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Problem 01:-

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.

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

cdac@Madhuri:~$ /
-bash: /: Is a directory
cdac@Madhuri:~$ home/
-bash: home/: Is a directory
cdac@Madhuri:~$ ls -l
total 12
drwxr-xr-x 2 cdac cdac 4096 Aug 28 08:24 Day1
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:27 file1.txt
-rw-r--r-- 1 cdac cdac   52 Aug 28 17:45 file1.txt.save
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:28 file2.txt
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:28 file3.txt
drwxr-xr-x 2 cdac cdac 4096 Aug 28 19:06 home
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ ls
Day1  file1.txt  file1.txt.save  file2.txt  file3.txt  home
cdac@Madhuri:~$ cd LinuxAssignment/
-bash: cd: LinuxAssignment/: No such file or directory
cdac@Madhuri:~$ mkdir LinuxAssignment
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ cd LinuxAssignment/
cdac@Madhuri:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@Madhuri:~/LinuxAssignment$
```

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

```
cdac@Madhuri: ~/LinuxAssignment                                    —    □    ×
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:28 file2.txt
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:28 file3.txt
drwxr-xr-x 2 cdac cdac 4096 Aug 28 19:06 home
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ ls
Day1  file1.txt  file1.txt.save  file2.txt  file3.txt  home
cdac@Madhuri:~$ cd LinuxAssignment/
-bash: cd: LinuxAssignment/: No such file or directory
cdac@Madhuri:~$ mkdir LinuxAssignment
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ cd LinuxAssignment/
cdac@Madhuri:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@Madhuri:~/LinuxAssignment$ cd
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ cd LinuxAssignment/
cdac@Madhuri:~/LinuxAssignment$ nano test.text
cdac@Madhuri:~/LinuxAssignment$ cat test.txt
cat: test.txt: No such file or directory
cdac@Madhuri:~/LinuxAssignment$ cat test.text
Hi i am madhuri
I have done MCA
with first class

cdac@Madhuri:~/LinuxAssignment$ ls
test.text
cdac@Madhuri:~/LinuxAssignment$
```

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


```
cdac@Madhuri: ~/LinuxAssignment                                    —    □    ×
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ cd LinuxAssignment/
cdac@Madhuri:~/LinuxAssignment$ nano test.text
cdac@Madhuri:~/LinuxAssignment$ cat test.txt
cat: test.txt: No such file or directory
cdac@Madhuri:~/LinuxAssignment$ cat test.text
Hi i am madhuri
I have done MCA
with first class

cdac@Madhuri:~/LinuxAssignment$ ls
test.text
cdac@Madhuri:~/LinuxAssignment$ mkdir docs/
cdac@Madhuri:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@Madhuri:~/LinuxAssignment$ mkdir docs
mkdir: cannot create directory 'docs': File exists
cdac@Madhuri:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@Madhuri:~/LinuxAssignment$ cd
cdac@Madhuri:~$ mkdir docs
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ cd LinuxAssignment/
cdac@Madhuri:~/LinuxAssignment$ ls -l
total 8
drwxr-xr-x 2 cdac cdac 4096 Aug 29 09:15 docs
-rw-r--r-- 1 cdac cdac   50 Aug 29 09:10 test.text
cdac@Madhuri:~/LinuxAssignment$
```

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


```
cdac@Madhuri: ~/Day1/docs3                                         —    □    ×
docs  docs1  test.text
cdac@Madhuri:~/LinuxAssignment$ cd Day1/
-bash: cd: Day1/: No such file or directory
cdac@Madhuri:~/LinuxAssignment$ cd
cdac@Madhuri:~$ cd Day1/
cdac@Madhuri:~/Day1$ ls
cdac@Madhuri:~/Day1$ pwd
/home/cdac/Day1
cdac@Madhuri:~/Day1$ ls -l
total 0
cdac@Madhuri:~/Day1$ mkdir docs3
cdac@Madhuri:~/Day1$ cd docs3/
cdac@Madhuri:~/Day1/docs3$ cat >file1.txt
This is file1.txt.

