

a) Navigate and List:

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

b) File Management:

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

```
cdac@Shubham: ~  
cdac@Shubham:~$ pwd  
/home/cdac  
cdac@Shubham:~$ ls  
feb25  
cdac@Shubham:~$ mkdir LinuxAssignment  
cdac@Shubham:~$ ls  
LinuxAssignment feb25  
cdac@Shubham:~$
```

b) File Management:

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

```
cdac@Shubham: ~  
cdac@Shubham:~$ ls  
LinuxAssignment feb25  
cdac@Shubham:~$ ls  
LinuxAssignment feb25  
cdac@Shubham:~$ cd LinuxAssignment/  
cdac@Shubham:~/LinuxAssignment$ touch file1.txt  
cdac@Shubham:~/LinuxAssignment$ ls  
file1.txt  
cdac@Shubham:~/LinuxAssignment$ nano file1.txt  
cdac@Shubham:~/LinuxAssignment$ cat file1.txt  
Hi this is linux worlld  
  
-----  
vey useful operation system  
cdac@Shubham:~/LinuxAssignment$
```

c) Directory Management:

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

```
cdac@Shubham: ~/LinuxAssig × + v
cdac@Shubham:~$ ls
LinuxAssignment  feb25
cdac@Shubham:~$ ls
LinuxAssignment  feb25
cdac@Shubham:~$ cd LinuxAssignment/
cdac@Shubham:~/LinuxAssignment$ touch file1.txt
cdac@Shubham:~/LinuxAssignment$ ls
file1.txt
cdac@Shubham:~/LinuxAssignment$ nano file1.txt
cdac@Shubham:~/LinuxAssignment$ cat file1.txt
Hi this is linux worlld

-----
vey useful operation system
cdac@Shubham:~/LinuxAssignment$ whoami
cdac
cdac@Shubham:~/LinuxAssignment$ man >
-bash: syntax error near unexpected token `newline'
cdac@Shubham:~/LinuxAssignment$ mkdir docs
cdac@Shubham:~/LinuxAssignment$ ls
docs  file1.txt
cdac@Shubham:~/LinuxAssignment$
```

d) Copy and Move Files:

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

file1.txt" file into the "docs" directory

```
-----
vey useful operation system
cdac@Shubham:~/LinuxAssignment$ whoami
cdac
cdac@Shubham:~/LinuxAssignment$ man >
-bash: syntax error near unexpected token `newline'
cdac@Shubham:~/LinuxAssignment$ mkdir docs
cdac@Shubham:~/LinuxAssignment$ ls
docs  file1.txt
cdac@Shubham:~/LinuxAssignment$ cp file1.txt docs/
cdac@Shubham:~/LinuxAssignment$ cd docs/
cdac@Shubham:~/LinuxAssignment/docs$ ls
file1.txt
cdac@Shubham:~/LinuxAssignment/docs$ cat file1.txt
Hi this is linux worlld

-----
vey useful operation system
cdac@Shubham:~/LinuxAssignment/docs$ rename file1.txt file2.txt
Command 'rename' not found, but can be installed with:
sudo apt install rename
cdac@Shubham:~/LinuxAssignment/docs$ sudo apt install rename
[sudo] password for cdac:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  rename
0 upgraded, 1 newly installed, 0 to remove and 52 not upgraded.
Need to get 20.2 kB of archives.
After this operation, 55.3 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 rename all 1.30-1 [20.2 kB]
Fetched 20.2 kB in 1s (21.8 kB/s)
Selecting previously unselected package rename.
(Reading database ... 42586 files and directories currently installed.)
Preparing to unpack .../archives/rename_1.30-1_all.deb ...
Unpacking rename (1.30-1) ...
Setting up rename (1.30-1) ...
update-alternatives: using /usr/bin/file-rename to provide /usr/bin/rename (rename) in auto mode
Processing triggers for man-db (2.10.2-1) ...
```

rename it to "file2.txt".

