Module Code & Module Title

Level 5 – Network Operating System

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Submitted To: Mr. Prashant Adhikari

I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded.

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1. Introduction

This exercise is intended to get you using basic UNIX utilities to establish command-line skills. Your mkdir command will create a specific directory structure with and without options, particularly -p. You'll learn how to navigate directories using relative paths (...,.) and carry out file operations like copying, moving, and renaming files. Other aspects to learn would be all about controlling access to file and directory permissions by using the chmod command. There would also be practicing important commands like echo, ls, cat, and rm for the management as well as output of files. It would entail efficiently navigating through directories, manipulating files as well as handling permissions in the UNIX environment. This is going to strengthen your UNIX skills hands-on!.

2. Objective

You're basically getting hands-on with UNIX utilities through hands-on command-line practice. By doing this task, you will have:

i.) Be Creating directory structures systematically with command mkdir with or without options like -p.

ii.) Confident in navigating directories using relevant paths (.. for parent, . for current directories).

iii.) Be understanding the most key file operations: creating, copying, moving and renaming files from all over the directories.

iv.) Be Using chmod for understanding how to control permissions bit by bit: read, write and execute those permissions for files and directories.

v.) Be Practicing such important commands as ls, echo, cat, rm with which you can do exploring directories and manipulating files with commands for output texts.

vi.) Understand the file system behaviour, so that you're able to handle access restrictions, cleanup directories, and troubleshoot permissions.

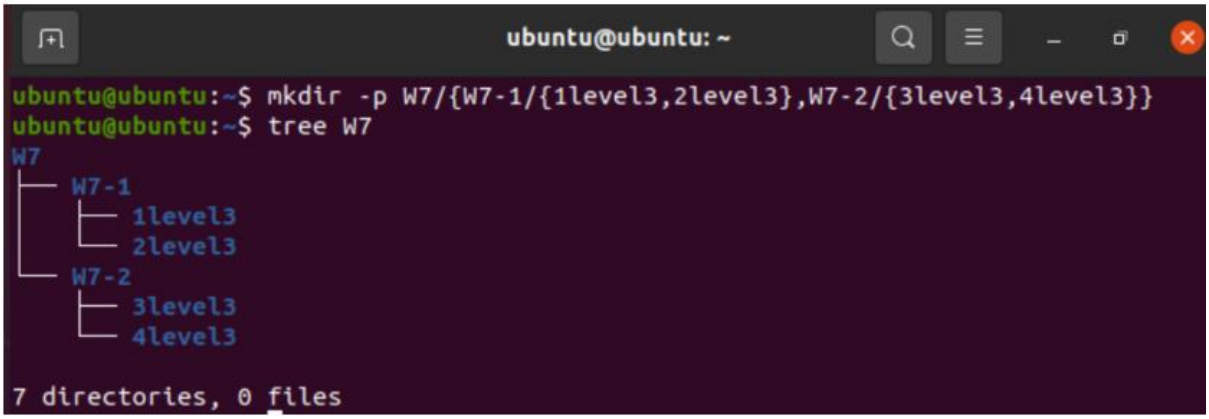

Figure 1: Creating directory using -p

So first we created a directory using -p and mkdir. -p allows us to create directory with its parent directories if it doesn't exist.

Figure 2: Changing path

Since we aren't using -p we can't create inner directory while making parent directory.

Figure 3: Moving to different director

Moving to different directories using the cd code.

Figure 4: Creating a file

Since we are in a different directory and if we want to move to different parent directory we will have to use the symbol “..” along with cd command.

