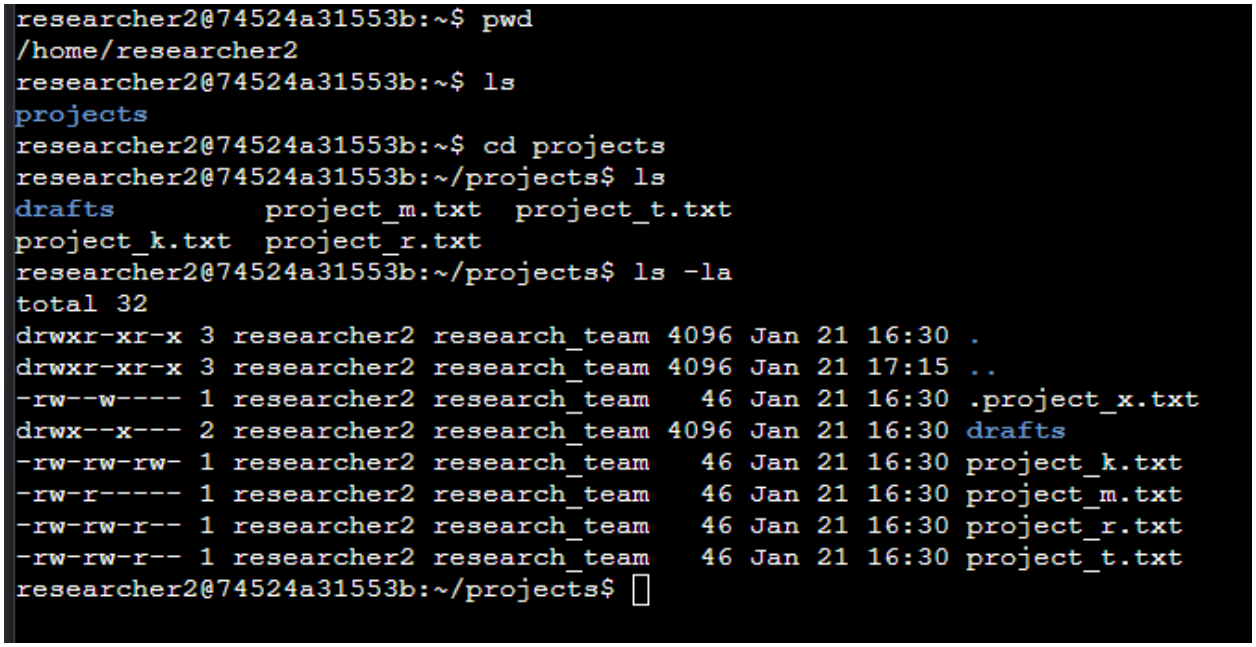
File permissions in Linux

Project description

This project makes me locate files in Linux and adjust permissions as required by the organization so that no one has access to files they shouldn't.

Check file and directory details

This is all of the files and hidden files located within the directory needing changes. This was found using the ls -la command.



Describe the permissions string

The permission string is represented as “drwxrwxrwx”. The d at the start represents the file type, so if it has a “d” it is a directory. If it is a hyphen instead, it is a file (e.g. -rwxrwxrwx). The first “rwx” represents the user (in this case researcher2), the second represents the “group” (research_team) and the third represents the “other”. These display the permissions that each type has, “r” being short for read, “w” being write and “x”being execute. Changing these values will affect the permissions that each group has.

Change file permissions

To change file permissions, the requirement here was to remove the “other” group from being able to write on file “project_k.txt”. To do this, I used the “chmod” command as seen at the top to remove the write ability for that group.

```
researcher2@74524a31553b:~/projects$ chmod o-w project_k.txt
researcher2@74524a31553b:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jan 21 16:30 .
drwxr-xr-x 3 researcher2 research_team 4096 Jan 21 17:15 ..
-rw--w---- 1 researcher2 research_team   46 Jan 21 16:30 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jan 21 16:30 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jan 21 16:30 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_t.txt
researcher2@74524a31553b:~/projects$
```

Change file permissions on a hidden file

For the hidden file, the requirements were that I remove all write permissions from the hidden file, which was “.project_x.txt”. The code at the top of the screenshot shows how this was done. Using the “=” sign overwrites any previous permissions so just having “r” means they can only read the file.

```
researcher2@74524a31553b:~/projects$ chmod u=r,g=r .project_x.txt
researcher2@74524a31553b:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jan 21 16:30 .
drwxr-xr-x 3 researcher2 research_team 4096 Jan 21 17:15 ..
-r--r----- 1 researcher2 research_team   46 Jan 21 16:30 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Jan 21 16:30 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jan 21 16:30 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_t.txt
researcher2@74524a31553b:~/projects$
```

Change directory permissions

Changing directory permissions just involves locating the directory within the file, either finding the blue text or noticing the “d” at the start of the permission list, and then modifying it like any other file. The requirement here was to remove the group’s ability to execute the directory, so that is what the code at the top does.

```
researcher2@74524a31553b:~/projects$ chmod g-x drafts
researcher2@74524a31553b:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Jan 21 16:30 .
drwxr-xr-x 3 researcher2 research_team 4096 Jan 21 17:15 ..
-r--r----- 1 researcher2 research_team   46 Jan 21 16:30 .project_x.txt
drwx------ 2 researcher2 research_team 4096 Jan 21 16:30 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Jan 21 16:30 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Jan 21 16:30 project_t.txt
researcher2@74524a31553b:~/projects$
```

Summary

This project taught me a lot about modifying permissions which I am sure will help me in my future career. I have also gained lots of Linux understanding from this and feel like I have a stronger ability to use it in a work environment.