CDAC MUMBAI

Concepts of Operating System {Assignment 1}

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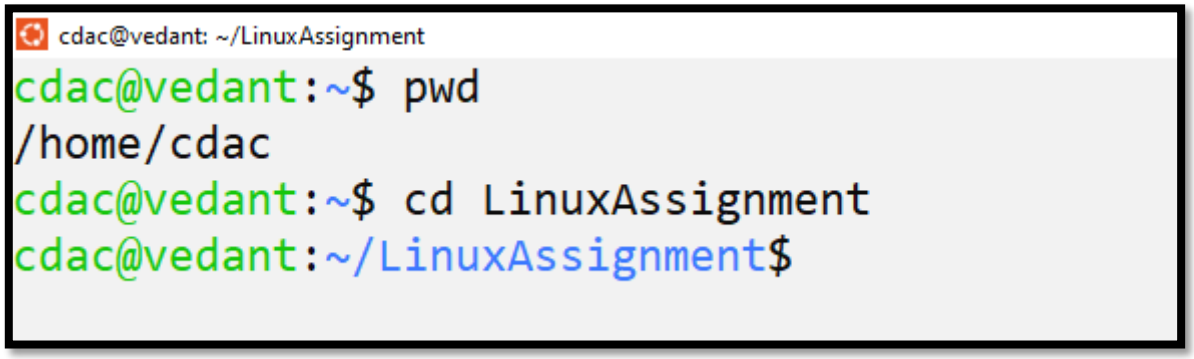
Problem 1: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

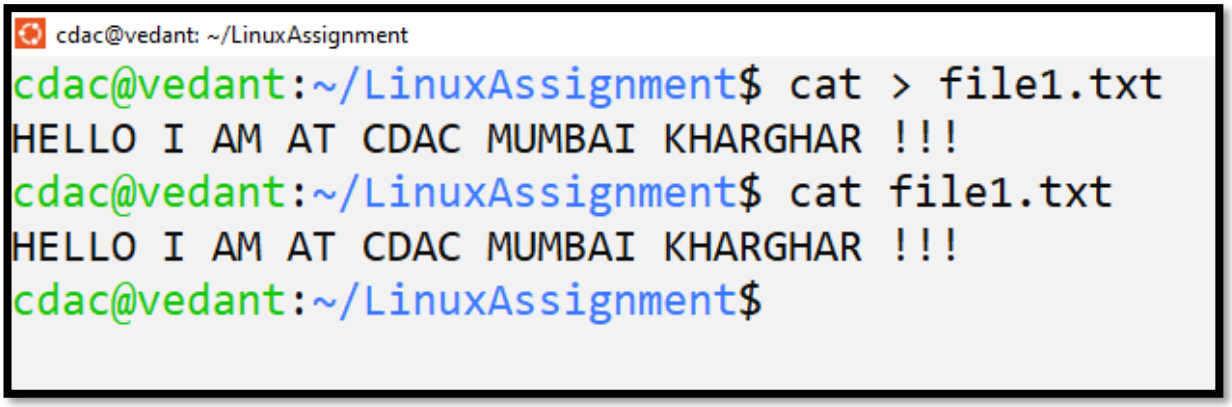
a) **Navigate and List:**

a. Start by navigating to your home directory and list its contents. Then, create it.



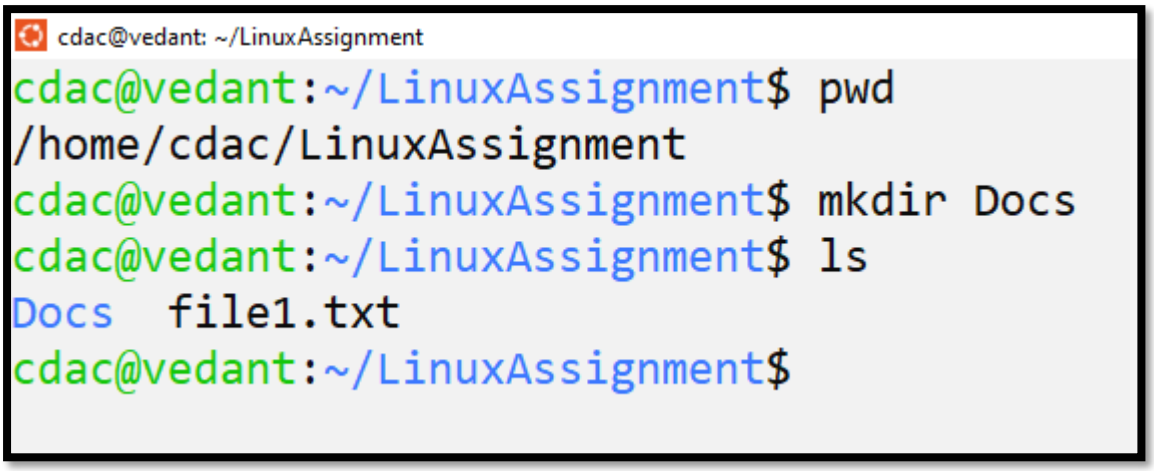
b) File Management:

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



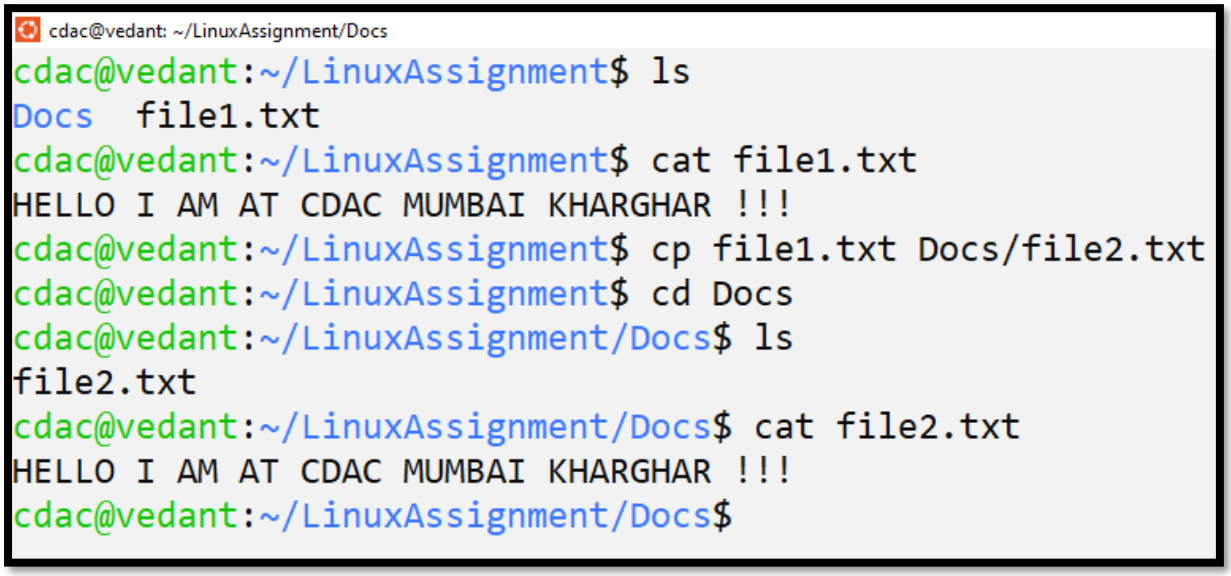
c) Directory Management:

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.

```
cdac@vedant: ~/LinuxAssignment/Docs
cdac@vedant:~/LinuxAssignment/Docs$ chmod 704 file2.txt
cdac@vedant:~/LinuxAssignment/Docs$ ls -l
total 0
-rwx---r-- 1 cdac cdac 39 Aug 19 13:35 file2.txt
cdac@vedant:~/LinuxAssignment/Docs$ chown $USER file2.txt
cdac@vedant:~/LinuxAssignment/Docs$ ls -l
total 0
-rwx---r-- 1 cdac cdac 39 Aug 19 13:35 file2.txt
cdac@vedant:~/LinuxAssignment/Docs$
```

