Mawlana Bhashani Science and Technology University

Lab-Report

Report No : 04

Experiment name : File Operation and Permission .

Course code : ICT-3110

Course title : Operating System Lab.

Date of Performance :

Date of Submission : 10 September 2020.

Submitted by

Name: Md Sohanur

ID: IT- IT-18011

3rd year 1st semester

Session: 2017- 18

Dept. of ICT

MBSTU.

Submitted To

Nazrul Islam

Assistant Professor

Dept. of ICT

MBSTU.

i) File Operation

Answer*:*

File Operation: All data in Linux is organized into files. All files are organized into directories. These directories are organized into a tree-like structure called the file system. These operations in File system is known as file operation.

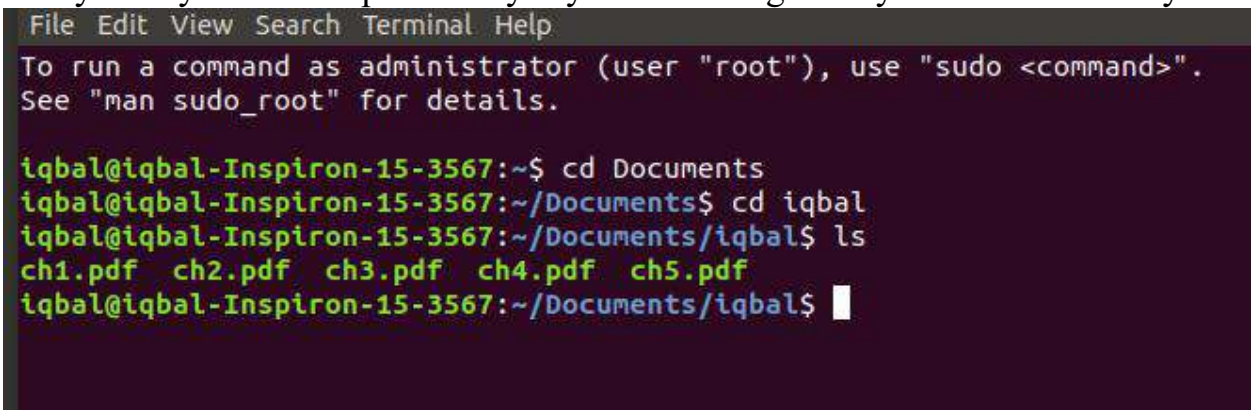
1.) **ls** – List Files
The ls command lists the files in a directory. By default, ls lists files in the current directory.

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

iqbal@iqbal-Inspiron-15-3567:~$ cd Documents
iqbal@iqbal-Inspiron-15-3567:~/Documents$ ls
ch10.pdf  ch7.pdf  ch9.pdf    imran  iqbal.txt
ch6.pdf   ch8.pdf  derectory  iqbal  new.txt
iqbal@iqbal-Inspiron-15-3567:~/Documents$
```

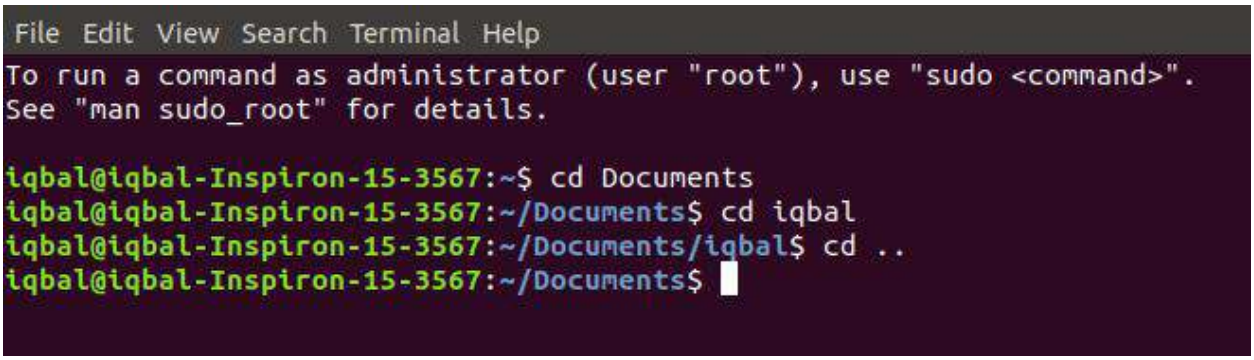
2**) ls –R :**we can also list files recursively — that is, list all files in directories inside the current directory —

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

iqbal@iqbal-Inspiron-15-3567:~$ cd Documents
iqbal@iqbal-Inspiron-15-3567:~/Documents$ ls
ch10.pdf  ch6.pdf  ch7.pdf  ch8.pdf  ch9.pdf  imran  iqbal
iqbal@iqbal-Inspiron-15-3567:~/Documents$ ls -R
.:
ch10.pdf  ch6.pdf  ch7.pdf  ch8.pdf  ch9.pdf  imran  iqbal

./imran:
Abraham-Silberschatz-Operating-System-Concepts---9th2012.12.pdf
operating-system-concepts-10th.pdf

./iqbal:
ch1.pdf  ch2.pdf  ch3.pdf  ch4.pdf  ch5.pdf
iqbal@iqbal-Inspiron-15-3567:~/Documents$
```