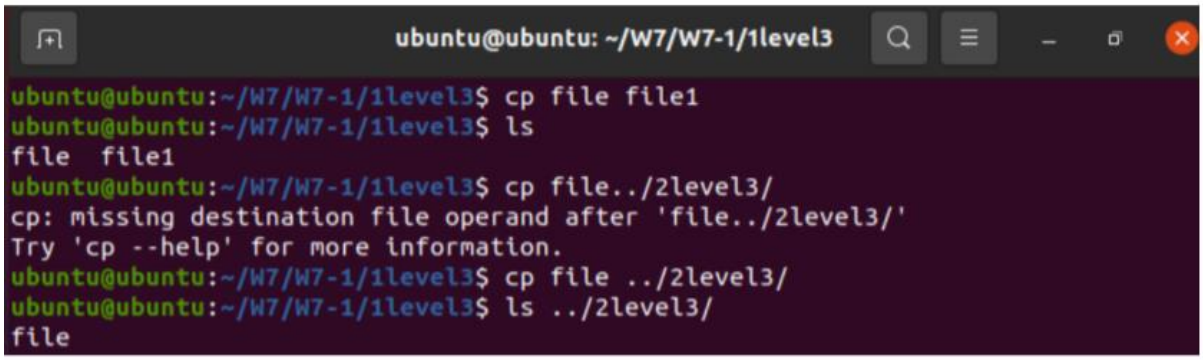

Figure 5: Moving to different directory and creating a file

Then I moved on to earlier directory and created a file using the cat command with redirect > feature and then checked if the file was created or not using ls command.

Figure 6: Moving a file

Later we moved the file named “file” to a different parent directory using mv command and also checked if it was moved properly and then we checked if the moved file still exists in the current directory (it doesn’t).

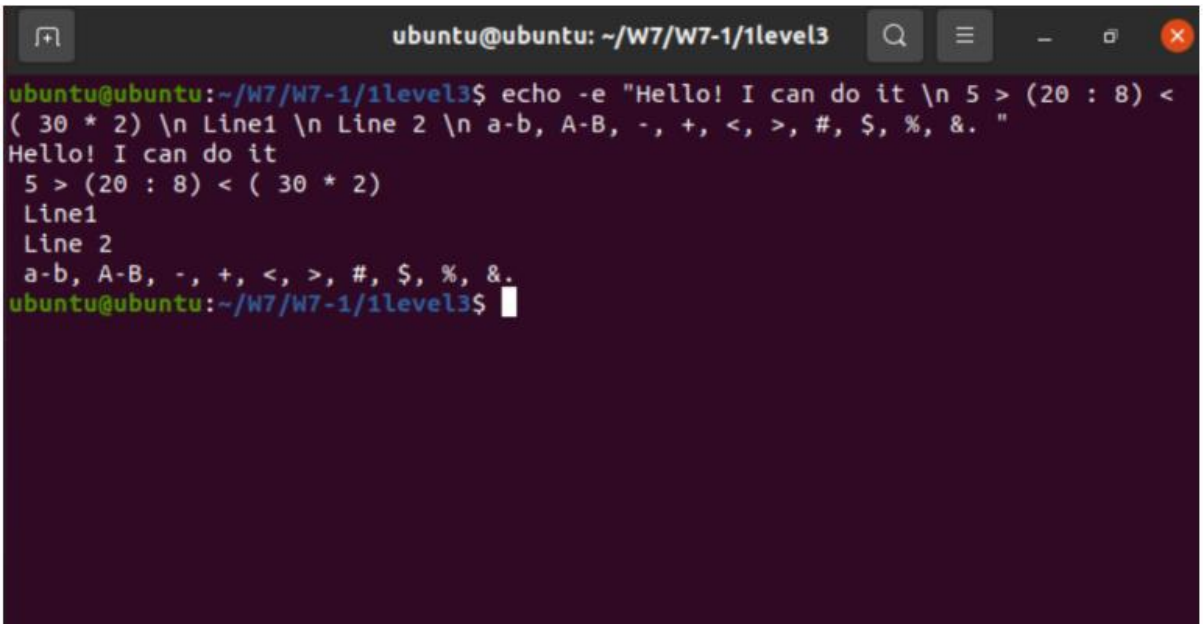

Figure 7: Using \n

We printed few words using the echo -e command where -e allows for escape sequences like \n, \t, \\, \b, etc.

