Introduction to Linux

Objectives.

To learn the basic Linux Bash Shell commands such as man, chmod, ls, pwd, diff, mv, rm, top, kill, touch, echo

Tasks

1. **Read the sections 3, 4 and 5 of the Ubuntu manual**, available in https://ubuntu.com/tutorials/command-line-for-beginners#3-opening-a-terminal

2. **Acquaint yourselves with Linux Terminal**

Open a terminal and follow the instructions below.
Find out which version of Linux you are using by typing :
uname -a
uname –r

Use the Linux manual to find out what *uname* command does by typing

man uname

Move around the file system using cd and pwd commands. For example, if you are in the

home folder and you want to go the download folder, then type

cd downloads

List files using ls with different options. Type 'man ls' to look up ls in the manual, to find out

what options there are (use q to exit the manual)

Look at some files using cat, less and more

cat file1

less file1

more file1

Move to the home directory. Type the following command to open the nano text editor.

nano

write some text and then save it.
You can delete the file you have just created by using the following command

rm myfile.txt
You can also create a file directly using the following command
touch newfile.txt

Use cat to show the contents of the file. List the permissions by using 'ls –l'.

Type the following command
echo Hello there

Use chmod to give permission to write the file to group members and others

- **u** – user , **g** – group, **o** – others , **a** – all
- + to add permission , – to remove permission , = to assign permission
- **r w x** is used for read , write, execute

Chmod u+w file , assigns execute permission to user
Chmod o-x file, removes execute permission to other users
Chmod a=rwx file, gives read, write and execute permission to everyone

Type '*ls –l'* to list the files including their permissions

Use '*diff myfile.txt myfile1.txt'* to see if there are any differences between the two files.

Create a new directory using 'mkdir' command and name it docs.

Copy a file to the docs directory.
cp path1/myfile.txt path2.

Rename myfile1.txt using the mv command to myfile2.txt.

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mv old-file-name new-file-name
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Create a new directory named *documents*. Move all the contents of the *docs* directory using the following:

mv ./docs/* ./documents

Move back to the home directory and try to delete the docs directory.
rm –R docs

Use nano editor to create a list of random numbers (each on a new line) and save it as numlist. To do so, type 'nano' to open the text editor and then write some random numbers. Then type the following command

sort –n numlist

The above command will print the contents of the numlist file ordered.

Instead of printint the results into the screen, we can print them into a file by using the '>'

operator. The new command is

sort –n numlist > output.txt

Look at the results in the output file using

cat output.txt

Delete the file using the following command.
rm output.txt

Type the following command:
top
this command shows all the processes running; each process has a PID number, e.g., 293. If you want to kill process 293 type '*kill 293'.* Type q to exit

Bash Scripts: Bash scripts can be used for various purposes, such as executing a shell command, running multiple commands together, customizing administrative tasks, performing task automation etc [2]. Scripts have '.sh' extension.

Create a script file by either using 'touch' command or 'nano' command, or by using the graphical interface. Copy paste the following inside the script file

#this is a comment
echo hi from your first script
echo hi again

Now run the script by typing either 'source script.sh' or 'bach script.sh'.

Further Reading

[1] The Linux command line for beginners , https://ubuntu.com/tutorials/command-line-for-beginners#3-opening-a-terminal
[2] Bash Script Examples, https://linuxhint.com/30_bash_script_examples/