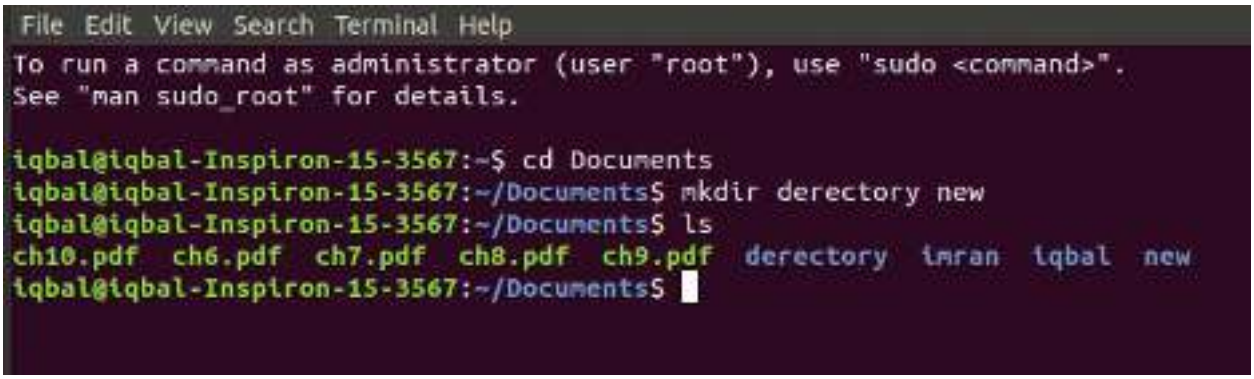
3) cd – Change Directory
The cd command changes to another directory. For example, cd Desktop will take you to your Desktop directory if you're starting from your home directory.



4) **cd . .** will take you up a directory.

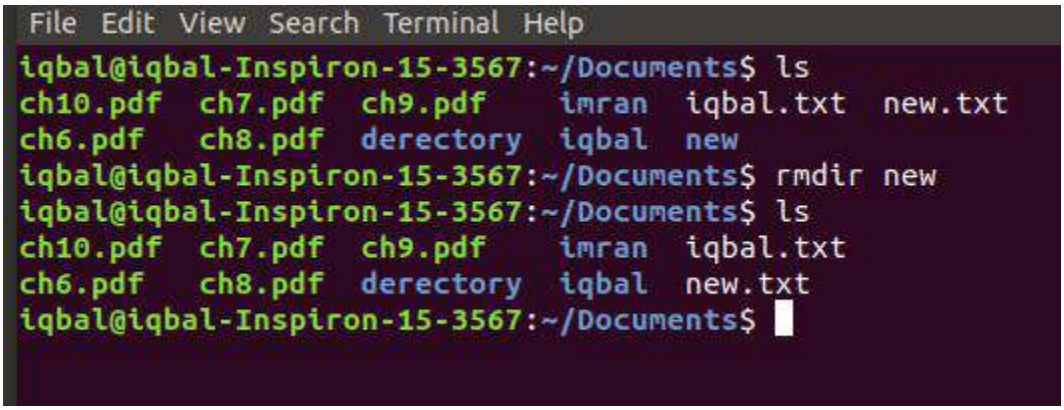


5) **mkdir** – Make Directories
The mkdir command makes a new directory. mkdir example will make a directory with the name "example" in the current directory.