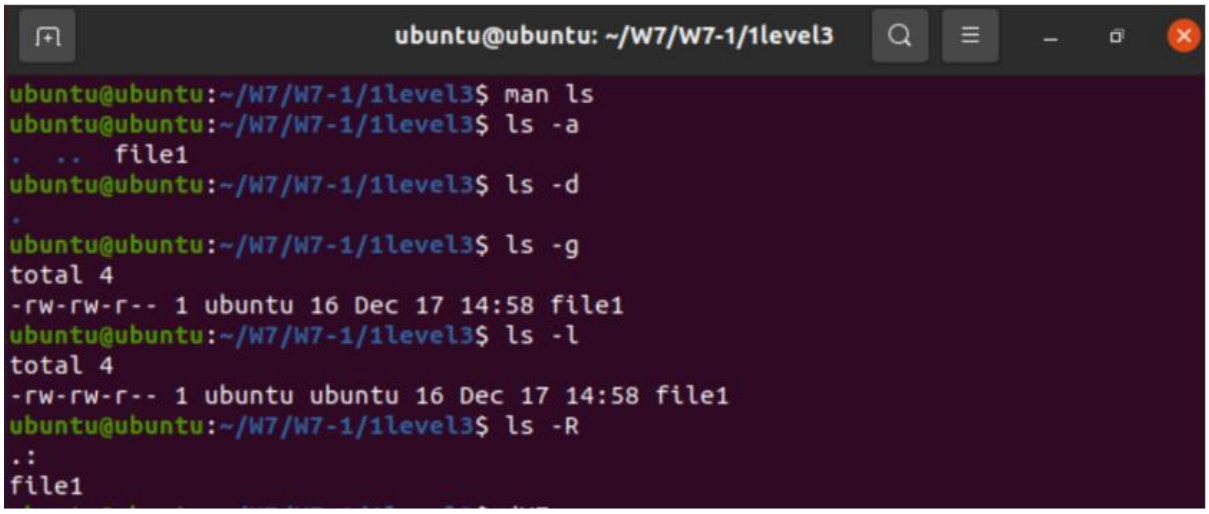

Figure 8: Using ls commands

Using the ls -a command to check all files in the directories which also includes hidden file. ls -d * lists all the folders inside a certain directory. I used ls -g command in Linux which is very similar to ls -l but hides the owner's information from long listing format. Here in ls -l it shows both owner's information along with group's information. Then we used ls -r to get the list in descending alphabetical order, but since there is only 1 folder in this directory, the change isn't very visible.

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Figure 9: Removing directories

I used the rm -ri to safe delete the folders in which -r removes the directories and content recursively and -I asks user for confirmation before deleting each file or folder.

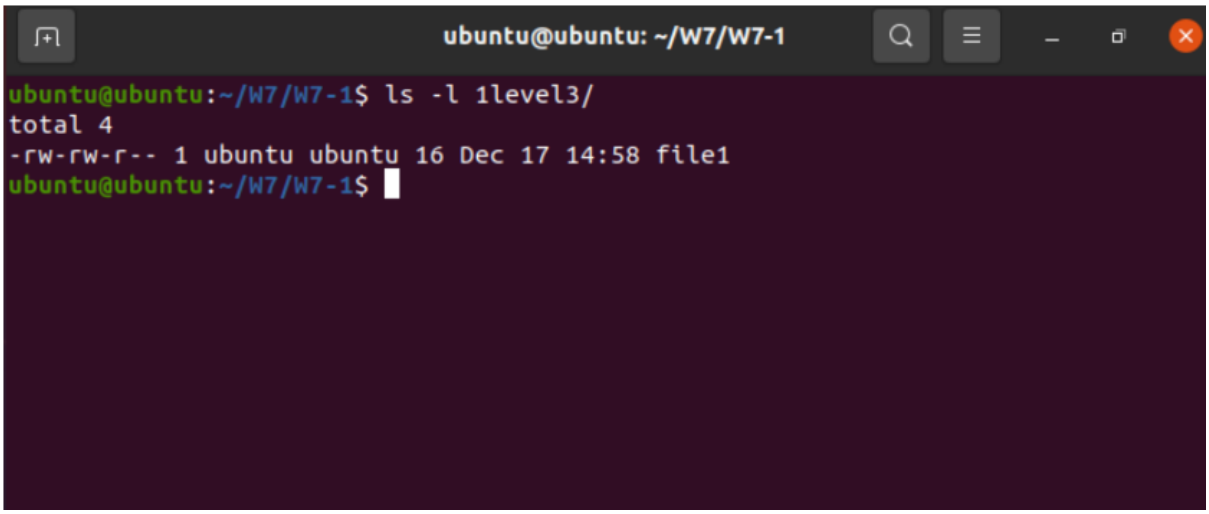

Figure 10: Displaying permission

I used the ls -l to check the permission of files and it shows that user has read and write permission, same with the group members but others only has the permission to read the file.

