# File permissions in Linux

## Project description

In this scenario, I am tasked to examine and modify file and directory permissions on a Linux system to ensure the authorization of users that aligns with the organization's security policies. The main objective is to review and adjust permissions to enhance the security of the file system.

## Describe the permissions string

To check the file and directory permissions, I will use the ls -la command. This type of command will show us a detailed list of files and directory and the permissions.

Each character in the 10-character string conveys different information about these permissions. The following table describes the purpose of each character:

* First character:
  + d for directory,
  + - for a regular file
* Characters 2-4 represent the user's permissions (read, write, and execute).
* Characters 5-7 represent the group's permissions (read, write, and execute).
* Characters 8-10 represent others' permissions (read, write, and execute).

Example: d r w x r w - r- - means

* signifies a directory with read, write, and execute permissions for the user, and read and write permissions for the group and only read permissions for the other.

## Change file permissions

Need to remove other write permission using chmod command at file project\_k.txt.

chmod o-w /home/researcher2/projects/project\_k.txt

## Change file permissions on a hidden file

The research team has archived **.project\_x.txt**, which is why it’s a hidden file. This file should not have write permissions for anyone, but the user and group should be able to read the file.

chmod u-w,g+r,g-w /home/researcher2/projects/.project\_x.txt

## Change directory permissions

The files and directories in the projects directory belong to the **researcher2** user. Only **researcher2** should be allowed to access the **drafts** directory and its contents.

chmod g-x /home/researcher2/projects/drafts

## Summary

I have changed multiple permissions to match the level of authorization that has been approved by the company for files and directories in the project directory.

* First we can use ls -la to get the detail of permission of the directories
* Then using this information we can choose which permissions at files or directories need to be changed using the chmod command.