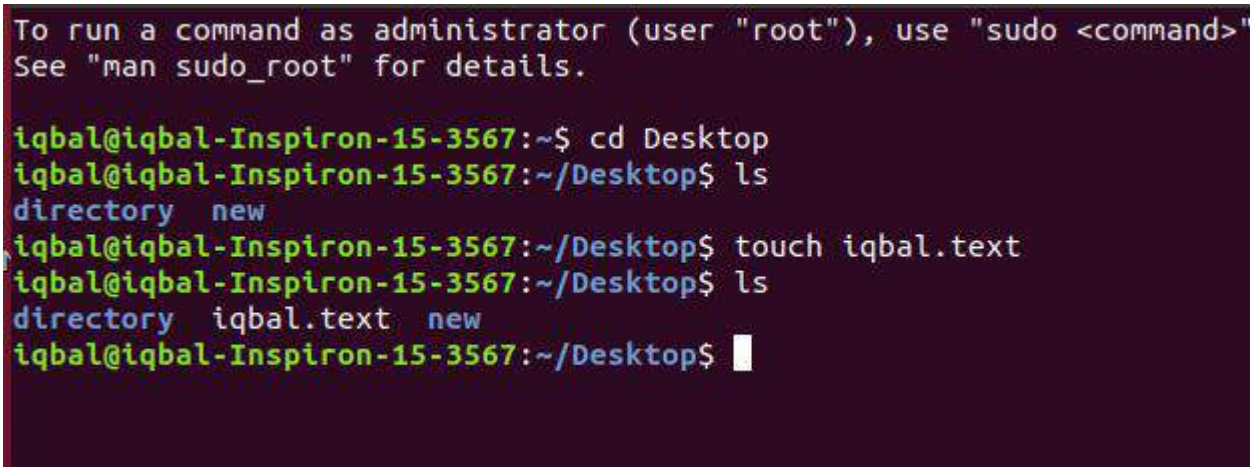


6.) **rmdir** – Remove Directories

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



7) **touch :** The touch command creates new file in your current directory



ii) File Permission.

Answer:

File Permission: File ownership is an important component of Linux that provides a secure method for storing files. Every file in Linux has the following attributes −

- **Owner permissions** − The owner's permissions determine what actions the owner of the file can perform on the file.

 Group permissions − The group's permissions determine what actions a user, who is a member of the group that a file belongs to, can perform on the file.

 Other (world) permissions − The permissions for others indicate what action all other users can perform on the file.

File Access Modes

The permissions of a file are the first line of defense in the security of a Unix system. The basic building blocks of Unix permissions are the **read**, **write**, and **execute** permissions, which have been described below −

