Manage authorization

Project Description

In this activity, I used Linux commands to check and modify file permissions in the projects directory. I ensured that the permissions matched the authorization that should be given, and I removed any unauthorized access.

Current file permissions

This document displays the file structure of the `/home/researcher2/projects` directory and the permissions of the files and subdirectory it contains.

In the `/home/researcher2/projects` directory, there are five files with the following names and permissions:

- `project_k.txt`
  - User = read, write,
  - Group = read, write
  - Other = read, write
- `project_m.txt`
  - User = read, write
  - Group = read
  - Other = none
- `project_r.txt`
  - User= read, write
  - Group = read, write
  - Other = read
- `project_t.txt`

    - User = read, write
    - Group = read, write
    - Other = read
- `.project_x.txt`
    - User = read, write
    - Group = write
    - Other = none

There is also one subdirectory inside the `projects` directory named `drafts`. The permissions on `drafts` are:

- User = read, write, execute
- Group = execute
- Other = none

1- Check file and directory details

In this step, I used Linux commands to 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. I checked 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.

1. I navigated to the `projects` directory.

The command to complete this step:

```
cd projects
```

2. I listed the contents and permissions of the `projects` directory.

The command to complete this step:

```
ls -l
```

The permissions of the files in the `projects` directory are as follows:

```
total 20
drwx--x--- 2 researcher2 research_team 4096 Oct 14 18:40 drafts
-rw-rw-rw- 1 researcher2 research_team  46 Oct 14 18:40 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Oct 14 18:40 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Oct 14 18:40 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Oct 14 18:40 project_t.txt
```

2. Change file permissions

I determined whether any files have incorrect permissions and then changed the permissions as needed. This action removed unauthorized access and strengthened security on the system.

1. I Checked whether any files in the `projects` directory have write permissions for the owner type of others.

The command to complete this step:

```
ls -l
```

2. I Change the permissions of the file identified in the previous step so that the owner type of other doesn't have write permissions.

The command to complete this step:

```
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.

The command to complete this step:

```
ls -l
```

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

The command to complete this step:

```
chmod g-r project_m.txt
```

3. Change file permissions on a hidden file

In this step, I determine if a hidden file has incorrect permissions and then change the permissions as needed. This action will further remove unauthorized access and strengthen security on the system.

1. I checked the permissions of the hidden file `.project_x.txt` and answered the question that follows.

The command to complete this step:

```
ls -la
```

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.

The command to complete this step:

```
chmod u-w,g-w,g+r .project_x.txt
```

4. Change directory permissions

In this step, I changed the permissions of a directory. First, l checked the group permissions of the `/home/researcher2/projects/drafts` directory and then modified the permissions as required.

1- I checked the permissions of the `drafts` directory.

The command to complete this step:

```
ls -l
```

2. I remove the execute permission for the group from the `drafts` directory.

The command to complete this step:

```
chmod g-x drafts
```

Summary

In this activity, I used Linux commands to check and modify file permissions in the projects directory. I ensured that the permissions matched the authorization that should be given, and I removed any unauthorized access.

I used the `ls -la` command to check the permissions for files and directories. I used the `chmod` command to change the permissions for files and directories. I interpreted the 10-character string that represents file permissions. I am confident that I can use Linux commands to manage file permissions effectively.