File permissions in Linux

Project description

In this project, I will do a demonstration on what I learned about Linux commands in this course. I will show you how to navigate, check, and change permissions of directories and files in this demonstration.

Check file and directory details

```
$ cd projects
$ ls -la
```

- `project_k.txt`
  - `-rw-rw-rw-`
- `project_m.txt`
  - `-rw-r-----`
- `project_r.txt`
  - `-rw-rw-r--`
- `project_t.txt`
  - `-rw-rw-r--`
- `.project_x.txt`
  - `-rw--w----`

I navigated to the /projects directory, and used ls -la to check the permissions of the directories and files in this directory.

Describe the permissions string

In the example output above, I will explain the `project_k.txt` file with permissions `-rw-rw-rw-`.

The `project_k.txt` file is followed with a 10-character string that summarizes the permissions of the file. It follows a format of `drwxrwxrwx`.

The first character of the string is `-`, which explains it is a file. If a `d` is in its place, it will be a directory. 3 `rwx` follows after, which explain the read, write, and execution permissions of the user, group, and others respectively. A hyphen in any letter's place explains that the permission is not given.

All users, groups, and others respectively have the permission to read and write in this scenario. However, they cannot execute the file (this is likely due to the fact `.txt` files cannot be executed). Therefore, all permissions are granted to all owners.

Change file permissions

Since my organization does not want any write permissions from owners of the files, I must remove them.

```
$ chmod u-w, g-w, o-w project_k.txt
$ chmod u-w project_m.txt
$ chmod u-w, g-w project_r.txt
$ chmod u-w, g-w project_t.txt
```

By running these commands, all files and directories will have their write permissions removed. This should oblige to the organization's standards.

Change file permissions on a hidden file

```
$ chmod u-w, g-w .project_x.txt
```

Hidden files are as they sound, you cannot find them normally. However, by entering either `ls -a` or `ls-la`, you will be able to view hidden files as well.

Change directory permissions

```
$ cd drafts
$ ls -la
```

- `drafts`
    - `drwx--x—`

```
$ chmod g-x drafts
```

My organization states that they only want the user (`researcher2`) to have access to the `draft` directory. Using the commands above, I have removed the permission of the group to execute the directory. This will limit all the permissions to the user only now.

Summary

I demonstrated my understanding of Linux command prompts through these examples. I navigated, checked, and changed permissions of files and directories based on what my organization requests of me.