Mawlana Bhashani Science and Technology University

Lab-Report

Report No: 04

Course code: ICT-3110

Course title: Operating System Lab

Date of Performance:

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Submitted by

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Session: 2017-2018

Dept. of ICT

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Submitted To

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Assistant Professor

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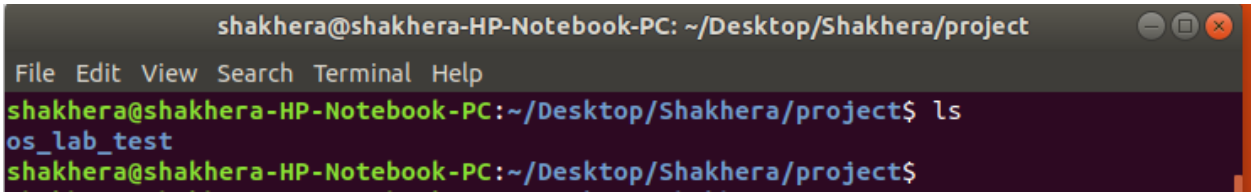
Experiment No: 04
Experiment Name: File operation and permission.

Objectives:

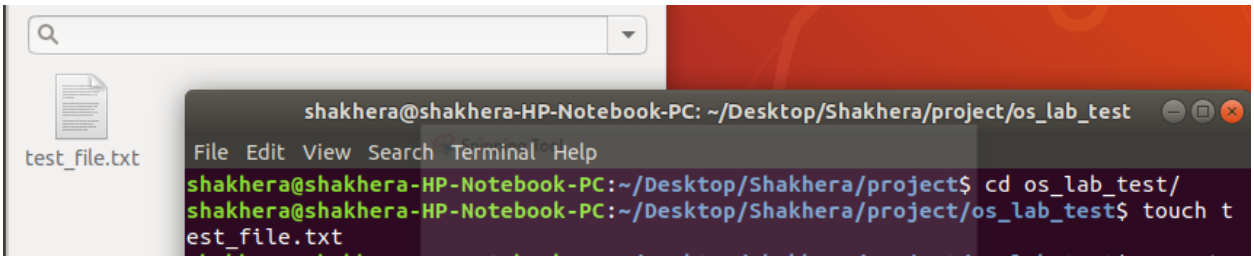
- What is File Operation and File Permission in Linux Operating System?
- Implementation of File Operation and File Permission.

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

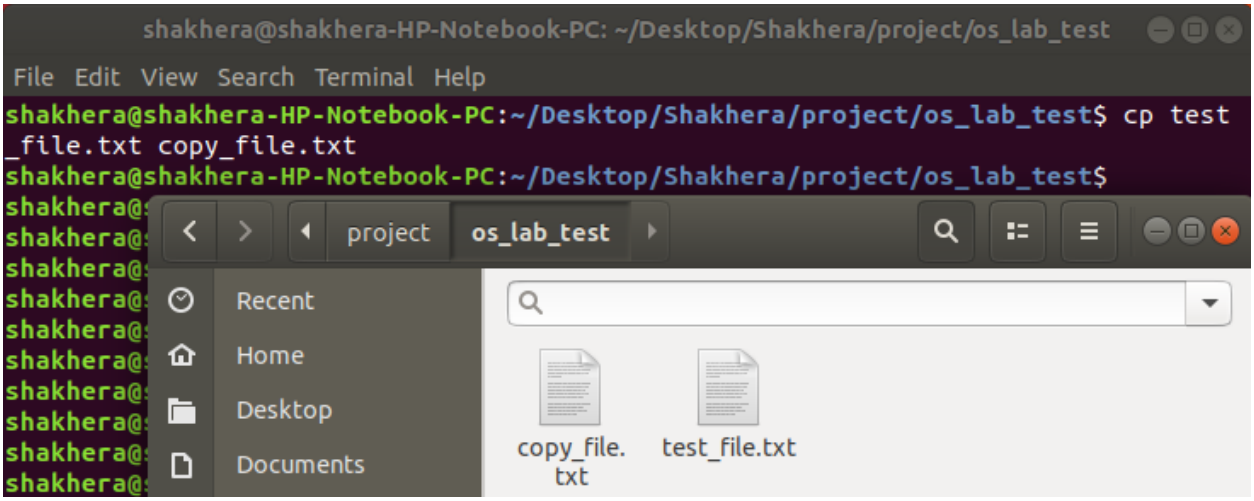
ls – The ls command lists the files in a directory. By default, ls lists files in the current directory.



