Linux Shell Lab Tasks

Department of Computer Science and Engineering

Part A: Basics (Warm-up)

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, and current shell 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: $\rightarrow /usr \rightarrow /bin \rightarrow /etc \rightarrow /tmp, then return home.$

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 `/var/log/syslog`.

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.

Submission Instructions

- Submit a PDF or text file containing the commands used.

- Include output screenshots where applicable.

- Script files must be executable and properly formatted.