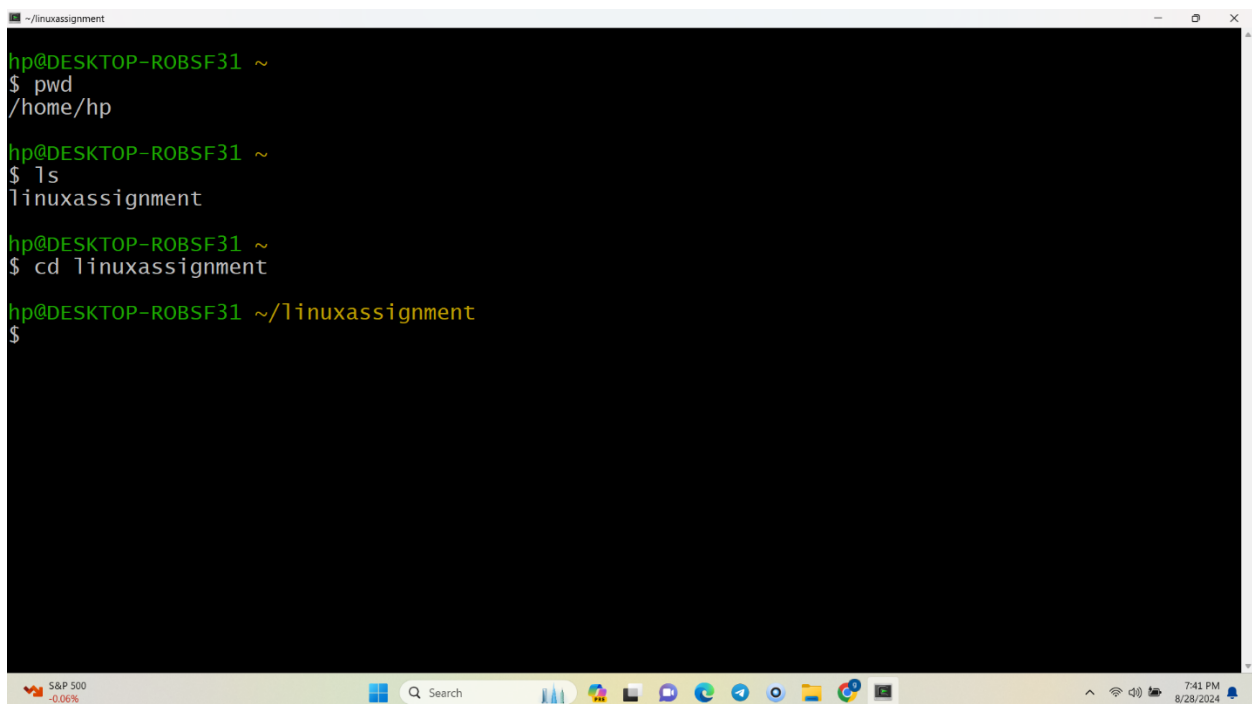


CDAC MUMBAI
Concepts of Operating System
Assignment 1

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.

A screenshot of a Windows terminal window titled '~/.linuxassignment'. The terminal shows a user named 'hp' at a machine named 'DESKTOP-ROBSF31'. The user enters the command 'pwd', which returns '/home/hp'. Then, the user enters 'ls', which returns 'linuxassignment'. Finally, the user enters 'cd linuxassignment', and the prompt changes to '~/.linuxassignment'. The Windows taskbar is visible at the bottom, showing the Start button, search bar, and various application icons. The system tray on the right shows the time as 7:41 PM on 8/28/2024.

```
hp@DESKTOP-ROBSF31 ~  
$ pwd  
/home/hp  
  
hp@DESKTOP-ROBSF31 ~  
$ ls  
linuxassignment  
  
hp@DESKTOP-ROBSF31 ~  
$ cd linuxassignment  
  
hp@DESKTOP-ROBSF31 ~/.linuxassignment  
$
```