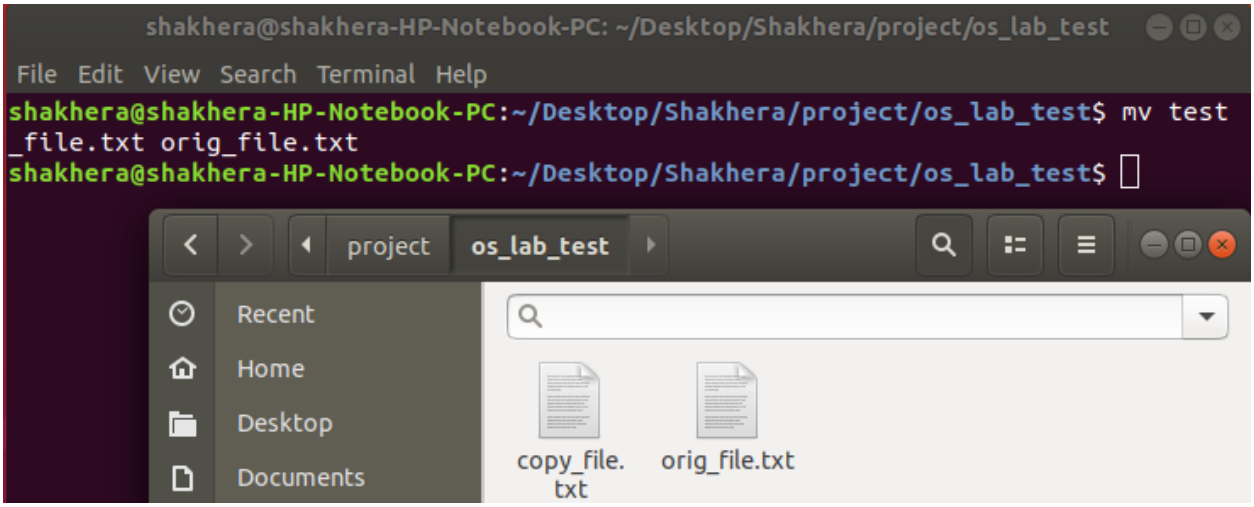
cd – Change Directory The cd command changes to another directory. For example, cd Desktop will take you to your Desktop directory if you're starting from your home directory.

