

Assignment 2

Part A

What will the following commands do?

1. `echo "Hello, World!"`
--> Above command `echo "Hello, World"` will print Hello, World

```
cdac@Harshal:~$ echo "Hello, World!"  
Hello, World!  
cdac@Harshal:~$
```

2. `name="Productive"`
--> Above command will Store String "Productive" in name variable.

```
cdac@Harshal: ~  
cdac@Harshal:~$ name="Productive"  
cdac@Harshal:~$
```

3. Touch file.txt

--> Above Command will Create a new file 'file.txt'

```
cdac@Harshal: ~  
cdac@Harshal:~$ touch file.txt  
cdac@Harshal:~$ ls  
LinuxAssignment add atharv eveOdd evenOdd evenOddclear.save file.txt  
cdac@Harshal:~$ ls -l  
total 60  
drwxr-xr-x 4 cdac cdac 4096 Feb 28 18:44 LinuxAssignment  
-rw-r--r-- 1 cdac cdac 49 Feb 28 23:28 add  
drwxr-xr-x 2 cdac cdac 4096 Feb 24 18:17 atharv  
-rw-r--r-- 1 cdac cdac 112 Mar 1 14:31 eveOdd  
-rw-r--r-- 1 cdac cdac 132 Mar 1 08:59 evenOdd  
-rw----- 1 cdac cdac 1 Feb 28 23:40 evenOddclear.save  
-rw-r--r-- 1 cdac cdac 0 Mar 1 20:33 file.txt  
-rw-r--r-- 1 cdac cdac 74 Mar 1 14:54 findfile  
-rw-r--r-- 1 cdac cdac 39 Mar 1 14:38 forloop  
-rw-r--r-- 1 cdac cdac 101 Mar 1 14:58 graternum  
-rw-r--r-- 1 cdac cdac 20 Feb 28 23:08 heloworld  
-rw-r--r-- 1 cdac cdac 97 Feb 28 23:24 input  
drwxr-xr-x 2 cdac cdac 4096 Feb 27 15:30 myDir  
-rw-r--r-- 1 cdac cdac 110 Mar 1 15:17 power  
-rw-r--r-- 1 cdac cdac 87 Mar 1 15:09 table  
-rw-r--r-- 1 cdac cdac 57 Mar 1 14:46 whileloop  
cdac@Harshal:~$
```

4. ls -a

--> The ls -a command in Ubuntu (or any Linux system) lists all files and directories, including hidden ones.

Explanation:

- Normally, ls lists only visible files.
- -a (all) shows hidden files (files starting with .).

```
cdac@Harshal: ~/LinuxAssignment  
cdac@Harshal:~$ cd LinuxAssignment  
cdac@Harshal:~/LinuxAssignment$ ls -a  
. .. Extract_unzip docs docs.zip duplicate.txt file1.txt file2.txt fruits.txt input.txt numbers.txt output.txt  
cdac@Harshal:~/LinuxAssignment$
```

5. `rm file.txt`

--> The command `rm file.txt` is used to remove (delete) a file named `file.txt` in Ubuntu/Linux.

```
cdac@Harshal: ~  
cdac@Harshal:~$ rm file.txt  
cdac@Harshal:~$ ls -l  
total 60  
drwxr-xr-x 4 cdac cdac 4096 Feb 28 18:44 LinuxAssignment  
-rw-r--r-- 1 cdac cdac  49 Feb 28 23:28 add  
drwxr-xr-x 2 cdac cdac 4096 Feb 24 18:17 atharv  
-rw-r--r-- 1 cdac cdac  112 Mar  1 14:31 eveOdd  
-rw-r--r-- 1 cdac cdac  132 Mar  1 08:59 evenOdd  
-rw----- 1 cdac cdac    1 Feb 28 23:40 evenOddclear.save  
-rw-r--r-- 1 cdac cdac   74 Mar  1 14:54 findfile  
-rw-r--r-- 1 cdac cdac   39 Mar  1 14:38 forloop  
-rw-r--r-- 1 cdac cdac  101 Mar  1 14:58 graternum  
-rw-r--r-- 1 cdac cdac   20 Feb 28 23:08 heloworld  
-rw-r--r-- 1 cdac cdac   97 Feb 28 23:24 input  
drwxr-xr-x 2 cdac cdac 4096 Feb 27 15:30 myDir  
-rw-r--r-- 1 cdac cdac  110 Mar  1 15:17 power  
-rw-r--r-- 1 cdac cdac   87 Mar  1 15:09 table  
-rw-r--r-- 1 cdac cdac   57 Mar  1 14:46 whileloop  
cdac@Harshal:~$
```