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

```
hp@DESKTOP-ROBSF31 ~/linuxassignment
$ touch file1.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment
$ Good
-bash: Good: command not found

hp@DESKTOP-ROBSF31 ~/linuxassignment
$ echo "This is a sample text file for Linux Assignment." > file1.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment
$ cat file1.txt
This is a sample text file for LinuxAssignment.

hp@DESKTOP-ROBSF31 ~/linuxassignment
$
```

c) Directory Management:

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

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docs
$ cd ~

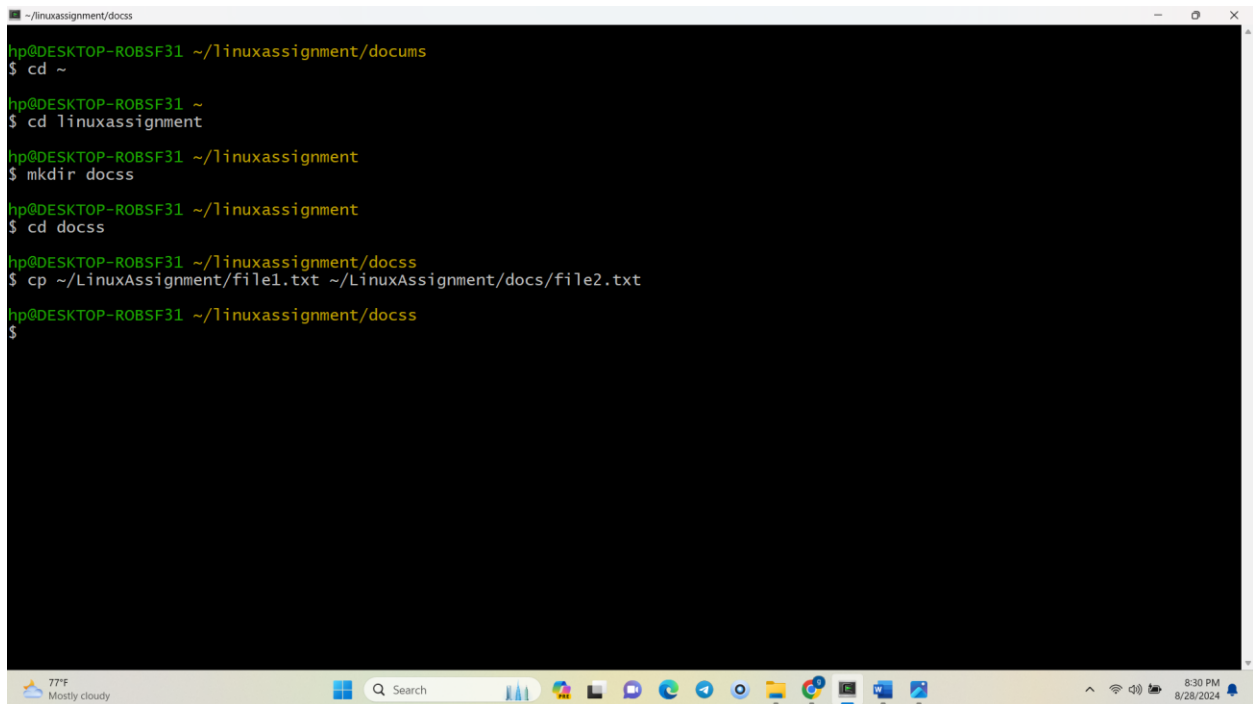
hp@DESKTOP-ROBSF31 ~
$ cd linuxassignment

hp@DESKTOP-ROBSF31 ~/linuxassignment
$ mkdir docss

hp@DESKTOP-ROBSF31 ~/linuxassignment
$ |
```

d) Copy and Move Files:

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



```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docs
$ cd ~

hp@DESKTOP-ROBSF31 ~
$ cd linuxassignment

hp@DESKTOP-ROBSF31 ~/linuxassignment
$ mkdir docss

hp@DESKTOP-ROBSF31 ~/linuxassignment
$ cd docss

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ cp ~/LinuxAssignment/file1.txt ~/LinuxAssignment/docs/file2.txt