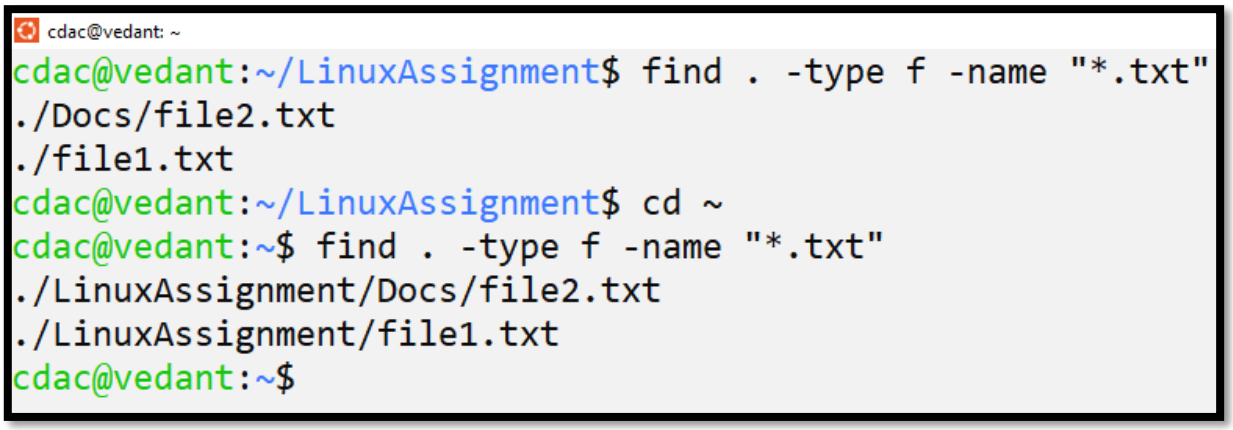
f) Final Checklist:

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

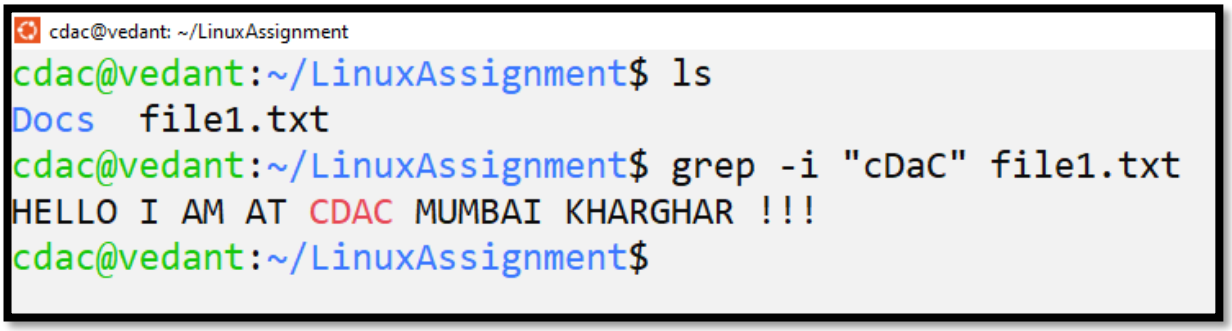
```
cdac@vedant: ~
cdac@vedant:~$ ls /
bin                boot  etc   init  lib.usr-is-merged  media  opt   root  sbin                snap  sys  usr
bin.usr-is-merged  dev   home  lib   lib64              mnt    proc  run   sbin.usr-is-merged  srv   tmp  var
cdac@vedant:~$ ls -l ~/LinuxAssignment
total 0
drwxr-xr-x 1 cdac cdac 512 Aug 19 13:35 Docs
-rw-r--r-- 1 cdac cdac  39 Aug 19 13:28 file1.txt
cdac@vedant:~$ ls -l ~/LinuxAssignment/Docs
total 0
-rwx---r-- 1 cdac cdac 39 Aug 19 13:35 file2.txt
cdac@vedant:~$
```

g) File Searching:

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

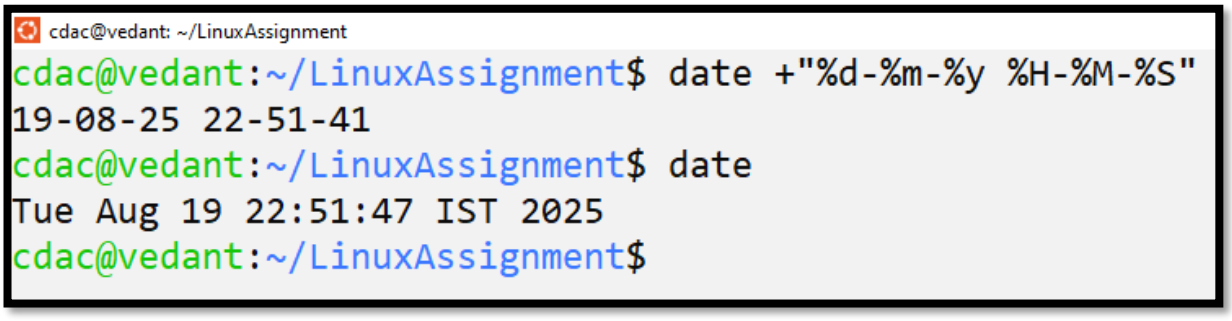


b. Display lines containing a specific word in a file (provide a file name and the specific word to search).



