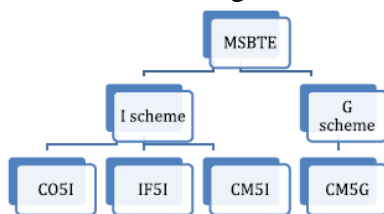


Subject: OSY	Subject Code: 22516
Semester: 5 th Semester	Course: Computer Engineering
Laboratory No: V118	Name of Subject teacher: Prof. Natasha Brahmne
Name of Student: Siddharth Shah	Roll Id: 22203A0041

Experiment No:	7
Title of Experiment:	Execute file and directory manipulation commands.

• **Program Code:**

1. Create the following structure.



```

(mc@kali)-[~]
└─$ mkdir MSBTE

(mc@kali)-[~]
└─$ cd MSBTE

(mc@kali)-[~/MSBTE]
└─$ mkdir Ischeme

(mc@kali)-[~/MSBTE]
└─$ mkdir Gscheme

(mc@kali)-[~/MSBTE]
└─$ cd Ischeme

(mc@kali)-[~/MSBTE/Ischeme]
└─$ mkdir C05I

(mc@kali)-[~/MSBTE/Ischeme]
└─$ mkdir IF5I

(mc@kali)-[~/MSBTE/Ischeme]
└─$ mkdir CM5I

(mc@kali)-[~/MSBTE/Ischeme]
└─$ ls
CM5I  C05I  IF5I

(mc@kali)-[~/MSBTE/Ischeme]
└─$ cd ..

(mc@kali)-[~/MSBTE]
└─$ cd Gscheme

(mc@kali)-[~/MSBTE/Gscheme]
└─$ mkdir CM5G

(mc@kali)-[~/MSBTE/Gscheme]
└─$ cd ..

(mc@kali)-[~/MSBTE]
└─$ cd ..

(mc@kali)-[~]

```

```
(mc@kali)-[~]
└─$ ls *
Desktop:

Documents:
AUTORUN.INF  VBoxDarwinAdditions.pkg          VBoxWindowsAdditions-amd64.exe  cert
BT3x        VBoxDarwinAdditionsUninstall.tool  VBoxWindowsAdditions-x86.exe    runasroot.sh
OS2         VBoxLinuxAdditions.run            VBoxWindowsAdditions.exe        windows11-bypass.reg
TRANS.TBL   VBoxSolarisAdditions.pkg          autorun.sh

Downloads:
google-chrome-stable_current_amd64.deb

ASBTE:
ischemie  Ischemie

Music:

OSY:
XXXX.txt  alcp.txt  a2.txt  a3.txt  chapter1  combine.txt  dte  names  xaa
a1        a2        a3      abc     chapter2  combined1.txt  name  surname  xz

Pictures:

Public:

Shark:
1.pcapng

Templates:

Videos:
```

- **Practical Related Questions**

1) How to shift from Root Directory to User(Home) directory

Ans:

To shift from the root directory (/) to the home directory (/home/username) in a Unix-like operating system (like Linux or macOS), you can use the following commands:

Using cd command:

cd /home/your_username

2) How to see the directories

Ans: To see the directories, you can use the following commands:

1. Using the ls command:

ls

This command lists all files and directories in the current directory.

2. Using ls with the -l option for detailed information:

ls -l

This option provides a detailed list, including permissions, ownership, size, and modification date.

3. Using ls with the -a option to show hidden directories:

ls -a

This command lists all files and directories, including hidden ones (those starting with a dot .).

4. Using ls with both -l and -a options together:

ls -la

This command gives a detailed list of all files and directories, including hidden ones.

3) What is the default set of permissions given by the system to a directory?

Ans:

The default set of permissions given by the system to a newly created directory is typically 755 or *rwxr-xr-x*. This means:

- **Owner:** Has read (r), write (w), and execute (x) permissions.
- **Group:** Has read (r) and execute (x) permissions.
- **Others:** Has read (r) and execute (x) permissions.

These permissions ensure that the owner can fully manage the directory, while others can view and access its contents, but cannot modify them.

4) How do you assign all permissions to your directory for all users using both symbolic and octal methods?

Ans:

To assign all permissions (read, write, and execute) to all users (owner, group, and others) for a directory, you can use the following methods:

1. Symbolic Method:

chmod u+rwx,g+rwx,o+rwx directory_name

OR

chmod a+rwx directory_name

2. Octal Method:

chmod 777 directory_name

5) What is the difference between the comm and cmp commands?

