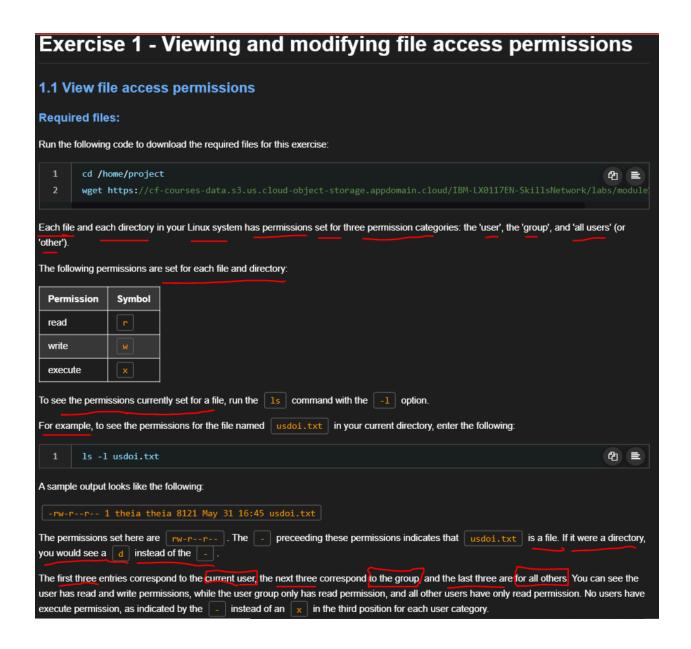
## Hands-on Lab: Access Control Commands

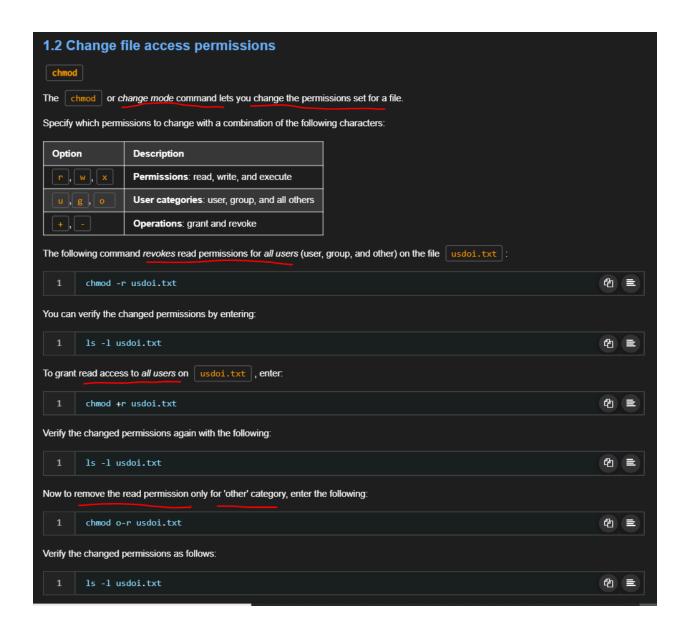


## **Learning Objectives**

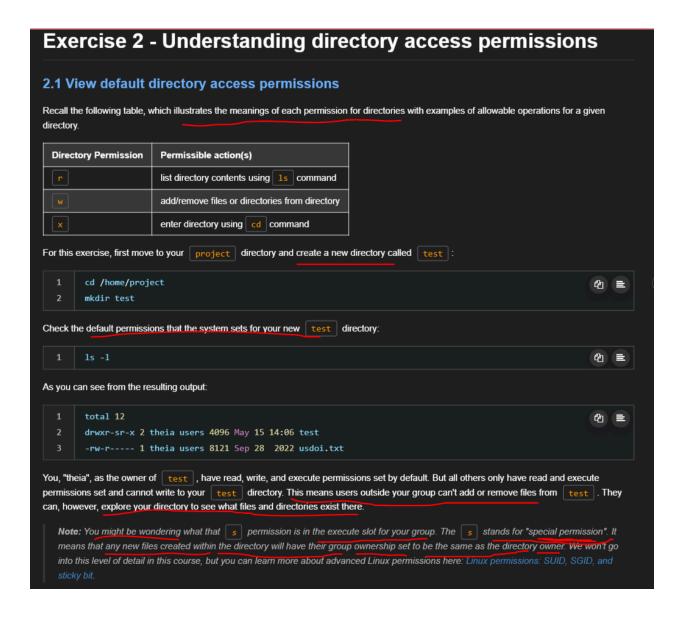
After completing this lab, you will be able to:

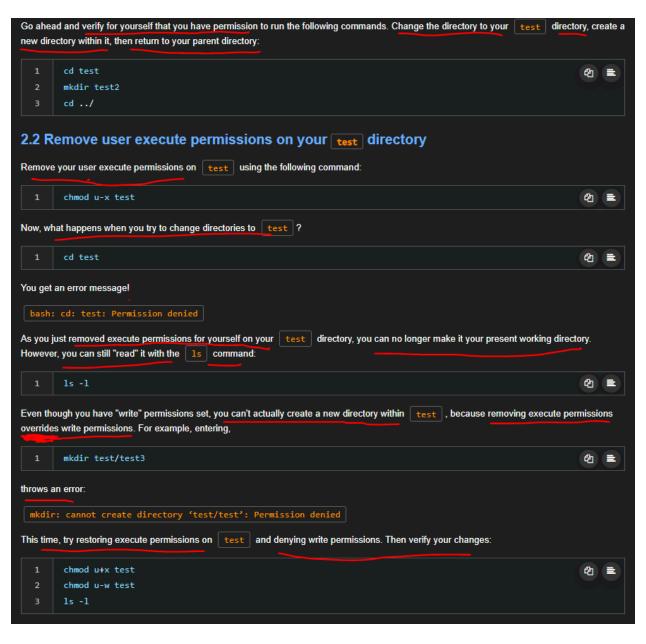
- Understand the various access permissions a file or directory can have
- View the permissions for all files and directories within a directory
- Modify permissions for a file by user
- Describe the effect of changing permissions on a directory





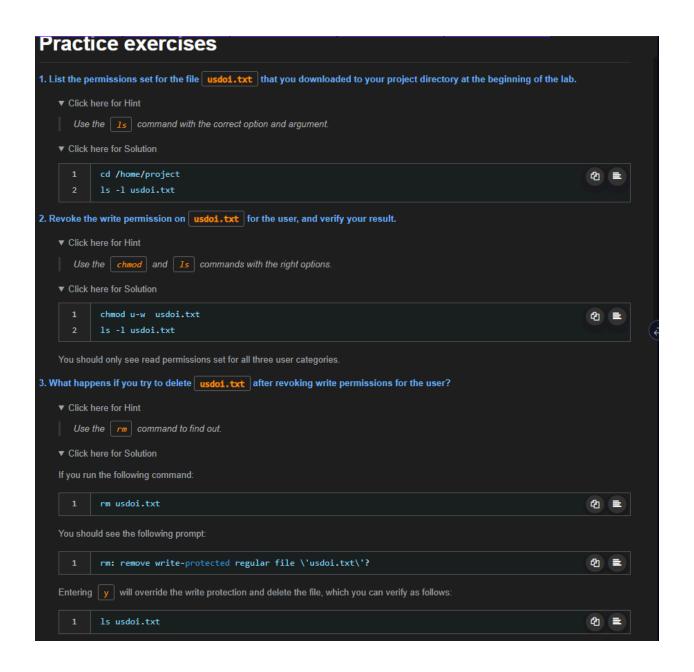
```
🔃 theia@theia-naimbenalaya: /home/project 🗴 🗓 🗖
 > theia@theia-naimbenalaya: /home/project
theia@theia-naimbenalaya:/home/project$ cd /home/project
wget https://cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud/IBM-
LX0117EN-SkillsNetwork/labs/module%201/usdoi.txt
--2025-06-30 16:31:21-- https://cf-courses-data.s3.us.cloud-object-storage.
appdomain.cloud/IBM-LX0117EN-SkillsNetwork/labs/module%201/usdoi.txt
Resolving cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud (cf-cou
rses-data.s3.us.cloud-object-storage.appdomain.cloud)... 169.63.118.104, 169
.63.118.104
Connecting to cf-courses-data.s3.us.cloud-object-storage.appdomain.cloud (cf
-courses-data.s3.us.cloud-object-storage.appdomain.cloud) | 169.63.118.104 | :44
connected.
HTTP request sent, awaiting response... 200 OK Length: 8121 (7.9K) [text/plain]
Saving to: 'usdoi.txt'
usdoi.txt
                   in 0s
2025-06-30 16:31:21 (2.50 GB/s) - 'usdoi.txt' saved [8121/8121]
theia@theia-naimbenalaya:/home/project$ ls -l usdoi.txt
-rw-r--r-- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$ chmod -r usdoi.txt
theia@theia-naimbenalaya:/home/project$ ls -l usdoi.txt
--w----- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$ chmod +r usdoi.txt
theia@theia-naimbenalaya:/home/project$ ls -l usdoi.txt
-rw-r--r-- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$ chmod o-r usdoi.txt
theia@theia-naimbenalaya:/home/project$ ls -l usdoi.txt
-rw-r---- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$
```