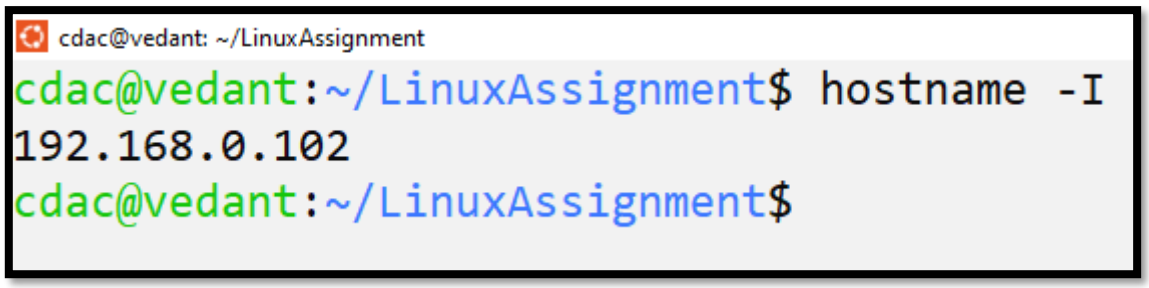
h) System Information:

a. Display the current system date and time.

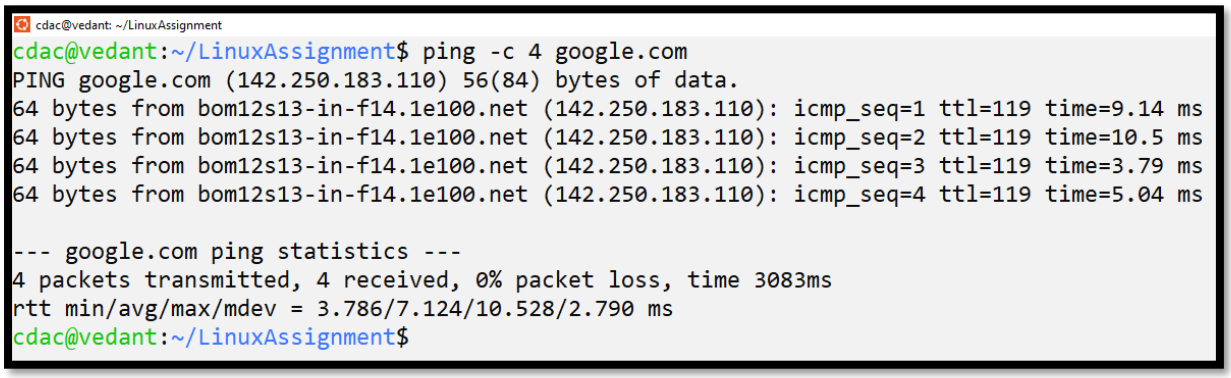


i) Networking:

a. Display the IP address of the system.