file1.txt" file into the "docs" directory

```
cdac@Shubham: ~/LinuxAssig x + v
vey useful operation system
cdac@Shubham:~/LinuxAssignment/docs$ rename file1.txt file2.txt
Command 'rename' not found, but can be installed with:
sudo apt install rename
cdac@Shubham:~/LinuxAssignment/docs$ sudo apt install rename
[sudo] password for cdac:
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  rename
0 upgraded, 1 newly installed, 0 to remove and 52 not upgraded.
Need to get 28.2 kB of archives.
After this operation, 55.3 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/universe amd64 rename all 1.30-1 [28.2 kB]
Fetched 28.2 kB in 1s (21.8 kB/s)
Selecting previously unselected package rename.
(Reading database ... 42586 files and directories currently installed.)
Preparing to unpack .../archives/rename_1.30-1_all.deb ...
Unpacking rename (1.30-1) ...
Setting up rename (1.30-1) ...
update-alternatives: using /usr/bin/file-rename to provide /usr/bin/rename (rename) in auto mode
Processing triggers for man-db (2.10.2-1) ...
cdac@Shubham:~/LinuxAssignment/docs$ rename file1.txt file2.txt
Bareword "file1" not allowed while "strict subs" in use at line 2, in:
file1.txt
cdac@Shubham:~/LinuxAssignment/docs$ mv file1.txt file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ ls
file2.txt
cdac@Shubham:~/LinuxAssignment/docs$
```

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@Shubham: ~/LinuxAssig x + v
cdac@Shubham:~/LinuxAssignment/docs$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 71 Feb 27 17:28 file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ chmod 744
chmod: missing operand after '744'
Try 'chmod --help' for more information.
cdac@Shubham:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 cdac cdac 71 Feb 27 17:28 file2.txt
cdac@Shubham:~/LinuxAssignment/docs$
```

f) Final Checklist:

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

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).
- h) System Information:
 - a. Display the current system date and time.

```
cdac@Shubham: ~/LinuxAssig x + v
cdac@Shubham:~/LinuxAssignment/docs$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 71 Feb 27 17:28 file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ chmod 744
chmod: missing operand after '744'
Try 'chmod --help' for more information.
cdac@Shubham:~/LinuxAssignment/docs$ chmod 744 file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 cdac cdac 71 Feb 27 17:28 file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ cal
    February 2025
Su Mo Tu We Th Fr Sa
                1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28

cdac@Shubham:~/LinuxAssignment/docs$ man cal
cdac@Shubham:~/LinuxAssignment/docs$ date
Thu Feb 27 18:21:05 IST 2025
cdac@Shubham:~/LinuxAssignment/docs$
```

i) Networking:

- a. Display the IP address of the system.

```
cdac@Shubham: ~/LinuxAssig x + v
total 4
-rwxr--r-- 1 cdac cdac 71 Feb 27 17:28 file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ cal
    February 2025
Su Mo Tu We Th Fr Sa
                1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28

cdac@Shubham:~/LinuxAssignment/docs$ man cal
cdac@Shubham:~/LinuxAssignment/docs$ date
Thu Feb 27 18:21:05 IST 2025
cdac@Shubham:~/LinuxAssignment/docs$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet 10.255.255.254/32 brd 10.255.255.254 scope global lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:15:5d:04:09:fb brd ff:ff:ff:ff:ff:ff
    inet 172.26.203.204/20 brd 172.26.207.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe04:9fb/64 scope link
        valid_lft forever preferred_lft forever
cdac@Shubham:~/LinuxAssignment/docs$
```

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

