Lab Worksheet: Command-Line Fundamentals

Learning Goals

- Navigate and manipulate files/directories using the terminal.
- Monitor and manage processes.
- Retrieve system information.

Part 1: Warm-up

- Run pwd, whoami, date, clear.

Part 2: Terminal Navigation & File System Operations

- Print the current working directory.

- Move into /tmp (or provided test directory).

- List files with hidden files visible.

- Create a directory lab_test with subdirectories alpha, beta, gamma.

- Create a text file notes.txt in alpha.

- Copy notes.txt to beta.

- Move notes.txt from alpha to gamma.

- Delete the file in beta.

- Write 'Hello Lab' into hello.txt.

- Display the first 3 lines of /etc/passwd.

- Monitor the last 5 lines of a log file with tail -f.

- Mini-Challenge: Create a folder my_lab with a nested file structure, add a readme.txt, and locate it.

Part 3: Process Management

- Run sleep 100 & to create a background process.

- Find its PID using ps.

- Use top to observe system activity.

- Kill the sleep process using its PID.

-

- Run nano test.txt, suspend with Ctrl+Z, resume with fg.

- Run a long command in background with &.

- Mini-Challenge: Start a command in background, find its PID, kill it.

Part 4: System Information Commands

- Run uname -a and note kernel info.

- Check number of CPUs with lscpu.

- Show free memory with free -h.

- Display mounted filesystems with df -h.

- Display block devices with lsblk.

- Run who or w to see logged-in users.

- Display system uptime with uptime.

- Mini-Challenge: Find system hostname, uptime, and available RAM.

Part 5: Final Challenge

- Create a directory sys_report.

- Save the output of uname -a to sys_report/kernel.txt.

- Save current processes (ps aux) to sys_report/processes.txt.

- Save memory info (free -h) to sys_report/memory.txt.

- Compress the sys_report folder into sys_report.tar.gz.