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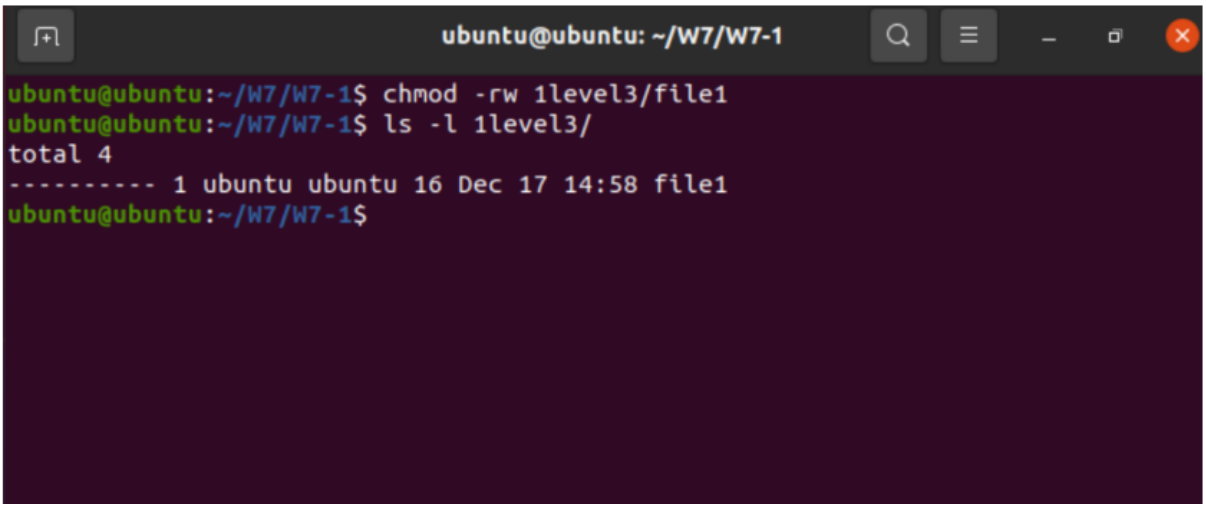

Figure 11: Removing all the permissions.

To remove the file permission, we used the chmod with 000 to remove all the permissions from all the users of file 1.

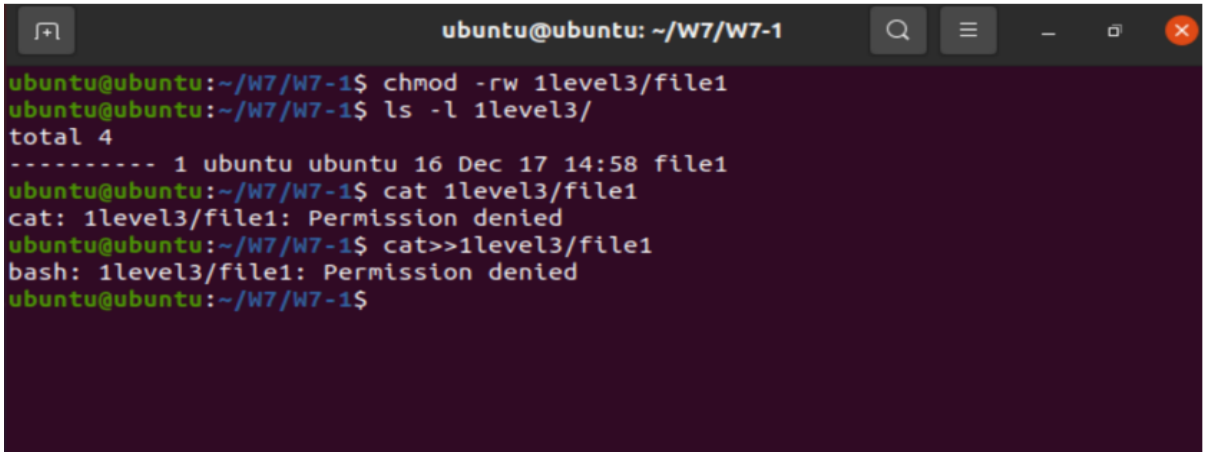

Figure 12:Displaying all removed permissions

Then we tried to read the file permission using cat command but we couldn’t since we removed everyone’s every permission from that certain file. Then we tried to write on the same permission less file but obviously the system didn’t let us manipulate it.