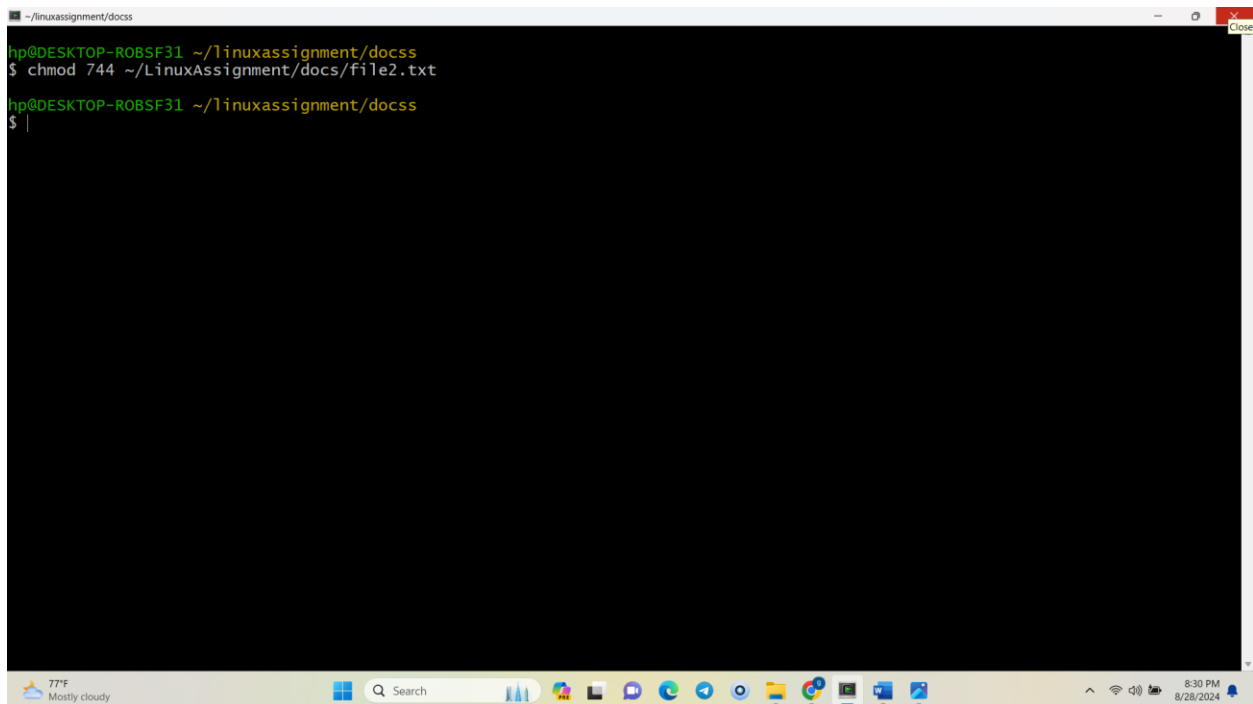
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

The image shows a terminal window with a black background and green text. The window title is '~ /linuxassignment/docs'. The user 'hp@DESKTOP-ROBSF31' is shown at the prompt. The commands executed are: 'cd ~', 'cd linuxassignment', 'mkdir docss', 'cd docss', and 'cp ~/LinuxAssignment/file1.txt ~/LinuxAssignment/docs/file2.txt'. The Windows taskbar is visible at the bottom, showing the date as 8/28/2024 and time as 8:30 PM.

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.