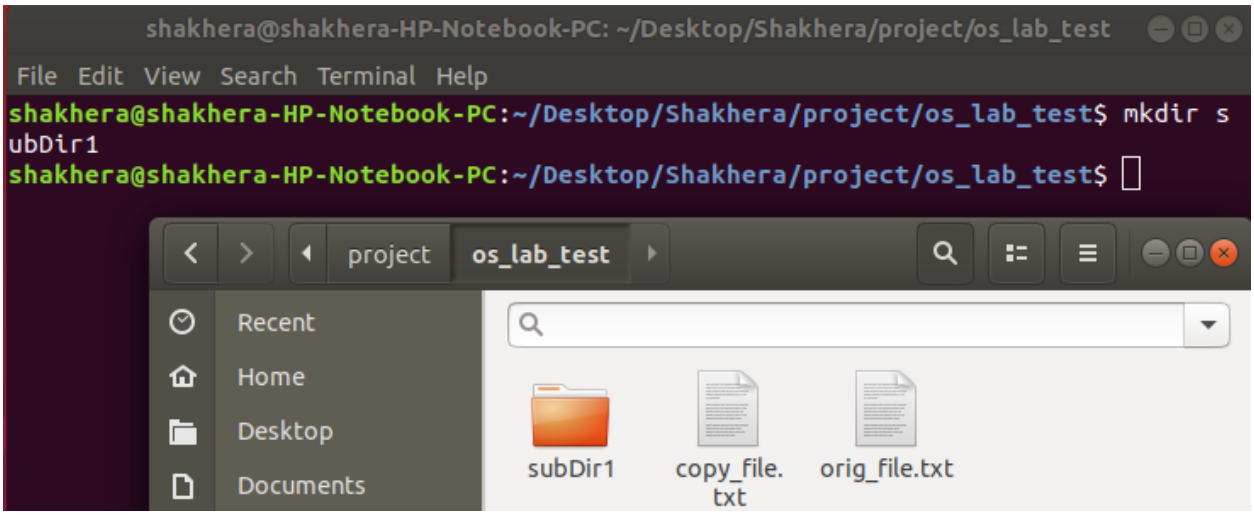


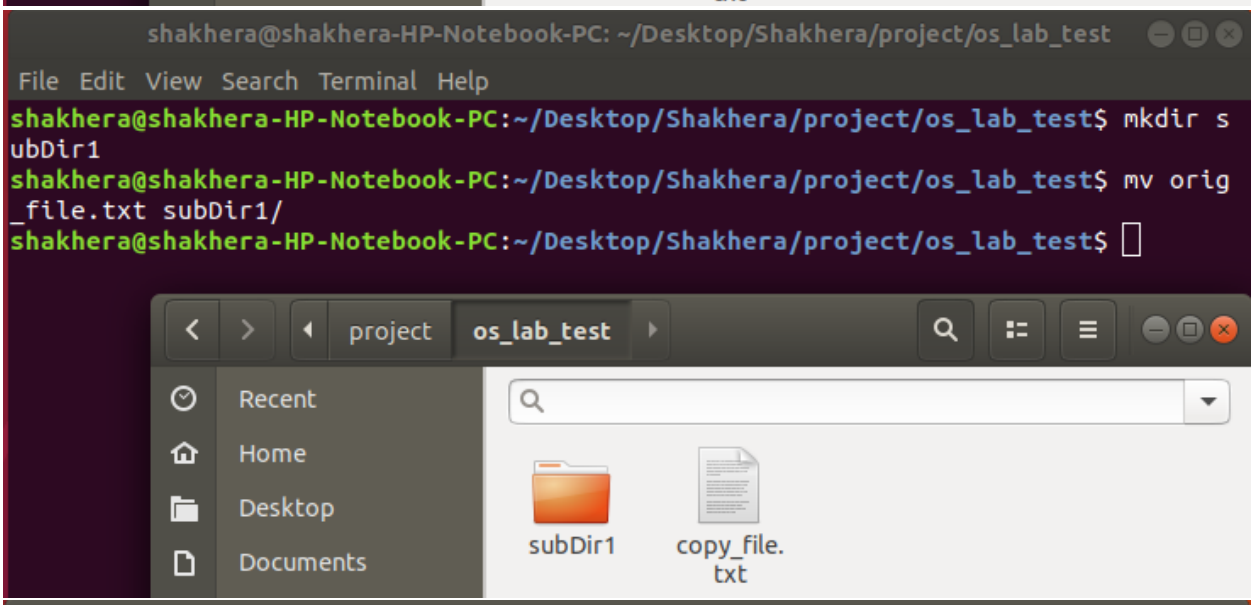
Cp- file1 file2 is the command which makes a copy of file1 in the current working directory and calls it file2.

