File permissions in Linux

Project description

Multiple permissions will need to be changed in files, hidden files and directories in /home/researcher2/projects directory

Check file and directory details

```
researcher2@99f11ad5e75b:~$ ls -la /home/researcher2/projects
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 05:43 .
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 06:47 ..
-rw--w---- 1 researcher2 research_team   46 Mar  6 05:43 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Mar  6 05:43 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Mar  6 05:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Mar  6 05:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_t.txt
researcher2@99f11ad5e75b:~$ 
```

ls -la command was used on /home/researcher2/projects to display files, hidden files, and directories in the projects directory

Describe the permissions string

The permission string shows that the directories (d) all have user with read write and execute permissions (rwx) and differing permissions from there. Files have specified permissions, for example hidden file .project_x.txt shows its a file with the permission string starting with a - then user permission at rw-, which translates to read and write, group permission at -w-, so write only and other at —, which means other has no permissions

Change file permissions

```
researcher2@99f11ad5e75b:~$ cd /home/researcher2/projects
researcher2@99f11ad5e75b:~/projects$ chmod o-w project_k.txt
researcher2@99f11ad5e75b:~/projects$ ls -la /home/researcher2/projects
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 05:43 .
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 06:47 ..
-rw--w---- 1 researcher2 research_team   46 Mar  6 05:43 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Mar  6 05:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Mar  6 05:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_t.txt
researcher2@99f11ad5e75b:~/projects$ 
```

cd command was used to navigate to the projects directory. Then chmod command was used to change permissions on project_k.txt . Other write permission was removed. Permission string now set to -rw-rw-r–

Change file permissions on a hidden file

```
researcher2@99f11ad5e75b:~/projects$ chmod u-w,g=r .project_x.txt
researcher2@99f11ad5e75b:~/projects$ ls -la /home/researcher2/projects
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 05:43 .
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 06:47 ..
-r--r----- 1 researcher2 research_team   46 Mar  6 05:43 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Mar  6 05:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_k.txt
-rw------- 1 researcher2 research_team   46 Mar  6 05:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_t.txt
researcher2@99f11ad5e75b:~/projects$ 
```

Chmod command was used to change permissions on hidden file .project_x.txt . write permission for user was removed. Group permissions previously only included write and neede to be changed to read only so I elected to assign group permissions to read only instead of removing write and adding read. Permission string now set to -r–r—--

Change directory permissions

```
researcher2@99f11ad5e75b:~/projects$ chmod g-x drafts
researcher2@99f11ad5e75b:~/projects$ ls -la /home/researcher2/projects
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 05:43 .
drwxr-xr-x 3 researcher2 research_team 4096 Mar  6 06:47 ..
-r--r----- 1 researcher2 research_team   46 Mar  6 05:43 .project_x.txt
drwx------ 2 researcher2 research_team 4096 Mar  6 05:43 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_k.txt
-rw------- 1 researcher2 research_team   46 Mar  6 05:43 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Mar  6 05:43 project_t.txt
researcher2@99f11ad5e75b:~/projects$
```

chmod command was used to remove execute permission from group on drafts directory.
Permission string for drafts directory now drwx—----

Summary

Multiple permissions were changed on files, hidden files, and directories using chmod
command and ls -la command to show proof that the proper changes were made to each file
and directory by checking each permission string.