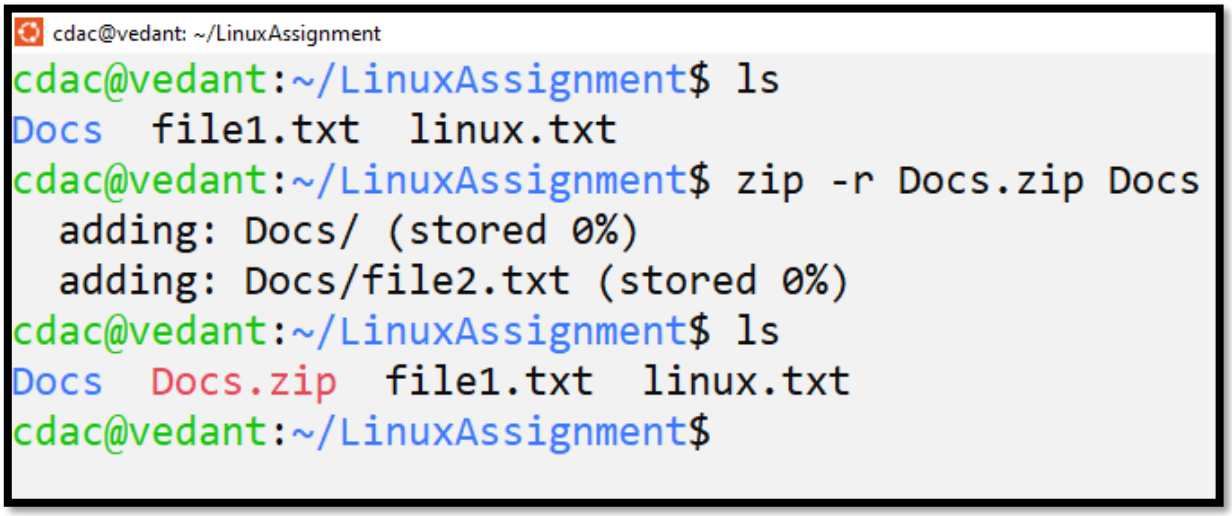


b. Ping a remote server to check connectivity (provide a remote server address to ping).



j) File Compression:

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



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

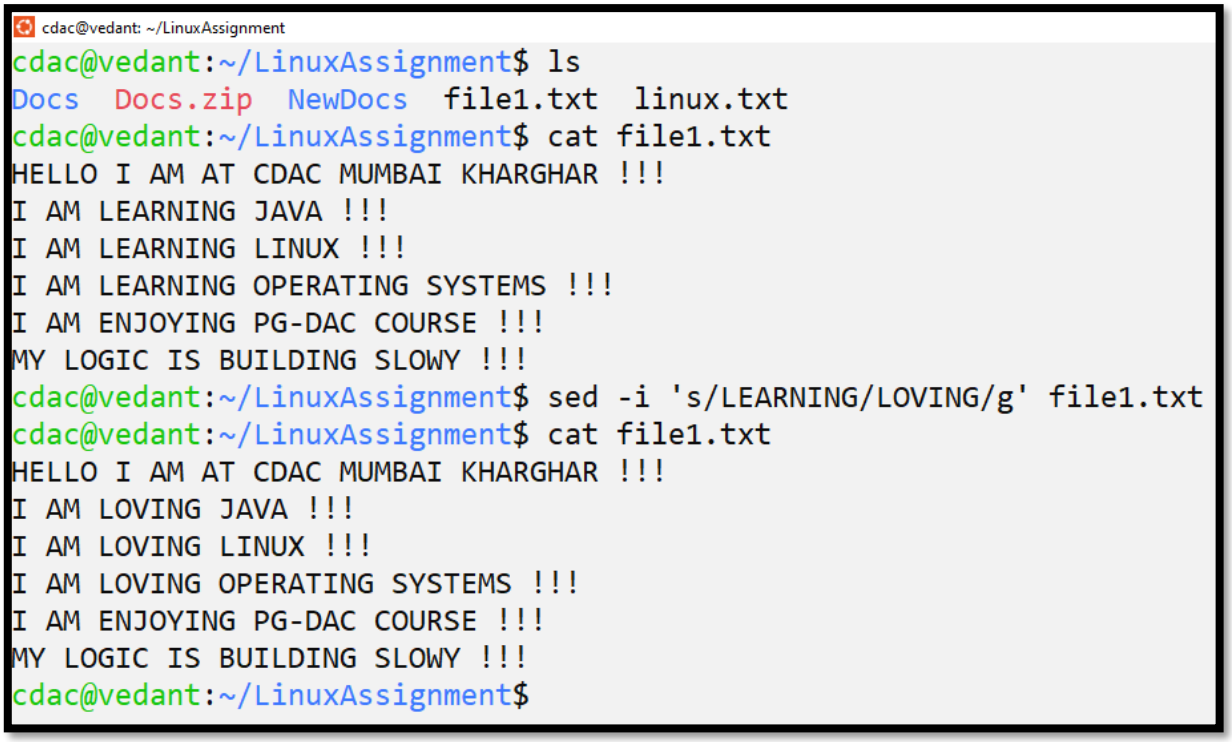
```
cdac@vedant: ~/LinuxAssignment
cdac@vedant:~/LinuxAssignment$ ls
Docs  Docs.zip  file1.txt  linux.txt
cdac@vedant:~/LinuxAssignment$ mkdir NewDocs
cdac@vedant:~/LinuxAssignment$ ls
Docs  Docs.zip  NewDocs  file1.txt  linux.txt
cdac@vedant:~/LinuxAssignment$ unzip Docs.zip -d NewDocs
Archive:  Docs.zip
   creating: NewDocs/Docs/
 extracting: NewDocs/Docs/file2.txt
cdac@vedant:~/LinuxAssignment$ ls NewDocs
Docs
cdac@vedant:~/LinuxAssignment$
```

k) File Editing:

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

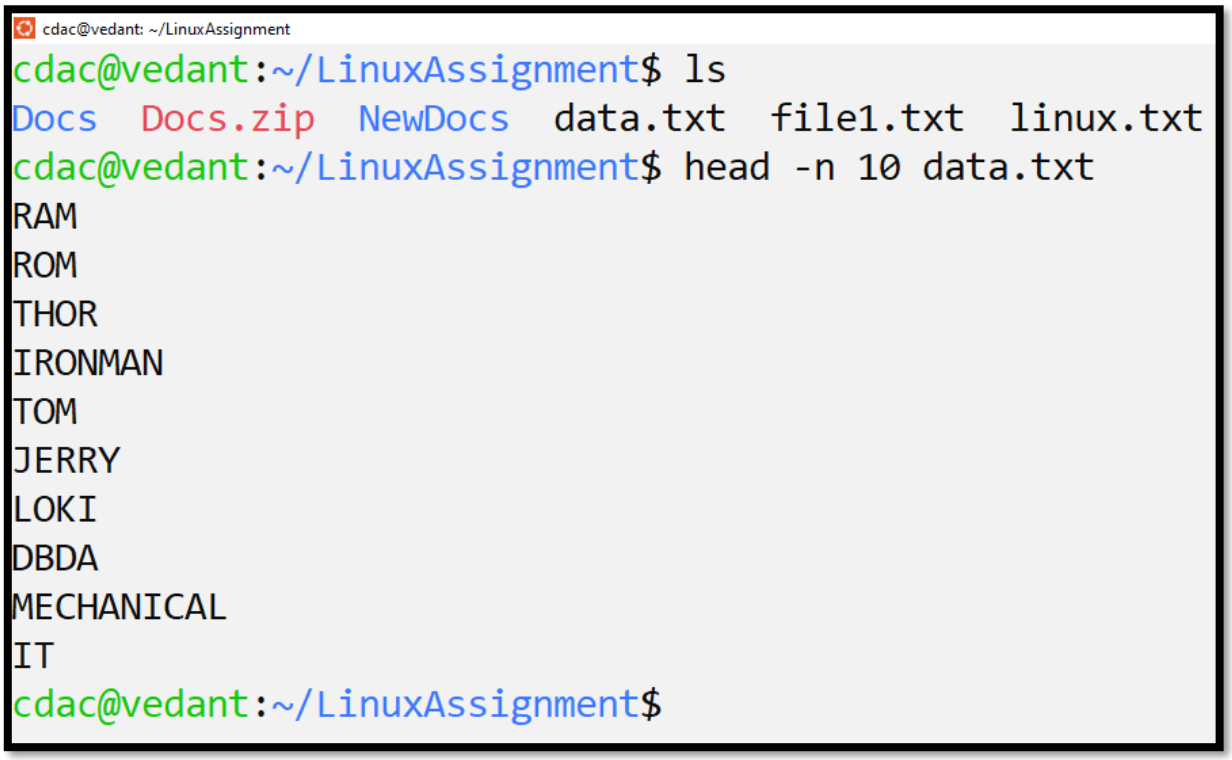
```
cdac@vedant: ~/LinuxAssignment
cdac@vedant:~/LinuxAssignment$ ls
Docs  Docs.zip  NewDocs  file1.txt  linux.txt
cdac@vedant:~/LinuxAssignment$ cat file1.txt
HELLO I AM AT CDAC MUMBAI KHARGHAR !!!
I AM LEARNING JAVA !!!
I AM LEARNING LINUX !!!
I AM LEARNING OPERATING SYSTEMS !!!
cdac@vedant:~/LinuxAssignment$ vi file1.txt
cdac@vedant:~/LinuxAssignment$
cdac@vedant:~/LinuxAssignment$ file1.txt
file1.txt: command not found
cdac@vedant:~/LinuxAssignment$ cat file1.txt
HELLO I AM AT CDAC MUMBAI KHARGHAR !!!
I AM LEARNING JAVA !!!
I AM LEARNING LINUX !!!
I AM LEARNING OPERATING SYSTEMS !!!
I AM ENJOYING PG-DAC COURSE !!!
MY LOGIC IS BUILDING SLOWY !!!
cdac@vedant:~/LinuxAssignment$
```

