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Concepts of Operating System

Assignment 1

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

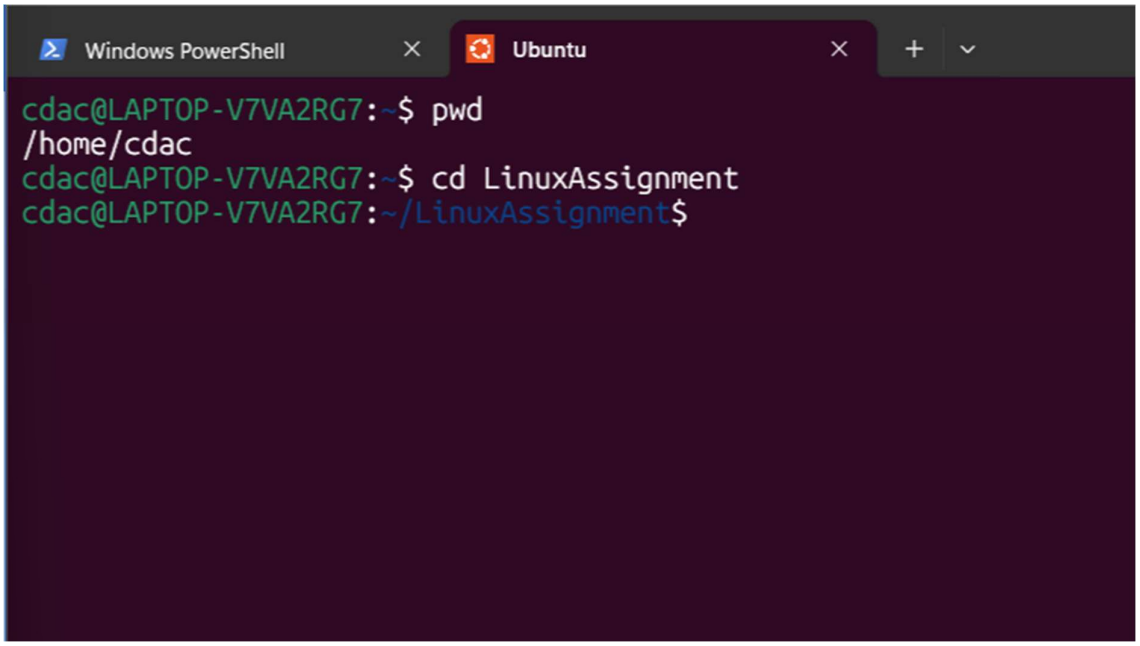
a) Navigate and List: a. Start by navigating to your home directory and list its contents. Then, move into a directory named "LinuxAssignment" if it exists; otherwise, create it.

Answer

To create a new directory “mkdir” command is used followed by file name

E.g. “mkdir LinuxAssignment “

To move into to the directory “cd “command is used E.g. “cd LinuxAssignment”.



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

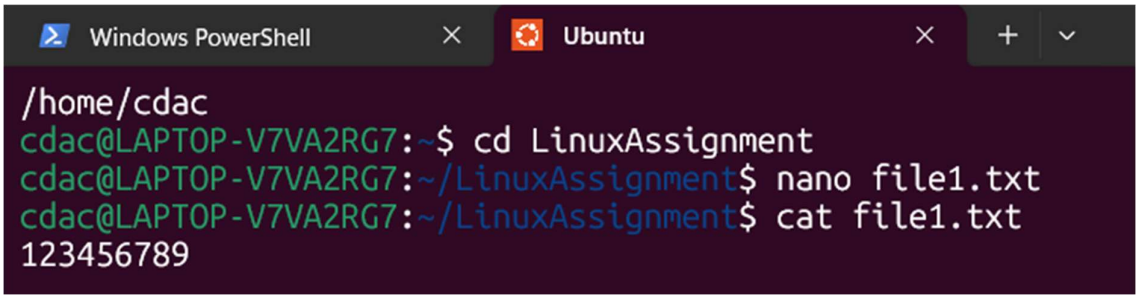
Answer

to create any file in linux the “nano” editor is used

Eg “nano file1.txt”

