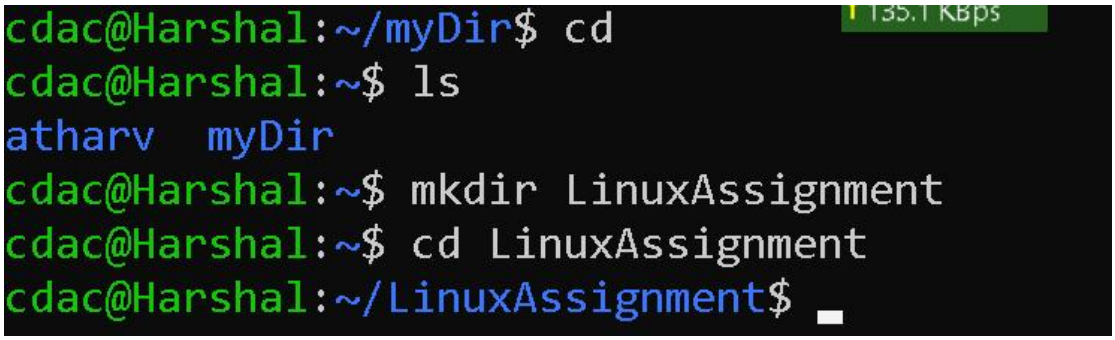
Assignment 1

Problem 1:

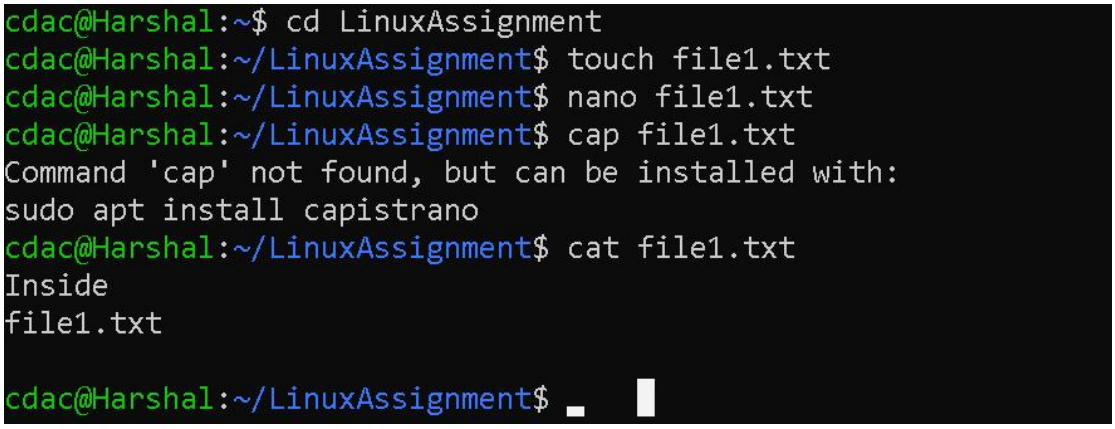
Navigate and List:

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



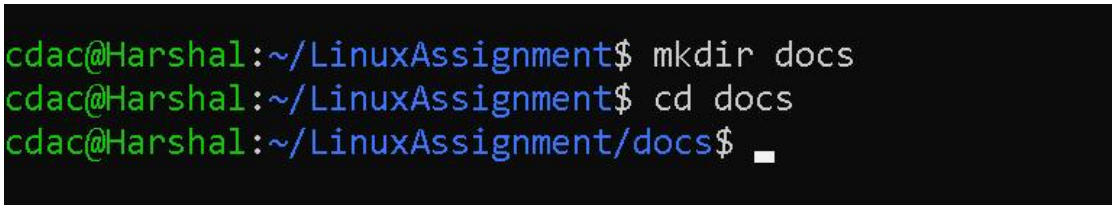
File Management:

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



Directory Management:

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



Copy and Move Files:

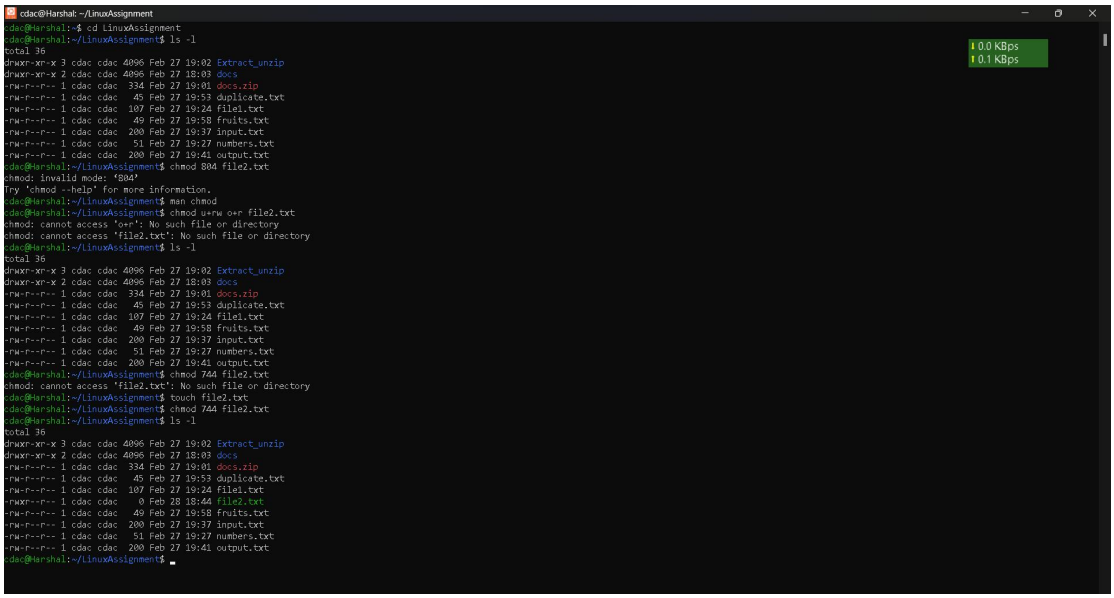
a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt"

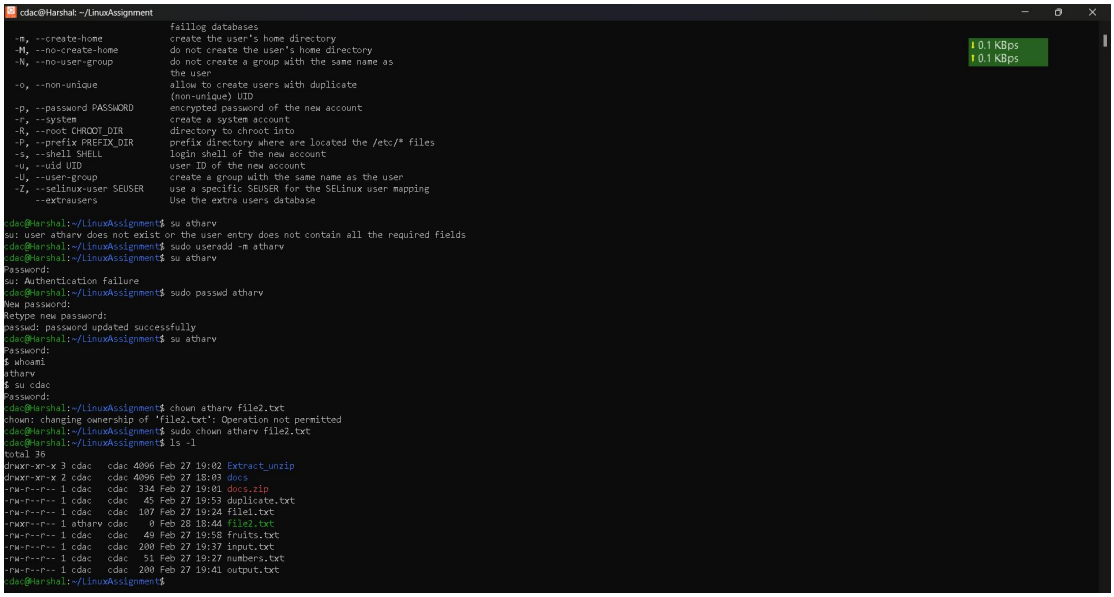
```
cdac@Harshal:~/LinuxAssignment$ cp file1.txt file2.txt
cdac@Harshal:~/LinuxAssignment$ ls
docs  file1.txt  file2.txt
cdac@Harshal:~/LinuxAssignment$ cat file2.txt
Inside
file1.txt

cdac@Harshal:~/LinuxAssignment$
```

```
cdac@Harshal:~/LinuxAssignment$ mv file2.txt docs
cdac@Harshal:~/LinuxAssignment$ ls
docs  file1.txt
cdac@Harshal:~/LinuxAssignment$ cd docs
cdac@Harshal:~/LinuxAssignment/docs$ ls
file2.txt
cdac@Harshal:~/LinuxAssignment/docs$ cat file2.txt
Inside
file1.txt

cdac@Harshal:~/LinuxAssignment/docs$
```