6. `cp file1.txt file2.txt`

--> The command `cp file1.txt file2.txt` is used to copy a file in Ubuntu/Linux.

```
cdac@Harshal: ~  
cdac@Harshal:~$ cp file1.txt file2.txt  
cdac@Harshal:~$ cat file2.txt  
This copies file1.txt to file2.txt.  
  
If file2.txt already exists, it will be overwritten without confirmation.  
If file2.txt does not exist, it will be created as a new file.  
cdac@Harshal:~$
```

7. `mv file.txt /path/to/directory/`

--> The command `mv file.txt /path/to/directory/` is used to move a file from one location to another in Ubuntu/Linux.

```
cdac@Harshal: ~/LinuxAssignment/docs
cdac@Harshal:~$ mv file1.txt /home/cdac/LinuxAssignment/docs/
cdac@Harshal:~$ cd /home/cdac/LinuxAssignment/docs/
cdac@Harshal:~/LinuxAssignment/docs$ ls -l
total 8
-rw-rw-r-- 1 cdac cdac 174 Mar  1 21:46 file1.txt
-rw-r--r-- 1 cdac cdac  18 Feb 27 17:52 file2.txt
cdac@Harshal:~/LinuxAssignment/docs$
```

8. `chmod 755 script.sh`

--> The command `chmod 755 script.sh` is used to change the file permissions of `script.sh`.

```
cdac@Harshal: ~
cdac@Harshal:~$ chmod 755 file2.txt
cdac@Harshal:~$ ls -l
total 64
drwxr-xr-x 4 cdac cdac 4096 Feb 28 18:44 LinuxAssignment
-rw-r--r-- 1 cdac cdac  49 Feb 28 23:28 add
drwxr-xr-x 2 cdac cdac 4096 Feb 24 18:17 atharv
-rw-r--r-- 1 cdac cdac  112 Mar  1 14:31 eveOdd
-rw-r--r-- 1 cdac cdac  132 Mar  1 08:59 evenOdd
-rw----- 1 cdac cdac    1 Feb 28 23:40 evenOddclear.save
-rwxr-xr-x 1 cdac cdac  174 Mar  1 21:46 file2.txt
-rw-r--r-- 1 cdac cdac   74 Mar  1 14:54 findfile
-rw-r--r-- 1 cdac cdac   39 Mar  1 14:38 forloop
-rw-r--r-- 1 cdac cdac  101 Mar  1 14:58 graternum
-rw-r--r-- 1 cdac cdac   20 Feb 28 23:08 heloworld
-rw-r--r-- 1 cdac cdac   97 Feb 28 23:24 input
drwxr-xr-x 2 cdac cdac 4096 Feb 27 15:30 myDir
-rw-r--r-- 1 cdac cdac  110 Mar  1 15:17 power
-rw-r--r-- 1 cdac cdac   87 Mar  1 15:09 table
-rw-r--r-- 1 cdac cdac   57 Mar  1 14:46 whileloop
cdac@Harshal:~$
```

9. `grep "pattern" file.txt`

--> The command `grep "pattern" file.txt` is used to search for a specific pattern or text inside a file in Ubuntu/Linux.

```
cdac@Harshal: ~  
cdac@Harshal:~$ grep "pattern" file2.txt  
pattern  
cdac@Harshal:~$
```

10. `kill PID`

--> The command `kill PID` is used to terminate a process in Ubuntu/Linux.

```
cdac@Harshal: ~  
cdac@Harshal:~$ pkill firefox  
cdac@Harshal:~$
```

11. `mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt`

--> Creates a directory, moves into it, creates a file, writes content to it, and displays the content.

Breakdown of Each Command:

- `mkdir mydir`
Creates a new directory named mydir.
- `&&` (AND operator)
Ensures the next command runs only if the previous one succeeds.
- `cd mydir`
Changes the current directory to mydir.
- `touch file.txt`
Creates an empty file named file.txt inside mydir.
- `echo "Hello, World!" > file.txt`
Writes "Hello, World!" into file.txt, overwriting any previous content.
- `cat file.txt`
Displays the contents of file.txt.

```
pattern  
cdac@Harshal:~$ mkdir mydir && cd mydir && touch file.txt && echo "Hello, World!" > file.txt && cat file.txt  
Hello, World!  
cdac@Harshal:~/mydir$
```

