Activity: Manage authorization

Scenario

In this scenario, you must examine and manage the permissions on the files in the /home/researcher2/projects directory for the researcher2 user.

The researcher2 user is part of the research_team group.

You must check the permissions for all files in the directory, including any hidden files, to make sure that permissions align with the authorization that should be given. When it doesn't, you must change the permissions.

Here's how you'll do this task: **First**, you'll check the user and group permissions for all files in the projects directory. **Next**, you'll check whether any files have incorrect permissions and change the permissions as needed. **Finally**, you'll check the permissions of the /home/researcher2/projects/drafts directory and modify these permissions to remove any unauthorized access.

Task 1. Check file and directory details

1. Navigate to the **projects** directory.
2. List the contents and permissions of the **projects** directory.

```
researcher2@2a21847d23c6:~$ cd projects
researcher2@2a21847d23c6:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Dec  7 10:56 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Dec  7 10:56 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Dec  7 10:56 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_t.txt
```

3. Check whether any **hidden files** exist in the projects directory.

```
researcher2@2a21847d23c6:~/projects$ ls -a
.   .project_x.txt  project_k.txt  project_r.txt
..  drafts          project_m.txt  project_t.txt
```

Task 2. Change file permissions

1. Check whether any files in the projects directory have write permissions for the owner type of other.

```
researcher2@2a21847d23c6:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Dec  7 10:56 drafts
-rw-rw-rw- 1 researcher2 research_team   46 Dec  7 10:56 project_k.txt
-rw-r----- 1 researcher2 research_team   46 Dec  7 10:56 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_t.txt
```

2. Change the permissions of the file (**project_k.txt**) identified in the previous step so that the owner type of other doesn't have write permissions.

```
researcher2@2a21847d23c6:~/projects$ chmod o-w project_k.txt
```

3. The file **project_m.txt** is a restricted file and should not be readable or writable by the group or other; only the user should have these permissions on this file. List the contents and permissions of the current directory and check if the group has read or write permissions.

4. Use the **chmod** command to change permissions of the **project_m.txt** file so that the group doesn't have read or write permissions.

```
researcher2@2a21847d23c6:~/projects$ chmod g-r project_m.txt
researcher2@2a21847d23c6:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Dec  7 10:56 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_k.txt
-rw------- 1 researcher2 research_team   46 Dec  7 10:56 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_t.txt
```

Task 3. Change file permissions on a hidden file

1. Check the permissions of the hidden file **.project_x.txt** and answer the question that follows.

```
researcher2@2a21847d23c6:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Dec  7 10:56 .
drwxr-xr-x 3 researcher2 research_team 4096 Dec  7 11:23 ..
-rw--w---- 1 researcher2 research_team   46 Dec  7 10:56 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Dec  7 10:56 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_k.txt
-rw------- 1 researcher2 research_team   46 Dec  7 10:56 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_t.txt
```

2. Change the permissions of the file **.project_x.txt** so that both the user and the group can read, but not write to, the file.

```
researcher2@2a21847d23c6:~/projects$ chmod u-w,g-w,g+r .project_x.txt
researcher2@2a21847d23c6:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Dec  7 10:56 .
drwxr-xr-x 3 researcher2 research_team 4096 Dec  7 11:23 ..
-r--r----- 1 researcher2 research_team   46 Dec  7 10:56 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Dec  7 10:56 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_k.txt
-rw------- 1 researcher2 research_team   46 Dec  7 10:56 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_t.txt
```

Task 4. Change directory permissions

1. Check the permissions of the drafts directory and answer the following question.

```
researcher2@2a21847d23c6:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Dec  7 10:56 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_k.txt
-rw------- 1 researcher2 research_team   46 Dec  7 10:56 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_t.txt
```

2. Remove the execute permission for the group from the drafts directory.

```
researcher2@2a21847d23c6:~/projects$ chmod g-x drafts
researcher2@2a21847d23c6:~/projects$ ls -l
total 20
drwx------ 2 researcher2 research_team 4096 Dec  7 10:56 drafts
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_k.txt
-rw------- 1 researcher2 research_team   46 Dec  7 10:56 project_m.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_r.txt
-rw-rw-r-- 1 researcher2 research_team   46 Dec  7 10:56 project_t.txt
```