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.





Final Checklist:

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

```
cdac@Harshal:~/LinuxAssignment$ ls -l
total 8
drwxr-xr-x 2 cdac cdac 4096 Feb 27 18:03 docs
-rw-r--r-- 1 cdac cdac   18 Feb 27 17:42 file1.txt
cdac@Harshal:~/LinuxAssignment$ ls -l /
total 792
lrwxrwxrwx   1 root root       7 Jan  7 03:05 bin -> usr/bin
drwxr-xr-x   2 root root    4096 Apr 18  2022 boot
drwxr-xr-x   9 root root    2960 Feb 27 14:56 dev
drwxr-xr-x  81 root root    4096 Feb 27 14:56 etc
drwxr-xr-x   3 root root    4096 Feb 24 18:09 home
-rwxr-xr-x   3 root root 1440152 Feb 24 17:42 init
lrwxrwxrwx   1 root root       7 Jan  7 03:05 lib -> usr/lib
lrwxrwxrwx   1 root root       9 Jan  7 03:05 lib32 -> usr/lib32
lrwxrwxrwx   1 root root       9 Jan  7 03:05 lib64 -> usr/lib64
lrwxrwxrwx   1 root root      10 Jan  7 03:05 libx32 -> usr/libx32
drwx------   2 root root   16384 Apr 10  2019 lost+found
drwxr-xr-x   2 root root    4096 Jan  7 03:05 media
drwxr-xr-x   6 root root    4096 Feb 24 18:08 mnt
drwxr-xr-x   2 root root    4096 Jan  7 03:05 opt
dr-xr-xr-x 168 root root       0 Feb 27 14:56 proc
drwx------   2 root root    4096 Jan  7 03:07 root
drwxr-xr-x   6 root root     120 Feb 27 14:56 run
lrwxrwxrwx   1 root root       8 Jan  7 03:05 sbin -> usr/sbin
drwxr-xr-x   2 root root    4096 Oct 11 13:35 snap
drwxr-xr-x   2 root root    4096 Jan  7 03:05 srv
dr-xr-xr-x  11 root root       0 Feb 27 14:56 sys
drwxrwxrwt   2 root root    4096 Feb 26 16:22 tmp
drwxr-xr-x  14 root root    4096 Jan  7 03:05 usr
drwxr-xr-x  13 root root    4096 Jan  7 03:07 var
cdac@Harshal:~/LinuxAssignment$
```

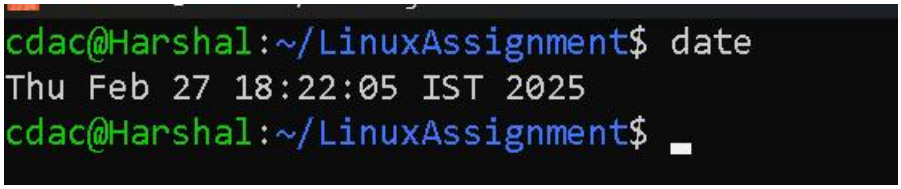
File Searching:

