File permissions in Linux

Project description

A research team at an organization is demanding to update the file permissions for certain files and directories within the projects directory. Because the current permissions are not currently reflective of the authorization that should be given, it is my job to make changes to the permissions. To complete this project, I performed the following tasks.

Check file and directory details

We used ls -la to display the permissions of the files and hidden files in the directory projects.to gain an understanding of the existing permissions set for this projects directory in the file system.

```
researcher2@5326379e3757:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Oct 31 18:03 .
drwxr-xr-x 3 researcher2 research_team 4096 Oct 31 19:12 ..
-rw--w---- 1 researcher2 research_team   46 Oct 31 18:03 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Oct 31 18:03 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Oct 31 18:03 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Oct 31 18:03 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Oct 31 18:03 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Oct 31 18:03 project_t.txt
```

Describe the permissions string

For example, the permissions indicated for file project_t indicate that the user researcher 2 has access to reading and writing in the file, the group they belong to research_team has access to reading and writing and the other group has access to just reading the file.
The first character represents the type of file. D would represent a directory and hyphen (-) represents a regular file.
Afterwards, the three following characters rw- represent the read,write and execute permissions in which hyphen (-) would represent no permission for execute.
The characters 2-4 represent the permissions for the user, characters 5-7 represent the permissions for the group and characters 8-10 represent the permissions for the other.

Change file permissions

The organization does not allow any users to have written permissions to any files.

To remove the permissions of write, I performed the following using chmod to change the permissions.

```
researcher2@5326379e3757:~/projects$ chmod u=r .project_x.txt
researcher2@5326379e3757:~/projects$ chmod u-w  drafts
researcher2@5326379e3757:~/projects$ chmod u-w,g-w,o-w project_k.txt
researcher2@5326379e3757:~/projects$ chmod u-w project_m.txt
researcher2@5326379e3757:~/projects$ chmod u-w,g-w project_r.txt
researcher2@5326379e3757:~/projects$ chmod u-w,g-w project_t.txt
```

The updated permissions are as follows:

```
researcher2@5326379e3757:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Oct 31 18:03 .
drwxr-xr-x 3 researcher2 research_team 4096 Oct 31 19:12 ..
-r---w---- 1 researcher2 research_team   46 Oct 31 18:03 .project_x.txt
dr-x--x--- 2 researcher2 research_team 4096 Oct 31 18:03 drafts
-r--r--r-- 1 researcher2 research_team   46 Oct 31 18:03 project_k.txt
-r--r----- 1 researcher2 research_team   46 Oct 31 18:03 project_m.txt
-r--r--r-- 1 researcher2 research_team   46 Oct 31 18:03 project_r.txt
-r--r--r-- 1 researcher2 research_team   46 Oct 31 18:03 project_t.txt
```

Change file permissions on a hidden file

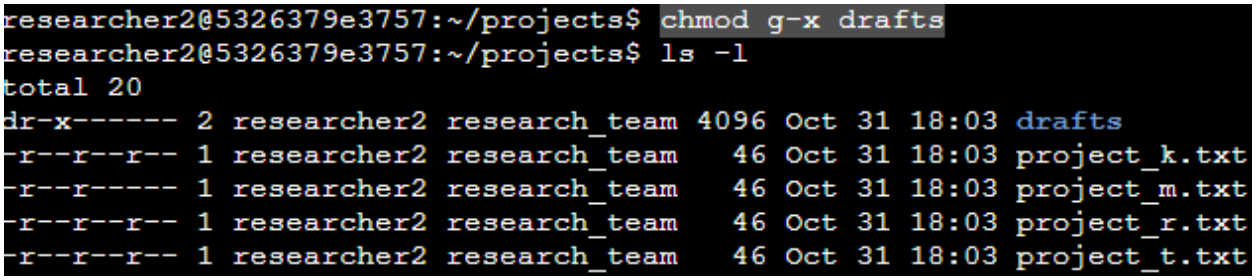
Removed permissions to the hidden file

```
researcher2@5326379e3757:~/projects$ chmod g=r .project_x.txt
```

```
researcher2@5326379e3757:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Oct 31 18:03 .
drwxr-xr-x 3 researcher2 research_team 4096 Oct 31 19:12 ..
-r--r----- 1 researcher2 research_team   46 Oct 31 18:03 .project_x.txt
dr-x--x--- 2 researcher2 research_team 4096 Oct 31 18:03 drafts
-r--r--r-- 1 researcher2 research_team   46 Oct 31 18:03 project_k.txt
-r--r----- 1 researcher2 research_team   46 Oct 31 18:03 project_m.txt
-r--r--r-- 1 researcher2 research_team   46 Oct 31 18:03 project_r.txt
-r--r--r-- 1 researcher2 research_team   46 Oct 31 18:03 project_t.txt
```

Change directory permissions

The organization only wants the reseracher2 user to have access to the drafts directory and its contents. No one other than reseracher2 should have execute permissions. The following code demonstrates how I used Linux commands to change the permissions:



Summary

I change the permissions to match the level of authorization and security needed by the organization for files and directories in the projects directory. By using commands such as ls -la and chmod to check permissions in the directory by modifying permissions from user, group and other.