Ans:

Feature	comm Command	cmp Command
Purpose	Compares two sorted files line by line.	Compares two files byte by byte.
Output	Displays lines that are unique to each file or common between them.	Displays the first differing byte and its position (by default).
Input Requirement	Requires the files to be sorted.	Does not require the files to be sorted.
Use Case	Best for comparing text files with sorted lines.	Best for identifying binary differences between files.
Options	Can suppress specific columns (unique or common lines).	Can provide detailed reports of differences using options.

- **Exercise:**

1. Write the command for performing the following tasks sequentially.

a. Display your current directory.

```
(mc@kali)-[~/OSY]
$ pwd
/home/mc/OSY
```

b. Create a directory 'subject' in the current directory.

```
(mc@kali)-[~/OSY]
$ mkdir subject
```

c. Create a file 'sample' in the directory 'subject'.

```
(mc@kali)-[~/OSY]
$ cd subject

(mc@kali)-[~/OSY/subject]
$ touch sample
touch: cannot touch 'sample': Permission denied

(mc@kali)-[~/OSY/subject]
$ sudo touch sample
[sudo] password for mc:

(mc@kali)-[~/OSY/subject]
$ ls
sample
```

d. Remove the write permission for the owner for 'sample' using symbolic method.

```
(mc@kali)-[~/OSY/subject]
$ sudo chmod u-w sample

(mc@kali)-[~/OSY/subject]
$ ls -l
total 0
-r--r--r-- 1 root root 0 Sep  3 11:32 sample
```

e. Delete the file 'sample'. What is an error message displayed?

```
(mc@kali)-[~/OSY/subject]
$ rm sample
rm: remove write-protected regular empty file 'sample'? yes
rm: cannot remove 'sample': Permission denied
```

2. What are the permissions assigned to the file after the execution of the following commands?
- a. `$chmod 700 abc`
 - b. `$chmod u+rw,go-rwx file1 file2`
 - c. `$chmod 536 xyz`

```
(mc@kali)-[~/OSY]
$ chmod 700 abc

(mc@kali)-[~/OSY]
$ chmod u-rwx,go-rwx a1 a2

(mc@kali)-[~/OSY]
$ chmod 536 a3

(mc@kali)-[~/OSY]
$ ls -l
total 60
-rw-rw-r-- 1 mc mc 16 Sep 3 10:34 XXXX.txt
----- 1 mc mc 15 Sep 3 10:38 a1
-rw-rw-r-- 1 mc mc 23 Sep 2 23:12 a1cp.txt
----- 1 mc mc 85 Sep 3 00:32 a2
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a2.txt
-r-x-wxrw- 1 mc mc 0 Sep 2 23:50 a3
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a3.txt
-rwx----- 1 mc mc 17 Sep 3 00:11 abc
-rw-rw-r-- 1 mc mc 11 Sep 3 00:01 chapter1
-rw-rw-r-- 1 mc mc 11 Sep 3 00:03 chapter2
-rw-rw-r-- 1 mc mc 45 Sep 2 23:18 combine.txt
-rw-rw-r-- 1 mc mc 52 Sep 3 00:43 combined1.txt
-rw-rw-r-- 1 mc mc 0 Sep 3 00:35 dte
-rw-rw-r-- 1 mc mc 28 Sep 3 00:44 name
-rw-rw-r-- 1 mc mc 24 Sep 3 00:42 names
dr-xrwxr-x 2 mc mc 4096 Sep 3 11:34 subject
-rw-rw-r-- 1 mc mc 28 Sep 3 00:42 surname
-rw-rw-r-- 1 mc mc 23 Sep 2 23:29 xaa
-rw-rw-r-- 1 mc mc 17 Sep 3 00:11 xz
```