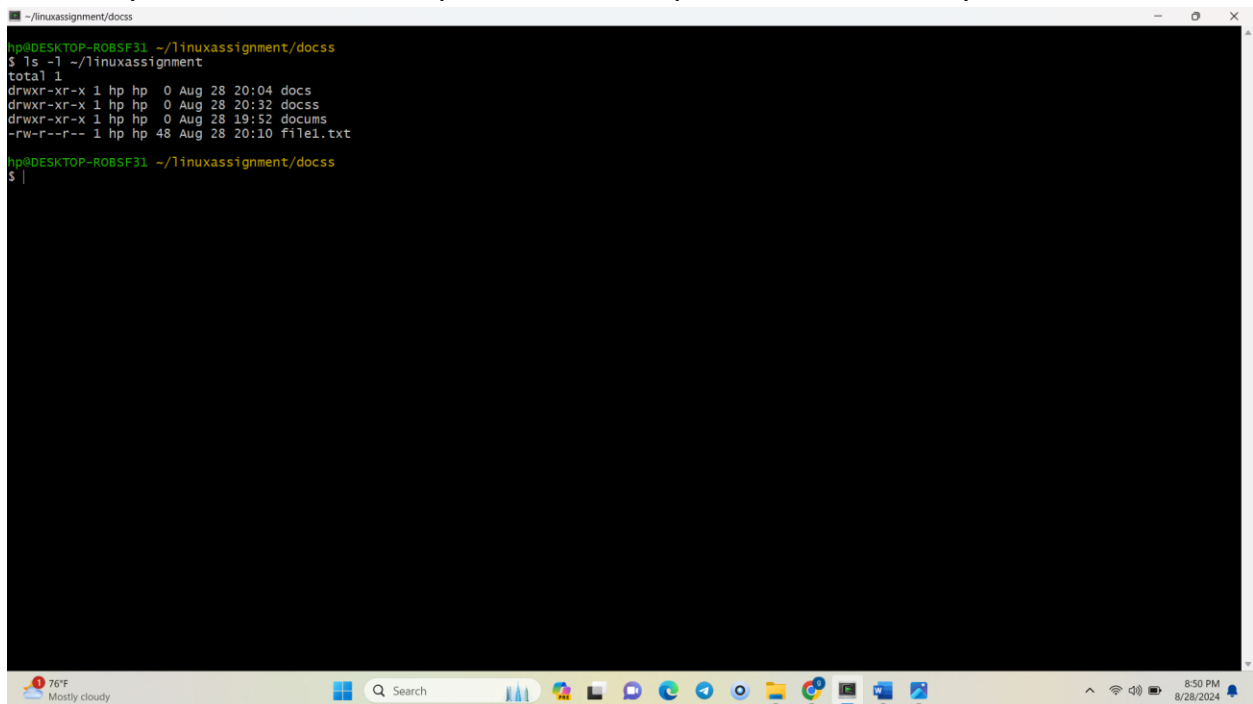


A terminal window titled "~ /linuxassignment/docss" is shown. The user "hp@DESKTOP-ROBSF31" is in the directory "~/linuxassignment/docss". The command "\$ chmod 744 ~/LinuxAssignment/docs/file2.txt" has been entered and executed. The prompt "\$" is shown on the next line.

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ chmod 744 ~/LinuxAssignment/docs/file2.txt
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

f) Final Checklist:

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



A terminal window titled "~ /linuxassignment/docss" is shown. The user "hp@DESKTOP-ROBSF31" is in the directory "~/linuxassignment/docss". The command "\$ ls -l ~/linuxassignment" has been entered and executed. The output shows the contents of the directory, including the "docs", "docss", and "docsms" subdirectories, and the "file1.txt" file.