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

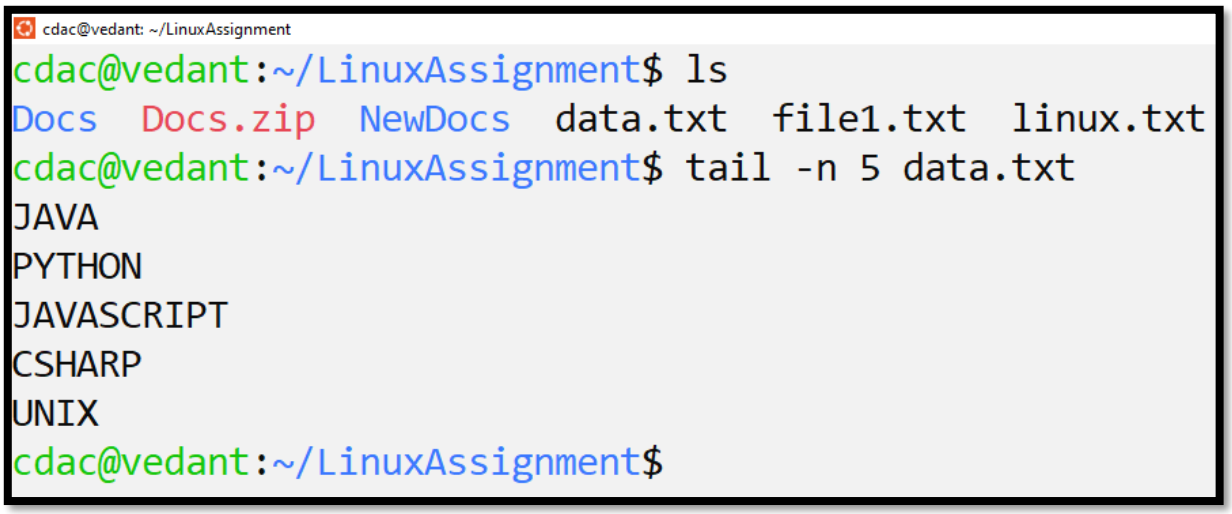


Problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

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.

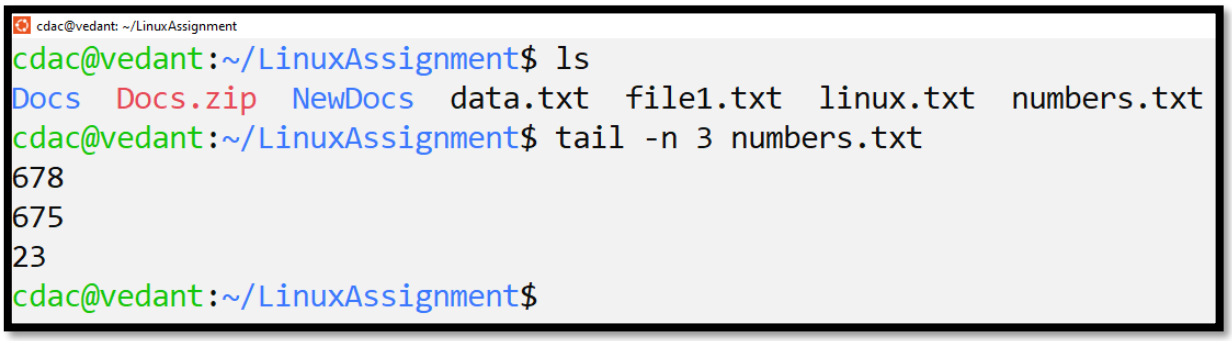


b. Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.