And to disdlay its content “cat” command is used

Eg “cat file1.txt”

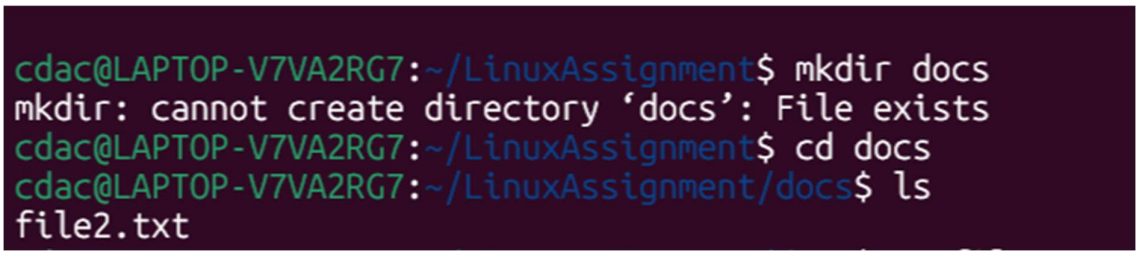


c) Directory Management: a. Create a new directory named "docs" inside the "LinuxAssignment" directory

Answer

to create a new directory under the "LinuxAssignment" directory first directory is changed with “cd LinuxAssignment” command and using “mkdir docs “command a new directory

named docs is created.

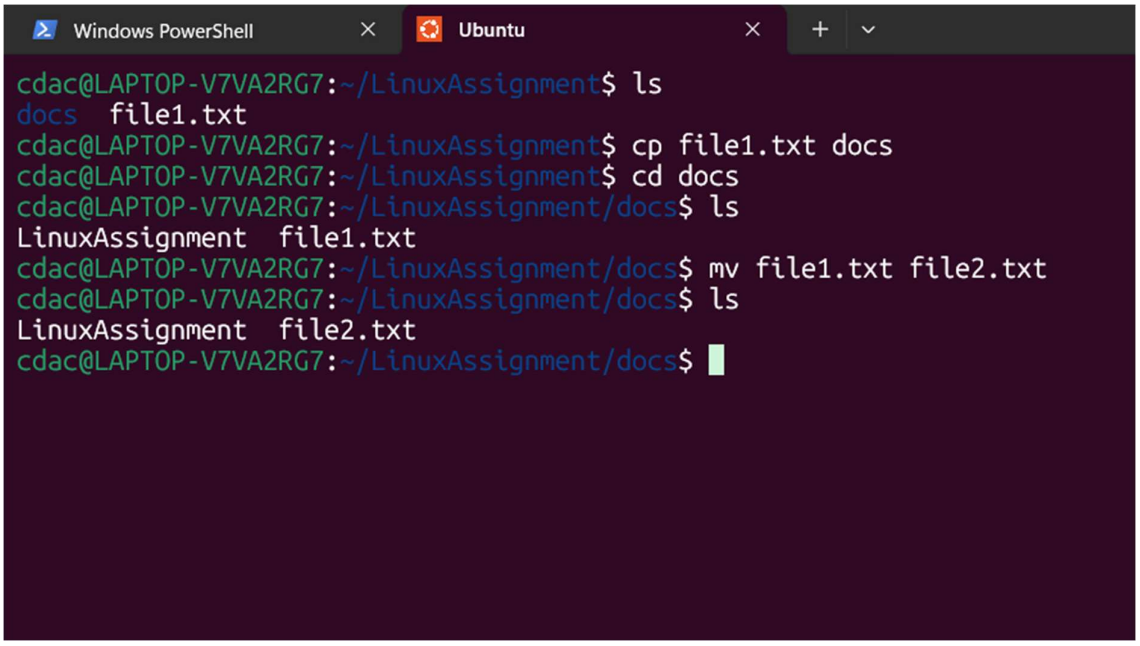


d) Copy and Move Files: a. Copy the "file1.txt" file into the "docs" directory and rename it to "file2.txt".

