

Linux Shell Lab Tasks

Department of Computer Science and Engineering

Part A: Basics

1. Print your full name, student ID, and current date in a single command.
2. Display the message Linux using a tab space between the words.
3. Print the following output using one command only:

```
Line 1  
Line 2  
Line 3
```

4. Display your username, home directory using environment variables.

Part B: Directory Navigation

1. Navigate to `/tmp`, print the current directory, then return to your home directory.
2. Create the directory structure `lab1/os/shell` in one command.
3. From inside `shell`, return to your home directory using a relative path.
4. Use pushd and popd to navigate: → `/usr` → `/bin` → `/etc` → `/tmp`,
then return home.

Part C: Listing and Exploring Files

1. List all files (including hidden) in your home directory in long format.
2. List only directories inside `/usr`.
3. Display files in `/var/log` sorted by size (largest first).
4. List all `.conf` files inside `/etc`.

Part D: File and Directory Operations

1. Create three empty files: `a.txt`, `b.txt`, and `c.txt`.
2. Create a directory `backup` and copy all `.txt` files into it.
3. Rename `a.txt` to `alpha.txt`.
4. Move all `.txt` files into a directory named `texts`.
5. Delete `c.txt` interactively.
6. Remove the directory `backup` recursively with verbose output.

Part E: Permissions and Ownership

1. Create a script file `run.sh` and make it executable only for the owner.
2. Set permissions of `data.txt` so the owner can read/write, group can read, and others have no permission.
3. Change the group ownership of directory `project/` to `students` recursively.

Part F: Viewing and Searching Files

1. Display the first 5 lines of `/etc/passwd`.
2. Display the last 10 lines of `/etc/passwd`.
3. Count the total number of lines in `/etc/passwd`.
4. Search for all lines containing `/bin/bash` in `/etc/passwd`.
5. Find all `.log` files in `/var/log` modified within the last 3 days.

Part G: Redirection and Pipelines

1. Save the output of `ls -l` into `listing.txt`.
2. Append the current date and time to `log.txt`.
3. Using pipelines, count how many users have `/bin/bash` as their login shell.

Part H: Text Editors

1. Open `/etc/passwd` in vim and go to line 10.
2. Create a new file `hello.c` and write a `main()` function.
3. Create a new file `notes.txt` and write three lines.

Submission Instructions

- Submit a PDF file containing the commands used.
- Include output screenshots.