cdac@Madhuri:~/Day1/docs3$ cat file1.txt
This is file1.txt.

cdac@Madhuri:~/Day1/docs3$ cp file1.txt /home/cdac/docs
cdac@Madhuri:~/Day1/docs3$ cd docs/
-bash: cd: docs/: No such file or directory
cdac@Madhuri:~/Day1/docs3$ pwd
/home/cdac/Day1/docs3
cdac@Madhuri:~/Day1/docs3$ ls
file1.txt
cdac@Madhuri:~/Day1/docs3$
```

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

```
user2@Madhuri: /home/cdac/Day1/docs3
cdac@Madhuri:~/Day1/docs3$ pwd
/home/cdac/Day1/docs3
cdac@Madhuri:~/Day1/docs3$ ls
file1.txt
cdac@Madhuri:~/Day1/docs3$ cat >> file1.txt
Hi i am madhuri shirke
cdac@Madhuri:~/Day1/docs3$ cat file1.txt
This is file1.txt.

Hi i am madhuri shirke
cdac@Madhuri:~/Day1/docs3$ cat file2.txt
cat: file2.txt: No such file or directory
cdac@Madhuri:~/Day1/docs3$ touch file2.txt
cdac@Madhuri:~/Day1/docs3$ pwd
/home/cdac/Day1/docs3
cdac@Madhuri:~/Day1/docs3$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 43 Aug 29 19:20 file1.txt
-rw-r--r-- 1 cdac cdac  0 Aug 29 19:21 file2.txt
cdac@Madhuri:~/Day1/docs3$ chmod u+wx file2.txt
cdac@Madhuri:~/Day1/docs3$ ls
file1.txt  file2.txt
cdac@Madhuri:~/Day1/docs3$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 43 Aug 29 19:20 file1.txt
-rwxr--r-- 1 cdac cdac  0 Aug 29 19:21 file2.txt
cdac@Madhuri:~/Day1/docs3$ chmod o+r file2.txt
cdac@Madhuri:~/Day1/docs3$ ls
file1.txt  file2.txt
cdac@Madhuri:~/Day1/docs3$ ls -l
```

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@Madhuri: ~
Password:


^[[A^[[Asu: Authentication failure
user2@Madhuri:/home/cdac/Day1/docs3$
user2@Madhuri:/home/cdac/Day1/docs3$
user2@Madhuri:/home/cdac/Day1/docs3$ su cdac
Password:
cdac@Madhuri:~/Day1/docs3$ ls -l
total 4
-rw-r--r-- 1 cdac cdac 43 Aug 29 19:20 file1.txt
-rwxr--r-- 1 cdac cdac  0 Aug 29 19:21 file2.txt
cdac@Madhuri:~/Day1/docs3$ cd home/
bash: cd: home/: No such file or directory
cdac@Madhuri:~/Day1/docs3$ cd home
bash: cd: home: No such file or directory
cdac@Madhuri:~/Day1/docs3$ cd
cdac@Madhuri:~$ pwd
/home/cdac
cdac@Madhuri:~$ ls -l
total 20
drwxr-xr-x 3 cdac cdac 4096 Aug 29 19:04 Day1
drwxr-xr-x 4 cdac cdac 4096 Aug 29 13:24 LinuxAssignment
drwxr-xr-x 2 cdac cdac 4096 Aug 29 19:14 docs
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:27 file1.txt
-rw-r--r-- 1 cdac cdac   52 Aug 28 17:45 file1.txt.save
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:28 file2.txt
-rw-r--r-- 1 cdac cdac    0 Aug 28 08:28 file3.txt
drwxr-xr-x 2 cdac cdac 4096 Aug 28 19:06 home
cdac@Madhuri:~$
```