Answer

to copy the file “file1.txt” first directory is changed to LinuxAssignment were file is located and with “cp file1.txt docs” the file is copied into “docs” directory

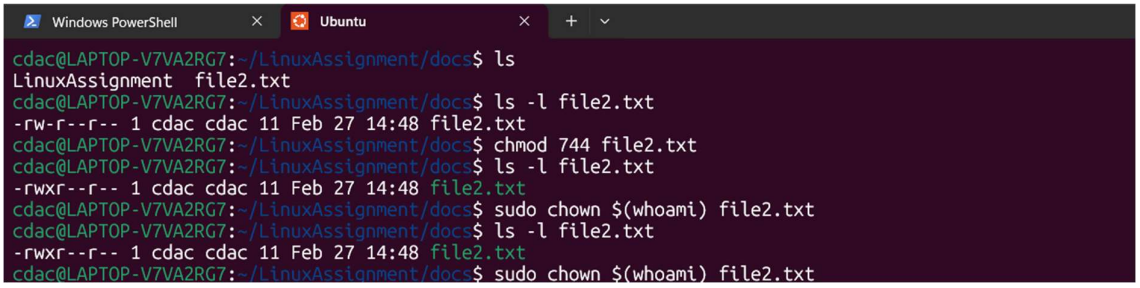
and to change the name of file the “mv file1.txt file2.txt “command is used.



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

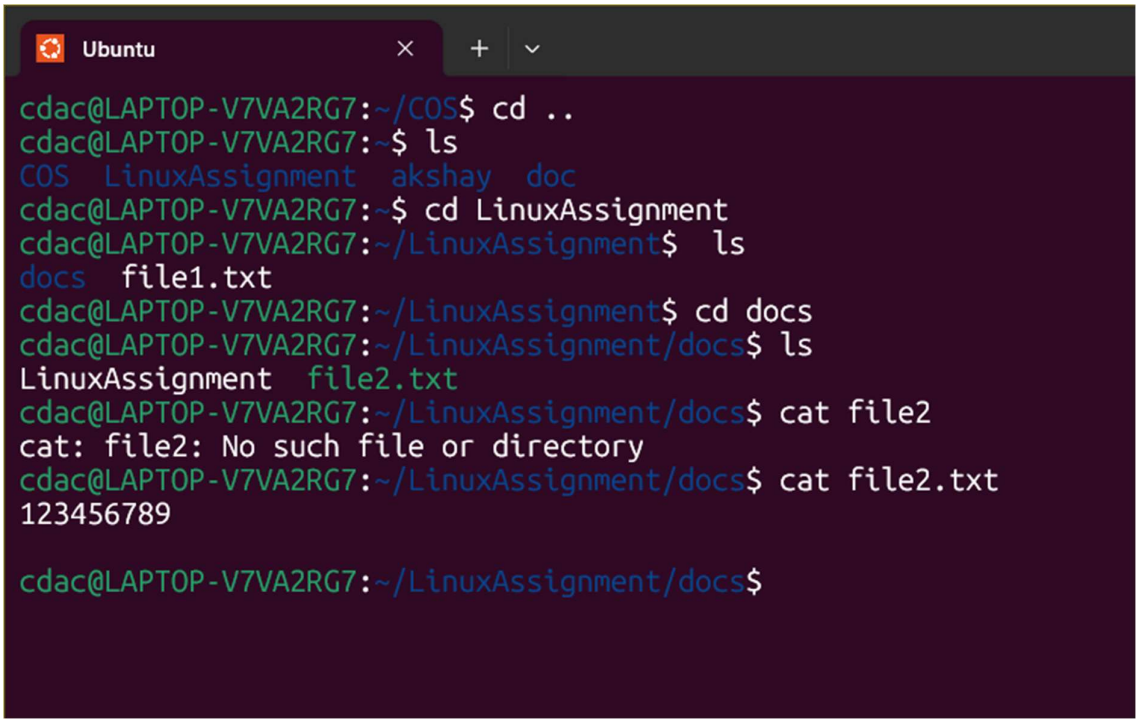
Answer

To change the permission of the file2.txt “chmod 744 file2.txt” command was used to allow primary user to allow read,write and execute .and “sudo chown $(whoami) file2.txt” was used to change the owner of the file.



