Assignment:2

Task:1

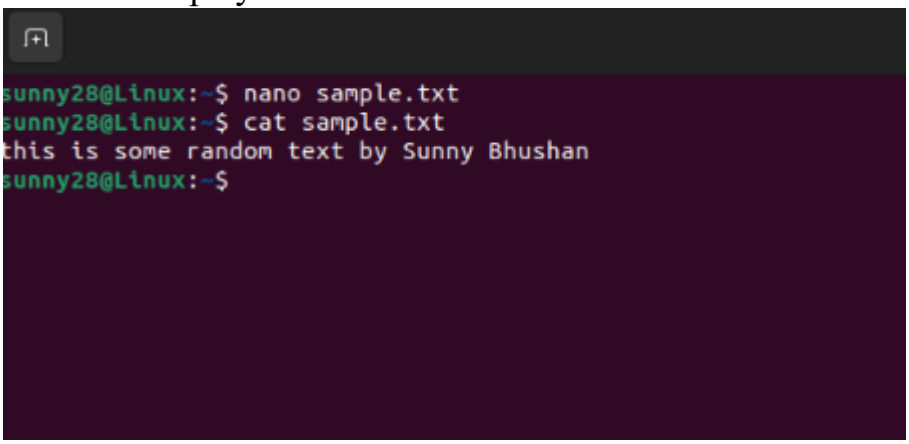
1. File Display Commands:

a. Task: Display the contents of a text file - Use commands like cat, less, or more to view the content of a text file. Describe the differences between these commands and identify scenarios where each is preferable.

Step 1: Create a Text File with Random Content:

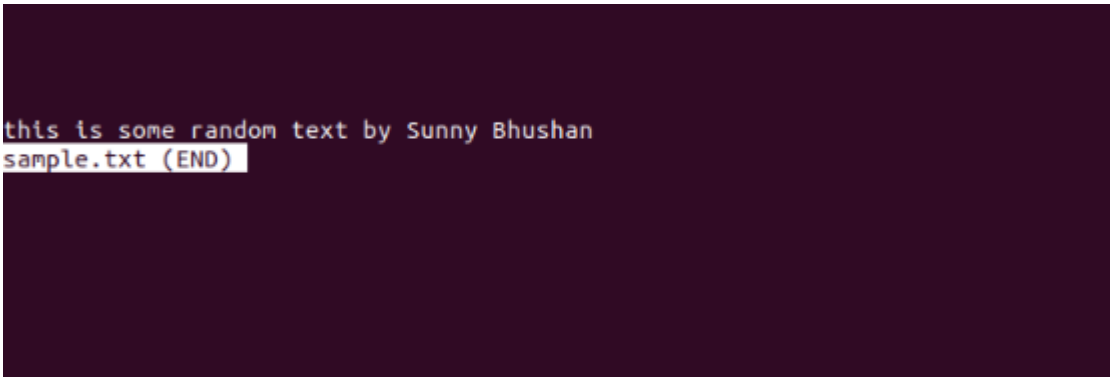
Open a terminal and use a text editor (e.g., nano, vim, or gedit) to create a text file. For example:
nano sample.txt
Add some random content to the file and save it.
Step 2: Use cat to Display Content:

The cat command concatenates and displays the content of files. Execute the following command:
cat sample.txt
This will display the entire content of the file.



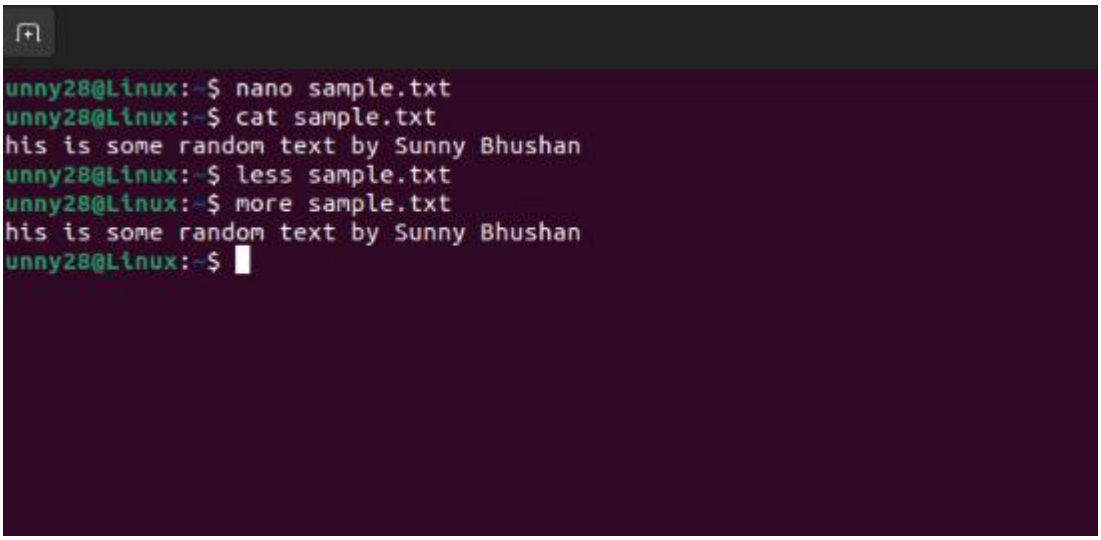
Step 3: Use less for Interactive Viewing:

The less command is a pager that allows interactive viewing of file content. Execute the following command:
less sample.txt



Step 4: Use more for Paging:

The more command also displays file content but in a paginated manner.
Execute the following command:
more sample.txt



Differences Between cat, less, and more:

cat:
Displays the entire content at once.
Suitable for small files.
Quick and straightforward.

less:
Allows interactive scrolling.
Suitable for large files as it doesn't load the entire file into memory.
Provides search capabilities (/ for searching).

more:
Displays content in a paginated manner.
Limited interactivity compared to less.
Suitable for quickly viewing the content of longer files.
Step 6: Identify Scenarios for Each Command:

cat:
Ideal for small files or when you want to display the entire content quickly.
less:

Preferred for larger files where interactive scrolling and searching are beneficial.
more:
Suitable for quickly scanning through longer files without the need for extensive interactivity.