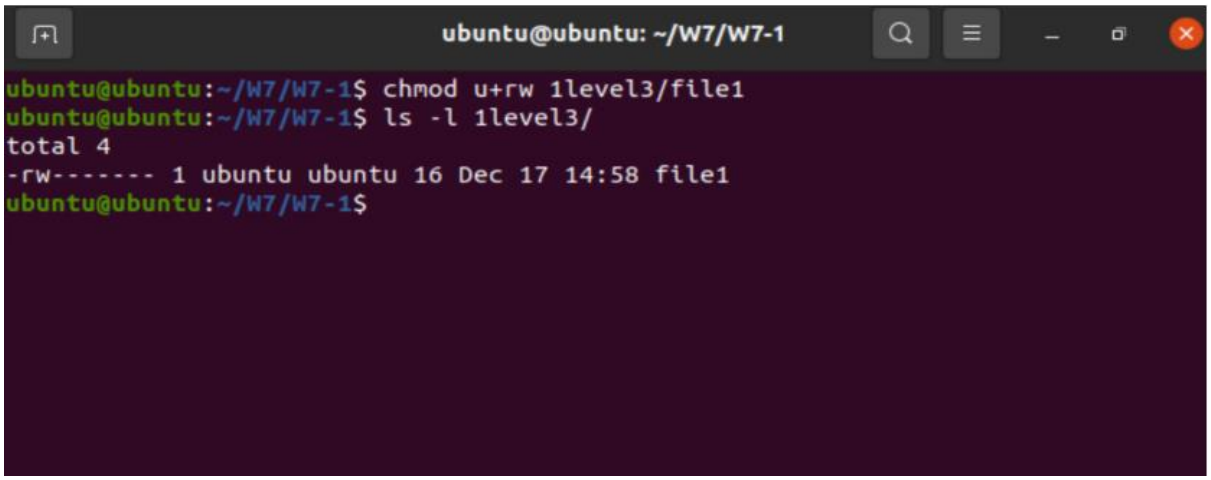

Figure 13: Giving permission to user

Then I added reading and writing permission to the owner only by giving the 600 which in summery reading is 4 writing is 2 and executing is 1 and here we did 4+2 just for user.

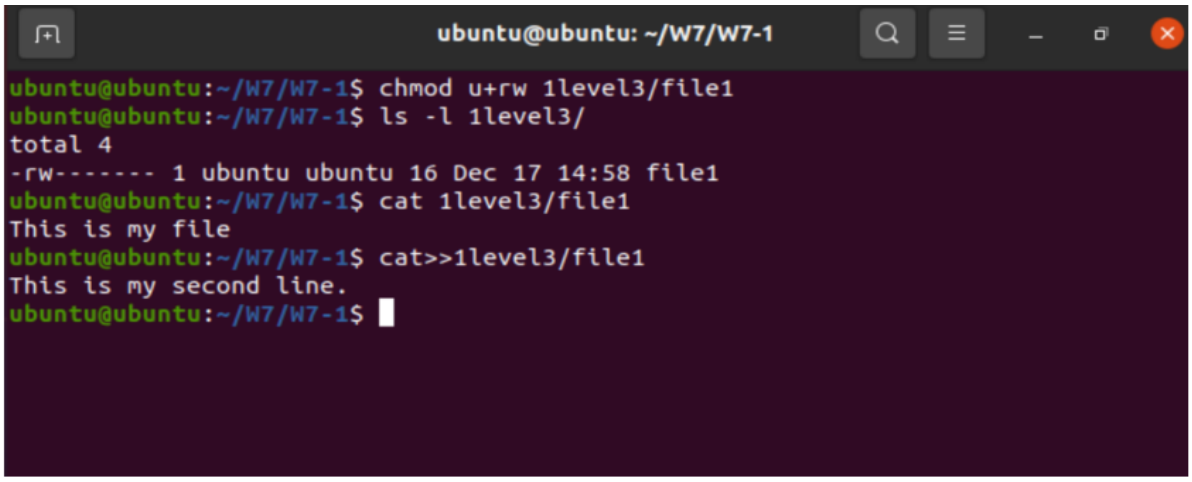

Figure 14: Displaying all the accessed permission

After I gave permission to the file, I tried reading it with cat command which was successful. After that I tried redirecting a new line in the file1 using echo and >> which was successful and I read the file using the utility called cat.