12. `ls -l | grep ".txt"`
--> Lists detailed information of files and filters only .txt files.

```
cdac@Harshal: ~  
cdac@Harshal:~$ ls -l | grep ".txt"  
-rwxr-xr-x 1 cdac cdac 181 Mar  1 22:04 file2.txt  
cdac@Harshal:~$
```

13. `cat file1.txt file2.txt | sort | uniq`
--> Combines, sorts, and removes duplicate lines from two text files.

```
cdac@Harshal: ~  
cdac@Harshal:~$ cat file1.txt file2.txt | sort | uniq  
Atharv  
Harshal  
If file2.txt already exists, it will be overwritten without confirmation.  
If file2.txt does not exist, it will be created as a new file.  
Lilya  
Pratik  
Shreyash  
This copies file1.txt to file2.txt.  
pattern  
cdac@Harshal:~$
```

14. `ls -l | grep "^d"`
--> Lists detailed information of files and filters only directories

```
cdac@Harshal:~/mydir$ cd ..  
cdac@Harshal:~$ ls -l | grep "^d"  
drwxr-xr-x 4 cdac cdac 4096 Feb 28 18:44 LinuxAssignment  
drwxr-xr-x 2 cdac cdac 4096 Feb 24 18:17 atharv  
drwxr-xr-x 2 cdac cdac 4096 Feb 27 15:30 myDir  
drwxrwxr-x 2 cdac cdac 4096 Mar  1 22:08 mydir  
cdac@Harshal:~$
```

15. `grep -r "pattern" /path/to/directory/`
--> Searches for a specific pattern recursively in all files inside the given directory and its subdirectories.

```
cdac@Harshal: ~  
cdac@Harshal:~$ grep -r "pattern" LinuxAssignment/file1.txt  
pattern  
cdac@Harshal:~$
```


16. `cat file1.txt file2.txt | sort | uniq -d`
--> Finds and displays only the duplicate lines that appear in both files.

```
cdac@Harshal: ~  
cdac@Harshal:~$ cat file1.txt file2.txt | sort | uniq -d  
Atharv  
cdac@Harshal:~$
```

17. `chmod 644 file.txt`
--> Change the mode of file.txt to Owner Read write Organization read and other read.

```
cdac@Harshal: ~  
cdac@Harshal:~$ chmod 644 file.txt  
cdac@Harshal:~$ ls -l  
total 72  
drwxr-xr-x 4 cdac cdac 4096 Feb 28 18:44 LinuxAssignment  
-rw-r--r-- 1 cdac cdac 49 Feb 28 23:28 add  
drwxr-xr-x 2 cdac cdac 4096 Feb 24 18:17 atharv  
-rw-r--r-- 1 cdac cdac 112 Mar 1 14:31 eveOdd  
-rw-r--r-- 1 cdac cdac 132 Mar 1 08:59 evenOdd  
-rw----- 1 cdac cdac 1 Feb 28 23:40 evenOddclear.save  
-rw-r--r-- 1 cdac cdac 0 Mar 1 22:34 file.txt  
-rw-rw-r-- 1 cdac cdac 39 Mar 1 22:27 file1.txt  
-rwxr-xr-x 1 cdac cdac 196 Mar 1 22:29 file2.txt  
-rw-r--r-- 1 cdac cdac 74 Mar 1 14:54 findfile  
-rw-r--r-- 1 cdac cdac 39 Mar 1 14:38 forloop  
-rw-r--r-- 1 cdac cdac 101 Mar 1 14:58 graternum  
-rw-r--r-- 1 cdac cdac 20 Feb 28 23:08 heloworld  
-rw-r--r-- 1 cdac cdac 97 Feb 28 23:24 input  
drwxr-xr-x 2 cdac cdac 4096 Feb 27 15:30 myDir  
drwxrwxr-x 2 cdac cdac 4096 Mar 1 22:08 mydir  
-rw-r--r-- 1 cdac cdac 110 Mar 1 15:17 power  
-rw-r--r-- 1 cdac cdac 87 Mar 1 15:09 table  
-rw-r--r-- 1 cdac cdac 57 Mar 1 14:46 whileloop  
cdac@Harshal:~$
```

