File permissions in Linux

Project description

We are to modify the permissions and files and subdirectory of the entire `projects` directory in researcher2's home directory to confirm to specifications.

Check file and directory details

We `cd projects`, then `ls -al`

We found

```
drwxr-xr-x 3 researcher2 research_team 4096 Jun  2 17:28 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun  2 18:01 ..
-rw--w---- 1 researcher2 research_team   46 Jun  2 17:28
.project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jun  2 17:28 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Jun  2 17:28
project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jun  2 17:28
project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun  2 17:28
project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun  2 17:28
project_t.txt
```

Describe the permissions string

Permission string contains 10 characters

1st is directory (or not)

2nd through 4th are user permissions for read/write/execute (r/w/x respectively)

5th through 7th are group permissions for read/write/execute

8th through 10th are other permissions for read/write/execute

Change file permissions

We found some odd read and write permissions given to other files. We perform
`chmod o-w project_k.txt`

And removed any other people's ability to read project_k file as that's none of their business.

We also executed

`chmod g-r project_m.txt`

To remove the read permissions by group to the file as that's not a group project.

Change file permissions on a hidden file

The .project_x file is hidden, and should not be writable, yet readable by both user and group, so we execute

`chmod u-w,g-w+r .project_x.txt`

Change directory permissions

We note that `drafts` directory should be restricted to only the user, but isn't, so we removed the group permissions to execute, i.e. view the directory.

`chmod g-x drafts`

Summary

By the end, the `ls-al` output looked like this:

```
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jun  2 17:28 .
drwxr-xr-x 3 researcher2 research_team 4096 Jun  2 18:01 ..
-r--r----- 1 researcher2 research_team   46 Jun  2 17:28
.project_x.txt
drwx------ 2 researcher2 research_team 4096 Jun  2 17:28 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jun  2 17:28
project_k.txt
```

```
-rw------- 1 researcher2 research_team   46 Jun  2 17:28
project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun  2 17:28
project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jun  2 17:28
project_t.txt
```

All permissions has been updated satisfactorily.