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

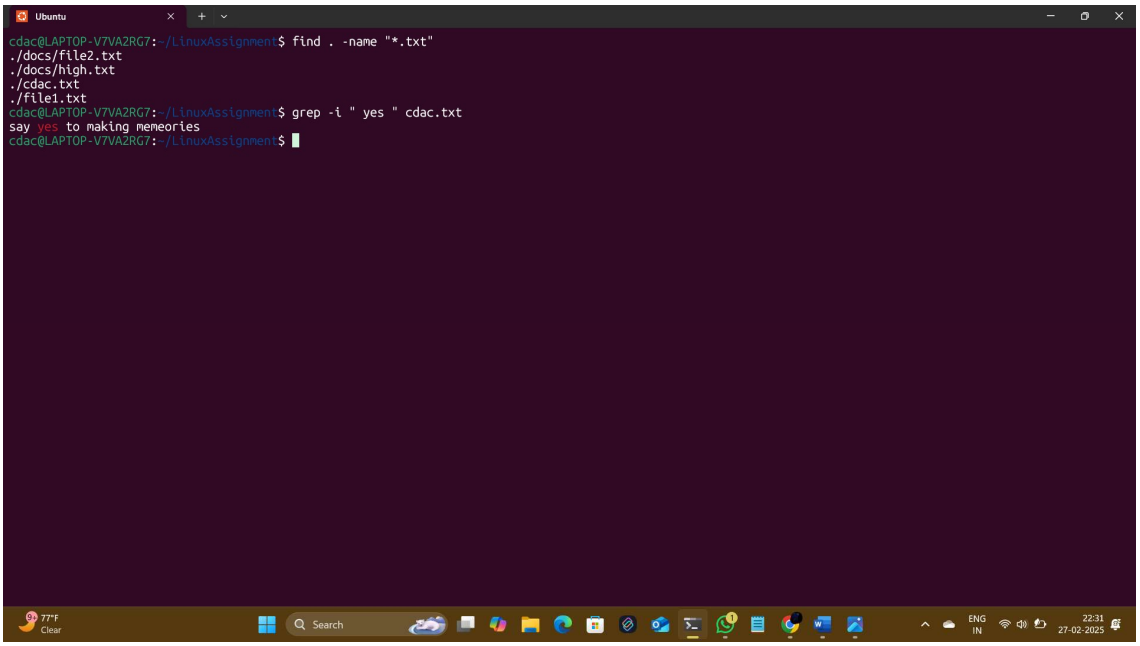
Answer



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)