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).

```
cdac@Harshal:~/LinuxAssignment$ find . -type f -name "*.txt"
./docs/file2.txt
./file1.txt
cdac@Harshal:~/LinuxAssignment$ grep -n "Inside" file1.txt
1:Inside
cdac@Harshal:~/LinuxAssignment$
```

System Information:

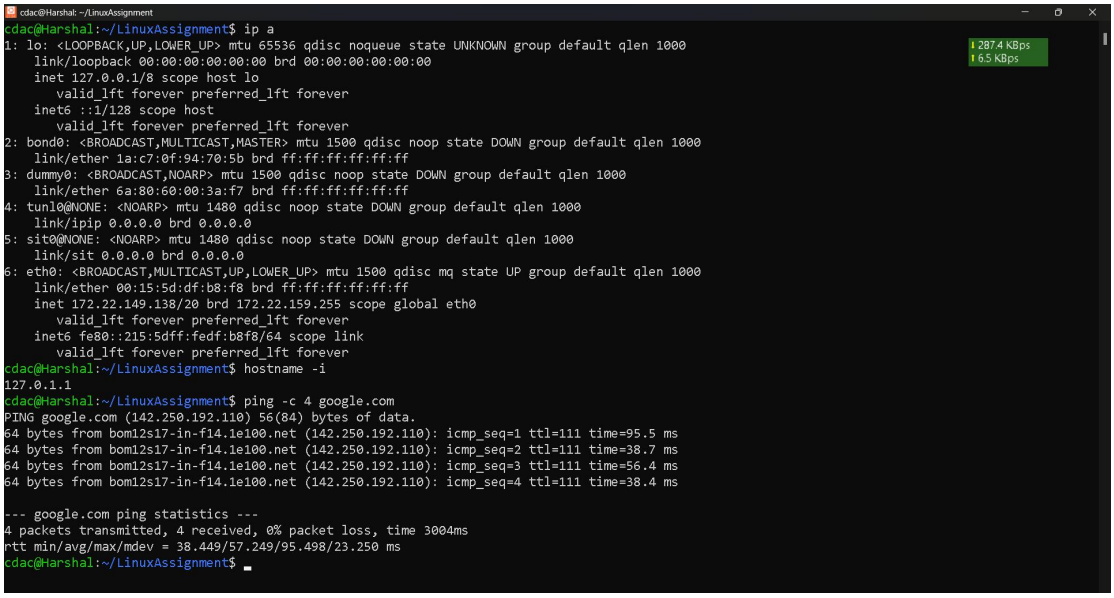
a. Display the current system date and time.



Networking:

a. Display the IP address of the system.

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



File Compression:

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

```
cdac@Harshal:~/LinuxAssignment/docs$ zip - r docs.zip docs

zip error: Invalid command arguments (cannot write zip file to terminal)
cdac@Harshal:~/LinuxAssignment/docs$ zip -r docs.zip docs
        zip warning: name not matched: docs

zip error: Nothing to do! (try: zip -r docs.zip . -i docs)
cdac@Harshal:~/LinuxAssignment/docs$ cd ..
cdac@Harshal:~/LinuxAssignment$ zip -r docs.zip docs
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (stored 0%)
cdac@Harshal:~/LinuxAssignment$ mkdir Extract_unzip
cdac@Harshal:~/LinuxAssignment$ unzip docs.zip - d Extract_unzip
Archive:  docs.zip
caution: filename not matched:  -
caution: filename not matched:  d
caution: filename not matched:  Extract_unzip
cdac@Harshal:~/LinuxAssignment$ unzip docs.zip -d Extract_unzip
Archive:  docs.zip
   creating: Extract_unzip/docs/
 extracting: Extract_unzip/docs/file2.txt
cdac@Harshal:~/LinuxAssignment$ ls -l /Extract_unzip
ls: cannot access '/Extract_unzip': No such file or directory
cdac@Harshal:~/LinuxAssignment$ cd Extract_unzip
cdac@Harshal:~/LinuxAssignment/Extract_unzip$ ls -l
total 4
drwxr-xr-x 2 cdac cdac 4096 Feb 27 18:03 docs
cdac@Harshal:~/LinuxAssignment/Extract_unzip$
```

