Linux Assignment 1:

▼ Problem 1:

Solution:

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.

```
krunalhatwar@LAPTOP-T8936DJ5:~$ pwd
/home/krunalhatwar
krunalhatwar@LAPTOP-T8936DJ5:~$ ls
Grandfather  Project  file.sh  snap  test.sh  test.txt
krunalhatwar@LAPTOP-T8936DJ5:~$ mkdir LinuxAssignment
krunalhatwar@LAPTOP-T8936DJ5:~$ cd LinuxAssignment
```

b) File Management:

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

contents

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat >file.txt
hello hi I am using Linux
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat file.txt
hello hi I am using Linux
```

 c) Directory Management:

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

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ mkdir docs
```

d) Copy and Move Files:

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

.

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cp file1.txt docs
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cd docs
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ ls
file1.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.

f) Final Checklist:

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

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ chmod 744 file2.txt
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ ls -l
total 4
-rwxr--r-- 1 krunalhatwar krunalhatwar 26 Mar  7 18:06 file2.txt
```

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ chown $USER file2.txt
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ ls /
bin  boot  dev  etc  home  init  lib  lib32  lib64  libx32  lost+found  media  mnt  opt  proc  root  run  sbin  snap  srv
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ ls
file2.txt
```

g) File Searching:

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

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ cd ..
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ find -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).

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment/docs$ grep "hello" file2.txt
hello hi I am using Linux
```

a. Display the current system date and time.

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ date
Thu Mar  7 18:47:42 IST 2024
```

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).

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ ifconfig
Command 'ifconfig' not found, but can be installed with:
sudo apt install net-tools
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ sudo apt install net-tools
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 79 not upgraded.
Need to get 204 kB of archives.
After this operation, 819 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu jammy/main amd64 net-tools amd64 1.60+git20181103.0eebece-1ubuntu5 [204 kB]
Fetched 204 kB in 2s (101 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 24248 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20181103.0eebece-1ubuntu5_amd64.deb ...
Unpacking net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Setting up net-tools (1.60+git20181103.0eebece-1ubuntu5) ...
Processing triggers for man-db (2.10.2-1) ...
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.17.23.149  netmask 255.255.240.0  broadcast 172.17.31.255
        inet6 fe80::215:5dff:fed0:3ff5  prefixlen 64  scopeid 0x20<link>
        ether 00:15:5d:d0:3f:f5  txqueuelen 1000  (Ethernet)
        RX packets 27766  bytes 81263220 (81.2 MB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 12947  bytes 918791 (918.7 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536
        inet 127.0.0.1  netmask 255.0.0.0
        inet6 ::1  prefixlen 128  scopeid 0x10<host>
        loop  txqueuelen 1000  (Local Loopback)
        RX packets 0  bytes 0 (0.0 B)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 0  bytes 0 (0.0 B)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ ping 127.17.23.149
```

- problem face

ifconfig
Command 'ifconfig' not found, but can be installed with:

sudo apt install net-tools // using this command issue solved

j) File Compression:

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

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

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ zip -r docs.zip docs
Command 'zip' not found, but can be installed with:
sudo apt install zip
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ sudo apt install zip
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  unzip
The following NEW packages will be installed:
  unzip zip
0 upgraded, 2 newly installed, 0 to remove and 79 not upgraded.
Need to get 350 kB of archives.
After this operation, 930 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://archive.ubuntu.com/ubuntu jammy-updates/main amd64 unzip amd64 6.0-26ubuntu3.2 [175 kB]
Get:2 http://archive.ubuntu.com/ubuntu jammy/main amd64 zip amd64 3.0-12build2 [176 kB]
Fetched 350 kB in 3s (139 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 24216 files and directories currently installed.)
Preparing to unpack .../unzip_6.0-26ubuntu3.2_amd64.deb ...
Unpacking unzip (6.0-26ubuntu3.2) ...
Selecting previously unselected package zip.
Preparing to unpack .../zip_3.0-12build2_amd64.deb ...
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) ...
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ zip -r docs.zip docs
  adding: docs/ (stored 0%)
  adding: docs/file2.txt (stored 0%)
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ mkdir extractfile
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ unzip docs.zip
Archive:  docs.zip
```

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).

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat  file1.txt
hello this is root user
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ sed 's/hello/hi/g' file1.txt
hi this is root user
```

▼ Problem 2:

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.

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ vi data.txt
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ head -n 10 data.txt
hello
hi
rk
jskd
word
java
python linux
command
operting system
Hackerrank
```

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

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ tail -n 5 data.txt
java
python
mysql
program
datatype
```

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.

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ head -n 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".

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ tail -n 3 numbers.txt
18
19
20
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat > input.txt
```

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."

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ tr '[:lower:]' '[:upper:]' <input.txt> output.txt
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat  input.txt
hello world , i am using ubuntu
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat  output.txt
HELLO WORLD , I AM USING UBUNTU
```

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."

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat  duplicate.txt
red
yellow
green
red
black
re
red
green
pink
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ sort duplicate.txt | uniq
black
green
pink
re
red
yellow
```

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."

```
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ cat  fruit.txt
apple
banana
banana
banana
manago
apple
manago
orange
watermelon
ornage
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ sort fruits.txt | uniq -c
sort: cannot read: fruits.txt: No such file or directory
krunalhatwar@LAPTOP-T8936DJ5:~/LinuxAssignment$ sort fruit.txt | uniq -c
      2 apple
      3 banana
      2 manago
      1 orange
      1 ornage
      1 watermelon
```