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ ls -l ~/linuxassignment
total 1
drwxr-xr-x 1 hp hp 0 Aug 28 20:04 docs
drwxr-xr-x 1 hp hp 0 Aug 28 20:32 docss
drwxr-xr-x 1 hp hp 0 Aug 28 19:52 docsms
-rw-r--r-- 1 hp hp 48 Aug 28 20:10 file1.txt
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

```
~/linuxassignment/docss
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ ls -l ~/linuxassignment
total 1
drwxr-xr-x 1 hp hp 0 Aug 28 20:04 docss
drwxr-xr-x 1 hp hp 0 Aug 28 20:32 docss
drwxr-xr-x 1 hp hp 0 Aug 28 19:52 docss
-rw-r--r-- 1 hp hp 48 Aug 28 20:10 file1.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ ls -l /
total 309
-rw-r--r-- 1 hp Administrators 53342 Aug 28 19:08 Cygwin-Terminal.ico
-rwxr-xr-x 1 hp Administrators 88 Aug 28 19:08 Cygwin.bat
-rw-r--r-- 1 hp Administrators 157097 Aug 28 19:08 Cygwin.ico
drwxr-xr-x 1 hp Administrators 0 Aug 28 19:08 bin
dr-xr-xr-x 1 hp hp 0 Aug 28 20:50 cygdrive
drwxr-xr-x 1 hp Administrators 0 Aug 28 19:08 dev
drwxr-xr-x 1 hp Administrators 0 Aug 28 19:08 etc
drwxrwxrwt 1 hp Administrators 0 Aug 28 19:08 home
drwxr-xr-x 1 hp Administrators 0 Aug 28 19:08 lib
dr-xr-xr-x 9 hp hp 0 Aug 28 20:50 proc
drwxr-xr-x 1 hp Administrators 0 Aug 28 19:08 sbin
drwxrwxrwt 1 hp Administrators 0 Aug 28 19:08 tmp
drwxr-xr-x 1 hp Administrators 0 Aug 28 19:08 usr
drwxr-xr-x 1 hp Administrators 0 Aug 28 19:08 var

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

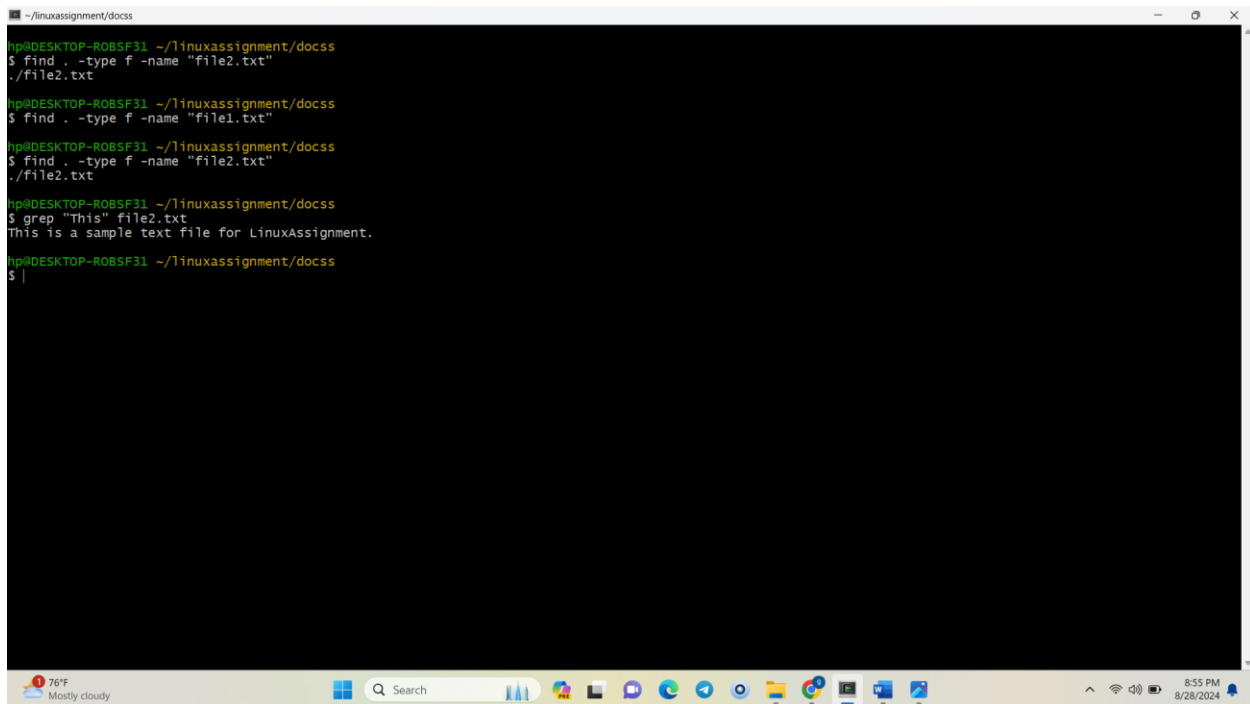
g) File Searching:

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

```
~/linuxassignment/docss
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file2.txt"
./file2.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

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



A terminal window titled '~ /linuxassignment/docss' showing a series of commands and their outputs. The user is in the directory ~/linuxassignment/docss. The commands and outputs are as follows:

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file2.txt"
./file2.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file1.txt"