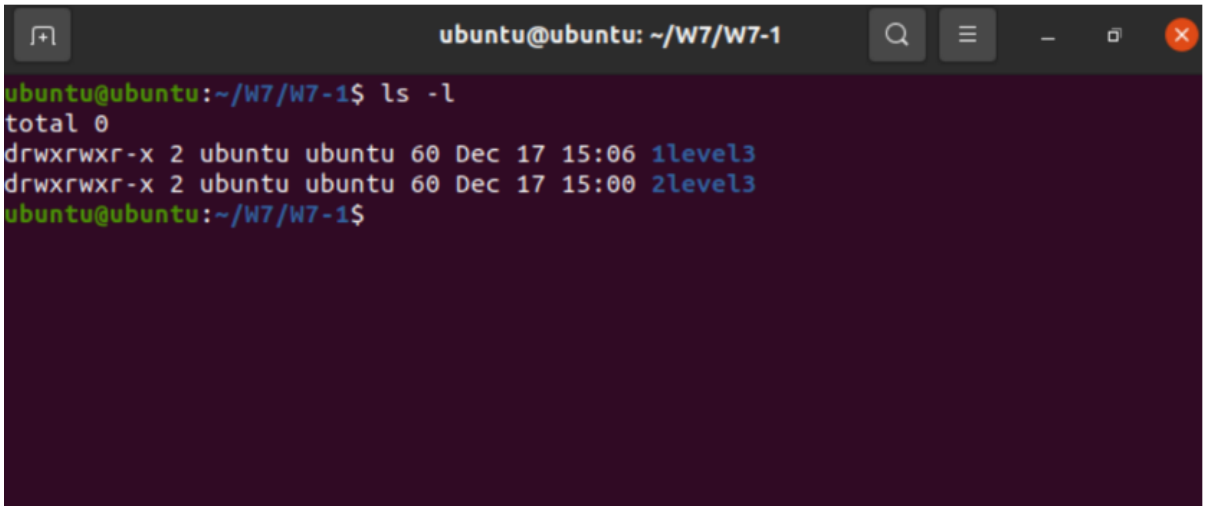

Figure 15: Displaying access for W7-1

By using ls -l i checked the permission of both of the directory of current directory.

