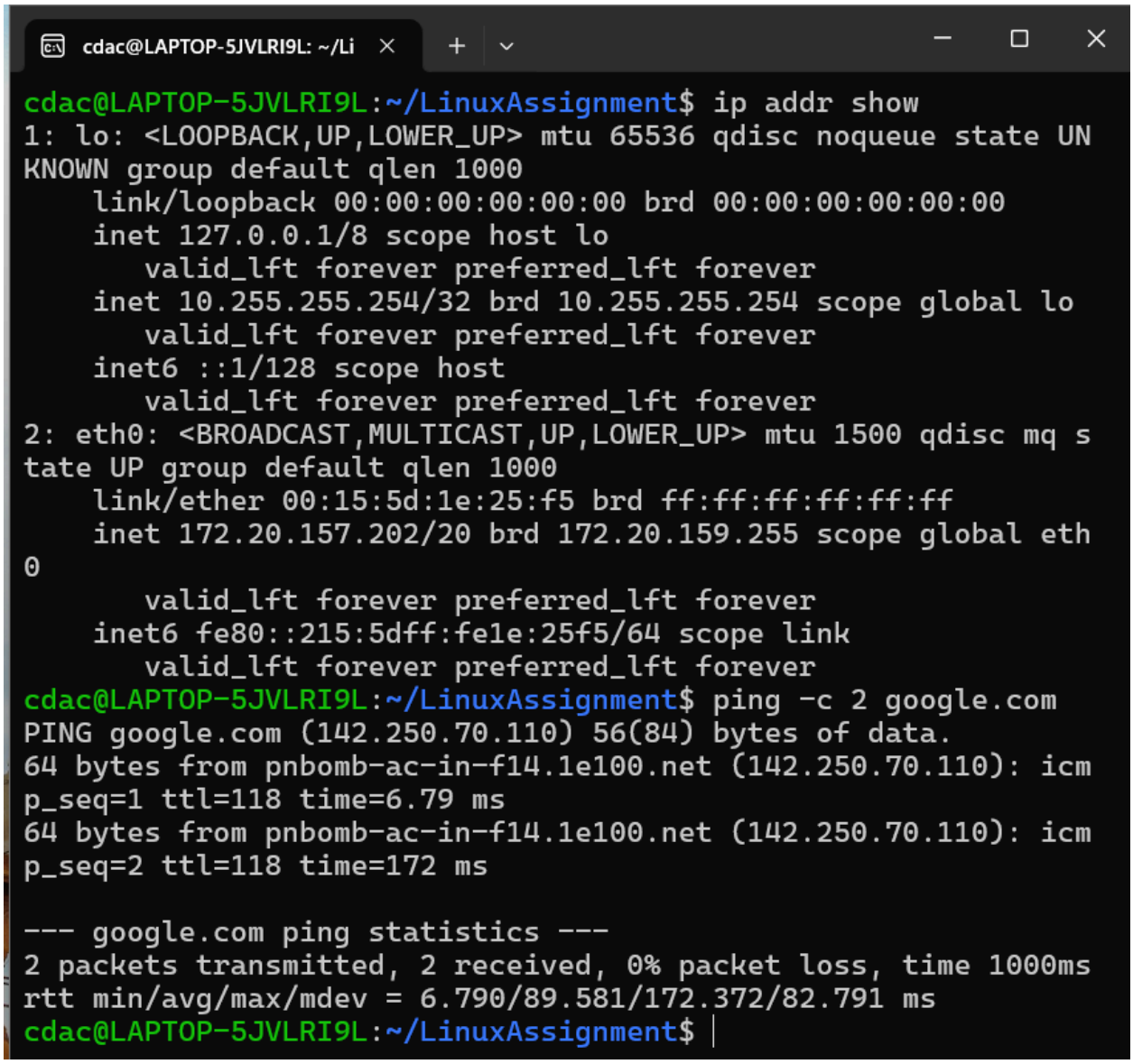
g) a. Search for all files with the extension ".txt" in the current directory and its subdirectories.
b. Display lines containing a specific word in a file (provide a file name and the specific word to search).



h) Display the current system date and time.



i) a. Display the IP address of the system.
b. Ping a remote server to check connectivity (provide a remote server address to ping).



j) a. Compress the "docs" directory into a zip file.
b. Extract the contents of the zip file into a new directory.