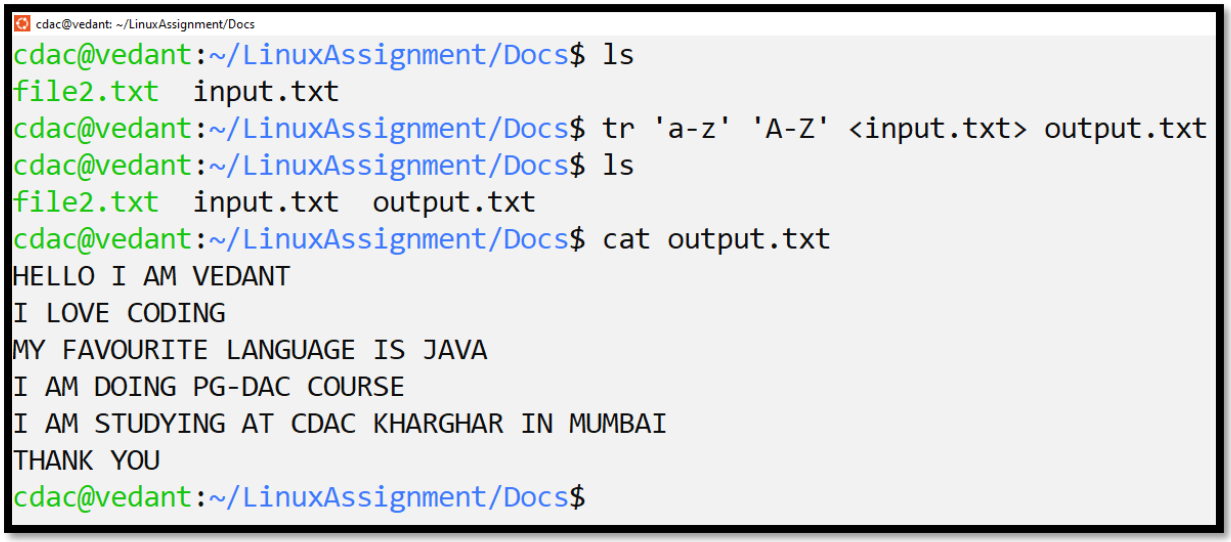


c. In a file named "numbers.txt," there are a series of numbers. Display the first 15 lines of this file to analyze the initial data set.

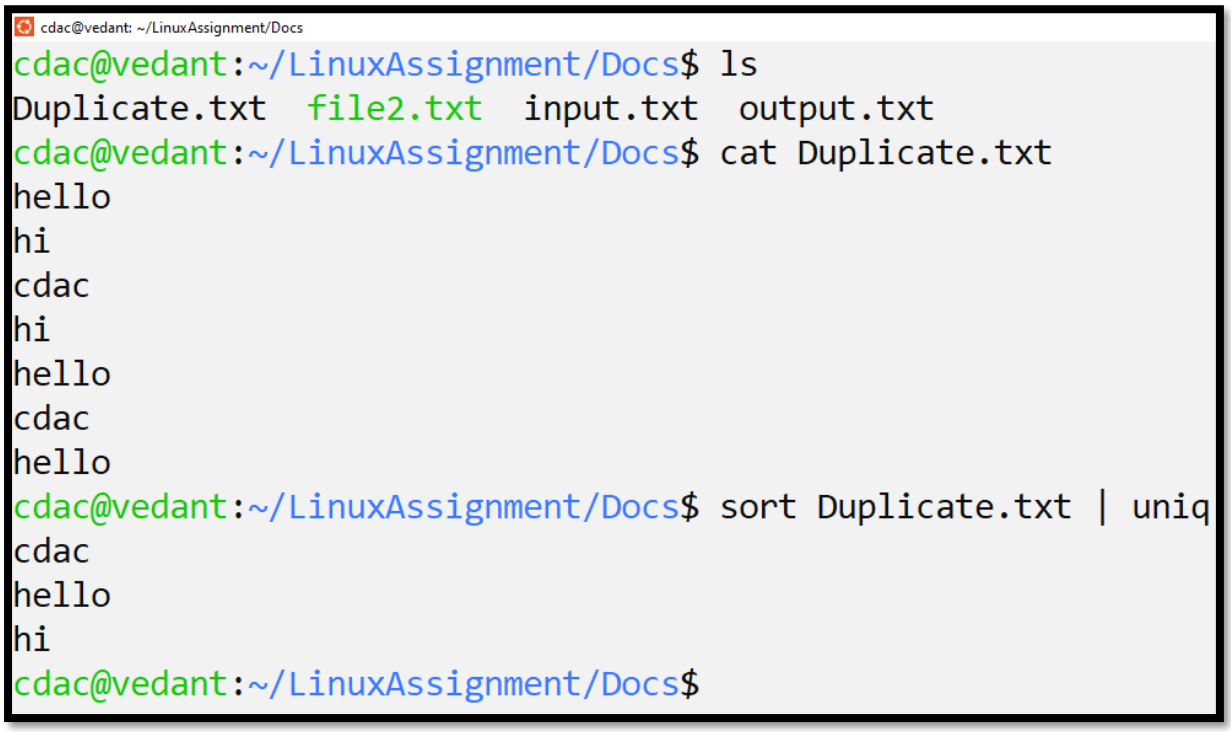
d. To focus on the last few numbers of the dataset, display the last 3 lines of "numbers.txt".



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."