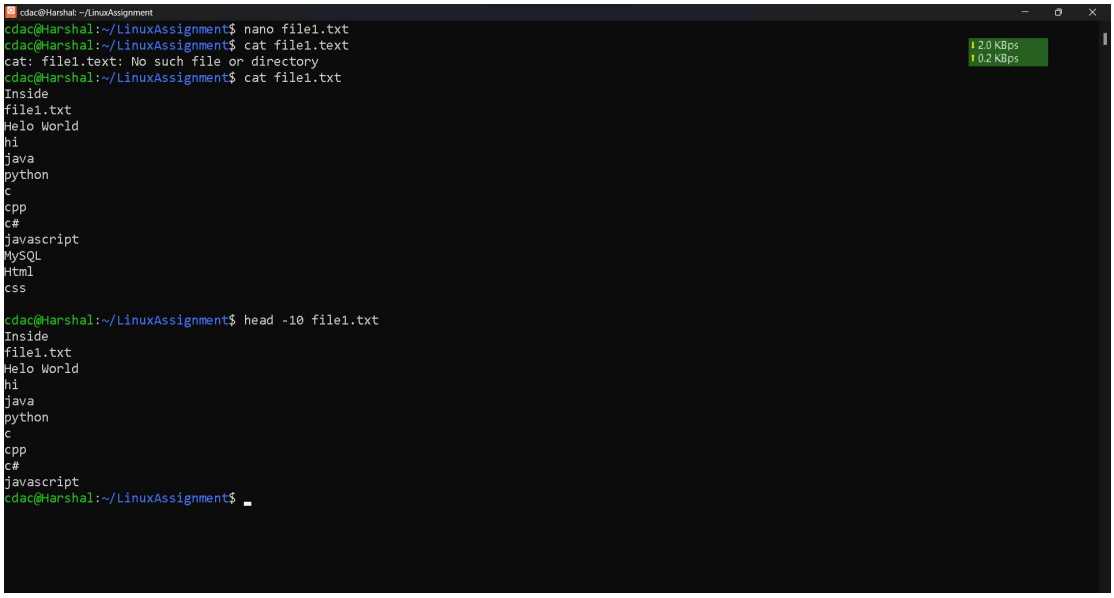
File Editing:

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)

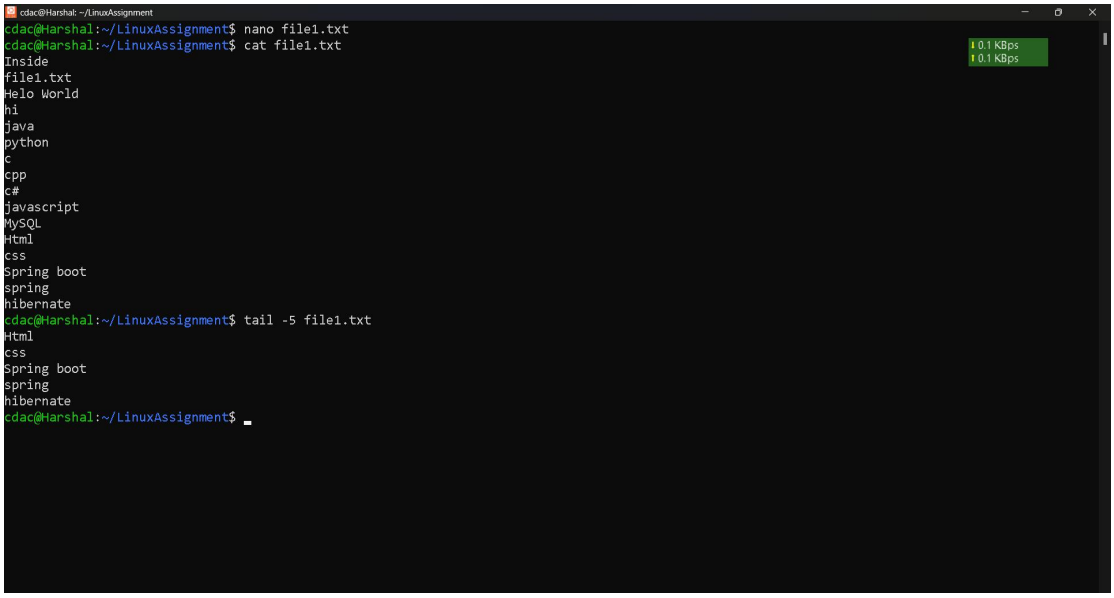
```
cdac@Harshal:~/LinuxAssignment$ nano file1.txt
cdac@Harshal:~/LinuxAssignment$ man replace
No manual entry for replace
cdac@Harshal:~/LinuxAssignment$ man sed
cdac@Harshal:~/LinuxAssignment$ ^C
cdac@Harshal:~/LinuxAssignment$ cat file1.txt
Inside
file1.txt
Hello World
cdac@Harshal:~/LinuxAssignment$ sed -i "s/Hello/Helo/g" file1.txt
cdac@Harshal:~/LinuxAssignment$ cat file1.txt
Inside
file1.txt
Helo World
cdac@Harshal:~/LinuxAssignment$
```

