SLIIT
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BSc (Hons) in Information Technology
IT– Year 2

Lab Exercise 1

IT2060 – Operating Systems and System Administration

Semester 1, 2022

Learning Objectives: Students will be able to learn basic UNIX Commands.

When you first log in on a UNIX system, you are always associated with a directory, which is called the home directory or the working directory or the current directory. Your home directory has the same name as your user-name (student) and it is where your personal files and sub-directories are saved.

Step 1. Run the command pwd on the command prompt. Write down the output appeared on the screen. It's the absolute path to your working directory, i.e. Pathname starting from /, i.e. root directory. (present working dirrectory)

Absolute path name: `/home/user`

Step 2. Run who am i utility. Write down the output appeared on the screen. (Give name of the current logged user)

user

Step 3. Run who utility to get the information about logged in users. Take one user-name and run finger user-name to get the information about the user, including full names. (if who will not work can use w instead of who)

09:33:58 up 15:43, 0 users, load average: 3.49, 3.16, 3.02

USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT

In Unix systems, **ls** utility lists the contents of your current directory. The behavior of a command can be changed by the options.

Lab_01.term

Step 4. Type command ls –al at the command prompt. Write down the lines of the output.

Will give the information about the all files and directories stored inside the current directory (a -all , l – long list format)

Output :-

total 13

drwxr-xr-x 4 user user 11 Aug 2 09:23 .

drwxr-xr-x 1 root root 4096 Aug 2 09:19 ..

-rw-r--r-- 1 user user 639 Aug 2 09:38 .Lab_01.term-0.term

-rw------- 1 user user 61 Aug 2 09:36 .bash_history

lrwxrwxrwx 1 user user 18 Aug 2 09:19 .bash_profile -> /home/user/.bashrc

-rw-r--r-- 1 user user 2355 Aug 2 09:19 .bashrc

-rw-r--r-- 1 user user 8192 Aug 2 09:19 .jupyter-blobs-v0.db

lrwxrwxrwx 1 user user 12 Aug 2 09:19 .smc -> /tmp/.cocalc

dr-xr-xr-x 2 user user 2 Aug 2 09:30 .snapshots

drwxr-xr-x 2 user user 3 Aug 2 09:19 .ssh

-rw-r--r-- 1 user user 0 Aug 2 09:20 Lab_01.term

If give ls -l this will give only the information's of unhidden files.

If gives ls-a it will give all files and folders within this current directory.

Step 5. Type cd. at the command prompt. And run the pwd utility again. Dose it change your working directory?

No. Reason is when you execute cd command it will go straight to the home directly. Since we are in home the path will not change.

Step 6. Run cd .. at the command prompt. And run the pwd utility again. Has cd .. changed the previous working directory?

Yes. This will move to previous directory

Step 7. According to your observations, what is the function of command cd, cd. and cd..?

C – change d- directory

cd - Go to home directory

cd .. - move to previous directory

cd . -error

Step 8. Now use cd command to change your directory to /. Them Type ls and observe the content that can be seen in the output.

Consider the following directories.

/bin, /home, /dev, /etc, /lib

List items with ls and then type cd /bin .this will move to bin directory

Step 9. Type ls –l under each directory. Can you interpret the output of ls –l command? Check the very first letter of each line when you type ls –l under these directories.

If give ls -l this will give only the information's of unhidden files in the current directory

Step 10. Now run ls utility and check whether test.txt file exists in the home directory called "student". If not, create a new file using cat utility, cat > filename and add your IT no and name. Use Ctrl+D to save and exit from it.

Create a new file in the current directory and will included that we givenr details.

Can display details inside the file with cat filename

Then open same file using **vi editor** and add some more lines of data. Also, can create files using vi command. vi >test.txt . this will create a file name test.txt. But to insert text we must press 'i' to apply insert mode. To exit and save press esc the type ':wq'.

Practice mkdir and rmdir commands to create and remove directories from the file hierarchy.

'mkdir name' to add directory

'rmdir name' to remove directory

The command syntax **mv source-file destination** is used to move the source-file to the destination called destination. This utility can be used to rename a file without making duplicate copy of it. In that case, command syntax is, **mv existing-filename new-filename**

Step 11. Run **mv test.txt ./student** command at the command prompt. Then run **cd ~** command. Run **pwd** command.

i) What is the output for **pwd** utility?

……

ii) What is the directory referred by **~** mark?

……

Step 12. Try **ls ~** and **ls ~/..**

The command syntax **cp source-file destination-file** is used to copy the contents of source file to the destination file called destination-file.

Step 13. Run **cp test.txt First.txt** command. Again, run **cp test.txt FiRsT.txt** command. List the files in your home directory. Is UNIX system case sensitive? Yes/No

Step 14. The cat (name derived from concatenate) utility displays the contents of a text file.

Run **cat First**. Then, run **rm First**. Again, run **cat First**.

i) Write down the output

……

ii) What is the function of **rm** ?

……

The head utility displays the first ten lines of a file. It is useful for reminding yourself what a particular file contains. The tail utility is similar to head, except it displays the last ten lines of a file.

Step 15. Write down the output

i) **head -3 test.txt**

……
……
……
……

ii) **tail -2 test.txt**

……
……
……
……

Step 20. Write a C program which prints the current local time in the format: hh:mm:ss to standard output. (Hint: look at the manual page for time (2) and localtime (3c).