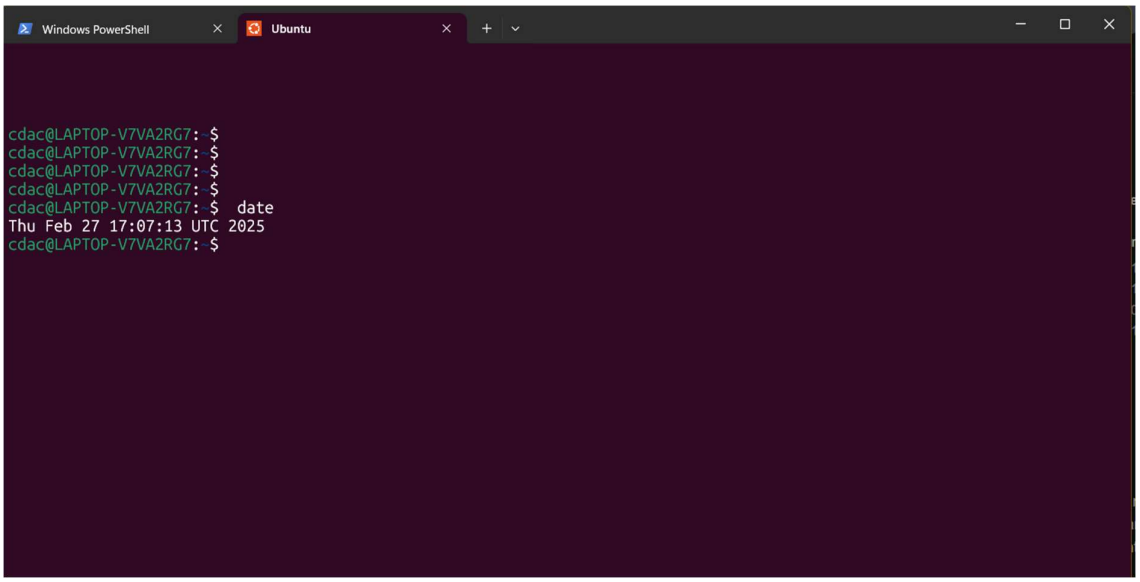
Answer



h) System Information:

a. Display the current system date and time.

