COS 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 in Working directory.*

**(base) Harshals-MacBook-Air:/ harshaltarmale$ cd ~**

**(base) Harshals-MacBook-Air:~ harshaltarmale$ ls**

Applications Downloads Music Public opt

Desktop Library Pictures config

Documents Movies Projects dirtest

(**base) Harshals-MacBook-Air:~ harshaltarmale$ cd Projects/CDAC/operating\_Systems/**

**(base) Harshals-MacBook-Air:operating\_Systems harshaltarmale$ mkdir LinuxAssignment**

**(base) Harshals-MacBook-Air:operating\_Systems harshaltarmale$ cd LinuxAssignment/**

**(base) Harshals-MacBook-Air:LinuxAssignment harshaltarmale$**

*b) File Management:*

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

*contents.*

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ pwd

/Users/harshaltarmale/Projects/CDAC/operating\_Systems/LinuxAssignment

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ touch file1.txt

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ cat > file1.txt

Hi this is file 1

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ cat file1.txt

Hi this is file 1

*c) Directory Management:*

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

(base) **Harshals-MacBook-Air:**~ harshaltarmale$ cd Projects/CDAC/operating\_Systems/LinuxAssignment

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ mkdir docs

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ ls

docs file1.txt

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$

*d) Copy and Move Files:*

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

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ cp file1.txt /Users/harshaltarmale/Projects/CDAC/operating\_Systems/LinuxAssignment/docs/file2.txt

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ cd docs

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ ls

file1.txt file2.txt

*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.*

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ ls -l

total 16

-rw-r--r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file1.txt

-rw-r--r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file2.txt

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ chmod u+x file2.txt

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ ls -l

total 16

-rw-r--r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file1.txt

-rwxr--r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file2.txt

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ chmod g-r file2.txt

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ ls -l

total 16

-rw-r--r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file1.txt

-rwx---r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file2.txt

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ chown file2.txt

usage: chown [-fhnvx] [-R [-H | -L | -P]] owner[:group] file ...

chown [-fhnvx] [-R [-H | -L | -P]] :group file ...

(base) **Harshals-MacBook-Air:**docs harshaltarmale$ ls -l

total 16

-rw-r--r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file1.txt

-rwx---r--@ 1 harshaltarmale staff 41 Aug 19 18:31 file2.txt

*f) Final Checklist:*

*a. Finally, list the contents of the "LinuxAssignment" directory and the root directory to*

*ensure that all operations were performed correctly.*

(base) **Harshals-MacBook-Air:**operating\_Systems harshaltarmale$ ls -R

Aug25 PGDAC\_COSSDM Syllabus\_74hr.docx

LinuxAssignment

practice

./LinuxAssignment:

COS Assignment 1.docx file1.txt

docs ~$S Assignment 1.docx

./LinuxAssignment/docs:

file1.txt file2.txt

./practice:

abc.txt cdac

./practice/cdac:

a b file

aa bb file.txt

abc bcd file2.txt

*g) File Searching:*

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

(base) **Harshals-MacBook-Air:**operating\_Systems harshaltarmale$ find . -name "\*.txt"

./LinuxAssignment/file1.txt

./LinuxAssignment/docs/file2.txt

./LinuxAssignment/docs/file1.txt

./practice/abc.txt

./practice/cdac/file2.txt

(base) **Harshals-MacBook-Air:**operating\_Systems harshaltarmale$ ls -R | grep ".txt$"

file1.txt

file1.txt

file2.txt

abc.txt

file.txt

file2.txt

*b. Display lines containing a specific word in a file (provide a file name and the specific*

*word to search).*

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ cat file3.txt

red

hi how are you red

red is the bright colour

yellow is also bright colour

green is dard colour

blue is light colour

red mixed with white gived pink

brown is obtained by mixing black with red and yellow

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ grep "red" file3.txt

red

hi how are you red

red is the bright colour

red mixed with white gived pink

brown is obtained by mixing black with red and yellow

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ grep "yellow" file3.txt

yellow is also bright colour

brown is obtained by mixing black with red and yellow

*h) System Information:*

*a. Display the current system date and time.*

(base) **Harshals-MacBook-Air:**LinuxAssignment harshaltarmale$ date

Mon Aug 18 20:07:31 IST 2025

*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).*

*j) File Compression:*

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

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

*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).*

*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.*

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ head data.txt

hi

this

is

an

important

document

containing

imp

data

linux

*b. Now, to check the end of the file for any recent additions, display the last 5 lines of*

*"data.txt" using another command.*

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ tail -5 data.txt

it

can

also

contain

password

*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.*

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ head -15 numbers.txt

1

12

123

2

21

23

3

32

34

4

43

45

5

54

56

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

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ tail -3 numbers.txt

543

234

5678

*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."*

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ tr '[:lower:]' '[:upper:]' < input.txt > output.txt

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ cat input.txt

hi my Name is Harshal Tarmale.

i Am Post Graduate from Germany.

I am Currently pursuing PG-DAC.

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ cat output.txt

HI MY NAME IS HARSHAL TARMALE.

I AM POST GRADUATE FROM GERMANY.

I AM CURRENTLY PURSUING PG-DAC.

*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."*

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ cat > duplicates.txt

HI MY NAME IS HARSHAL TARMALE.

I AM POST GRADUATE FROM GERMANY.

I AM CURRENTLY PURSUING PG-DAC.

hi my Name is Harshal Tarmale.

i Am Post Graduate from Germany.

I am Currently pursuing PG-DAC.

I AM POST GRADUATE FROM GERMANY.

I AM CURRENTLY PURSUING PG-DAC.

hi my Name is Harshal Tarmale.

i Am Post Graduate from Germany.

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ sort duplicates.txt | uniq

HI MY NAME IS HARSHAL TARMALE.

I AM CURRENTLY PURSUING PG-DAC.

I AM POST GRADUATE FROM GERMANY.

I am Currently pursuing PG-DAC.

hi my Name is Harshal Tarmale.

i Am Post Graduate from Germany.

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ sort duplicates.txt | uniq -u

HI MY NAME IS HARSHAL TARMALE.

I am Currently pursuing PG-DAC.

*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."*

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ cat fruits.txt

Apple

banana

mango

pear

strawberry

guava

dragonfruit

pineapple

watermelon

kivi

pricklypear

grapes

orange

melon

papaya

Apple

guava

kivi

mango

orange

apple

banana

(base) **Harshals-MacBook-Air:**problem2 harshaltarmale$ sort fruits.txt | uniq -c

2 Apple

1 apple

2 banana

1 dragonfruit

1 grapes

2 guava

2 kivi

2 mangoå

1 melon

2 orange

1 papaya

1 pear

1 pineapple

1 pricklypear

1 strawberry

1 watermelon