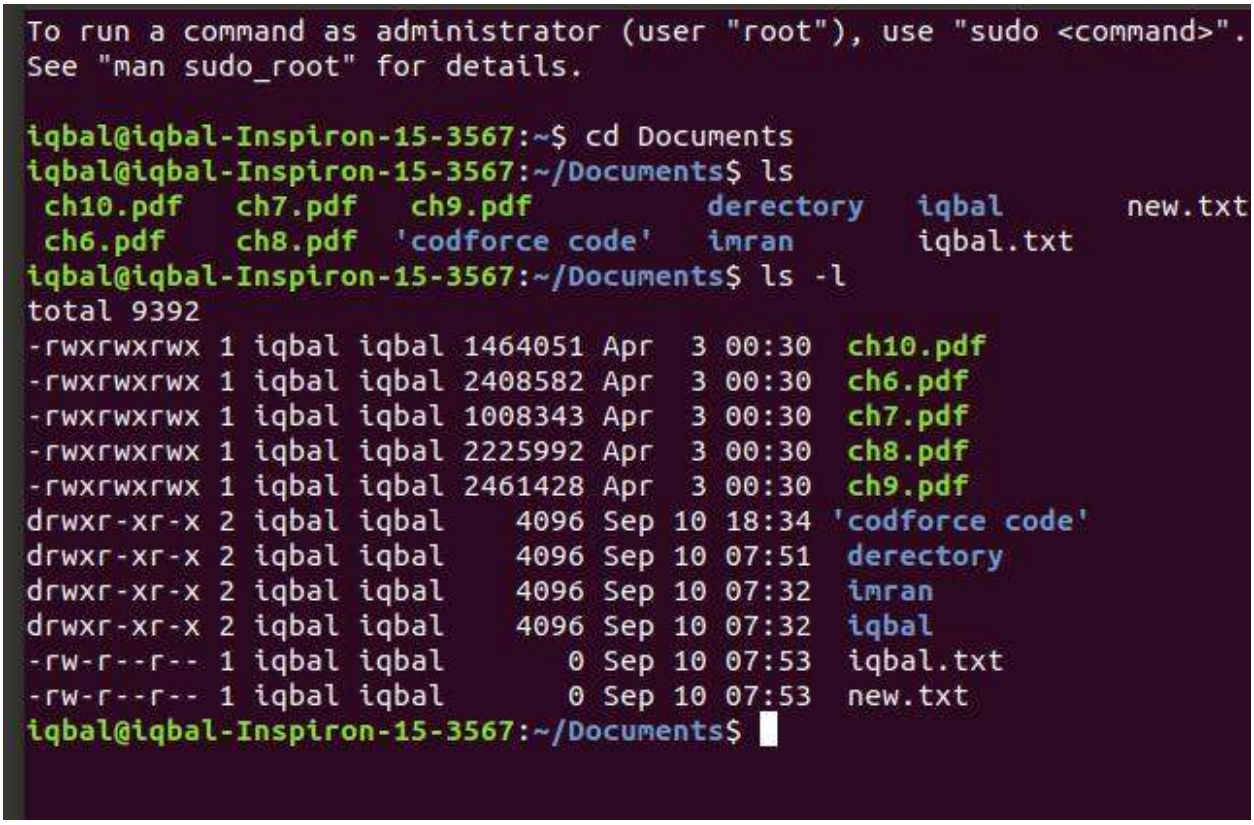
Read : Grants the capability to read, i.e., view the contents of the file.

Write : Grants the capability to modify, or remove the content of the file.

Execute : User with execute permissions can run a file as a program.

** ls –l

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:



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

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

iqbal@iqbal-Inspiron-15-3567:~$ cd Documents
iqbal@iqbal-Inspiron-15-3567:~/Documents$ ls -al
total 9400
drwxr-xr-x  6 iqbal iqbal    4096 Sep 10 18:34  .
drwxr-xr-x 21 iqbal iqbal    4096 Sep 10 18:32  ..
-rwxrwxrwx  1 iqbal iqbal 1464051 Apr  3 00:30  ch10.pdf
-rwxrwxrwx  1 iqbal iqbal 2408582 Apr  3 00:30  ch6.pdf
-rwxrwxrwx  1 iqbal iqbal 1008343 Apr  3 00:30  ch7.pdf
-rwxrwxrwx  1 iqbal iqbal 2225992 Apr  3 00:30  ch8.pdf
-rwxrwxrwx  1 iqbal iqbal 2461428 Apr  3 00:30  ch9.pdf
drwxr-xr-x  2 iqbal iqbal    4096 Sep 10 18:34 'codforce code'
drwxr-xr-x  2 iqbal iqbal    4096 Sep 10 07:51  derectory
drwxr-xr-x  2 iqbal iqbal    4096 Sep 10 07:32  imran
drwxr-xr-x  2 iqbal iqbal    4096 Sep 10 07:32  iqbal
-rw-r--r--  1 iqbal iqbal       0 Sep 10 07:53  iqbal.txt
-rw-r--r--  1 iqbal iqbal       0 Sep 10 07:53  new.txt
iqbal@iqbal-Inspiron-15-3567:~/Documents$
```

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.

Conclusion: From this lab work we come to learn that the Linux being a multiuser system uses permissions and ownership for security.linux is best operating system of all. When one computer in the network gets affected, then it does not affect another computer in the network. So, the system can be handled efficiently.