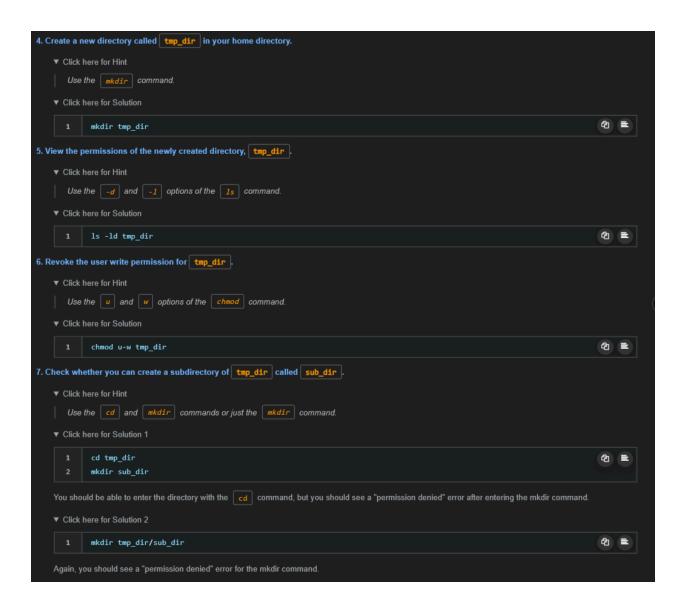






```
theia@theia-naimbenalaya:/home/project$ cd /home/project
mkdir test
theia@theia-naimbenalaya:/home/project$ ls -1
total 12
drwxr-sr-x 2 theia users 4096 Jun 30 16:42 test
-rw-r---- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$ total 12
drwxr-sr-x 2 theia users 4096 May 15 14:06 test
-rw-r---- 1 theia users 8121 Sep 28 2022 usdoi.txt
bash: total: command not found
bash: drwxr-sr-x: command not found
bash: -rw-r---: command not found
theia@theia-naimbenalaya:/home/project$ cd test
mkdir test2
theia@theia-naimbenalaya:/home/project$ chmod u-x test
theia@theia-naimbenalaya:/home/project$ cd test
bash: cd: test: Permission denied
theia@theia-naimbenalaya:/home/project$ ls -1
total 12
drw-r-sr-x 3 theia users 4096 Jun 30 16:44 test
-rw-r---- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$ ls -1
total 12
drw-r-sr-x 3 theia users 4096 Jun 30 16:44 test
-rw-r---- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$ mkdir test/test3
mkdir: cannot create directory 'test/test3': Permission denied
theia@theia-naimbenalaya:/home/project$ chmod u+x test
chmod u-w test
ls -1
total 12
dr-xr-sr-x 3 theia users 4096 Jun 30 16:44 test
-rw-r---- 1 theia users 8121 Sep 28 2022 usdoi.txt
theia@theia-naimbenalaya:/home/project$ cd test
mkdir test again
mkdir: cannot create directory 'test again': Permission denied
```





## **Summary**

In this lab, you learned that:

- Files and directories can have read, write, and execute permissions for the user, group, and others
- You can view the permissions for all files and directories within a directory by using Is-I
- You can modify permissions for a file by using chmod
- Changing permissions on a directory will change who can do what to the directory and its files