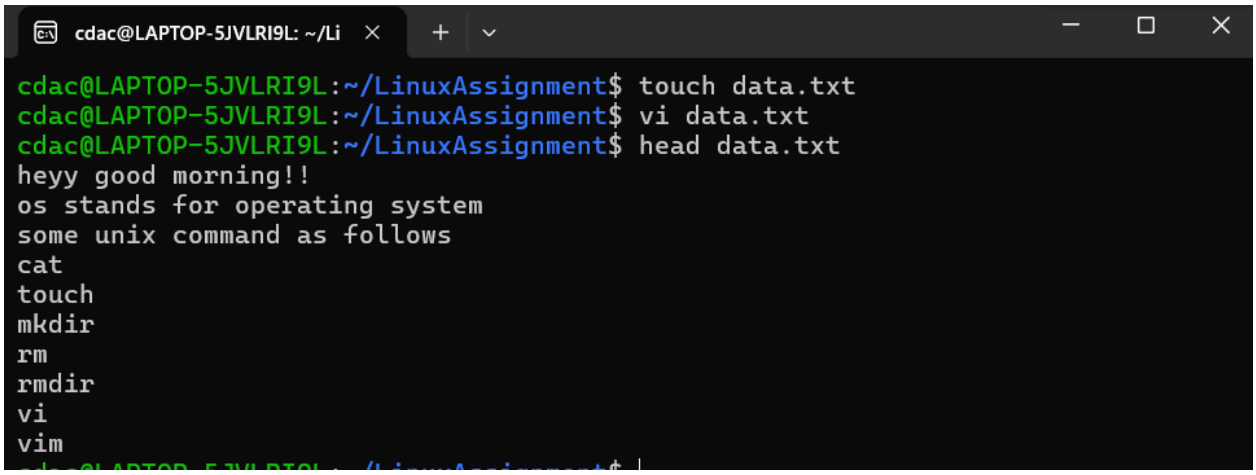
```
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ zip -r docs.zip docs
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (stored 0%)
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ ls
docs  docs.zip  file1.txt
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ mkdir docs_extracted
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ ls
docs  docs.zip  docs_extracted  file1.txt
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ unzip docs.zip -d docs_extracted
Archive:  docs.zip
   creating: docs_extracted/docs/
 extracting: docs_extracted/docs/file2.txt
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$
```

k) 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).

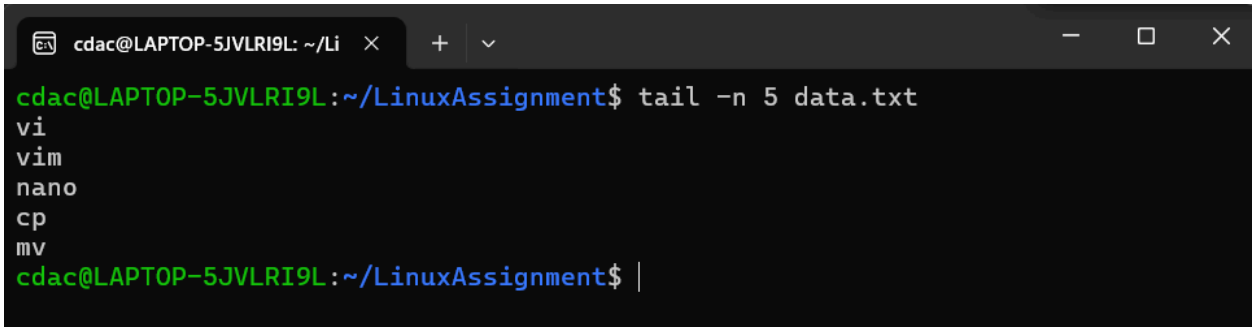
```
cdac@LAPTOP-5JVLRI9L: ~/Li
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ ls
docs  docs.zip  docs_extracted  file1.txt
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ cat file1.txt
This is my first OS Assignment
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ nano file1.txt
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ cat file1.txt
This is my second OS Assignment
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ vi file1.txt
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ cat file1.txt
This is my Third OS Assignment
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ sed -i 's/Third/Fifth/g' file1.txt
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$ cat file1.txt
This is my Fifth OS Assignment
cdac@LAPTOP-5JVLRI9L:~/LinuxAssignment$
```