Conclusion:
Understanding the differences between cat, less, and more helps in choosing the appropriate command based on the size of the file and the desired level of interactivity. Each command serves specific use cases, making them valuable tools for displaying the contents of text files on a Linux system.

b. Task: Display a specific range of lines from a text file - Use the appropriate options with cat, sed, or awk to display a specific range of lines from a text file.

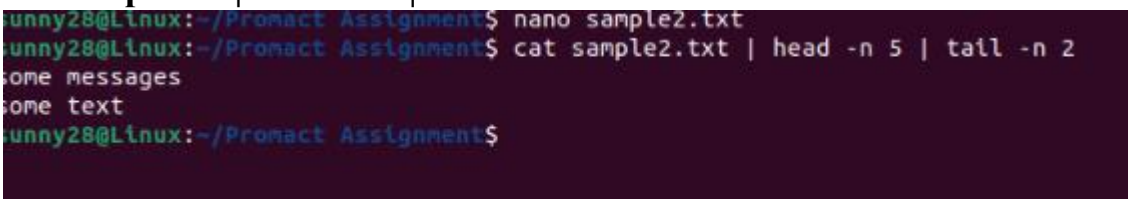
Step 1: Create a Text File with Random Content:

Open a terminal and use a text editor (e.g., nano, vim, or gedit) to create a text file. For example:
nano sample.txt
Add some random content to the file and save it.

Step 2: Use cat with head and tail to Display a Range:

The cat command can be used in combination with head and tail to display a specific range of lines. Execute the following command:

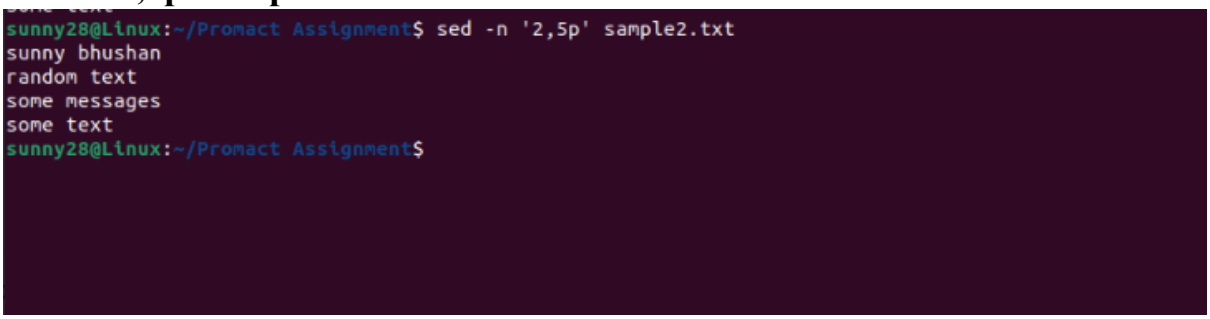
cat sample.txt | head -n 5 | tail -n 2



Step 3: Use sed to Display a Range:

The sed command (stream editor) can be used to print specific lines. Execute the following command:

sed -n '2,5p' sample.txt

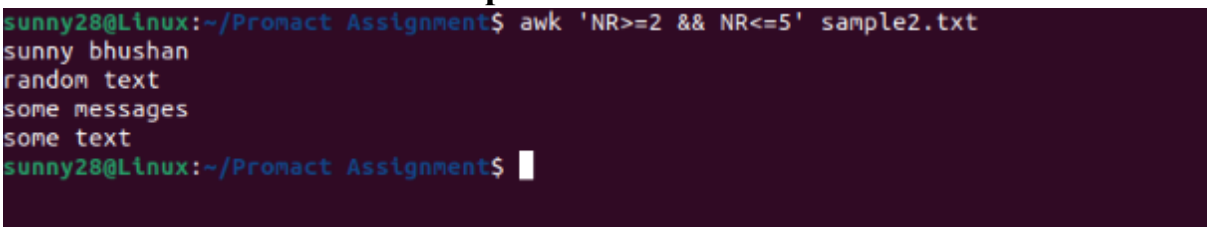


This will display lines 2 to 5 of the file.

Step 4: Use awk to Display a Range:

The awk command is a powerful text processing tool. Execute the following command:

awk 'NR>=2 && NR<=5' sample.txt



This will display lines 2 to 5 of the file.

Step 5: Explanation of Commands:

cat with head and tail:

cat concatenates the file content.
head -n 5 extracts the first 5 lines.
tail -n 2 extracts the last 3 lines of the result, effectively giving lines 2 to 5.
sed:

-n suppresses automatic printing of pattern space.
'2,5p' specifies to print lines 2 to 5.
awk:

'NR>=2 && NR<=5' instructs awk to print lines where the record number (line number) is between 2 and 5

Conclusion:
Using commands like cat with head and tail, sed, or awk allows for displaying specific ranges of lines from a text file. These tools provide flexibility in extracting and displaying content based on line numbers, contributing to efficient text file analysis on a Linux system.