File permissions in Linux

Project description

You are a security professional at a large organization. You mainly work with their research team. Part of your job is to ensure users on this team are authorized with the appropriate permissions. This helps keep the system secure. Your task is to examine existing permissions on the file system. You'll need to determine if the permissions match the authorization that should be given. If they do not match, you'll need to modify the permissions to authorize the appropriate users and remove any unauthorized access.

Check file and directory details

Use this command: ls -la , this displays permission to the files and directories including hidden files.

```
researcher2@697cc2bb3c25:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Aug  4 23:50 .
drwxr-xr-x 3 researcher2 research_team 4096 Aug  5 00:00 ..
-rw--w---- 1 researcher2 research_team   46 Aug  4 23:50 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Aug  4 23:50 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Aug  4 23:50 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Aug  4 23:50 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug  4 23:50 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug  4 23:50 project_t.txt
researcher2@697cc2bb3c25:~/projects$
```

Describe the permissions string

The file permissions are represented by a 10 character string. In this example, drafts , 10 character string means; d, it is a directory, user has read, write and execute permissions; group has execute permissions and other has not been granted any permissions.

Change file permissions

I used the chmod command to remove the execute permission from the other owner type in the project_k.txt file. Then I used ls -la to make sure the permissions were changed.

```
researcher2@697cc2bb3c25:~/projects$ chmod o-w project_k.txt
researcher2@697cc2bb3c25:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Aug  4 23:50 .
drwxr-xr-x 3 researcher2 research_team 4096 Aug  5 00:00 ..
-rw--w---- 1 researcher2 research_team   46 Aug  4 23:50 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Aug  4 23:50 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Aug  4 23:50 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Aug  4 23:50 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug  4 23:50 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Aug  4 23:50 project_t.txt
researcher2@697cc2bb3c25:~/projects$
```

Change file permissions on a hidden file
I used the chmod command again to change the user permission by taking away the write permission and the changing group to read only. This makes it so both groups only have read permissions.

```
researcher2@697cc2bb3c25:~/projects$ chmod u-w, g=r .project_x.txt
```

Change directory permissions
I used chmod command again to take away the group execute permissions making it so only researcher 2 user has the ability to access the draft directory and its content.

```
researcher2@697cc2bb3c25:~/projects$ chmod g-x drafts
```

Summary
This task has given me practical experience in using Basic LINUX Bash Shell commands to examine file and directory permissions, change permissions on files and change permissions on directories.