```
cdac@Shubham: ~/LinuxAssig x + v
cdac@Shubham:~/LinuxAssignment/docs$ man cal
cdac@Shubham:~/LinuxAssignment/docs$ date
Thu Feb 27 18:21:05 IST 2025
cdac@Shubham:~/LinuxAssignment/docs$ ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet 10.255.255.254/32 brd 10.255.255.254 scope global lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:15:5d:04:09:fb brd ff:ff:ff:ff:ff:ff
    inet 172.26.203.204/20 brd 172.26.207.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe04:9fb/64 scope link
        valid_lft forever preferred_lft forever
cdac@Shubham:~/LinuxAssignment/docs$ IP address "192.168.1.10":
IP: command not found
cdac@Shubham:~/LinuxAssignment/docs$ IP address "192.168.1.10"
IP: command not found
cdac@Shubham:~/LinuxAssignment/docs$ IP addressping 192.168.1.10 "192.168.1.10"
IP: command not found
cdac@Shubham:~/LinuxAssignment/docs$ IP addressping 192.168.1.10
IP: command not found
cdac@Shubham:~/LinuxAssignment/docs$ ping 192.168.1.10
PING 192.168.1.10 (192.168.1.10) 56(84) bytes of data.
```

j) File Compression:

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

```
cdac@Shubham: ~/LinuxAssig x + v
Unpacking zip (3.0-12build2) ...
Setting up unzip (6.0-26ubuntu3.2) ...
Setting up zip (3.0-12build2) ...
Processing triggers for man-db (2.10.2-1) ...
cdac@Shubham:~/LinuxAssignment$ zip -r docs/

zip error: Nothing to do! (docs/.zip)
cdac@Shubham:~/LinuxAssignment$ cd docs/
cdac@Shubham:~/LinuxAssignment/docs$ ls
file2.txt
cdac@Shubham:~/LinuxAssignment/docs$ touch file3.txt
cdac@Shubham:~/LinuxAssignment/docs$ nano file3.txt
cdac@Shubham:~/LinuxAssignment/docs$ zip -r docs/

zip error: Nothing to do! (docs/.zip)
cdac@Shubham:~/LinuxAssignment/docs$ zip docs/

zip error: Nothing to do! (docs/.zip)
cdac@Shubham:~/LinuxAssignment/docs$
cdac@Shubham:~/LinuxAssignment/docs$ cd ..
cdac@Shubham:~/LinuxAssignment$ zip docs/

zip error: Nothing to do! (docs/.zip)
cdac@Shubham:~/LinuxAssignment$ zip -r archive.zip docs/
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (deflated 18%)
  adding: docs/file3.txt (deflated 36%)
cdac@Shubham:~/LinuxAssignment$ ls
archive.zip  docs  file1.txt
cdac@Shubham:~/LinuxAssignment$
```

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

```
cdac@Shubham: ~/LinuxAssig × + v
archive.zip docs file1.txt mkdir newdir
cdac@Shubham:~/LinuxAssignment$ touch file1.txt
cdac@Shubham:~/LinuxAssignment$ nano file1.txt
cdac@Shubham:~/LinuxAssignment$ cat file1.txt

Extract the contents of the zip file into a new directory.linux using command by example

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How to Create and Extract Zip Files to Specific Directory in ...
To extract a zip file into a new directory in Linux, you can use the unzip command with the -d option. For example, to unzip a file named demo.zip into a di
rectory named destination, you can use the command unzip demo.zip -d destination.
Steps
Open the terminal window
Use the unzip command with the -d option
Specify the destination directory after the -d option
Additional information
You can use the unzip -l command to see a list of the files and directories in the zip archive.
You can also use the Gnome desktop to unzip a zip file.
Open the file manager
Navigate to the directory with the zip file
Right-click on the zip file
Select Extract here
Related commands
zip -r: Includes files and folders in sub-directories
tar -x: Extracts the contents of an archive
tar -v: Displays a list of the files being extracted
tar -z: Decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment$
```

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).

sed -i 's/original word /new word/g' filename

```
cdac@Shubham: ~/LinuxAssig × + v
zip -r: Includes files and folders in sub-directories
tar -x: Extracts the contents of an archive
tar -v: Displays a list of the files being extracted
tar -z: Decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment$ sed -i 's/Shopping/entertainment/g' file1.txt
cdac@Shubham:~/LinuxAssignment$ cat file1.txt