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file2.txt"
./file2.txt

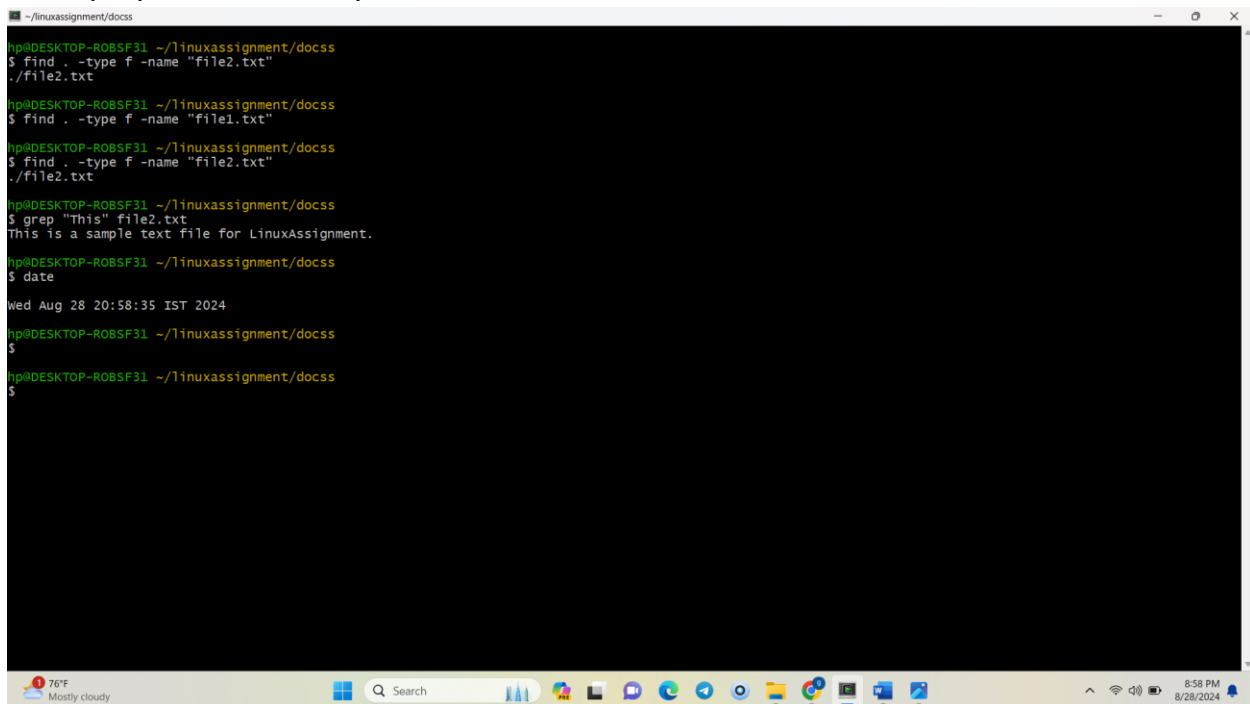
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ grep "This" file2.txt
This is a sample text file for LinuxAssignment.

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

The terminal window is part of a desktop environment. The taskbar at the bottom shows the Windows logo, a search bar, and several application icons. The system tray on the right indicates a temperature of 76°F, 'Mostly cloudy' weather, and the time 8:55 PM on 8/28/2024.

h) System Information:

a. Display the current system date and time.



A terminal window titled '~ /linuxassignment/docss' showing the same sequence of commands as the previous image, followed by the 'date' command. The output of 'date' is 'Wed Aug 28 20:58:35 IST 2024'.

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file2.txt"
./file2.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file1.txt"

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file2.txt"
./file2.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ grep "This" file2.txt
This is a sample text file for LinuxAssignment.

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ date
Wed Aug 28 20:58:35 IST 2024

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

The terminal window is part of a desktop environment. The taskbar at the bottom shows the Windows logo, a search bar, and several application icons. The system tray on the right indicates a temperature of 76°F, 'Mostly cloudy' weather, and the time 8:58 PM on 8/28/2024.

i) Networking:

a. Display the IP address of the system.

