Assignment:5

Task:2

File Permission

Task: Create a file/folder and give it the fine-grained access to it. Research which user need how much permissions. Document the all the process and your research.

Certainly! File permissions in Linux are managed using a combination of three permission types: read (r), write (w), and execute (x). These permissions are assigned to three categories of users: owner, group, and others. To achieve fine-grained access control, you can use the chmod command to set specific permissions for each category.

Let's go through the process of creating a file/folder and assigning fine-grained access to it:

Step 1. Create a File or Folder:

You can use the touch command to create an empty file or mkdir to create a directory.

 # Create an empty file

touch myfile.txt

 # OR

 # Create a directory

mkdir myfolder

step 2. Understand Permission Levels:

Owner (u): The user who owns the file or folder.

Group (g): The group associated with the file or folder.

Others (o): All other users who are not the owner or part of the group.

Step 3. Assign Permissions:

Use the chmod command to assign permissions. The syntax is:

chmod permissions file_or_directory

Permissions can be specified using numbers (octal representation) or symbols.

Octal Representation:

Read (r) is represented by 4.

Write (w) is represented by 2.

Execute (x) is represented by 1.

The sum of these values represents the permission level. For example:

Read and write (rw) is 4 + 2 = 6.

Read, write, and execute (rwx) is 4 + 2 + 1 = 7.

Symbolic Representation:

u represents the owner.

g represents the group.

o represents others.

+ adds a permission.

- removes a permission.

= assigns the specified permission.

Step 4. Examples:

Assign read and write permissions to the owner:

chmod u+rw myfile.txt

Assign read and execute permissions to the group:

chmod g+rx myfolder

Assign execute permission to others:

chmod o+x myfile.txt

Step 5. Verify Permissions:

You can use the ls command with the -l option to view the permissions of a file or folder:

ls -l myfile.txt

This will display detailed information about the file, including its permissions.

Step 6. Research on User Permissions:

Here's a general guideline for user permissions:

Owner (u): Typically, the owner has full control (read, write, execute).

Group (g): The group might have read and execute permissions.

Others (o): Others may have limited or no permissions.