Mawlana Bhashani Science and Technology University

Lab-Report

Report No:04

Lab Report Name: File operation and permission

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Experiment no : 04
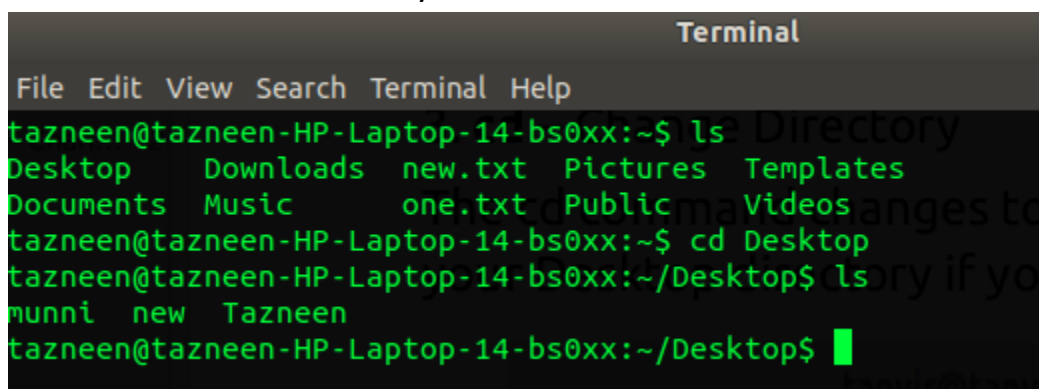**Experiment Name : File operation and permission.**

Theory :

As you know that files are used to store the required information for its later uses. Just likely in Linux operating system, everything is organized in the form of files and directories. By setting permissions on files and directories, one can make sure that only authorized users are allowed to access a specific data. Each file in Linux is owned by a user and group. The user is the one who creates the file and group is the one to which the user belongs to.

File permissions consist of three permissions that you can apply to files and directories. In this section, you'll learn how the system works and how to modify these permissions. Before doing this, let's have a look at how to read the current permissions. The best method to do so is by using ls-l which will show you a list of all files and directories in the current directory. the first column shows the file permissions. the third column shows the user owner of the file. the fourth column shows the group owner of the file.
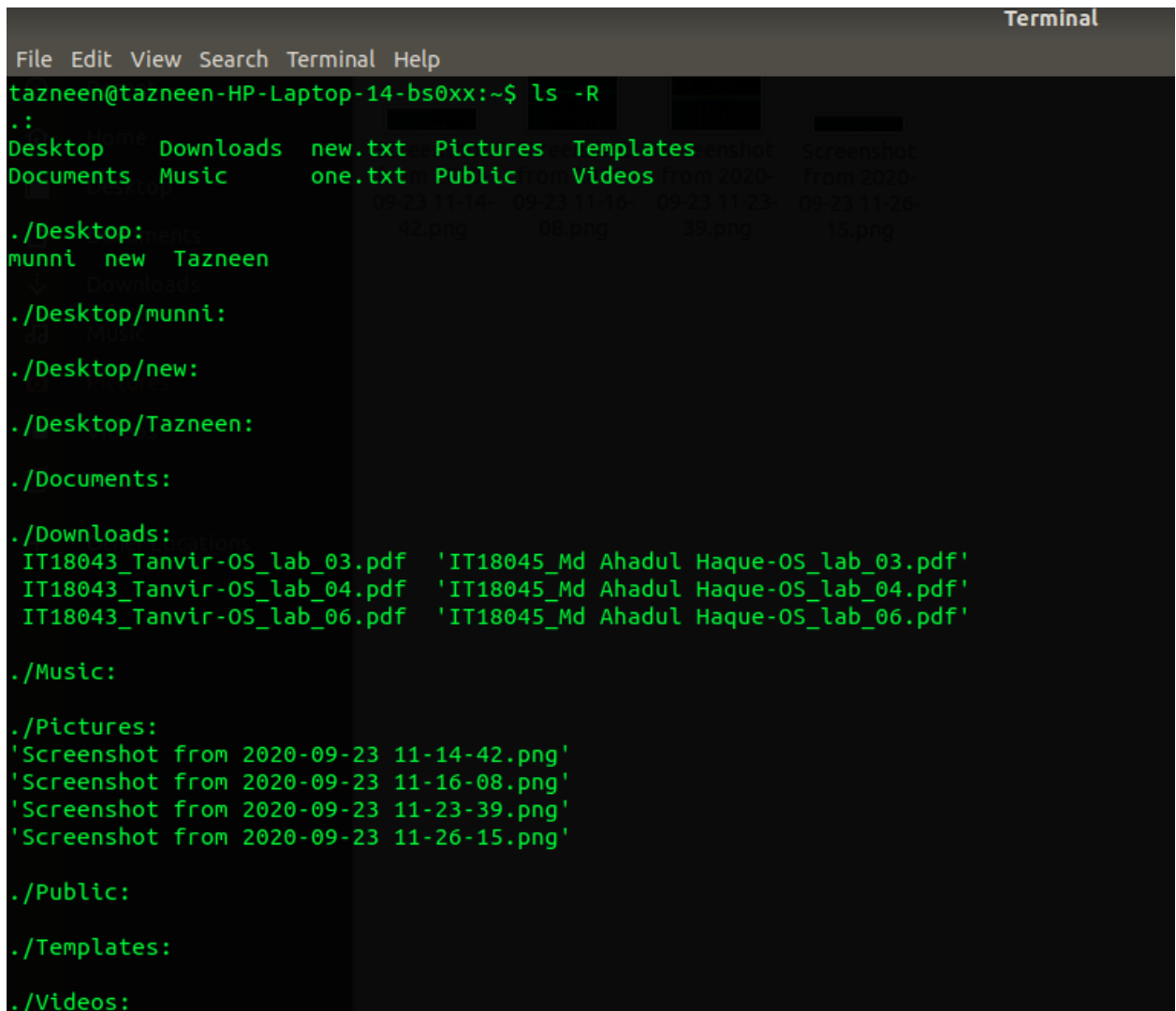
Working Process:

