CSE2005 Operating Systems Lab – 1 on 08-02-2021

The lab consists of performing basic system operations such as file management, text editing, permission management. The objective of this lab is to make students familiar with the Linux command-line environment and develop the skills of shell scripting. This lab serves as a platform for the subsequent labs related to system calls, process management, file management and memory management.

Login to the system, open the Terminal and type the following on the login prompt :

1. echo hello world :

The word hello world would get displayed as output on the terminal. The echo command displays a line of text. type man echo to read what an echo command does.

2. Linux provides on-line manuals for different commands through an interface called man. To know about man type the following on the terminal: man man and read the description that is displayed.

For all commands we will use the syntax man < commandname >

3. Type echo $SHELL : This prints /bin/bash

bash is the name of the login shell that is currently in use

4. Study the following Unix/Linux general purpose utility commands using their man pages and execute them on the terminal :

man, who,cat, cd, cp, ps, ls, mv,rm, mkdir, rmdir, echo, more, date, time, kill, history, chmod, chown, finger, pwd, cal, logout, shutdown.

5. Study the following Linux commands: sed, grep and awk.

- Use the sed command to delete the first character and last character in each line of a file.

- Use the grep command to find how many lines of a file contain a given word. The filename and the word are provided as inputs.

6. Shell Scripting:

- Write a shell script to display “HELLO WORLD" on the terminal :

- Open an editor
- Type echo HELLO WORLD
- Save the file with .sh extension (say test.sh)
- Close the editor
- At the terminal, type sh test.sh
- Expected output at the prompt: HELLO WORLD

Exercises:

- Use the who command and redirect the result to a file called my myfile1. Use the more command to see the contents of myfile1.
- Write a sed command that swaps the first and second words in each line in a file.
- Write a (i) shell script program and (ii) C program to display “HELLO WORLD". Compare the running time of both the programs using time command.
- Write a shell script that takes a command line argument and reports on whether it is directory, a file, or something else.
- Write a shell script that determines the period for which a specified user is working on the system.