Answer

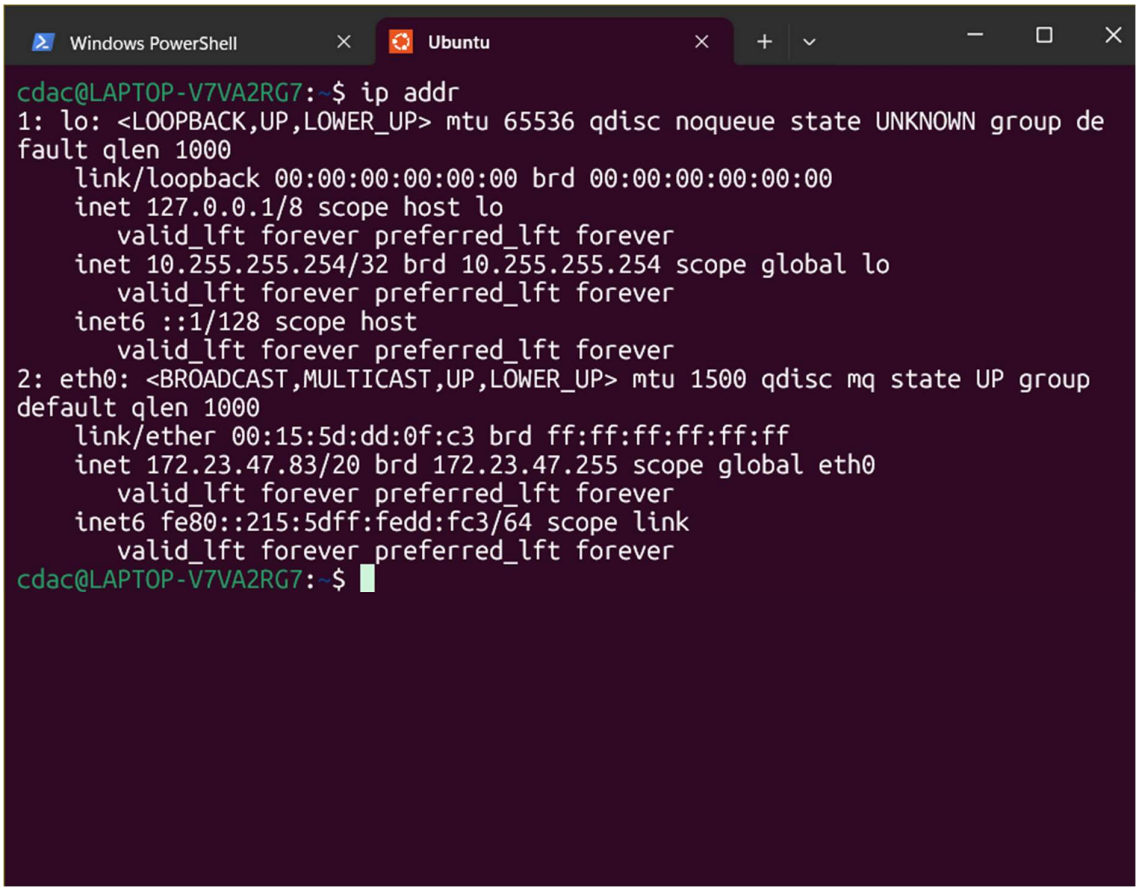


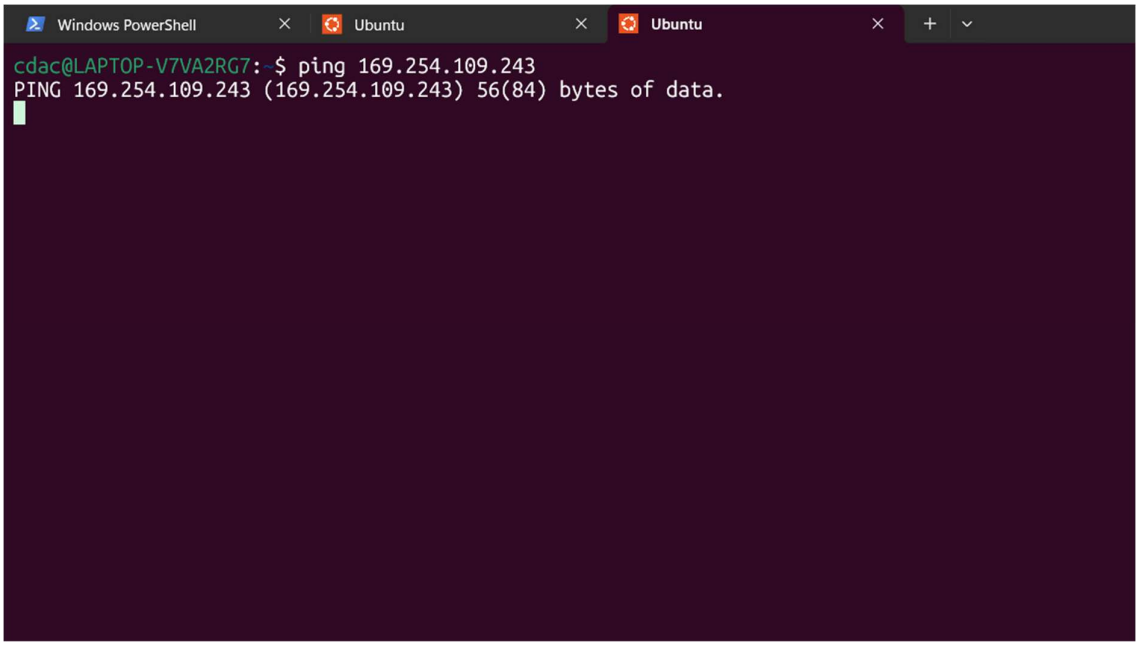
i) Networking:

a. Display the IP address of the system.