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file2.txt"
./file2.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file1.txt"

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ find . -type f -name "file2.txt"
./file2.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ grep "This" file2.txt
This is a sample text file for LinuxAssignment.

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ date
Wed Aug 28 20:58:35 IST 2024

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ hostname -I
169.254.49.196 192.168.56.1 169.254.58.238 169.254.81.80 2401:4900:1c09:615b:4b5c:a4e0:78f:b556 2401:4900:1c09:615b:ad66:1a9b:5a05:ce0e 192.168.1.5 169.254.61.105

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

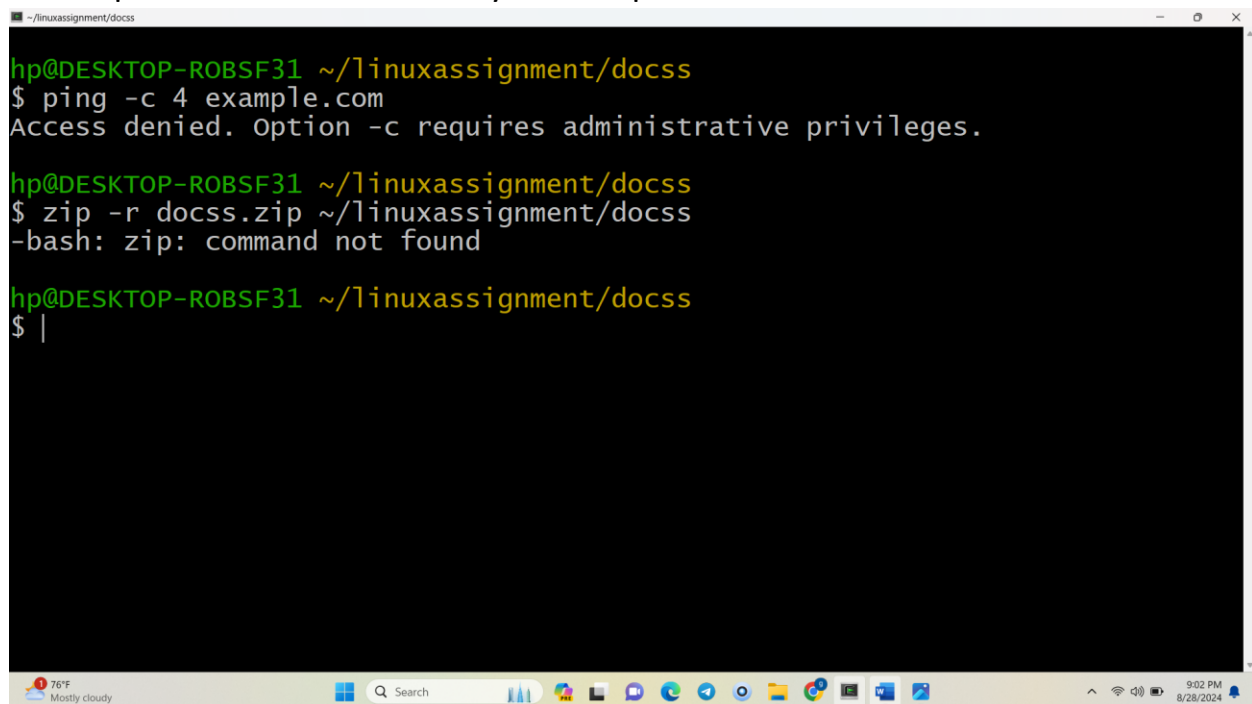
b. Ping a remote server to check connectivity (provide a remote server address to ping).

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ ping -c 4 example.com
Access denied. Option -c requires administrative privileges.

