

Lab-Report

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Experiment No: 04

Experiment Name: File operation and permission.

Objectives:

- i) File operation and File permission.
- ii) Implementation of file operation and file permission.

File Operation:

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:

1. **ls**: This command shows the content of a directory. By default, ls lists files in the current directory.

```
miran@Miran-Inspiron-5570: ~  
File Edit View Search Terminal Help  
miran@Miran-Inspiron-5570:~$ ls  
Desktop      examples.desktop  LicenceServer  Public        Videos  
Documents    IntelliJ-16       Music          snap  
Downloads    lab               Pictures        Templates  
miran@Miran-Inspiron-5570:~$
```

2. **ls -r**: we can also list files recursively – that is, list all files in the directories inside the current directory.

```
miran@Miran-Inspiron-5570: ~/Downloads  
File Edit View Search Terminal Help  
miran@Miran-Inspiron-5570:~/Downloads$ ls -r  
'Sonic the Hedgehog (2020) 720p HDRip.mkv'  
'lab 02 Basic Linux Command.odt'  
'Lab 01 Install linux UBuntu.odt'  
'Julius Dreisig & Zeus X Crona - Invisible [NCS Release].mp3'  
miran@Miran-Inspiron-5570:~/Downloads$
```

3. **cd**: The cd command is use to change a directory.

```
miran@Miran-Inspiron-5570: ~/Downloads
File Edit View Search Terminal Help
miran@Miran-Inspiron-5570:~$ cd Downloads
miran@Miran-Inspiron-5570:~/Downloads$
```

4. **cd ..** : This command use to move one directory up.

```
miran@Miran-Inspiron-5570: ~
File Edit View Search Terminal Help
miran@Miran-Inspiron-5570:~$ cd Downloads
miran@Miran-Inspiron-5570:~/Downloads$
miran@Miran-Inspiron-5570:~/Downloads$ cd ..
miran@Miran-Inspiron-5570:~$
```

5. **rmdir**: The rmdir command removes an empty directory.

```
miran@Miran-Inspiron-5570: ~/Documents
File Edit View Search Terminal Help
miran@Miran-Inspiron-5570:~$ cd Documents
miran@Miran-Inspiron-5570:~/Documents$ ls
labw.txt  LicenceServer  miran  miran.txt
miran@Miran-Inspiron-5570:~/Documents$ rmdir miran
miran@Miran-Inspiron-5570:~/Documents$ ls
labw.txt  LicenceServer  miran.txt
miran@Miran-Inspiron-5570:~/Documents$
```

6. **mkdir**: The mkdir command makes a new directory.

```
miran@Miran-Inspiron-5570: ~/Documents
File Edit View Search Terminal Help
miran@Miran-Inspiron-5570:~/Documents$ ls
labw.txt  LicenceServer  miran.txt
miran@Miran-Inspiron-5570:~/Documents$ mkdir miran
miran@Miran-Inspiron-5570:~/Documents$ ls
labw.txt  LicenceServer  miran  miran.txt
miran@Miran-Inspiron-5570:~/Documents$
```

7. **ln**: this command creates links. The most commonly used type of link is probably the symbolic link, which you can create with ln -s.

```
miran@Miran-Inspiron-5570: ~
File Edit View Search Terminal Help
miran@Miran-Inspiron-5570:~$ ln -s /home/Miran21
miran@Miran-Inspiron-5570:~$ ls
Desktop      examples.desktop  LicenceServer  Pictures  Templates
Documents    IntelliJ-16       Miran21        Public    Videos
Downloads    lab               Music           snap
miran@Miran-Inspiron-5570:~$
```

File Permission:

There are three types of file permission. They are

- Read.
- Write.
- 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:

```
miran@Miran-Inspiron-5570: ~  
File Edit View Search Terminal Help  
miran@Miran-Inspiron-5570:~$ ls -l  
total 60  
drwxr-xr-x 3 miran miran 4096 Sep 20 10:44 Desktop  
drwxrwxrwx 4 miran miran 4096 Sep 30 11:02 Documents  
drwxr-xr-x 2 miran miran 4096 Sep  3 20:24 Downloads  
-rw-r--r-- 1 miran miran 8980 Mar  2 2020 examples.desktop  
drwxr-xr-x 8 miran miran 4096 Aug 13 2018 IntelliJ-16  
drwxrwxr-x 2 miran miran 4096 Mar  2 2020 lab  
drwxr-xr-x 2 miran miran 4096 Jul 23 2019 LicenceServer  
lrwxrwxrwx 1 miran miran  13 Sep 30 11:03 Miran21 -> /home/Miran21  
drwxr-xr-x 2 miran miran 4096 Mar  2 2020 Music  
drwxr-xr-x 2 miran miran 4096 Sep 30 11:03 Pictures  
drwxr-xr-x 2 miran miran 4096 Mar  2 2020 Public  
drwxr-xr-x 4 miran miran 4096 Mar 17 2020 snap  
drwxr-xr-x 2 miran miran 4096 Mar  2 2020 Templates  
drwxr-xr-x 2 miran miran 4096 Mar  2 2020 Videos  
miran@Miran-Inspiron-5570:~$
```

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

```
miran@Miran-Inspiron-5570: ~
File Edit View Search Terminal Help

miran@Miran-Inspiron-5570:~$ ls -al
total 128
drwxr-xr-x 23 miran miran 4096 Sep 30 11:03 .
drwxr-xr-x  3 root  root  4096 Mar  2  2020 ..
-rw-----  1 miran miran   311 Sep 30 10:32 .bash_history
-rw-r--r--  1 miran miran   220 Mar  2  2020 .bash_logout
-rw-r--r--  1 miran miran  3771 Mar  2  2020 .bashrc
drwx----- 22 miran miran 4096 Mar 22  2020 .cache
drwx----- 24 miran miran 4096 Sep  4 01:53 .config
drwxr-xr-x  3 miran miran 4096 Sep 20 10:44 Desktop
drwxrwxrwx  4 miran miran 4096 Sep 30 11:02 Documents
drwxr-xr-x  2 miran miran 4096 Sep  3 20:24 Downloads
-rw-r--r--  1 miran miran 8980 Mar  2  2020 examples.desktop
drwx-----  3 miran miran 4096 Mar  2  2020 .gnome
drwx-----  3 miran miran 4096 Sep  6 20:46 .gnupg
-rw-----  1 miran miran 4070 Sep 30 10:14 .ICEauthority
drwxr-xr-x  8 miran miran 4096 Aug 13  2018 IntelliJ-16
drwxrwxr-x  2 miran miran 4096 Mar  2  2020 lab
drwxr-xr-x  2 miran miran 4096 Jul 23  2019 LicenceServer
drwx-----  3 miran miran 4096 Mar  2  2020 .local
lrwxrwxrwx  1 miran miran   13 Sep 30 11:03 Miran21 -> /home/Miran21
drwx-----  5 miran miran 4096 Mar  2  2020 .mozilla
drwxr-xr-x  2 miran miran 4096 Mar  2  2020 Music
-rw-r--r--  1 miran miran   310 Mar  2  2020 .pam_environment
drwxr-xr-x  2 miran miran 4096 Sep 30 11:04 Pictures
drwx-----  3 miran miran 4096 Mar  2  2020 .pki
-rw-r--r--  1 miran miran   807 Mar  2  2020 .profile
drwxr-xr-x  2 miran miran 4096 Mar  2  2020 Public
drwxr-xr-x  4 miran miran 4096 Mar 17  2020 snap
drwx-----  2 miran miran 4096 Sep  6 20:46 .ssh
-rw-r--r--  1 miran miran     0 Mar 17  2020 .sudo_as_admin_successful
drwxr-xr-x  2 miran miran 4096 Mar  2  2020 Templates
drwx-----  6 miran miran 4096 Mar  2  2020 .thunderbird
drwxr-xr-x  2 miran miran 4096 Mar  2  2020 Videos
miran@Miran-Inspiron-5570:~$
```

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:

In this lab I learn about the file operation and permission. There are different types of file operation and I did all in the terminal. And there are three types of permission and I also show in the terminal. The output is expected.