CDAC MUMBAI

Concepts of Operating System

Assignment 1

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@DESKTOP-HFLCO3Q:/home$` pwd

/home

`cdac@DESKTOP-HFLCO3Q:/home$` cd ~

`cdac@DESKTOP-HFLCO3Q:~$` mkdir LinuxAssignment

`cdac@DESKTOP-HFLCO3Q:~$` ls

LinuxAssignment abc.txt

b) File Management:

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

contents.

`cdac@DESKTOP-HFLCO3Q:~$` cd LinuxAssignment/

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$` ls

docs file1.txt

c) Directory Management:

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

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$` mkdir docs

d) Copy and Move Files:

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

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$` cp file1.txt docs/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.

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$` chmod 744 docs/file2.txt

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$` chown cdac docs/file2.txt

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$` ls -1 docs/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.

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$`

ls ~/LinuxAssignment

docs file1.txt

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$` ls ~

LinuxAssignment abc.txt

g) File Searching:

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

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$`

 find . -type f -name "*.txt"

./docs/file2.txt

./file1.txt

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

`cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$`

grep "Hello" file1.txt

Hello

h) System Information:

a. Display the current system date and time.

cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$ date

Wed Aug 28 19:08:19 IST 2024

i) Networking:

a. Display the IP address of the system.

cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$ ip a

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

cdac@DESKTOP-HFLCO3Q:~/LinuxAssignment$

 ping www.facebook.com

PING star-mini.c10r.facebook.com (57.144.124.1) 56(84) bytes of data.

64 bytes from edge-star-mini-shv-03-bom2.facebook.com (57.144.124.1): icmp_seq=1 ttl=56 time=6.30 ms

64 bytes from edge-star-mini-shv-03-bom2.facebook.com (57.144.124.1): icmp_seq=2 ttl=56 time=5.51 ms

j) File Compression:

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

zip -r docs.zip docs

  adding: docs/ (stored 0%)

  adding: docs/file2.txt (stored 0%)

zip -r docs.zip docs

updating: docs/ (stored 0%)

updating: docs/file2.txt (stored 0%)

zip -r docs.zip docs

updating: docs/ (stored 0%)

updating: docs/file2.txt (stored 0%)

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

 unzip docs.zip -d zipDoc

Archive: docs.zip

  creating: zipDoc/docs/

 extracting: zipDoc/docs/file2.txt

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).

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@DESKTOP-HFLCO3Q:~$ nano data.txt
cdac@DESKTOP-HFLCO3Q:~$ head -10 data.txt
Hie
How r U?
Where are u from?
What are u doing?
Nice To meet u
Take care
See u soon
Good moring
good afternoon
good evening

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@DESKTOP-HFLCO3Q:~$ tail -5 data.txt

good afternoon

good evening

good night

Have a sweet dream

Bye

b. 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@DESKTOP-HFLCO3Q:~$ nano numbers.txt
cdac@DESKTOP-HFLCO3Q:~$ head -15 numbers.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

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

tail -3 numbers.txt

18

19

20

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."
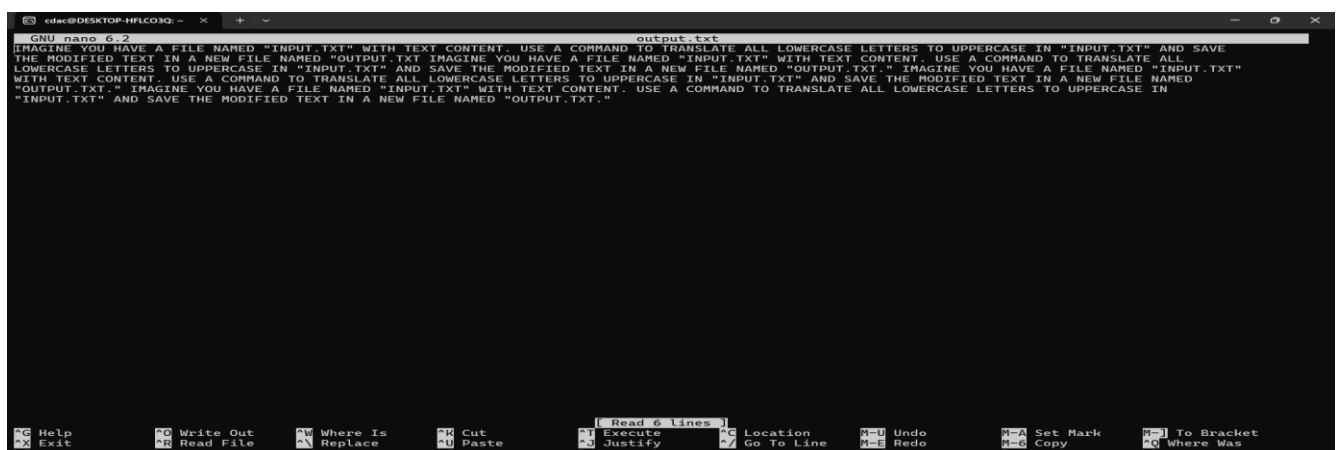
nano input.txt

tr 'a-z' 'A-Z' input.txt output.txt

tr: extra operand 'input.txt'

