Linux File Permissions Management Portfolio Document

Project Description
In this project, I acted as a security specialist working with a research team, reviewing and adjusting user access permissions on the Linux file system. The goal was to ensure sensitive data could only be viewed and modified by authorized users and to maintain system security.

1. Check File and Directory Details
Command Used:
ls -la /home/research/projects
Description:
This command lists all files and directories (including hidden ones) in long format within the projects direc
Example Command Output:
-rw-r--r-- 1 researcher2 research 2048 Apr 30 11:25 public_notes.txt
-rw-rw-r-- 1 researcher2 research 1024 Apr 30 11:27 draft1.txt
-rw-rw-r-- 1 researcher2 research 1024 Apr 30 11:28 .project_x.txt
drwx------ 2 researcher2 research 4096 Apr 30 11:30 drafts/

2. Explanation of Permission String
Example String: -rw-r--r--
Explanation:
- `-`: This is a regular file.
- `rw-`: The owner can read and write.
- `r--`: The group can only read.
- `r--`: Others can only read.

3. Modify Permissions
Problem: The file public_notes.txt allows write access for others.
Solution Command: chmod o-w /home/research/projects/public_notes.txt
Explanation:
This command removes write permissions for 'others'.

4. Adjust Hidden File Permissions
File: .project_x.txt
Target Permissions:
- Only the user and group should be able to read the file.
- No write access for anyone.
Command: chmod 440 /home/research/projects/.project_x.txt
Explanation: 440 → grants read permissions to user and group, none for others.

5. Change Directory Permissions
Directory: drafts/
Requirement: Only researcher2 should have access.
Command: chmod 700 /home/research/projects/drafts
Explanation: 700 → only the owner can read, write, and enter the directory. Others have no permissions.

Summary
In this project, I used Linux command-line tools to inspect and adjust file permissions.
With commands like ls -la and chmod, I improved the security of files and directories.
By setting specific permissions for hidden files, public files, and user-specific directories,
I ensured protection against unauthorized access within the system.