3. Create new files pqr and pqr1, perform the commands:
 - a. \$chmod ugo=r pqr
 - b. \$chmod ugo+r pqr1

```
(mc@kali)-[~/OSY]
$ chmod ugo=r dte

(mc@kali)-[~/OSY]
$ chmod ugo+r dte

(mc@kali)-[~/OSY]
$ ls -l
total 60
-rw-rw-r-- 1 mc mc 16 Sep 3 10:34 XXXX.txt
----- 1 mc mc 15 Sep 3 10:38 a1
-rw-rw-r-- 1 mc mc 23 Sep 2 23:12 a1cp.txt
----- 1 mc mc 85 Sep 3 00:32 a2
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a2.txt
-r-x-wxrw- 1 mc mc 0 Sep 2 23:50 a3
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a3.txt
-rwx----- 1 mc mc 17 Sep 3 00:11 abc
-rw-rw-r-- 1 mc mc 11 Sep 3 00:01 chapter1
-rw-rw-r-- 1 mc mc 11 Sep 3 00:03 chapter2
-rw-rw-r-- 1 mc mc 45 Sep 2 23:18 combine.txt
-rw-rw-r-- 1 mc mc 52 Sep 3 00:43 combined1.txt
-r--r--r-- 1 mc mc 0 Sep 3 00:35 dte
-rw-rw-r-- 1 mc mc 28 Sep 3 00:44 name
-rw-rw-r-- 1 mc mc 24 Sep 3 00:42 names
dr-xrwxr-x 2 mc mc 4096 Sep 3 11:34 subject
-rw-rw-r-- 1 mc mc 28 Sep 3 00:42 surname
-rw-rw-r-- 1 mc mc 23 Sep 2 23:29 xaa
-rw-rw-r-- 1 mc mc 17 Sep 3 00:11 xz
```

4. Assign read and write permission for the owner, write permission for the group and execute permission for others using octal method for file 'mfile'.

```
(mc@kali)-[~/OSY]
$ chmod 621 mfile

(mc@kali)-[~/OSY]
$ ls -l
total 60
-rw-rw-r-- 1 mc mc 16 Sep 3 10:34 XXXX.txt
----- 1 mc mc 15 Sep 3 10:38 a1
-rw-rw-r-- 1 mc mc 23 Sep 2 23:12 a1cp.txt
----- 1 mc mc 85 Sep 3 00:32 a2
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a2.txt
-r-x-wxrw- 1 mc mc 0 Sep 2 23:50 a3
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a3.txt
-rwx----- 1 mc mc 17 Sep 3 00:11 abc
-rw-rw-r-- 1 mc mc 11 Sep 3 00:01 chapter1
-rw-rw-r-- 1 mc mc 11 Sep 3 00:03 chapter2
-rw-rw-r-- 1 mc mc 45 Sep 2 23:18 combine.txt
-rw-rw-r-- 1 mc mc 52 Sep 3 00:43 combined1.txt
-r--r--r-- 1 mc mc 0 Sep 3 00:35 dte
-rw--w---x 1 mc mc 0 Sep 3 11:42 mfile
-rw-rw-r-- 1 mc mc 28 Sep 3 00:44 name
-rw-rw-r-- 1 mc mc 24 Sep 3 00:42 names
dr-xrwxr-x 2 mc mc 4096 Sep 3 11:34 subject
-rw-rw-r-- 1 mc mc 28 Sep 3 00:42 surname
-rw-rw-r-- 1 mc mc 23 Sep 2 23:29 xaa
-rw-rw-r-- 1 mc mc 17 Sep 3 00:11 xz
```

5. Write commands to assign following permissions to the file OSY using octal method.

- a. -----
- b. -rw-r-xr--
- c. -r-xr-xr-x

```
(mc@kali)~[~/OSY]
$ chmod 000 a1

(mc@kali)~[~/OSY]
$ chmod 654 a2

(mc@kali)~[~/OSY]
$ chmod 555 a3

(mc@kali)~[~/OSY]
$ ls -l
total 60
-rw-rw-r-- 1 mc mc 16 Sep 3 10:34 XXXX.txt
----- 1 mc mc 15 Sep 3 10:38 a1
-rw-rw-r-- 1 mc mc 23 Sep 2 23:12 a1cp.txt
-rw-r-xr-- 1 mc mc 85 Sep 3 00:32 a2
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a2.txt
-r-xr-xr-x 1 mc mc 0 Sep 2 23:50 a3
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a3.txt
-rwx----- 1 mc mc 17 Sep 3 00:11 abc
-rw-rw-r-- 1 mc mc 11 Sep 3 00:01 chapter1
-rw-rw-r-- 1 mc mc 11 Sep 3 00:03 chapter2
-rw-rw-r-- 1 mc mc 45 Sep 2 23:18 combine.txt
-rw-rw-r-- 1 mc mc 52 Sep 3 00:43 combined1.txt
-r--r--r-- 1 mc mc 0 Sep 3 00:35 dte
-rw--w---x 1 mc mc 0 Sep 3 11:42 mfile
-rw-rw-r-- 1 mc mc 28 Sep 3 00:44 name
-rw-rw-r-- 1 mc mc 24 Sep 3 00:42 names
dr-xrwxr-x 2 mc mc 4096 Sep 3 11:34 subject
-rw-rw-r-- 1 mc mc 28 Sep 3 00:42 surname
-rw-rw-r-- 1 mc mc 23 Sep 2 23:29 xaa
-rw-rw-r-- 1 mc mc 17 Sep 3 00:11 xz
```

