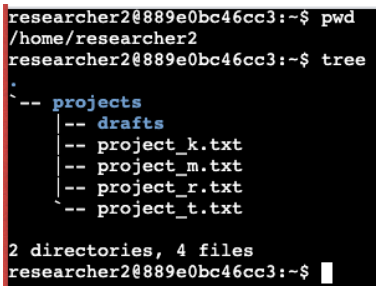
File permissions in Linux

Project description

This project involves examining and modifying file and directory permissions within the /home/researcher2 directory. It begins by identifying the current working directory with pwd and listing its contents with tree. The project explores the structure of file permissions using ls -la, detailing how permissions are assigned to the user, group, and others. It then demonstrates how to adjust these permissions using chmod, specifically setting group permissions to read-only for .txt files, and explains the process for directories and hidden files.

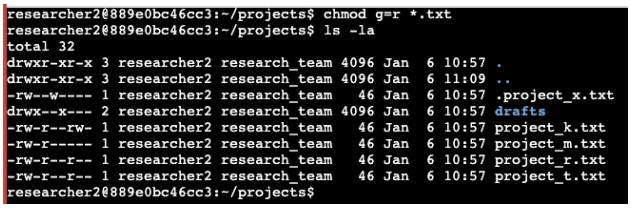
Check file and directory details

To start this project we need to locate where we are and the file we are going to work with. First we execute the command pwd to see the path of the working directory and then we tree the /home/researcher2 subfolder to see the files on it.



Describe the permissions string

Executing the command ls -la list the files on the directory and output the hidden files and folders on the directory.
The permissions string is composed of 4 groupings. The first letter (a solo group), refers if the item is a file (-) or a directory (d). The second grouping composed by the 3 following letters or hyphens is the permissions (r= read, w=write, x=execute, - no permission) that the user (researcher2) has. The following group refers to permissions (r, w, x) of the group (research_team). The last 3 spaces are for the “others” users on the machine.

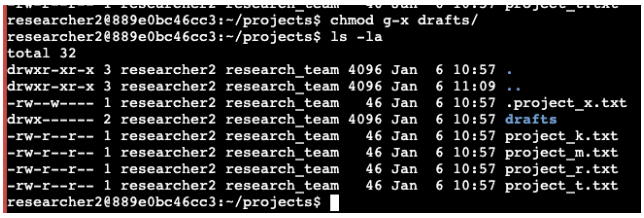


Change file permissions

Permissions can be changed with the chmod command. The command expects 2 arguments the first argument set the permissions and the second argument sets the file or files to alter. In the image bellow chmod g=r *.txt the command sets the group permissions to only read (g=r) every text file (*.txt) on the folder. Note: Hidden files are not affected with this command.

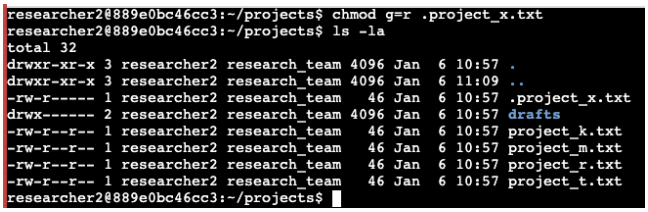
Change directory permissions

To change directories permissions we use the same method as above to, instead of using a file or files as the second argument we use just the directory name and execute the command with the same syntax.



Change file permissions on a hidden file

To change permissions on an hidden file the command chmod g=r *.txt does not work, thus we need to chmod g=r .hidden_file.txt directly to change its permissions.



Summary

This project examines the file structure and permissions within the /home/researcher2/projects directory. It lists five files (project_k.txt, project_m.txt, project_r.txt, project_t.txt, .project_x.txt) with varying permissions for user, group, and others, ranging from read, write, to execute. Additionally, there is a subdirectory named drafts with permissions set to read, write, and execute for the user and group, but none for others. The document provides a detailed overview of how permissions are assigned, highlighting the differences in access rights for different users and groups.