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

```
cdac@Madhuri: ~/LinuxAssignment                                    —   □   ✕
Try: sudo apt install <deb name>
cdac@Madhuri:~$ type f -name"*.txt"
bash: type: f: not found
bash: type: -name*.txt: not found
cdac@Madhuri:~$ type f -name "*.TxT"
bash: type: f: not found
bash: type: -name: not found
bash: type: *.TxT: not found
cdac@Madhuri:~$ type f -name "*.txt"
bash: type: f: not found
bash: type: -name: not found
bash: type: *.txt: not found
cdac@Madhuri:~$ cd LinuxAssignment/
cdac@Madhuri:~/LinuxAssignment$ pwd
/home/cdac/LinuxAssignment
cdac@Madhuri:~/LinuxAssignment$ ls -l
total 12
drwxr-xr-x 2 cdac cdac 4096 Aug 29 09:15 docs
drwxr-xr-x 2 cdac cdac 4096 Aug 29 13:24 docs1
-rw-r--r-- 1 cdac cdac   50 Aug 29 09:10 test.text
cdac@Madhuri:~/LinuxAssignment$ cat test.text
Hi i am madhuri
I have done MCA
with first class

cdac@Madhuri:~/LinuxAssignment$ grep MCA test.txt
grep: test.txt: No such file or directory
cdac@Madhuri:~/LinuxAssignment$ grep MCA test.text
I have done MCA
cdac@Madhuri:~/LinuxAssignment$
```

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

```
cdac@Madhuri:~/LinuxAssignment$ grep MCA test.txt
grep: test.txt: No such file or directory
cdac@Madhuri:~/LinuxAssignment$ grep MCA test.text
I have done MCA
cdac@Madhuri:~/LinuxAssignment$ date
Fri Aug 30 14:54:19 IST 2024
cdac@Madhuri:~/LinuxAssignment$
```

i) Networking:

a. Display the IP address of the system.

```
cdac@Madhuri: ~/LinuxAssignment                                    —   □   ✕
drwxr-xr-x 2 cdac cdac 4096 Aug 29 09:15 docs
drwxr-xr-x 2 cdac cdac 4096 Aug 29 13:24 docs1
-rw-r--r-- 1 cdac cdac   50 Aug 29 09:10 test.text
cdac@Madhuri:~/LinuxAssignment$ cat test.text
Hi i am madhuri
I have done MCA
with first class

cdac@Madhuri:~/LinuxAssignment$ grep MCA test.txt
grep: test.txt: No such file or directory
cdac@Madhuri:~/LinuxAssignment$ grep MCA test.text
I have done MCA
cdac@Madhuri:~/LinuxAssignment$ date
Fri Aug 30 14:54:19 IST 2024
cdac@Madhuri:~/LinuxAssignment$ ip addr show
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:0e:0c:6a brd ff:ff:ff:ff:ff:ff
    inet 172.20.110.195/20 brd 172.20.111.255 scope global eth0
       valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe0e:c6a/64 scope link
       valid_lft forever preferred_lft forever
cdac@Madhuri:~/LinuxAssignment$
```

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

```
     inet6 fe80::215:5dff:fe0e:c6a/64 scope link
         valid_lft forever preferred_lft forever
cdac@Madhuri:~/LinuxAssignment$ ping google.com
PING google.com (142.250.67.238) 56(84) bytes of data.
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=1 ttl=58 time=18.7 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=2 ttl=58 time=16.1 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=3 ttl=58 time=18.5 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=4 ttl=58 time=16.8 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=5 ttl=58 time=15.2 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=6 ttl=58 time=17.8 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=7 ttl=58 time=16.5 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=8 ttl=58 time=17.8 ms
64 bytes from bom07s24-in-f14.1e100.net (142.250.67.238): icmp_seq=9 ttl=58 time=17.0 ms
```

j) File Compression: a. Compress the "docs" directory into a zip file

```
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 (101 kB/s)
Selecting previously unselected package unzip.
(Reading database ... 24206 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) ...
cdac@Madhuri:~/LinuxAssignment$ zip -r docs.zip docs/
  adding: docs/ (stored 0%)
cdac@Madhuri:~/LinuxAssignment$
```