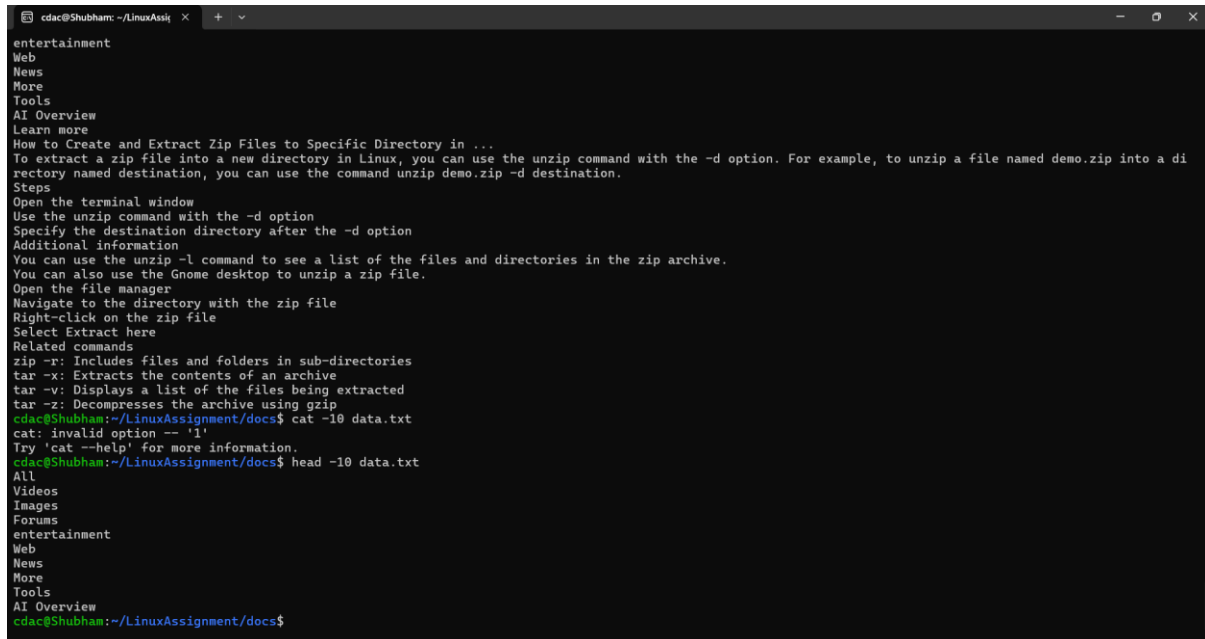
Extract the contents of the zip file into a new directory.linux using command by example

