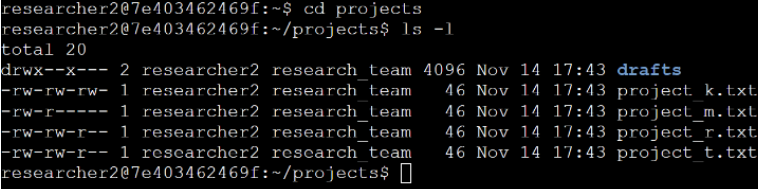# File permissions in Linux

Project description

Manage and modify file permissions and directory permissions. Focused on files within directory as well as hidden files.

Check file and directory details

cd projects
ls -l

```
researcher2@7e403462469f:~$ cd projects
researcher2@7e403462469f:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Nov 14 17:43 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Nov 14 17:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Nov 14 17:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_t.txt
researcher2@7e403462469f:~/projects$ 
```

Describe the permissions string

-rw-rw-rw- 1 researcher2 research_team   46 Nov 14 17:42 project_k.txt

(-): Indication of a regular file, not a directory or a link
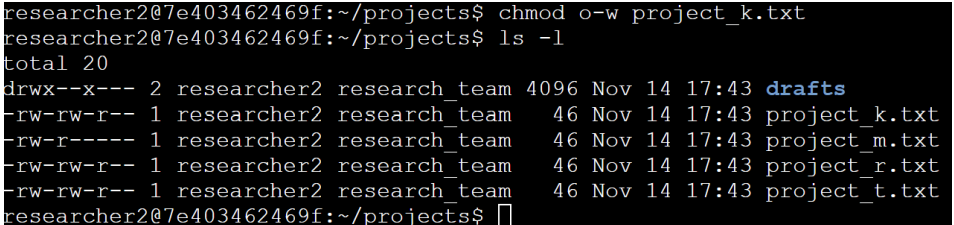(rw-): Owner can read and write but cannot execute
(rw-): Members can read and write but cannot execute
(rw-): Remaining users can read and write but cannot execute

Change file permissions

Chmod o-w project_k.txt
Removing write permission for all "others". Outside of the owner and group, users will only be allowed to read the file but will no longer be able to write

```
researcher2@7e403462469f:~/projects$ chmod o-w project_k.txt
researcher2@7e403462469f:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Nov 14 17:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Nov 14 17:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_t.txt
researcher2@7e403462469f:~/projects$ 
```

Change file permissions on a hidden file

(u-w): removes write permission from owner user

(g-w): removes write permission from group users

(g+r): adds read permission for users in files group

```
researcher2@7e403462469f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Nov 14 17:43 .
drwxr-xr-x 3 researcher2 research_team 4096 Nov 14 18:21 ..
-rw--w---- 1 researcher2 research_team   46 Nov 14 17:43 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Nov 14 17:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Nov 14 17:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_t.txt
researcher2@7e403462469f:~/projects$ chmod u-w,g-w,g+r .project_x.txt
researcher2@7e403462469f:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Nov 14 17:43 .
drwxr-xr-x 3 researcher2 research_team 4096 Nov 14 18:21 ..
-r--r----- 1 researcher2 research_team   46 Nov 14 17:43 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Nov 14 17:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Nov 14 17:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_t.txt
```

Change directory permissions

chmod g-x drafts: Removes execute permission for group to be able to get the directory labeled "drafts'

```
total 20
drwx--x--- 2 researcher2 research_team 4096 Nov 14 17:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Nov 14 17:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_t.txt
researcher2@7e403462469f:~/projects$ chmod g-x drafts
researcher2@7e403462469f:~/projects$ ls -l
total 20
drwx------ 2 researcher2 research_team 4096 Nov 14 17:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Nov 14 17:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Nov 14 17:43 project_t.txt
```

Summary

Overview of how different modifications can be made to directory and files. Below is identification of the information input into the command lines:

User (u)

Group (g)

Others (o)

Adding (+)

Removing (r)

Writing (w)

Executing (x)