6. Write commands to assign following permissions to the file OSY using symbolic method.

- a. -rwxr-xr--
- b. -rwxrwxrwx

```
(mc@kali)~[~/OSY]
$ chmod u=rwx,g=r,x,o=r OSY

(mc@kali)~[~/OSY]
$ ls -l
total 60
-rwxr-xr-- 1 mc mc 0 Sep 3 11:51 OSY
-rw-rw-r-- 1 mc mc 16 Sep 3 10:34 XXXX.txt
----- 1 mc mc 15 Sep 3 10:38 a1
-rw-rw-r-- 1 mc mc 23 Sep 2 23:12 a1cp.txt
-rw-r-xr-- 1 mc mc 85 Sep 3 00:32 a2
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a2.txt
-r-xr-xr-x 1 mc mc 0 Sep 2 23:50 a3
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a3.txt
-rwx----- 1 mc mc 17 Sep 3 00:11 abc
-rw-rw-r-- 1 mc mc 11 Sep 3 00:01 chapter1
-rw-rw-r-- 1 mc mc 11 Sep 3 00:03 chapter2
-rw-rw-r-- 1 mc mc 45 Sep 2 23:18 combine.txt
-rw-rw-r-- 1 mc mc 52 Sep 3 00:43 combined1.txt
-r--r--r-- 1 mc mc 0 Sep 3 00:35 dte
-rw--w---x 1 mc mc 0 Sep 3 11:42 mfile
-rw-rw-r-- 1 mc mc 28 Sep 3 00:44 name
-rw-rw-r-- 1 mc mc 24 Sep 3 00:42 names
dr-xrwxr-x 2 mc mc 4096 Sep 3 11:34 subject
-rw-rw-r-- 1 mc mc 28 Sep 3 00:42 surname
-rw-rw-r-- 1 mc mc 23 Sep 2 23:29 xaa
-rw-rw-r-- 1 mc mc 17 Sep 3 00:11 xz
```



```
(mc@kali)-[~/OSY]
```

```
$ chmod u=rwx,g=rwx,o=rwx OSY
```

```
(mc@kali)-[~/OSY]
```

```
$ ls -l
```

```
total 60
```

```
-rwxrwxrwx 1 mc mc 0 Sep 3 11:51 OSY
-rw-rw-r-- 1 mc mc 16 Sep 3 10:34 XXXX.txt
----- 1 mc mc 15 Sep 3 10:38 a1
-rw-rw-r-- 1 mc mc 23 Sep 2 23:12 a1cp.txt
-rw-r-xr-- 1 mc mc 85 Sep 3 00:32 a2
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a2.txt
-r-xr-xr-x 1 mc mc 0 Sep 2 23:50 a3
-rw-rw-r-- 1 mc mc 0 Sep 3 00:18 a3.txt
-rwx----- 1 mc mc 17 Sep 3 00:11 abc
-rw-rw-r-- 1 mc mc 11 Sep 3 00:01 chapter1
-rw-rw-r-- 1 mc mc 11 Sep 3 00:03 chapter2
-rw-rw-r-- 1 mc mc 45 Sep 2 23:18 combine.txt
-rw-rw-r-- 1 mc mc 52 Sep 3 00:43 combined1.txt
-r--r--r-- 1 mc mc 0 Sep 3 00:35 dte
-rw--w---x 1 mc mc 0 Sep 3 11:42 mfile
-rw-rw-r-- 1 mc mc 28 Sep 3 00:44 name
-rw-rw-r-- 1 mc mc 24 Sep 3 00:42 names
dr-xrwxr-x 2 mc mc 4096 Sep 3 11:34 subject
-rw-rw-r-- 1 mc mc 28 Sep 3 00:42 surname
-rw-rw-r-- 1 mc mc 23 Sep 2 23:29 xaa
-rw-rw-r-- 1 mc mc 17 Sep 3 00:11 xz
```