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To extract a zip file into a new directory in Linux, you can use the unzip command with the -d option. For example, to unzip a file named demo.zip into a di
rectory named destination, you can use the command unzip demo.zip -d destination.
Steps
Open the terminal window
Use the unzip command with the -d option
Specify the destination directory after the -d option
Additional information
You can use the unzip -l command to see a list of the files and directories in the zip archive.
You can also use the Gnome desktop to unzip a zip file.
Open the file manager
Navigate to the directory with the zip file
Right-click on the zip file
Select Extract here
Related commands
zip -r: Includes files and folders in sub-directories
tar -x: Extracts the contents of an archive
tar -v: Displays a list of the files being extracted
tar -z: Decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment$
```

Problem 2: Read the instructions carefully and answer accordingly. If there is any need to insert some data then do that as well.

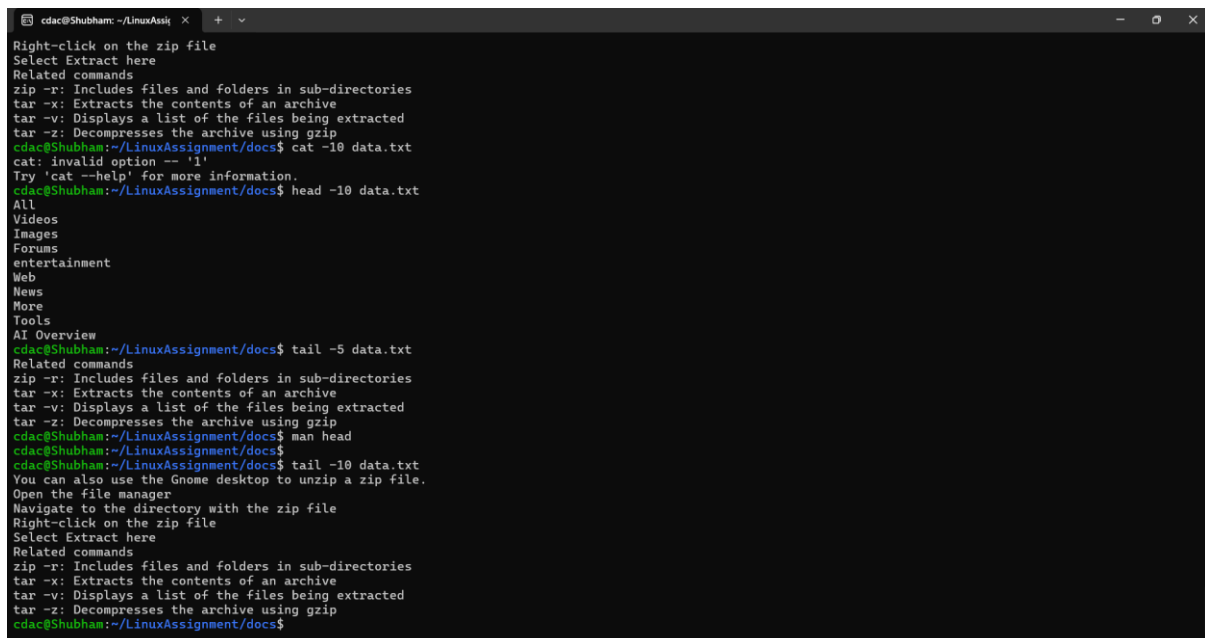
- a. Suppose you have a file named "data.txt" containing important information. Display the

first 10 lines of this file to quickly glance at its contents using a command.



```
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To extract a zip file into a new directory in Linux, you can use the unzip command with the -d option. For example, to unzip a file named demo.zip into a di
rectory named destination, you can use the command unzip demo.zip -d destination.
Steps
Open the terminal window
Use the unzip command with the -d option
Specify the destination directory after the -d option
Additional information
You can use the unzip -l command to see a list of the files and directories in the zip archive.
You can also use the Gnome desktop to unzip a zip file.
Open the file manager
Navigate to the directory with the zip file
Right-click on the zip file
Select Extract here
Related commands
zip -r: Includes files and folders in sub-directories
tar -x: Extracts the contents of an archive
tar -v: Displays a list of the files being extracted
tar -z: Decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment/docs$ cat -10 data.txt
cat: invalid option -- '1'
Try 'cat --help' for more information.
cdac@Shubham:~/LinuxAssignment/docs$ head -10 data.txt
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cdac@Shubham:~/LinuxAssignment/docs$
```

- 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@Shubham: ~/LinuxAssig
Right-click on the zip file
Select Extract here
Related commands
zip -r: Includes files and folders in sub-directories
tar -x: Extracts the contents of an archive
tar -v: Displays a list of the files being extracted
tar -z: Decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment/docs$ cat -10 data.txt
cat: invalid option -- '1'
Try 'cat --help' for more information.
cdac@Shubham:~/LinuxAssignment/docs$ head -10 data.txt
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cdac@Shubham:~/LinuxAssignment/docs$ tail -5 data.txt
Related commands
zip -r: Includes files and folders in sub-directories
tar -x: Extracts the contents of an archive
tar -v: Displays a list of the files being extracted
tar -z: Decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment/docs$ man head
cdac@Shubham:~/LinuxAssignment/docs$ tail -10 data.txt
You can also use the Gnome desktop to unzip a zip file.
Open the file manager
Navigate to the directory with the zip file
Right-click on the zip file
Select Extract here
Related commands
zip -r: Includes files and folders in sub-directories
tar -x: Extracts the contents of an archive
tar -v: Displays a list of the files being extracted
tar -z: Decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment/docs$
```