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

```
cdac@Madhuri:~/LinuxAssignment$ zip -r docs.zip docs/
  adding: docs/ (stored 0%)
cdac@Madhuri:~/LinuxAssignment$ unzip docs.zip -d madhuri/
Archive:  docs.zip
   creating: madhuri/docs/
cdac@Madhuri:~/LinuxAssignment$ ls -l
total 20
drwxr-xr-x 2 cdac cdac 4096 Aug 29 09:15 docs
-rw-rw-r-- 1 cdac cdac  160 Aug 30 15:05 docs.zip
drwxr-xr-x 2 cdac cdac 4096 Aug 29 13:24 docs1
drwxrwxr-x 3 cdac cdac 4096 Aug 30 15:09 madhuri
-rw-r--r-- 1 cdac cdac   50 Aug 29 09:10 test.text
cdac@Madhuri:~/LinuxAssignment$ unzip docs1.zip -d madhuri/
unzip:  cannot find or open docs1.zip, docs1.zip.zip or docs1.zip.ZIP.
cdac@Madhuri:~/LinuxAssignment$ zip -r docs1.zip docs1/
  adding: docs1/ (stored 0%)
cdac@Madhuri:~/LinuxAssignment$ unzip docs1.zip docs1/
Archive:  docs1.zip
cdac@Madhuri:~/LinuxAssignment$ unzip docs1.zip -d madhuri/
Archive:  docs1.zip
   creating: madhuri/docs1/
cdac@Madhuri:~/LinuxAssignment$ ls
docs   docs.zip  docs1  docs1.zip  madhuri  test.text
cdac@Madhuri:~/LinuxAssignment$
```

k) File Editing:

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@Madhuri: ~/LinuxAssignment                                          —    □    ✕
cdac@Madhuri:~/LinuxAssignment$ zip -r docs.zip docs/
  adding: docs/ (stored 0%)
cdac@Madhuri:~/LinuxAssignment$ unzip docs.zip -d madhuri/
Archive:  docs.zip
   creating: madhuri/docs/
cdac@Madhuri:~/LinuxAssignment$ ls -l
total 20
drwxr-xr-x 2 cdac cdac 4096 Aug 29 09:15 docs
-rw-rw-r-- 1 cdac cdac  160 Aug 30 15:05 docs.zip
drwxr-xr-x 2 cdac cdac 4096 Aug 29 13:24 docs1
drwxrwxr-x 3 cdac cdac 4096 Aug 30 15:09 madhuri
-rw-r--r-- 1 cdac cdac   50 Aug 29 09:10 test.text
cdac@Madhuri:~/LinuxAssignment$ unzip docs1.zip -d madhuri/
unzip:  cannot find or open docs1.zip, docs1.zip.zip or docs1.zip.ZIP.
cdac@Madhuri:~/LinuxAssignment$ zip -r docs1.zip docs1/
  adding: docs1/ (stored 0%)
cdac@Madhuri:~/LinuxAssignment$ unzip docs1.zip docs1/
Archive:  docs1.zip
cdac@Madhuri:~/LinuxAssignment$ unzip docs1.zip -d madhuri/
Archive:  docs1.zip
   creating: madhuri/docs1/
cdac@Madhuri:~/LinuxAssignment$ ls
docs   docs.zip   docs1   docs1.zip   madhuri   test.text
cdac@Madhuri:~/LinuxAssignment$ sed -i 's/MCA/BCS/g' test.text
cdac@Madhuri:~/LinuxAssignment$ cat test.text
Hi i am madhuri
I have done BCS
with first class

cdac@Madhuri:~/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

```
16
cdac@Madhuri:~/LinuxAssignment$ head data.txt
head: cannot open 'data.txt' for reading: No such file or directory
cdac@Madhuri:~/LinuxAssignment$ head data.text
hi 1
2
3
4
5
6
7
8
9
10
cdac@Madhuri:~/LinuxAssignment$ tail data.text
7
8
9
```

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

```
6
7
8
9
10
cdac@Madhuri:~/LinuxAssignment$ tail data.text
7
8
9
10
11
12
13
14
15
16
cdac@Madhuri:~/LinuxAssignment$
```

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.