Try 'tr --help' for more information.

tr 'a-z' 'A-Z' <input.txt> output.txt

nano 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."

cdac@DESKTOP-HFLCO3Q:~$ nano duplicate.txt

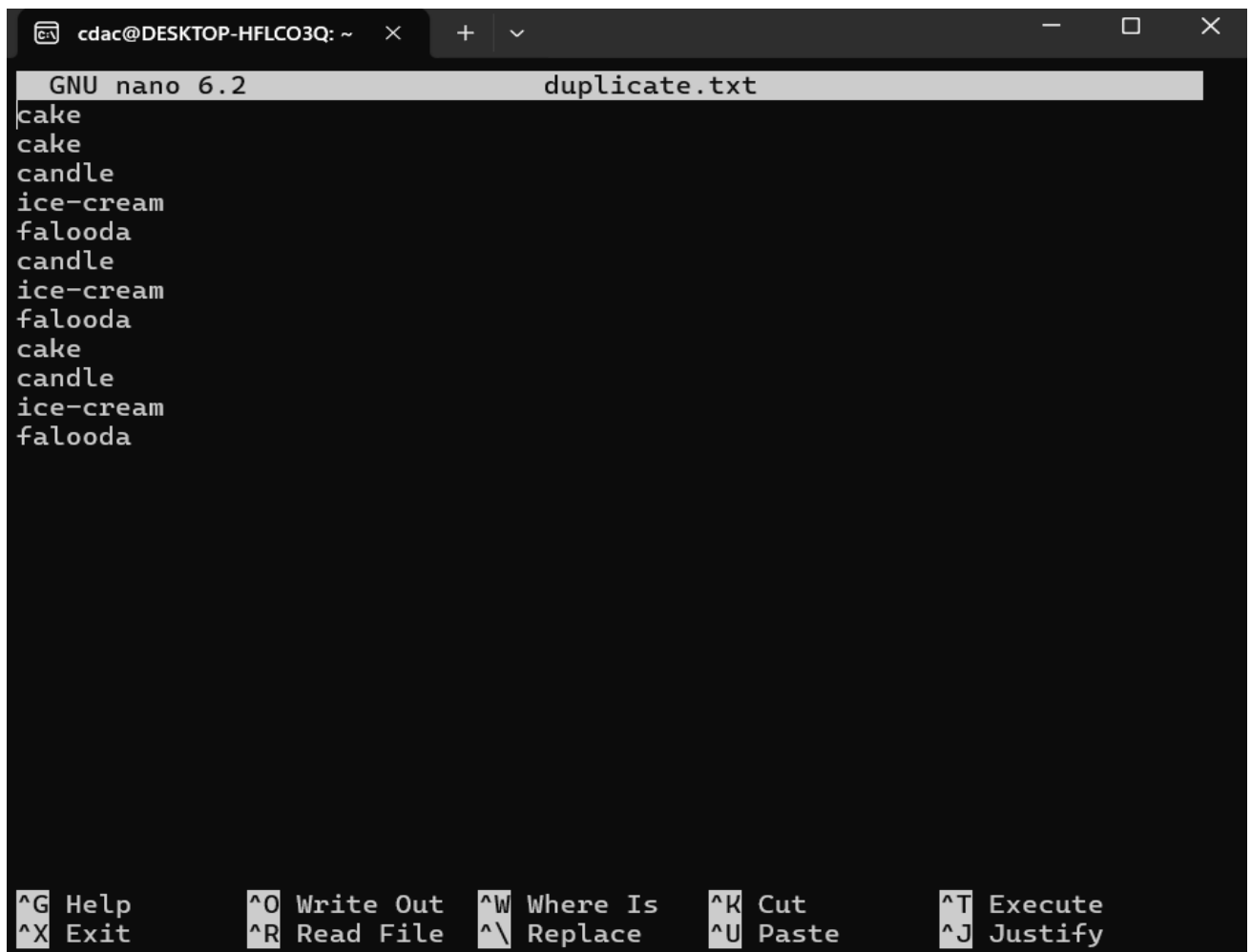cdac@DESKTOP-HFLCO3Q:~$ sort duplicate.txt | uniq

cake

candle

falooda

ice-cream

```
  cdac@DESKTOP-HFLCO3Q: ~      ×    +  ∨                                        —    □    ×

    GNU nano 6.2                    duplicate.txt
cake
cake
candle
ice-cream
falooda
candle
ice-cream
falooda
cake
candle
ice-cream
falooda




^G Help        ^O Write Out  ^W Where Is   ^K Cut        ^T Execute
^X Exit        ^R Read File   ^\ Replace    ^U Paste      ^J Justify
```