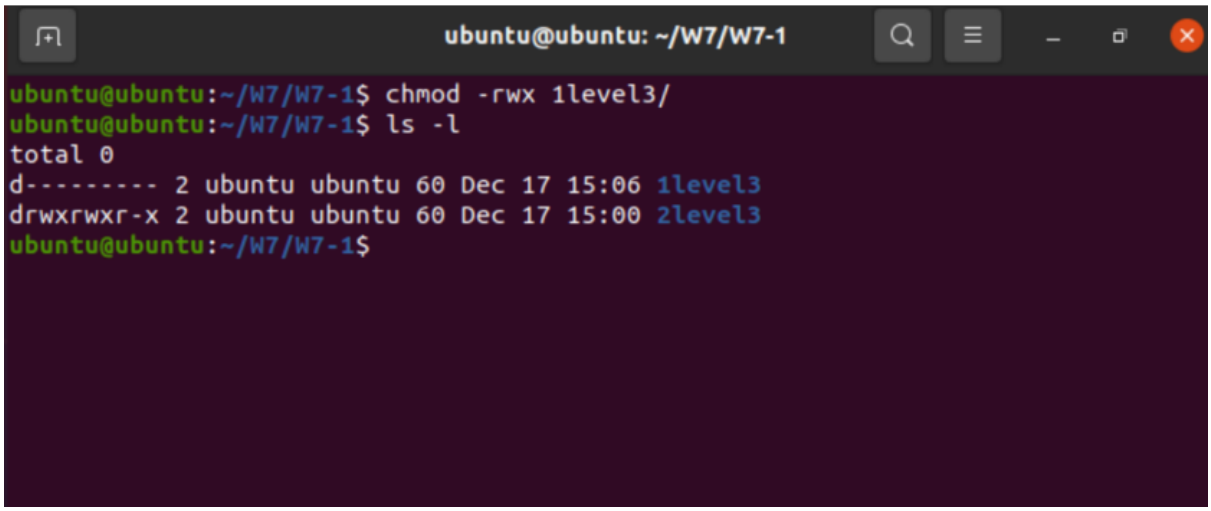

Figure 16: Removing all the permissions

I used chmod -rwx again to remove all the permissions from the directory. And checked it by using the ls -l command.

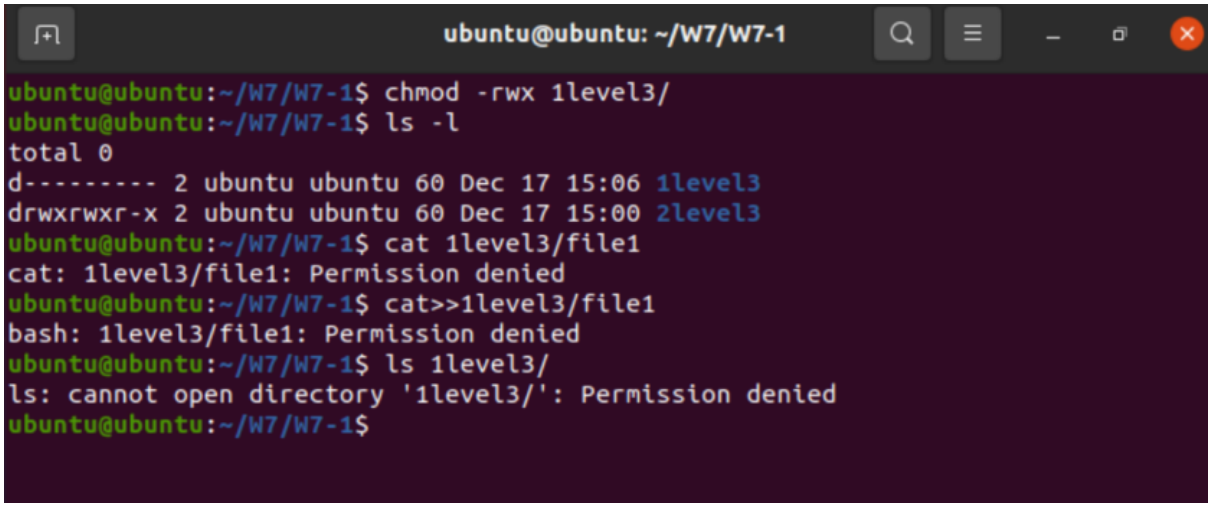

Figure 17: Displaying denied permissions

Then I tried to read the file of the same directory where I removed all the permission from but the permission was denied. Then again I tried writing in the same directory by using cat >> which would let us write inside the file of 1level3 directory.

