Scenario

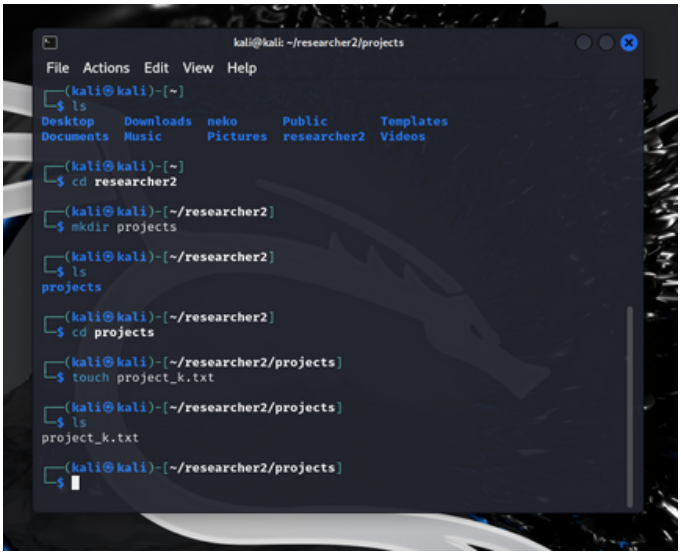
Review the scenario below. Then, complete the step-by-step instructions.
You are a security professional at a large organization. You mainly work with their research team. Part of your job is to ensure users on this team are authorized with the appropriate permissions. This helps keep the system secure.
Your task is to examine existing permissions on the file system. You'll need to determine if the permissions match the authorization that should be given. If they do not match, you'll need to modify the permissions to authorize the appropriate users and remove any unauthorized access.

1. **Project description**
   a. In this project, I worked as a security professional ensuring that users in a research team had the appropriate file and directory permissions. The objective was to analyze existing permissions, modify incorrect settings, and enforce proper authorization policies to maintain security in the file system
2. **Check File and Directory Details**
   a. To check file and directory permissions, I used the following command:
   b. ls -la
   c. This command lists all files, including hidden ones, along with their permissions. The output contains a 10-character string representing the permissions of each file or directory.
3. **Describe the Permissions String**
   a. Example output:
   b. $~ drwxrwxr-x 2 kali kali 4096 Feb 26 15:48 drafts
   c. The first character represents the type:
   d. "-" means a regular file
   e. "d" means a directory
   f. The next nine characters are grouped in sets of three:
   g. rwx (owner: kali) – read, write and execute permissions
   h. rwx (group: researchgroup) – read, write and execute permissions
   i. r-x (others) – read and execute permissions
4. **Change File Permissions/Change Directory Permissions**
   a. To remove write access from others, I used:
   b. $ chmod g-wx,o-x drafts
   c. Now, others can only read the file. Verification using ls -la showed:
   d. drwxr--r-- 2 kali kali 4096 Feb 26 15:48 drafts
5. **Change File Permissions on a Hidden File**
   a. For .project_x.txt, which should only be readable by the user and group, I used:
   b. chmod 440 .project_x.txt
   c. Verification:
   d. -r--r----- 1 researcher2 researchgroup 1024 Feb 26 10:05 .project_x.txt
6. **Summary**
   a. In this project, I examined and modified file and directory permissions to align with security policies. I ensured that unauthorized users could not modify or access sensitive files. Using ls -la, I analyzed existing permissions, described permission strings, and applied chmod commands to enforce security. This process enhances file system integrity and restricts access to authorized users only.