Problem 2

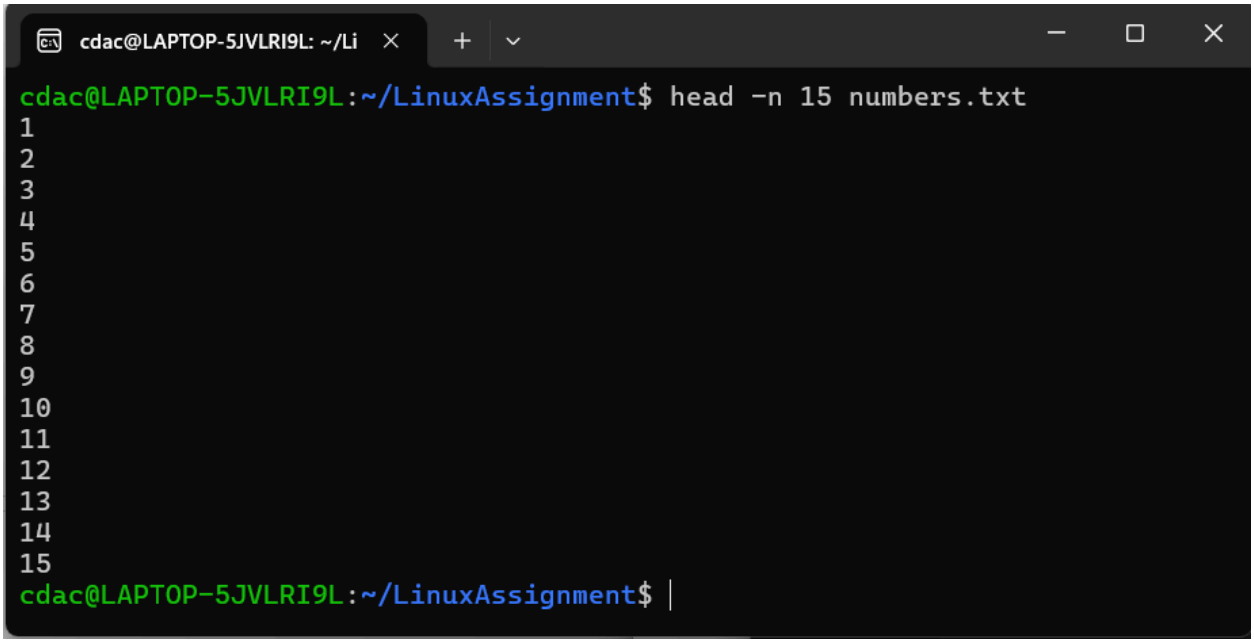
a) Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.



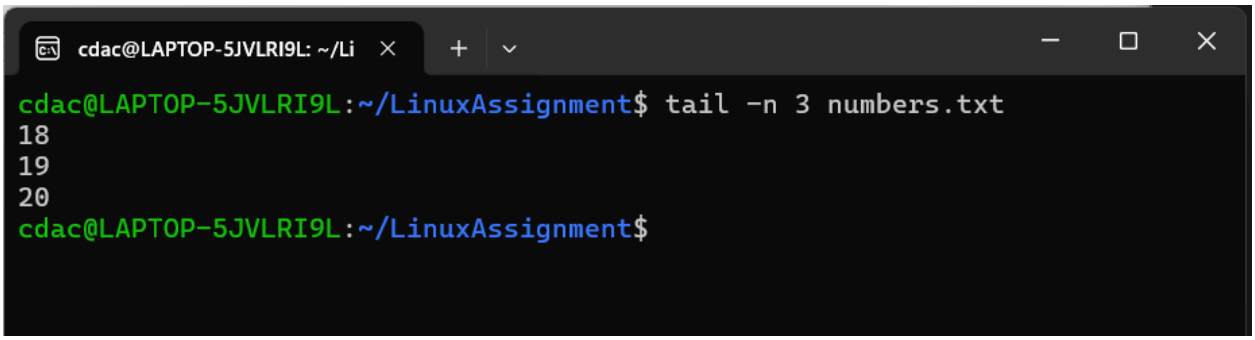
b) Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.