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

Answer



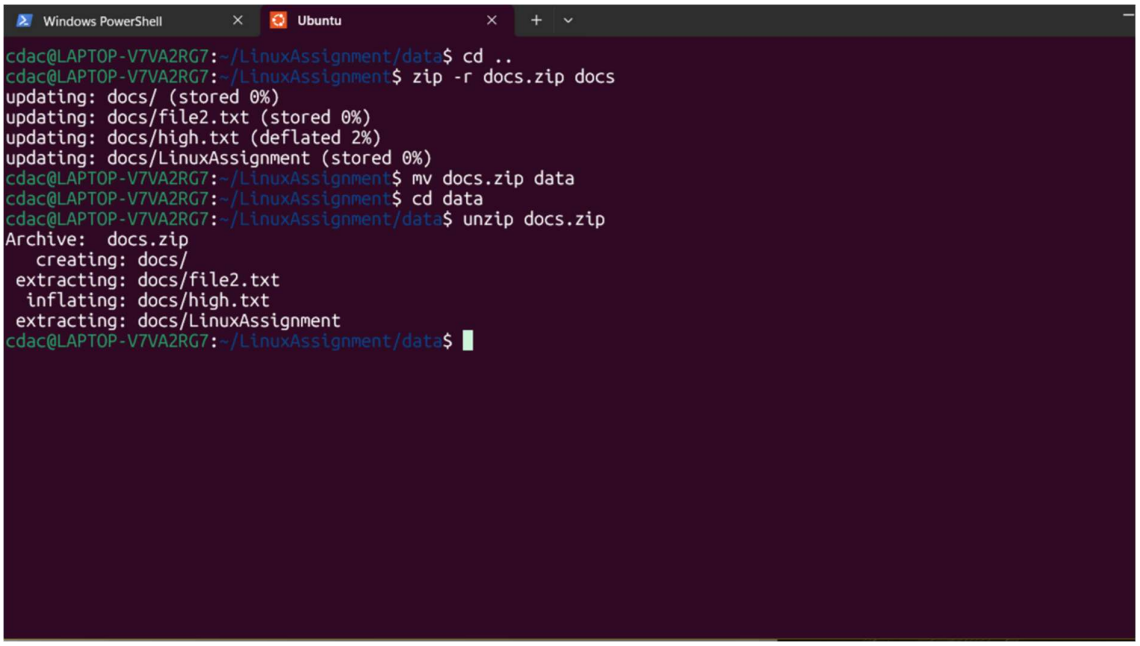


j) File Compression:

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

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

Answer

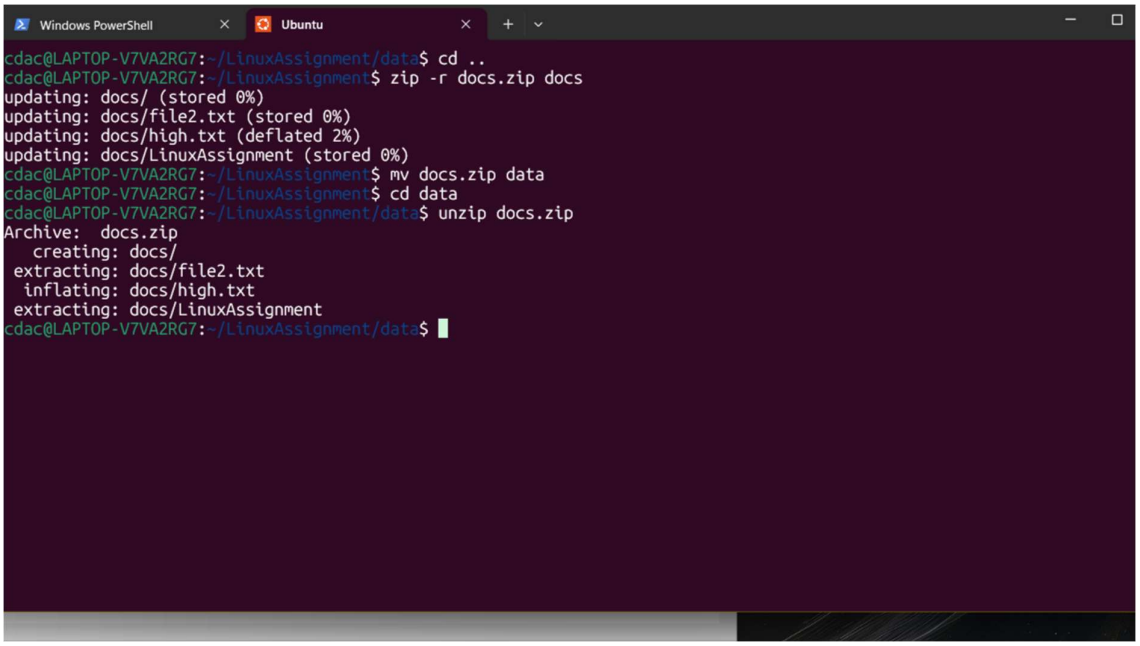


k) File Editing:

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).

Answer



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.

Answer

To get the data " Bash head -n 10 data.txt" will be used

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

Answer

To get the data " Bash head -n 5 data.txt" will be used

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

Answer

To get the data " Bash head -n 15 data.txt" will be used

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

Answer

Bash tail -n 3 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."

Answer

Bash tr ‘[:lower:]’ ‘[:upper:]’ input.txt 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."

Answer

Bash sort duplicate.txt | uniq

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."

Answer

Bash sort fruit.txt | uniq -c