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@Shubham: ~/LinuxAssig × + v
-rw-r--r-- 1 cdac cdac 1113 Feb 27 19:19 file1.txt
drwxr-xr-x 2 cdac cdac 4096 Feb 27 18:59 mkdir
drwxr-xr-x 3 cdac cdac 4096 Feb 27 19:00 newdir
cdac@Shubham:~/LinuxAssignment$ cd ..
cdac@Shubham:~$ ls -l
total 8
drwxr-xr-x 5 cdac cdac 4096 Feb 27 19:19 LinuxAssignment
drwxr-xr-x 2 cdac cdac 4096 Feb 26 16:20 feb25
cdac@Shubham:~$ cd LinuxAssignment/
cdac@Shubham:~/LinuxAssignment$ ls
archive.zip docs file1.txt mkdir newdir
cdac@Shubham:~/LinuxAssignment$ touch number.txt
cdac@Shubham:~/LinuxAssignment$ nano number.txt
cdac@Shubham:~/LinuxAssignment$ head -15 number.txt
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
cdac@Shubham:~/LinuxAssignment$
```

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

```
cdac@Shubham: ~/LinuxAssig × + v
cdac@Shubham:~/LinuxAssignment$ tail -3 number.txt
28
29
30
cdac@Shubham:~/LinuxAssignment$ ls
archive.zip docs file1.txt mkdir newdir number.txt
cdac@Shubham:~/LinuxAssignment$ cat file1.txt

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To extract a zip file into a new directory in Linux, you can use the unzip command with the -d option. For example, to u
nzip a file named demo.zip into a directory named destination, you can use the command unzip demo.zip -d destination.
Steps
Open the terminal window
Use the unzip command with the -d option
Specify the destination directory after the -d option
Additional information
```

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@Shubham: ~/LinuxAssig x + v
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how to create and extract zip files to specific directory in ...
to extract a zip file into a new directory in linux, you can use the unzip command with the -d option. for example, to u
nzip a file named demo.zip into a directory named destination, you can use the command unzip demo.zip -d destination.
steps
open the terminal window
use the unzip command with the -d option
specify the destination directory after the -d option
additional information
you can use the unzip -l command to see a list of the files and directories in the zip archive.
you can also use the gnome desktop to unzip a zip file.
open the file manager
navigate to the directory with the zip file
right-click on the zip file
select extract here
related commands
zip -r: includes files and folders in sub-directories
tar -x: extracts the contents of an archive
tar -v: displays a list of the files being extracted
tar -z: decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment$
```

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@Shubham: ~/LinuxAssig x + v
right-click on the zip file
select extract here
related commands
zip -r: includes files and folders in sub-directories
tar -x: extracts the contents of an archive
tar -v: displays a list of the files being extracted
tar -z: decompresses the archive using gzip
cdac@Shubham:~/LinuxAssignment$ touch duplicate.txt
cdac@Shubham:~/LinuxAssignment$ nano duplicate.txt
cdac@Shubham:~/LinuxAssignment$ cat duplicate.txt
india
pak
srilanka
india
neapl
nepal
indial
pak
bagladesh

cdac@Shubham:~/LinuxAssignment$ cat duplicate.txt | sort| uniq
bagladesh
india
indial
neapl
nepal
pak
srilanka
cdac@Shubham:~/LinuxAssignment$
```

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@Shubham: ~/LinuxAssig × + v
neapl
nepal
pak
srilanka
cdac@Shubham:~/LinuxAssignment$ touch fruit.txt
cdac@Shubham:~/LinuxAssignment$ nano f
file1.txt fruit.txt
cdac@Shubham:~/LinuxAssignment$ nano fruit.txt
cdac@Shubham:~/LinuxAssignment$ cat fruit.txt
mango
banana
lichi
pineapple
apple
grapes
mango
banana
lichi
pineapple
apple
grapes
lichi
cdac@Shubham:~/LinuxAssignment$ cat fruit.txt | sort| uniq
apple
banana
grapes
lichi
mango
pineapple
cdac@Shubham:~/LinuxAssignment$
```