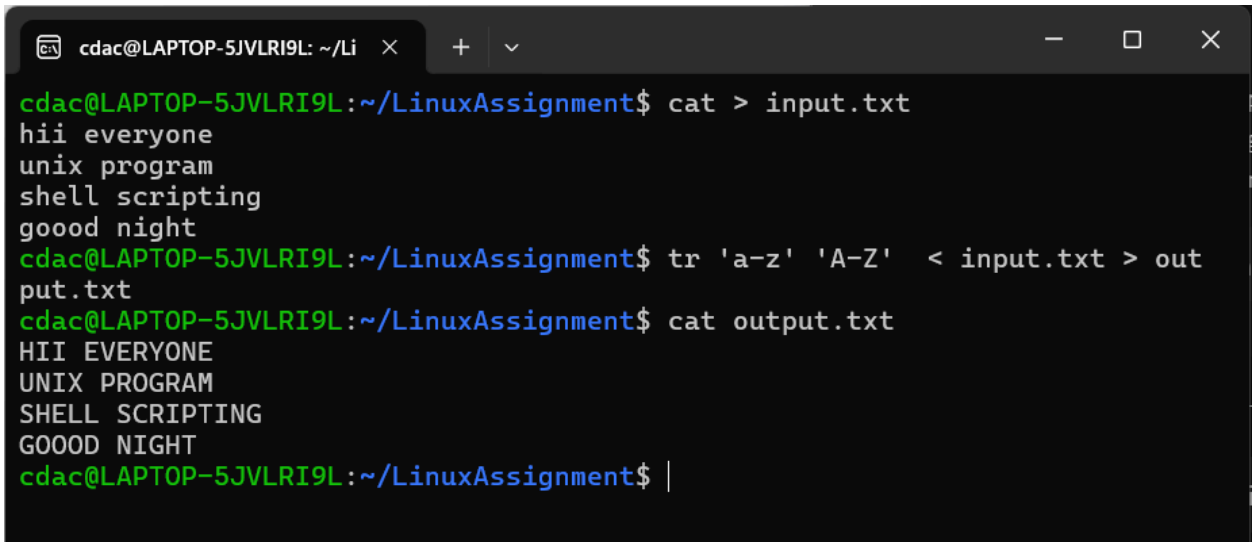
c) In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of this file to analyze the initial data set.



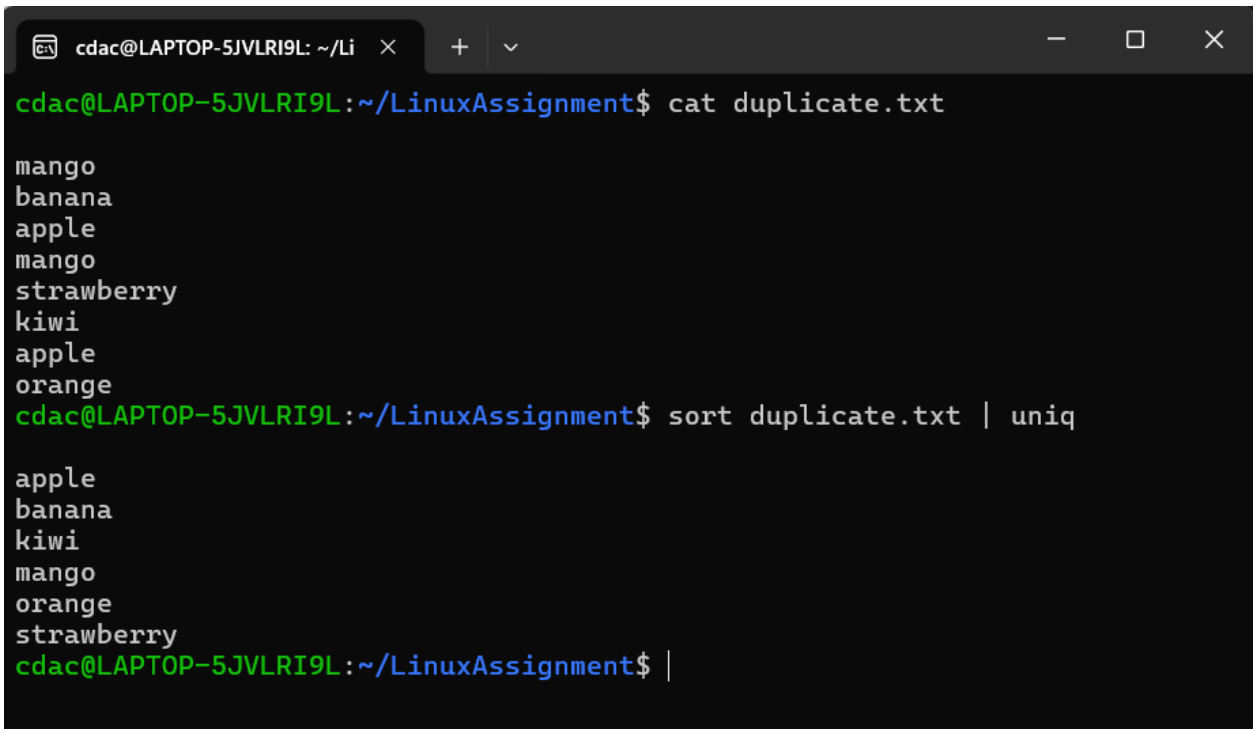
d) To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".



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."