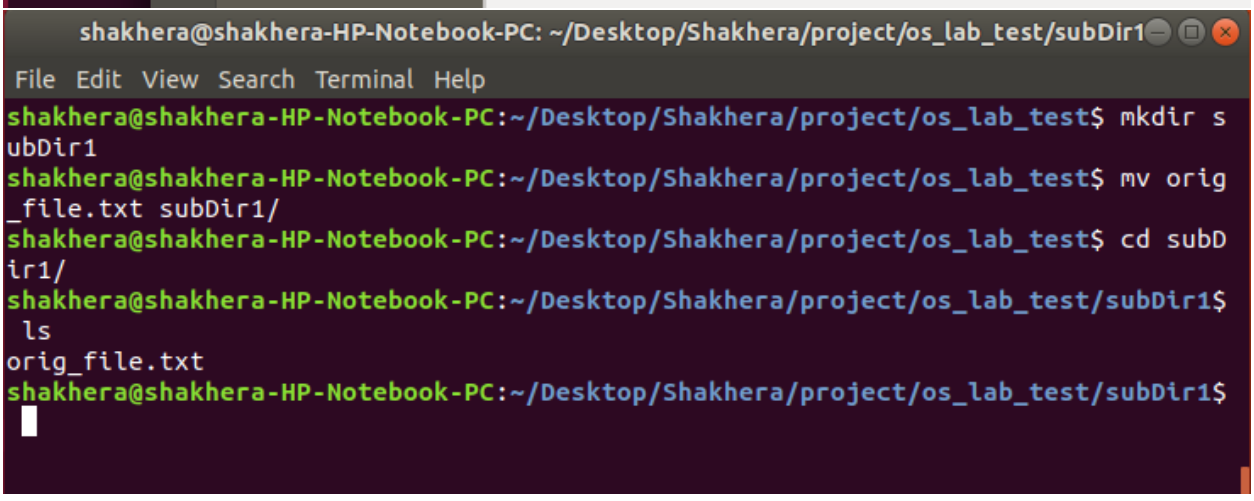


mv- the mv command moves files and directories from one directory to another or renames a file or directory. If you move a file or directory to new directory, it retains the base file name.

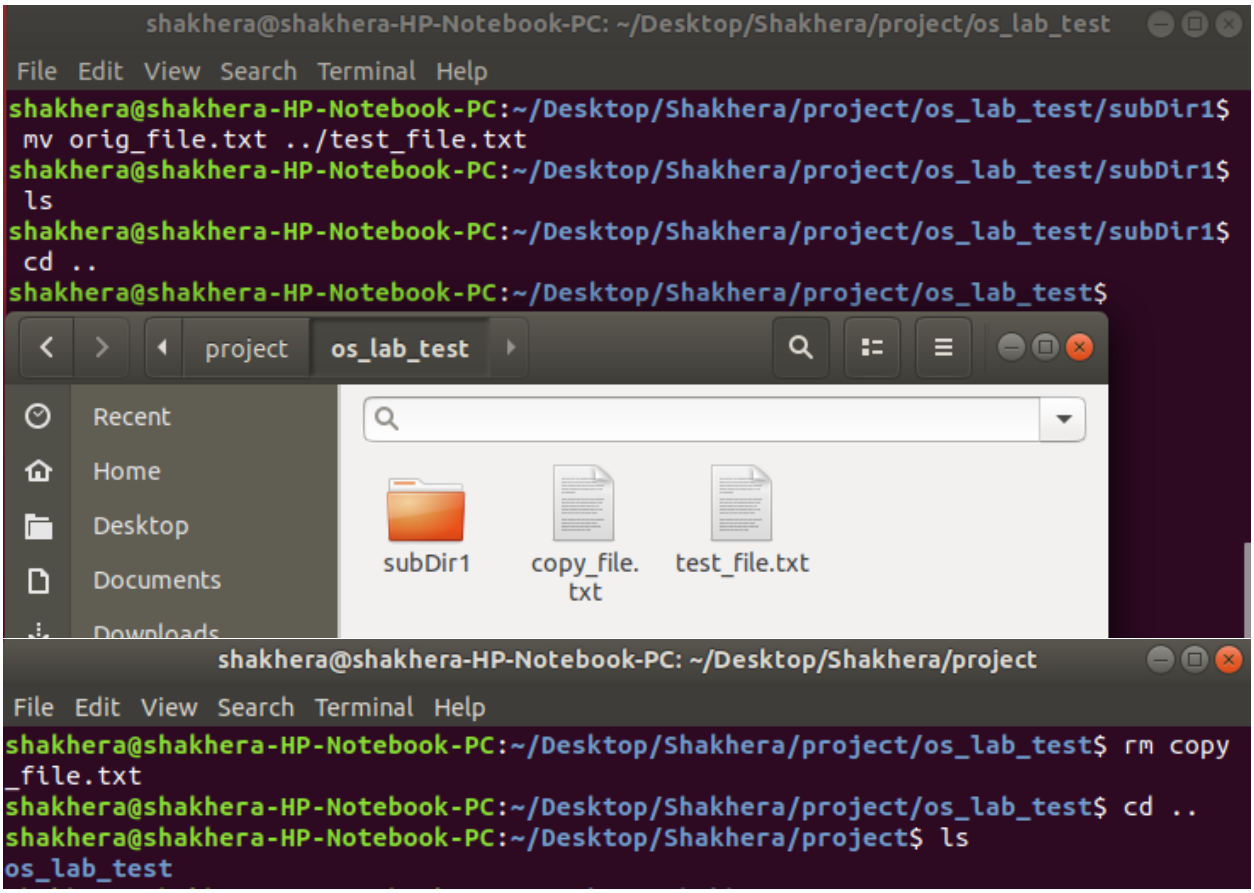



shakhera@shakhera-HP-Notebook-PC: ~/Desktop/Shakhera/project/os_lab_test
File Edit View Search Terminal Help
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$ mkdir subDir1
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$
project
os_lab_test
Recent
Home
Desktop
Documents
subDir1
copy_file.txt
orig_file.txt