File Operation : To use the Linux terminal like a pro, we'll need to know the basics of managing files and navigating directories.Differnet file operation is given below.

1. **ls –** List Files The ls command lists the files in a directory. By default, ls lists files in the current directory.

2. We can also list files recursively — that is, list all files in directories inside the current directory — with **ls -R**.


```
tazneen@tazneen-HP-Laptop-14-bs0xx:~$ ls -R
.:
Desktop      Downloads   new.txt   Pictures   Templates
Documents    Music       one.txt   Public     Videos

./Desktop:
munni   new   Tazneen

./Desktop/munni:

./Desktop/new:

./Desktop/Tazneen:

./Documents:

./Downloads:
 IT18043_Tanvir-OS_lab_03.pdf   'IT18045_Md Ahadul Haque-OS_lab_03.pdf'
 IT18043_Tanvir-OS_lab_04.pdf   'IT18045_Md Ahadul Haque-OS_lab_04.pdf'
 IT18043_Tanvir-OS_lab_06.pdf   'IT18045_Md Ahadul Haque-OS_lab_06.pdf'

./Music:

./Pictures:
'Screenshot from 2020-09-23 11-14-42.png'
'Screenshot from 2020-09-23 11-16-08.png'
'Screenshot from 2020-09-23 11-23-39.png'
'Screenshot from 2020-09-23 11-26-15.png'

./Public:

./Templates:

./Videos:
```

3. **cd –** Change Directory The cd command changes to another directory. For example, cd Desktop will take you to your Desktop directory if you're starting from your home directory.

4. cd .. - will take you up a directory.
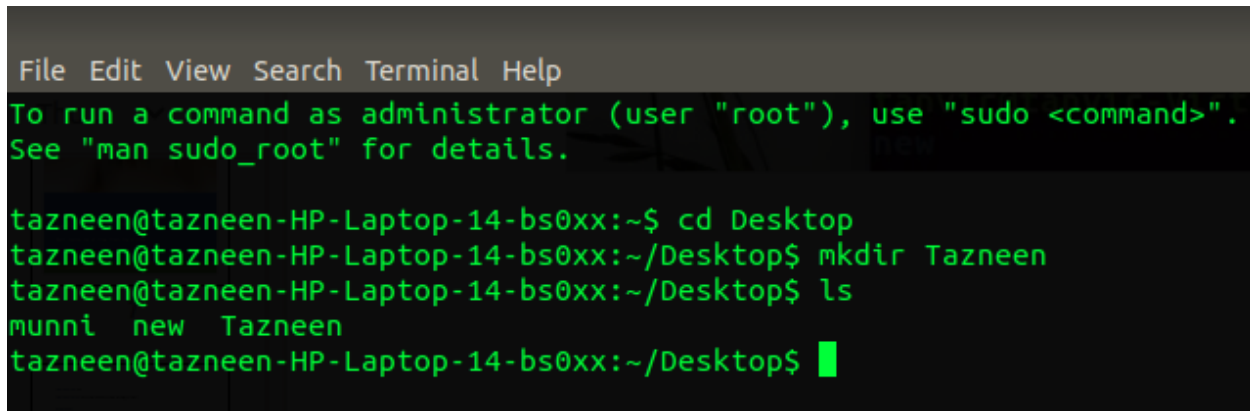

5.rmdir – Remove Directories

The rmdir command removes an empty directory. rmdir directory would delete the directory named "directory" in the current directory.

6.mkdir – Make Directories

The mkdir command makes a new directory. mkdir example will make a directory with the name "example" in the current directory.