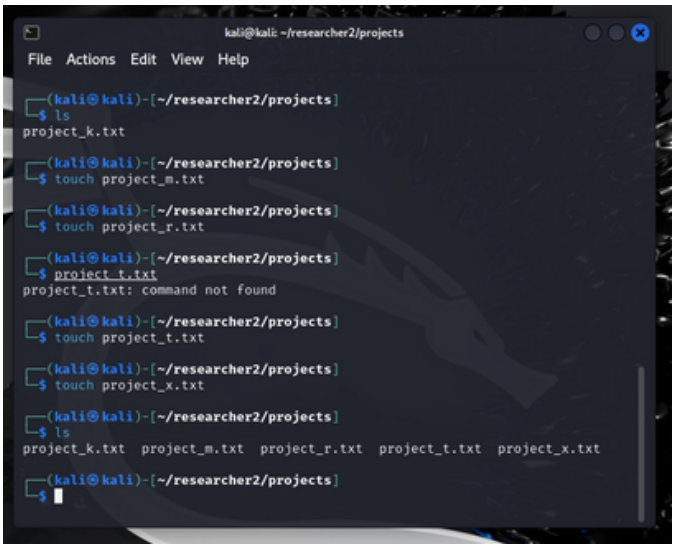
1


kali@kali: ~
File Actions Edit View Help
(kali㉿kali)-[/home]
$ ls -l
total 4
drwx------ 17 kali kali 4096 Feb 26 15:34 kali
(kali㉿kali)-[/home]
$ ls
kali
(kali㉿kali)-[/home]
$ cd kali
(kali㉿kali)-[~]
$ mkdir researcher2
(kali㉿kali)-[~]
$ pwd
/home/kali
(kali㉿kali)-[~]
$ ls
Desktop Downloads neko Public Templates
Documents Music Pictures researcher2 Videos
(kali㉿kali)-[~]
$

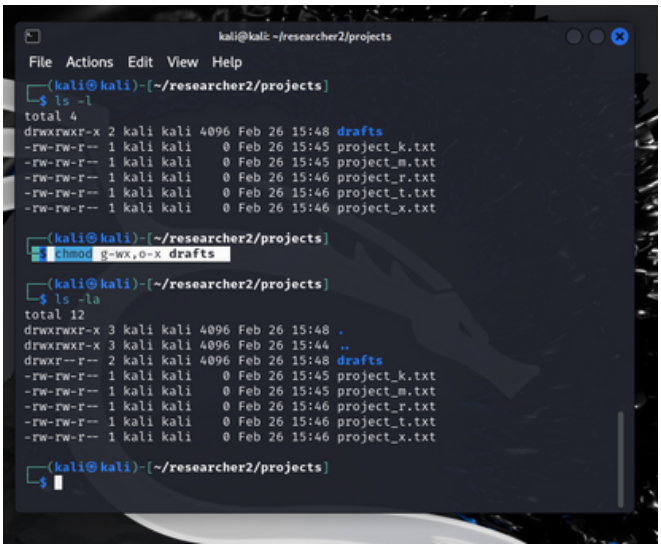
2


kali@kali: ~/researcher2/projects
File Actions Edit View Help
(kali㉿kali)-[~]
$ ls
Desktop Downloads neko Public Templates
Documents Music Pictures researcher2 Videos
(kali㉿kali)-[~]
$ cd researcher2
(kali㉿kali)-[~/researcher2]
$ mkdir projects
(kali㉿kali)-[~/researcher2]
$ ls
projects
(kali㉿kali)-[~/researcher2]
$ cd projects
(kali㉿kali)-[~/researcher2/projects]
$ touch project_k.txt
(kali㉿kali)-[~/researcher2/projects]
$ ls
project_k.txt
(kali㉿kali)-[~/researcher2/projects]
$

3


kali@kali: ~/researcher2/projects
File Actions Edit View Help
(kali㉿kali)-[~/researcher2/projects]
$ ls
project_k.txt
(kali㉿kali)-[~/researcher2/projects]
$ touch project_m.txt
(kali㉿kali)-[~/researcher2/projects]
$ touch project_r.txt
(kali㉿kali)-[~/researcher2/projects]
$ project_t.txt
project_t.txt: command not found
(kali㉿kali)-[~/researcher2/projects]
$ touch project_t.txt
(kali㉿kali)-[~/researcher2/projects]
$ touch project_x.txt
(kali㉿kali)-[~/researcher2/projects]
$ ls
project_k.txt project_m.txt project_r.txt project_t.txt project_x.txt
(kali㉿kali)-[~/researcher2/projects]
$

4


kali@kali: ~/researcher2/projects
File Actions Edit View Help
(kali㉿kali)-[~/researcher2/projects]
$ ls -l
total 4
drwxrwxr-x 2 kali kali 4096 Feb 26 15:48 drafts
-rw-rw-r-- 1 kali kali 0 Feb 26 15:45 project_k.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:45 project_m.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:46 project_r.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:46 project_t.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:46 project_x.txt
(kali㉿kali)-[~/researcher2/projects]
$ chmod g-wx,o-x drafts
(kali㉿kali)-[~/researcher2/projects]
$ ls -la
total 12
drwxrwxr-x 3 kali kali 4096 Feb 26 15:48 .
drwxrwxr-x 3 kali kali 4096 Feb 26 15:44 ..
drwxr--r-- 2 kali kali 4096 Feb 26 15:48 drafts
-rw-rw-r-- 1 kali kali 0 Feb 26 15:45 project_k.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:45 project_m.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:46 project_r.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:46 project_t.txt
-rw-rw-r-- 1 kali kali 0 Feb 26 15:46 project_x.txt
(kali㉿kali)-[~/researcher2/projects]
$