Linux File Permissions – Explanation (Assignment Section)

1. What Linux permissions mean:

Linux permissions control who can read, write, or execute a file. Each file has three roles:

- Owner

- Group

- Others

Each role has:

r = read

w = write

x = execute

Example:

-rwxr-x---

Owner: rwx

Group: r-x

Others: ---

2. Demonstrating commands:

a) View permissions:

ls -l

ls -la

b) Create files/folders:

mkdir permissions_practice

cd permissions_practice

touch notes.txt secret.txt script.sh report.log

mkdir private_folder

c) Change permissions (numeric):

chmod 755 script.sh

chmod 644 notes.txt

chmod 600 secret.txt

d) Change permissions (symbolic):

chmod u+x script.sh

chmod g-w notes.txt

chmod o-r secret.txt

chmod go+r report.log

e) Change ownership:

sudo chown student notes.txt

sudo chown student:developers secret.txt

f) Secure a private folder:

chmod 700 private_folder

ls -ld private_folder

3. Summary:

This exercise demonstrates understanding of Linux file permissions (rwx), ownership, and secure access control using chmod, chown, ls -l, and directory/file creation.