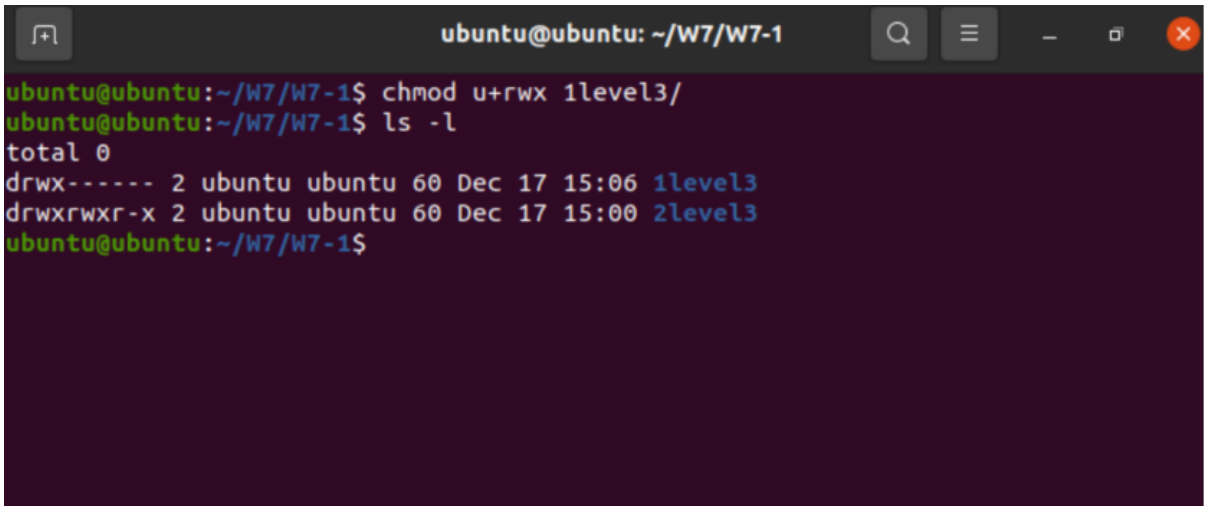

Figure 18: Adding permissions

Then I used chmod u+rwx to give permission of the folder to read write and execute to myself.

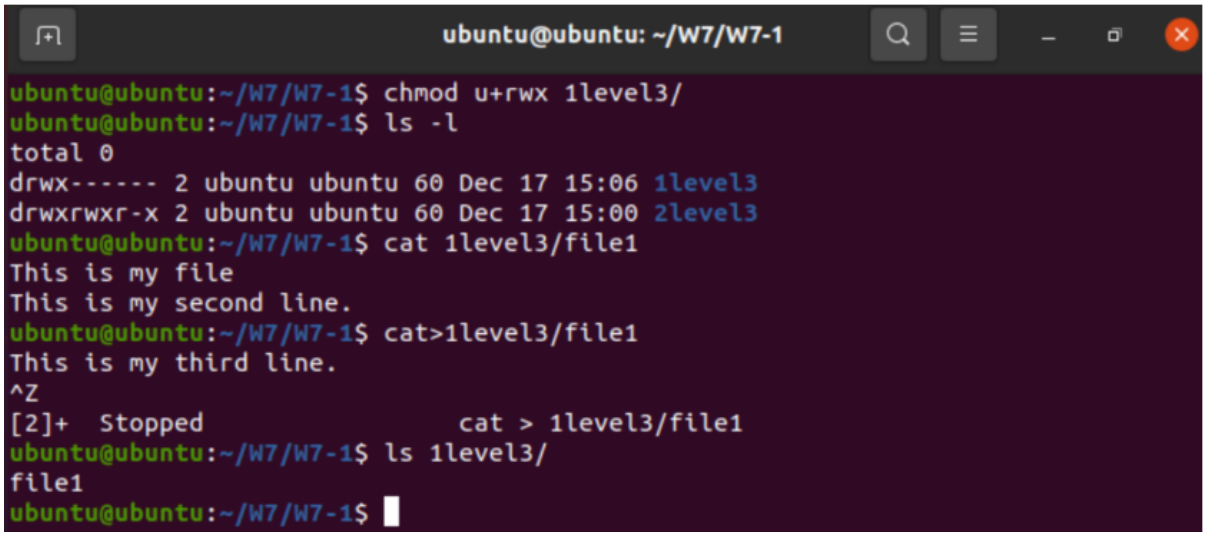

Figure 19: Testing all the accessed permissions

Then I checked if I changed the permission of the directory properly or not using the ls -l command. After I gave the permission to user, I tried writing inside it using the cat command and redirect >> symbol. And we didn't get denied this time. And at last searching file in the directory.

3. Conclusion

You practiced essential UNIX commands through exercise by doing the following: Creating a directory, traversing it, manipulating files, and managing permissions, which further enlightened you on how the file system works. It also used commands like mkdir, ls, chmod, and rm-all-important commands for efficient file and directory management. The load was lightened by practice, and theory was enabled preparing you for real-world UNIX skills-needed system administration and development tasks. Continued practice is essential for mastery of these tools and for independence in managing UNIX environments.