shakhera@shakhera-HP-Notebook-PC: ~/Desktop/Shakhera/project/os_lab_test
File Edit View Search Terminal Help
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$ mkdir subDir1
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$ mv orig_file.txt subDir1/
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$
project
os_lab_test
Recent
Home
Desktop
Documents
subDir1
copy_file.txt


shakhera@shakhera-HP-Notebook-PC: ~/Desktop/Shakhera/project/os_lab_test/subDir1
File Edit View Search Terminal Help
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$ mkdir subDir1
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$ mv orig_file.txt subDir1/
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test$ cd subDir1/
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test/subDir1$ ls
orig_file.txt
shakhera@shakhera-HP-Notebook-PC:~/Desktop/Shakhera/project/os_lab_test/subDir1$

cd .. will take you up a directory.



File Permission in Linux Operating:

Linux is a clone of UNIX, the multi-user operating system which can be accessed by many users simultaneously. Linux can also be used in mainframes and servers without any modifications. But this raises security concerns as an unsolicited or malign user can corrupt, change or remove crucial data. For effective security, Linux divides authorization into 2 levels.

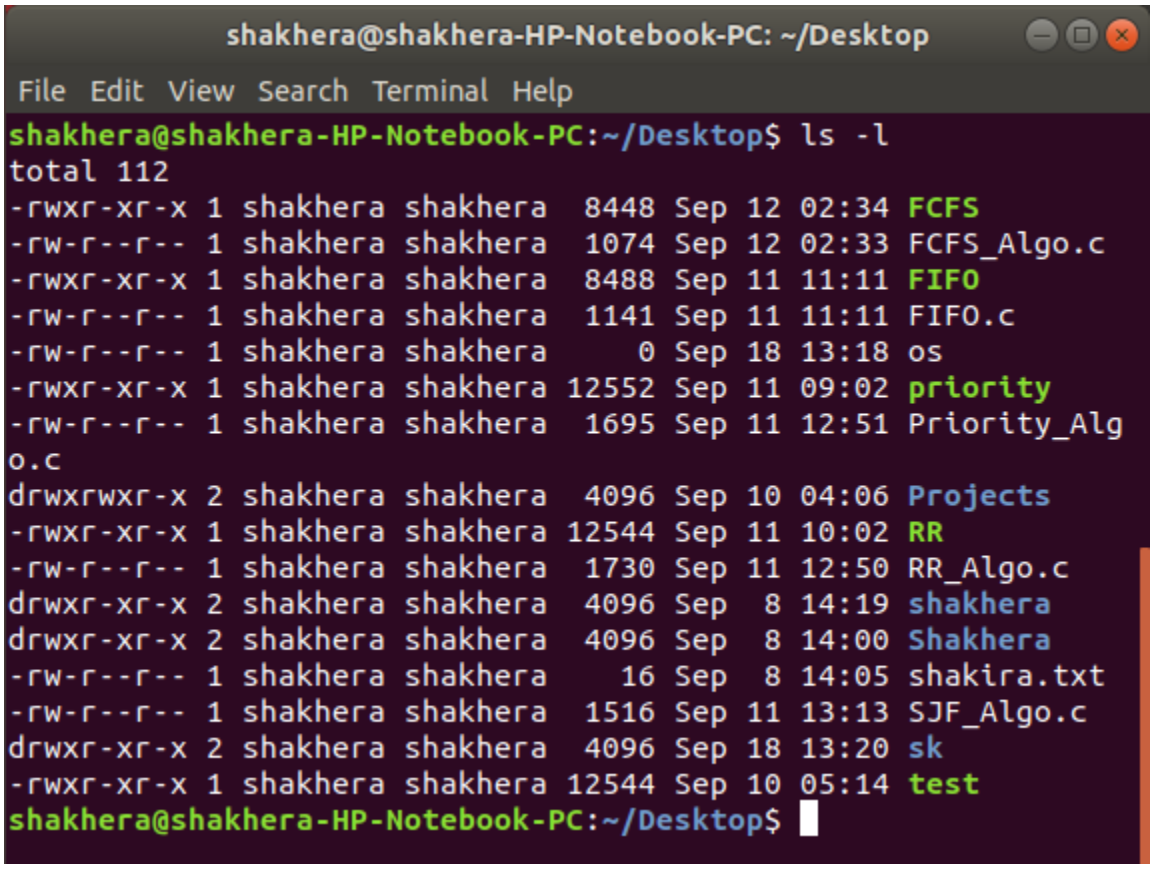
1. Ownership
2. Permission

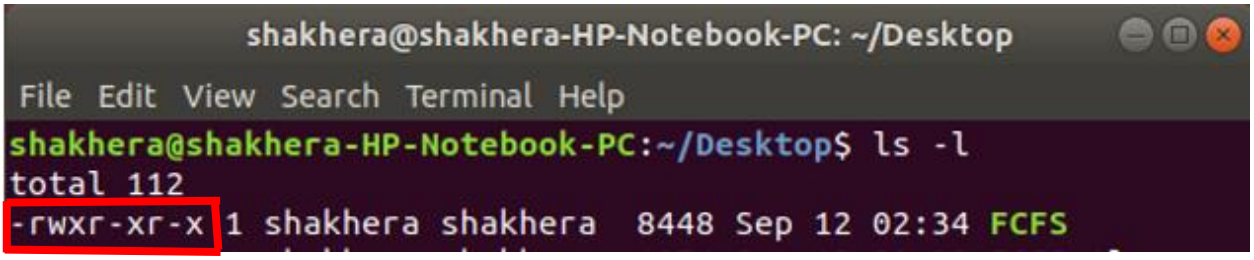
Every file and directory in your Linux system has following 3 permissions defined for all the 3 owners discussed above.

1. Read
2. Write
3. Execute permission

- **Read (r):** This permission give you the authority to open and read a file. Read permission on a directory gives you the ability to lists its content.
- **Write (w):** The write permission gives you the authority to modify the contents of a file. That's mean to add, remove and rename files stored in the directory.
