# CSE 310: Operating System Lab
# Lab 02
## Introduction to Linux Operating System (Part - 2)

**Description:**
Welcome to Lab-2! In this lab, we will continue exploring essential Linux commands to expand your knowledge and proficiency with the Linux operating system. Building upon the commands covered in Lab-1, we will introduce additional commands that are frequently used in Linux administration and day-to-day operations. By the end of this lab, you will have a deeper understanding of a broader range of Linux commands and their functionalities.

**Review of Lab 01:**
Commands learned so far

1. **pwd** : shows current directory
2. **cd** : change directory
3. **ls** : list existing directories and files
4. **ls -l** : list with details
5. **mkdir** : create directories (folder)
6. **rmdir** : delete directory
7. **touch** : create text file
8. **cat** : display file contents
9. **echo** : display string of write string to file
10. **cp** : copy files
11. **rm** : remove file
12. **mv**: move files (can be used for renaming also)

**Lab Objectives:**

1. Familiarize yourself with new Linux commands beyond those covered in Lab-1.
2. Learn how to manipulate files and directories using advanced command options.
3. Understand how to search for files and content within files.
4. Execute administrative tasks using powerful command-line tools.

**Lab Content:**

**Date and Time:**

- Use the `date` command to display the current date and time.

**User and System Information:**

- Use the `who` command to display a list of currently logged-in users.
- Use the `whoami` command to display your username.
- Use the `hostname` command to display the hostname of your system.
- Use the `hostname -I` command to display the IP address of your machine.

**Process Management:**

- Use the `ps` command to view the currently running processes.
- Use the `ps aux` command to display detailed information about all running processes.
- Use the `ps -ef` command to show all the processes in full-format listing.
- Use the `ping` command to test network connectivity with another host.

**File and Text Manipulation:**

- Use the `head` command to display the first few lines of a file.
- Use the `tail` command to display the last few lines of a file.
- Use the `wc` command to count lines, words, and characters in files.

**Archiving and Compression:**

- Use the `tar` command to create or extract archive files.

**Printing and File Permissions:**

- Use the `chmod` command to change file permissions.
- Use the `chown` command to change file ownership.

**User and Group Management:**

- Use the `useradd` command to create a new user.
- Use the `passwd` command to set or change a user's password.
- Use the `groupadd` command to create a new group.
- Use the `usermod` and `groupmod` commands to modify user and group properties.

**Mathematical Calculations and Calendar:**

- Use the `bc` command to perform mathematical calculations.
- Use the `cal` command to display a calendar.

**Conclusion:**

In Lab-2, we expanded our knowledge of Linux commands beyond those covered in Lab-1. By exploring new commands related to date and time, user and system information, file and text manipulation, printing and file permissions, user and group management, file searching and content filtering, mathematical calculations, and calendar display, you have gained a more comprehensive understanding of Linux command-line operations. Continue practicing these commands and exploring more advanced Linux

commands to further enhance your Linux skills and productivity.