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."

cdac@DESKTOP-HFLCO3Q:~$ nano fruit.txt

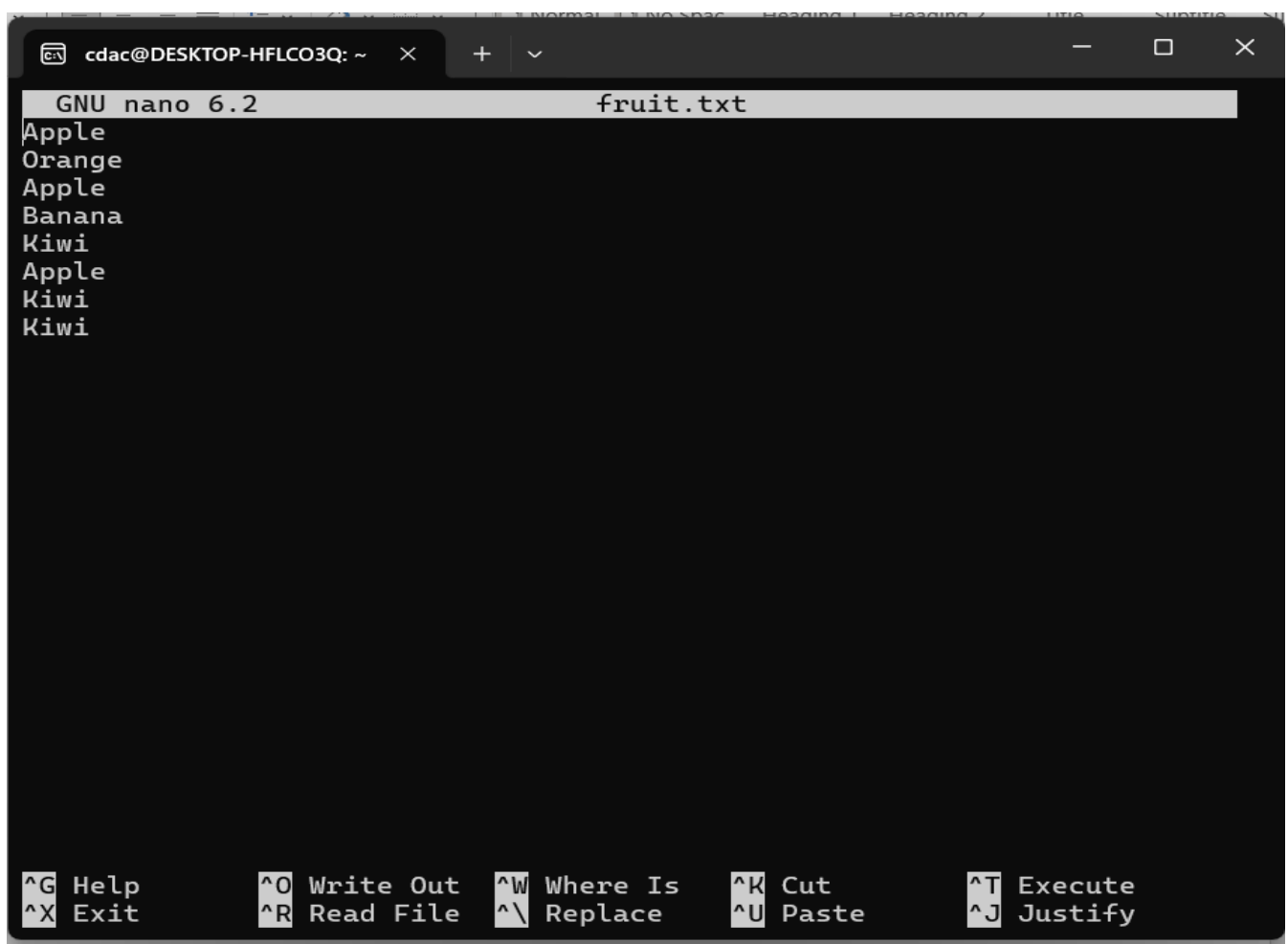cdac@DESKTOP-HFLCO3Q:~$ sort fruit.txt |uniq

Apple

Banana

Kiwi

Orange