File permissions in Linux

Project description

This lab demonstrated how to change file and directory permission using chmod

Check file and directory details

```
researcher2@4ea3e17c33fd:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Feb  2 10:20 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Feb  2 10:20 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Feb  2 10:20 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_t.txt
researcher2@4ea3e17c33fd:~/projects$
```

Describe the permissions string

Here we could take a long on file name project_k.txt with file permission of -rw-rw-rw-

The green means that it's a normal file, red indicates that user have Read and write access, orange for group have read and write, yellow for other have read and write

Change file permissions

```
researcher2@4ea3e17c33fd:~/projects$ chmod o-w project_k.txt
researcher2@4ea3e17c33fd:~/projects$ ls -al
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Feb  2 10:20 .
drwxr-xr-x 3 researcher2 research_team 4096 Feb  2 11:13 ..
-rw--w---- 1 researcher2 research_team   46 Feb  2 10:20 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Feb  2 10:20 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Feb  2 10:20 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_t.txt
```

To change the file permission of project_k.txt, you must use chmod o-w filename, remember that o is for others and -w means revoking write permission.

Change file permissions on a hidden file

First we must show the hidden files, this can be done by writing ls -al

```
researcher2@4ea3e17c33fd:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Feb  2 10:20 .
drwxr-xr-x 3 researcher2 research_team 4096 Feb  2 11:13 ..
-rw--w---- 1 researcher2 research_team   46 Feb  2 10:20 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Feb  2 10:20 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_k.txt
-rw------- 1 researcher2 research_team   46 Feb  2 10:20 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_t.txt
```

Then to change the file permission we can use this command

```
researcher2@4ea3e17c33fd:~/projects$ chmod u-w,g-w+r .project_x.txt
```

Here we are revoking user and group write permission while adding read to the group

```
researcher2@4ea3e17c33fd:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Feb  2 10:20 .
drwxr-xr-x 3 researcher2 research_team 4096 Feb  2 11:13 ..
-r--r----- 1 researcher2 research_team   46 Feb  2 10:20 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Feb  2 10:20 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_k.txt
-rw------- 1 researcher2 research_team   46 Feb  2 10:20 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_t.txt
researcher2@4ea3e17c33fd:~/projects$
```

Change directory permissions

Now to change the executable permission (x) we set the command chmod g-x to revoke the execute permission of group to the draft directory

```
researcher2@4ea3e17c33fd:~/projects$ chmod g-x drafts
researcher2@4ea3e17c33fd:~/projects$ ls -l
total 20
drwx------ 2 researcher2 research_team 4096 Feb  2 10:20 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_k.txt
-rw------- 1 researcher2 research_team   46 Feb  2 10:20 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Feb  2 10:20 project_t.txt
researcher2@4ea3e17c33fd:~/projects$
```

Summary

This lab taught learners how to list files, change file permission, change directory permission