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ |
```

j) File Compression:

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

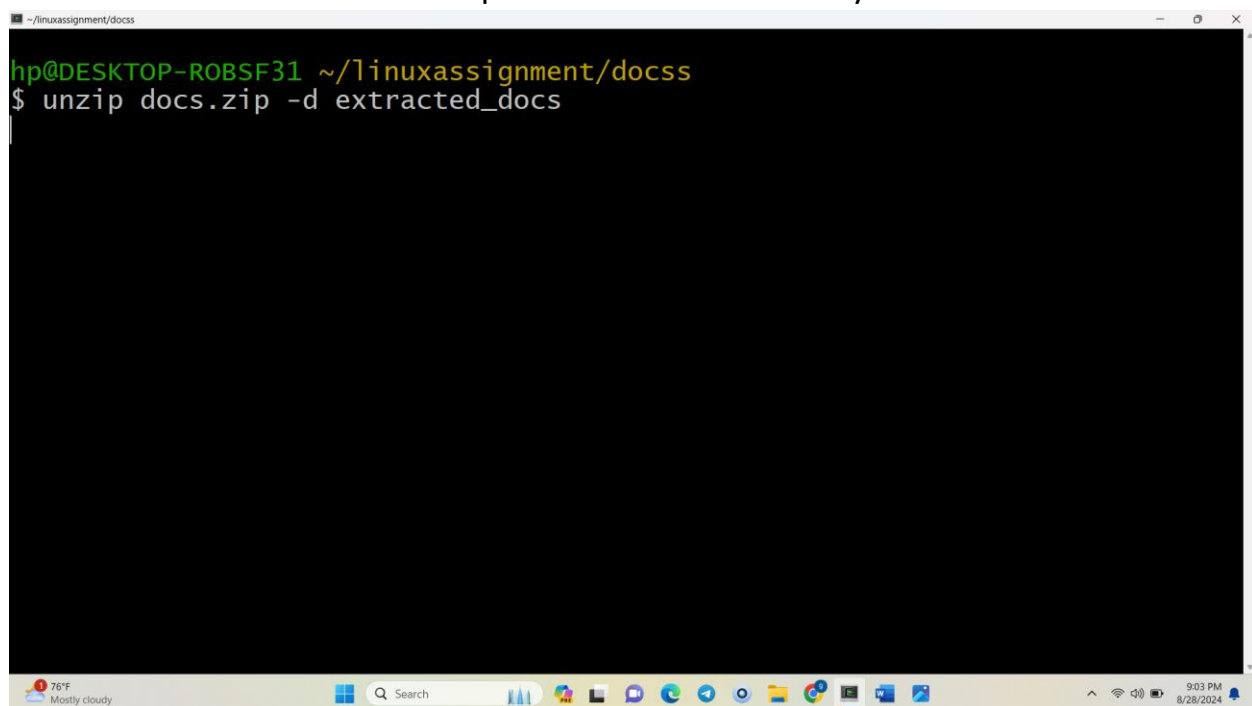
A terminal window titled '~ /linuxassignment/docss' on a Windows desktop. The user 'hp@DESKTOP-ROBSF31' is in the directory '~ /linuxassignment/docss'. They attempt to run 'ping -c 4 example.com', which is denied due to lack of administrative privileges. Then, they attempt to run 'zip -r docss.zip ~/linuxassignment/docss', which fails because the 'zip' command is not found. The prompt returns to '\$ |'.

```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ ping -c 4 example.com
Access denied. Option -c requires administrative privileges.

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ zip -r docss.zip ~/linuxassignment/docss
-bash: zip: command not found

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ |
```

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

A terminal window titled '~ /linuxassignment/docss' on a Windows desktop. The user 'hp@DESKTOP-ROBSF31' is in the directory '~ /linuxassignment/docss'. They enter the command 'unzip docs.zip -d extracted_docs' to extract the contents of 'docs.zip' into a new directory named 'extracted_docs'. The prompt returns to '\$ |'.


```
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ unzip docs.zip -d extracted_docs

$ |
```

k) File Editing:


```
~/linuxassignment/docss
hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$ sed -i 's/sample/example/g' file2.txt

hp@DESKTOP-ROBSF31 ~/linuxassignment/docss
$
```

The image shows a Windows taskbar at the bottom of the screen. On the left, it displays the weather as 76°F and Mostly cloudy. In the center is a search bar with the word "Search". To the right of the search bar are several application icons: File Explorer, Microsoft Edge, Microsoft Word, and others. On the far right, there are system icons for network, volume, and battery, along with the date and time: 9:08 PM, 8/28/2024.