Problem 2:

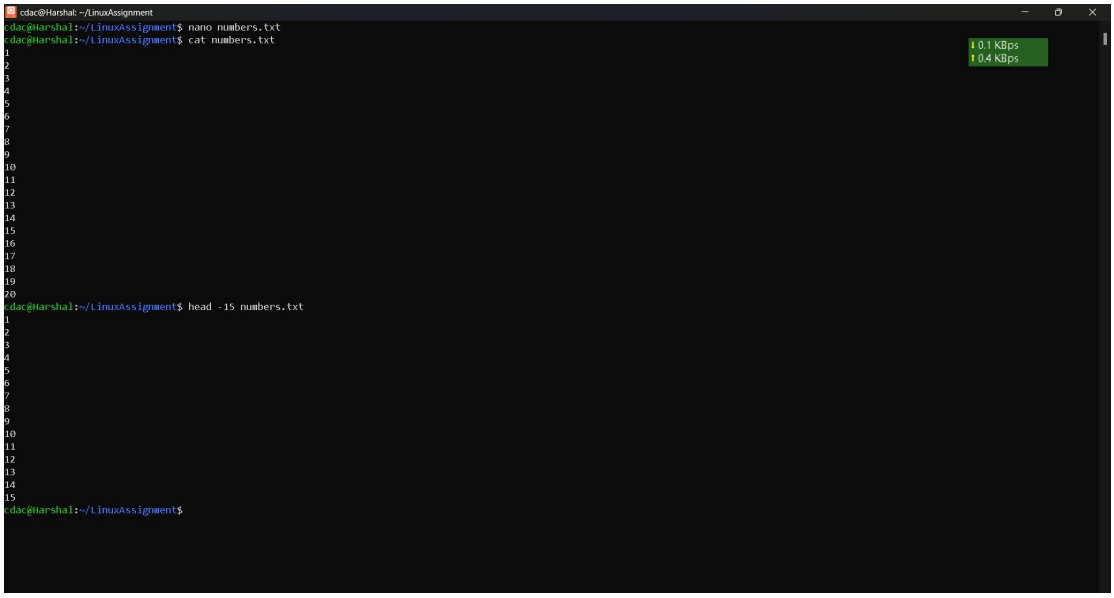
a. Suppose you have a file named "data.txt" containing important information. Display the first 10 lines of this file to quickly glance at its contents using a command.



