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.

```
cdac@LAPTOP-6237ABAK:~$ cd feb25/
cdac@LAPTOP-6237ABAK:~/feb25$ mkdir LinuxAssignment
cdac@LAPTOP-6237ABAK:~/feb25$ ls
LinuxAssignment
cdac@LAPTOP-6237ABAK:~/feb25$
```

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

```
cdac@LAPTOP-6237ABAK:~/feb25$ cd LinuxAssignment/
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ nano file1.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ ls
file1.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ cat file1.txt
Hello My Name Is Honey
This Is File1.txt content...
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$
```

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

```
cdac@LAPTOP-6237ABAK:~/feb25$ cd LinuxAssignment/
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ mkdir docs
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ ls
docs  file1.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$
```

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

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ ls
docs  file1.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ cp file1.txt docs/fi
le2.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ ls
docs  file1.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ cd docs/
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ ls
file2.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat file2.text
cat: file2.text: No such file or directory
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat file2.txt
Hello My Name Is Honey
This Is File1.txt content...
```

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

```
cdac@LAPTOP-6237ABAK:~$ cd feb25/LinuxAssignment
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ pwd
/home/cdac/feb25/LinuxAssignment
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ cd docs
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ pwd
/home/cdac/feb25/LinuxAssignment/docs
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ ls
file2.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ ls -l
total 4
-rw-rw-r-- 1 cdac cdac 52 Feb 27 17:03 file2.txt
```

f) **File Searching:**
   a. Search for all files with the extension ".txt" in the current directory and its subdirectories.

```
cdac@LAPTOP-6237ABAK:~/feb25$ find LinuxAssignment/ -type f -name
"*.txt"
LinuxAssignment/docs/file2.txt
LinuxAssignment/file1.txt
```

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

```
cdac@LAPTOP-6237ABAK:~/feb25$ cd LinuxAssignment/docs/
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat file2.txt
Hello My Name Is Honey
This Is File1.txt content...
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat file2.txt |
grep "Honey"
Hello My Name Is Honey
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$
```

g) **System Information:**

a. Display the current system date and time.

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ date
Thu Feb 27 17:35:18 UTC 2025
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$
```

h) **File Editing:**

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

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ nano file2.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat file2.txt
Hello My Name Is Honey
This Is File1.txt content...
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$
```

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@LAPTOP-6237ABAK:~/feb25/LinuxAssignment$ cd docs/
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat file2.txt
Hello My Name Is Honey
This Is File1.txt content...
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ sed -i 's/Honey
/Tushar/g' file2.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat file2.txt
Hello My Name Is Tushar
This Is File1.txt content...
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$
```

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.

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ head data.txt
India
pakistan
russia
america
japan
china
singapore
england
afganistan
bhutan
```

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

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ tail -5 data.txt
england
afganistan
bhutan
shrilanka
bangladesh
```

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.

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ head -15 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$
```

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

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ tail -3 numbers.txt
23
24
25
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$
```

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."

```
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat input.txt
hello my name is tushar meshram
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat input.txt | tr '[a-z]' '[A-Z]'
HELLO MY NAME IS TUSHAR MESHRAM
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat input.txt | tr '[a-z]' '[A-Z]' > output.txt
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$ cat output.txt
HELLO MY NAME IS TUSHAR MESHRAM
cdac@LAPTOP-6237ABAK:~/feb25/LinuxAssignment/docs$
```