- **Execute (x):** In Windows, an executable program usually has an extension ".exe" and which you can easily run. In Linux, you cannot run a program unless the execute permission is set. If the execute permission is not set, you might still be able to see/modify the program code (provided read & write permissions are set), but not run it.

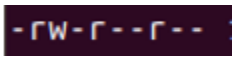
ls – l





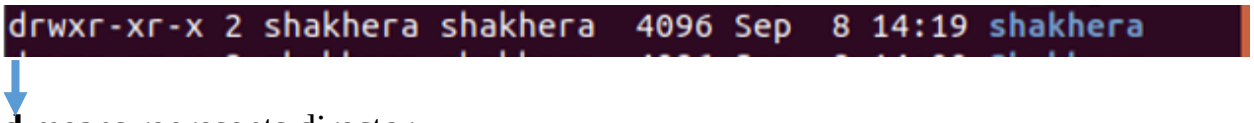
File type and Access Permissions.

Here , we have highlighted **'-rw-r—r—'** and this weird looking code is the one that tells us about the permissions gives to the owner, user group and the world. Here the first '-' implies that we have selected a file.p>



→ indicates file

Else, if it were a directory, d would have been shown.



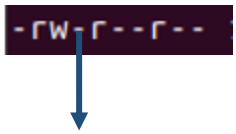
d means represents directory.

The characters are pretty easy to remember.

r = read permission
w = write permission
x = execute permission
- = no permission

Let us look at it this way.

The first part of the code is '**rw-**'. This suggests that the owner 'Home' can:



no execute permission

- Read the file
- Write or edit the file
- He cannot execute the file since the execute bit is set to '-'.

By design, many Linux distributions like Fedora, CentOS, Ubuntu, etc. will add users to a group of the same group name as the user name. Thus, a user 'tom' is added to a group named 'tom'.

The second part is **'rw-'.** It for the user group 'Home' and group-members can:

- Read the file
- Write or edit the file

The third part is for the world which means any user. It says **'r--'.** This means the user can only:

- Read the file

Discussion: Linux file system is generally a built-in layer of a Linux operating system used to handle the data management of the storage. It helps to arrange the file on the disk storage. It manages the file name, file size, creation date, and much more information about a file.