There are 3 types of permissions:

1) Read

 2) Write

 3) Execute permission

Read (r): this gives permission to merely open a file or folder and view its contents.

Write (w): this gives permission to overwrite, append-to or delete a file or folder.

Execute (x): this gives permission to "run" a file. For example to run a script or a program.

So, how can we put this all into context? Let's have a look at the contents of a typical folder. I used the command ls -l to bring up this list:

```
File  Edit  View  Search  Terminal  Help
tazneen@tazneen-HP-Laptop-14-bs0xx:~$ ls -l
total 36
drwxr-xr-x 4 tazneen tazneen 4096 সেপ্টে(ം23 11:30 Desktop
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം21 18:19 Documents
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം23 11:13 Downloads
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം21 18:19 Music
-rw-r--r-- 1 tazneen tazneen    0 সেপ্টে(ം21 18:56 new.txt
-rw-r--r-- 1 tazneen tazneen    0 সেপ্টে(ം21 18:52 one.txt
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം23 11:31 Pictures
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം21 18:19 Public
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം23 11:31 Tazneen
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം21 18:19 Templates
drwxr-xr-x 2 tazneen tazneen 4096 সেপ্টে(ം21 18:19 Videos
tazneen@tazneen-HP-Laptop-14-bs0xx:~$ █
```

we can also do this via the command-line. Go to a directory that has files in it and type the following command to view all files in a list:

ls –al

```
                                                                    Terminal
 File  Edit  View  Search  Terminal  Help
tazneen@tazneen-HP-Laptop-14-bs0xx:~$ ls -al
total 76
drwxr-xr-x 16 tazneen tazneen 4096 মে ২৩ 11:31 .
drwxr-xr-x  3 root    root    4096 ৪ঃৰ    8  2020 ..
-rw-------  1 tazneen tazneen  791 মে ২৩ 11:34 .bash_history
drwxr-xr-x 15 tazneen tazneen 4096 মে ২৩ 11:34 .cache
drwx------ 14 tazneen tazneen 4096 মে ২৩ 11:34 .config
drwxr-xr-x  4 tazneen tazneen 4096 মে ২৩ 11:30 Desktop
drwxr-xr-x  2 tazneen tazneen 4096 মে ২১ 18:19 Documents
drwxr-xr-x  2 tazneen tazneen 4096 মে ২৩ 11:13 Downloads
drwx------  3 tazneen tazneen 4096 মে ২১ 18:18 .gnupg
-rw-------  1 tazneen tazneen 1194 মে ২৩ 11:08 .ICEauthority
drwx------  3 tazneen tazneen 4096 ৪ঃৰ    8  2020 .local
drwxr-xr-x  5 tazneen tazneen 4096 মে ২১ 18:24 .mozilla
drwxr-xr-x  2 tazneen tazneen 4096 মে ২১ 18:19 Music
-rw-------  1 root    root    1533 মে ২৩ 09:52 .mysql_history
-rw-r--r--  1 tazneen tazneen    0 মে ২১ 18:56 new.txt
-rw-r--r--  1 tazneen tazneen    0 মে ২১ 18:52 one.txt
drwxr-xr-x  2 tazneen tazneen 4096 মে ২৩ 11:34 Pictures
drwxr-xr-x  2 tazneen tazneen 4096 মে ২১ 18:19 Public
-rw-r--r--  1 tazneen tazneen    0 মে ২১ 18:49 .sudo_as_admin_successful
drwxr-xr-x  2 tazneen tazneen 4096 মে ২৩ 11:31 Tazneen
drwxr-xr-x  2 tazneen tazneen 4096 মে ২১ 18:19 Templates
drwxr-xr-x  2 tazneen tazneen 4096 মে ২১ 18:19 Videos
tazneen@tazneen-HP-Laptop-14-bs0xx:~$
```

Next to each file and directory, we'll see a special section that outlines the permissions it has. It looks like this:

-rwx rw- r—

The r stands for "read," the w stands for "write," and the x stands for "execute." Directories will be start with a "d" instead of a "-". You'll also notice that there are 10 spaces which hold value. You can ignore the first, and then there are 3 sets of 3. The first set is for the owner, the second set is for the group, and the last set is for the world.

To change a file or directory's permissions, let's look at the basic form of the chmod command.

chmod [class][operator][permission] file

chmod [ugoa][+ or –] [rwx] file

u: This is for the owner.

g: This is for the group.

o: This is for all others.

a: This will change permissions for all of the above.

+: The plus sign will add the permissions which follow.

-: The minus sign will remove the permissions which follow.

r: Allows read access.

w: Allows write access.

x: Allows execution.

Discussion: File permissions are required to be changed when the user want to restrict the operations permissible on a file. It can gives us option that we can secure our personal files from clients or other person. By doing this lab we have gain a clear idea about File Operation and Permission.