

File permissions in Linux

Project description

The team noticed we need to edit the permissions for the user researcher2. Using bash shell commands we can accomplish this.

Check file and directory details

```
researcher2@4bfd6c8149be:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Feb 21 20:57 .
drwxr-xr-x 3 researcher2 research_team 4096 Feb 21 21:58 ..
-rw--w---- 1 researcher2 research_team  46 Feb 21 20:57 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Feb 21 20:57 drafts
-rw-rw-rw- 1 researcher2 research_team  46 Feb 21 20:57 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Feb 21 20:57 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_t.txt
researcher2@4bfd6c8149be:~/projects$
```

Using the following commands we can see what permissions researcher2 has to all projects, even if the files are hidden.

Describe the permissions string

The first character in the permissions will either be `d` for directory or `-` if it is a file.

The second, third and fourth characters will either be `r w x` in that order or individually replaced with a `-` to indicate if the user has read, write, and/or execute permissions.

The fifth, sixth, and seventh will have the same indicators for permissions in the same order but displays the groups permissions.

Lastly, the eighth, ninth, and tenth characters will have the same indicators as well, but for the owner.

Change file permissions

```
researcher2@4bfd6c8149be:~/projects$ chmod o-w project_k.txt
researcher2@4bfd6c8149be:~/projects$ ls -l
total 20
drwx--x--- 2 researcher2 research_team 4096 Feb 21 20:57 drafts
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Feb 21 20:57 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_t.txt
researcher2@4bfd6c8149be:~/projects$
```

The team decided to remove write permissions for the owner for project_k.txt.

Change file permissions on a hidden file

```
researcher2@4bfd6c8149be:~/projects$ chmod u-w,g-w,g+r .project_x.txt
researcher2@4bfd6c8149be:~/projects$ ls -la
total 32
drwxr-xr-x 3 researcher2 research_team 4096 Feb 21 20:57 .
drwxr-xr-x 3 researcher2 research_team 4096 Feb 21 21:58 ..
-r--r----- 1 researcher2 research_team  46 Feb 21 20:57 .project_x.txt
drwx--x--- 2 researcher2 research_team 4096 Feb 21 20:57 drafts
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Feb 21 20:57 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_t.txt
researcher2@4bfd6c8149be:~/projects$ █
```

The team also decided to remove user and group write permissions, and add read permissions to group for the hidden file project_x.txt.

Change directory permissions

```
researcher2@4bfd6c8149be:~/projects$ chmod g-x drafts
researcher2@4bfd6c8149be:~/projects$ ls -l
total 20
drwx----- 2 researcher2 research_team 4096 Feb 21 20:57 drafts
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_k.txt
-rw-r----- 1 researcher2 research_team  46 Feb 21 20:57 project_m.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_r.txt
-rw-rw-r-- 1 researcher2 research_team  46 Feb 21 20:57 project_t.txt
researcher2@4bfd6c8149be:~/projects$ █
```

Using the following command we are able to remove the execute function for the group for the `drafts` directory.

Summary

I changed numerous permissions in the `projects` directory using `chmod` and ensuring they were done properly by using `ls -la` to display permissions for the directory.