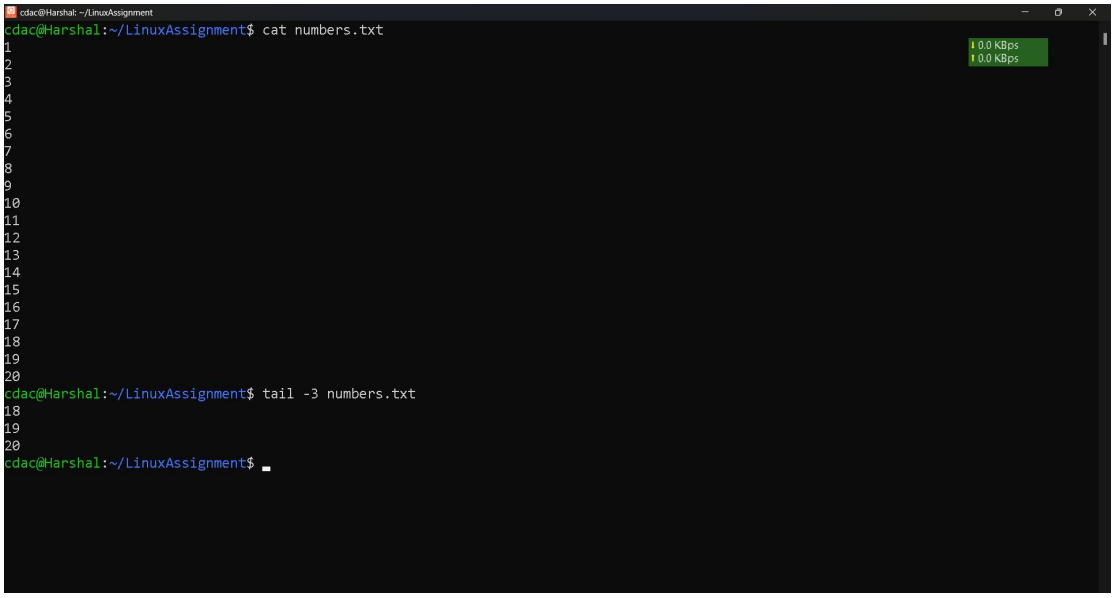
b. Now, to check the end of the file for any recent additions, display the last 5 lines of "data.txt" using another command.



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.



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



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.

```
cdac@Harshal:~/LinuxAssignment$ nano input.txt
cdac@Harshal:~/LinuxAssignment$ cat input.txt
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.
cdac@Harshal:~/LinuxAssignment$ man lowercase
No manual entry for lowercase
cdac@Harshal:~/LinuxAssignment$ tr [:lower] [:upper] input.txt > output.txt
tr: extra operand ‘input.txt’
Try 'tr --help' for more information.
cdac@Harshal:~/LinuxAssignment$ tr '[:lower:]' '[:upper:]' input.txt > output.txt
tr: extra operand ‘input.txt’
Try 'tr --help' for more information.
cdac@Harshal:~/LinuxAssignment$ tr '[:lower:]' '[:upper:]' <input.txt > output.txt
cdac@Harshal:~/LinuxAssignment$ cat output.txt
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.
cdac@Harshal:~/LinuxAssignment$ batcat output.txt
```

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."

```
cdac@Harshal:~/LinuxAssignment$ nano duplicate.txt
cdac@Harshal:~/LinuxAssignment$ cat duplicate.txt
Harshal
Harshal
Harshal
Atharv
Atharv
Atharv
cdac@Harshal:~/LinuxAssignment$ cat duplicate.txt | uniq
Harshal
Atharv
cdac@Harshal:~/LinuxAssignment$
```

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@Harshal: ~/LinuxAssignment
cdac@Harshal:~/LinuxAssignment$ nano duplicate.txt
cdac@Harshal:~/LinuxAssignment$ cat duplicate.txt
Harshal
Harshal
Harshal
Atharv
Atharv
Atharv
cdac@Harshal:~/LinuxAssignment$ cat duplicate.txt | uniq
Harshal
Atharv
cdac@Harshal:~/LinuxAssignment$ nano fruits.txt
cdac@Harshal:~/LinuxAssignment$ cat fruits.txt
Mango
Apple
Grappes
Mango
Watermelon
Apple
Apple
cdac@Harshal:~/LinuxAssignment$ cat fruits.txt | uniq
Mango
Apple
Grappes
Mango
Watermelon
Apple
cdac@Harshal:~/LinuxAssignment$ cat fruits.txt | sort | uniq
Apple
Grappes
Mango
Watermelon
cdac@Harshal:~/LinuxAssignment$
0.0 KBps
0.3 KBps
```