18. `cp -r source_directory destination_directory`
--> Recursively copies a directory and all its contents (files and subdirectories) to the specified destination.

```
cdac@Harshal: ~/LinuxAssignment
cdac@Harshal:~$ cp -r mydir LinuxAssignment/
cdac@Harshal:~$ cd LinuxAssignment
cdac@Harshal:~/LinuxAssignment$ ls -l
total 44
drwxr-xr-x 3 cdac cdac 4096 Feb 27 19:02 Extract_unzip
drwxr-xr-x 2 cdac cdac 4096 Mar  1 21:54 docs
-rw-r--r-- 1 cdac cdac 334 Feb 27 19:01 docs.zip
-rw-r--r-- 1 cdac cdac 45 Feb 27 19:53 duplicate.txt
-rw-r--r-- 1 cdac cdac 14 Mar  2 20:49 file.txt
-rw-r--r-- 1 cdac cdac 115 Mar  2 20:44 file1.txt
-rwxr--r-- 1 atharv cdac 0 Feb 28 18:44 file2.txt
-rw-r--r-- 1 cdac cdac 49 Feb 27 19:58 fruits.txt
-rw-r--r-- 1 cdac cdac 200 Feb 27 19:37 input.txt
drwxr-xr-x 2 cdac cdac 4096 Mar  2 20:52 mydir
-rw-r--r-- 1 cdac cdac 51 Feb 27 19:27 numbers.txt
-rw-r--r-- 1 cdac cdac 200 Feb 27 19:41 output.txt
cdac@Harshal:~/LinuxAssignment$
```

19. `find /path/to/search -name "*.txt"`
--> Searches for all .txt files in the specified directory and its subdirectories.

```
cdac@Harshal: ~
cdac@Harshal:~$ find LinuxAssignment/mydir -name "*.txt"
LinuxAssignment/mydir/file.txt
cdac@Harshal:~$
```


20. `chmod u+x file.txt`
--> Change the mode of user of file file.txt to add write acces.

```
cdac@Harshal: ~  
cdac@Harshal:~$ chmod u+x file.txt  
cdac@Harshal:~$ ls -l  
total 72  
drwxr-xr-x 4 cdac cdac 4096 Feb 28 18:44 LinuxAssignment  
-rw-r--r-- 1 cdac cdac 49 Feb 28 23:28 add  
drwxr-xr-x 2 cdac cdac 4096 Feb 24 18:17 atharv  
-rw-r--r-- 1 cdac cdac 112 Mar 1 14:31 eveOdd  
-rw-r--r-- 1 cdac cdac 132 Mar 1 08:59 evenOdd  
-rw----- 1 cdac cdac 1 Feb 28 23:40 evenOddclear.save  
-rwxrw-r-- 1 cdac cdac 0 Mar 1 22:34 file.txt  
-rw-rw-r-- 1 cdac cdac 39 Mar 1 22:27 file1.txt  
-rwxr-xr-x 1 cdac cdac 196 Mar 1 22:29 file2.txt  
-rw-r--r-- 1 cdac cdac 74 Mar 1 14:54 findfile  
-rw-r--r-- 1 cdac cdac 39 Mar 1 14:38 forloop  
-rw-r--r-- 1 cdac cdac 101 Mar 1 14:58 graternum  
-rw-r--r-- 1 cdac cdac 20 Feb 28 23:08 heloworld  
-rw-r--r-- 1 cdac cdac 97 Feb 28 23:24 input  
drwxr-xr-x 2 cdac cdac 4096 Feb 27 15:30 myDir  
drwxrwxr-x 2 cdac cdac 4096 Mar 1 22:08 mydir  
-rw-r--r-- 1 cdac cdac 110 Mar 1 15:17 power  
-rw-r--r-- 1 cdac cdac 87 Mar 1 15:09 table  
-rw-r--r-- 1 cdac cdac 57 Mar 1 14:46 whileloop  
cdac@Harshal:~$
```

21. `echo $PATH`
--> Displays the system's PATH environment variable, which lists directories where executable files are located.

```
cdac@Harshal: ~  
cdac@Harshal:~$ echo $PATH  
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin  
cdac@Harshal:~$
```

Part B

Identify True or False:

1. ls is used to list files and directories in a directory.

--> True

2. mv is used to move files and directories.

--> True

3. cd is used to copy files and directories.

--> False

Cd is use for change directories
for copy we use cp

4. pwd stands for "print working directory" and displays the current directory.

--> True

5. grep is used to search for patterns in files.

--> True

6. chmod 755 file.txt gives read, write, and execute permissions to the owner, and read and execute permissions to group and others.

--> True

7. mkdir -p directory1/directory2 creates nested directories, creating directory2 inside directory1 if directory1 does not exist.

--> True

8. rm -rf file.txt deletes a file forcefully without confirmation

--> True

