File permissions in Linux

Project description

This file consists of various commands related to file permissions in Linux.
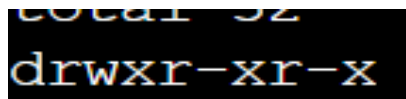
Check file and directory details

Use ls -la to display both hidden and non-hidden file details

OUTPUT

```
researcher2@892e3c1481be:~$ pwd
/home/researcher2
researcher2@892e3c1481be:~$ cd projects
researcher2@892e3c1481be:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jun  2 16:59 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun  2 17:44 ..
-rw--w---- 1 researcher2 research_team   46 Jun  2 16:59 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jun  2 16:59 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Jun  2 16:59 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jun  2 16:59 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun  2 16:59 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun  2 16:59 project_t.txt
researcher2@892e3c1481be:~/projects$
```

Describe the permissions string:

```
total 32
drwxr-xr-x
```

d - stands for directory if it is a file it is represented as "-".
 The next three characters represent the user's file permissions.
Here the user has read, write, and execute permissions.
Characters 5 to 7 represent the group's permissions.
Here the group has only read and execute permissions.
Characters 8 to 10 represent the owner type "other" permissions.
Here the owner type "other" has only read and execute permissions

If the permissions are unavailable for the owner it is represented in "-".

Change file permissions

For changing the permissions "chmod" command is used

```
-rw-rw-r-- 1 researcher2 research_team     46 Jun  2 16:59 project_
researcher2@892e3c1481be:~/projects$ chmod o-w project_k.txt
researcher2@892e3c1481be:~/projects$
```

Here the project_k.txt permission to write for the owner type "other" is being removed.

"-" is used to remove.

"+" is used to add .

Before the command:

```
drwx--x--  2 researcher2 research_team 4096 Jun  2 16:59 drafts
-rw-rw-rw- 1 researcher2 research_team     46 Jun  2 16:59 project_k.txt
```

After:

```
drwx--x--- 2 researcher2 research_team 4096 Jun  2 16:59 drafts
-rw-rw-r-- 1 researcher2 research_team     46 Jun  2 16:59 project_k.txt
```

Change file permissions on a hidden file

For changing the file permission on a hidden file, the syntax remains the same but we have to add "." before the file name.

```
researcher2@892e3c1481be:~/projects$ chmod g-w,u-w,g+r .project_x.txt
```

Change directory permissions

```
total 20
drwx--x--- 2 researcher2 research_team 4096 Jun  2 16:59 drafts
```

These are the permissions for the drafts directory.

```
researcher2@892e3c1481be:~/projects$ chmod g-x drafts
```

We have now used chmod command to remove the execute permission of the owner type "group"

```
drwx------ 2 researcher2 research_team 4096 Jun  2 16:59 drafts
```

Thus we have successfully enforced the permissions changes.

Summary

We have used commands such as

- chmod
- ls -l
- ls -la