UCSC

Assignment - 03
ENH 1202 - Application Laboratory

Instructions

- **Do the following questions using the terminal .**
- **Write the answers to the question and take the necessary screenshots for proof.**
- **Create a PDF file that includes screenshots and answers.**
- **Rename the file using your temporary index number (Eg. 230011.pdf) and upload it in the given link.**

Activity 01

Perform the following tasks using commands only, and without using a GUI:

1. Navigate to the /usr/bin directory.
2. Without leaving /usr/bin, list:
    a. The contents of /dev in a long listing format.
    b. The contents of your desktop folder using ~ and ls -la.
3. Create a nested folder structure in your home directory by a single command where:
    - The first folder is named for an assignment.
    - Inside it, create a folder related to Linux work.
    - Inside that, create a folder for general files.
    - Inside the files folder, create a final folder for documents.
4. Go into the /etc directory, and from there:
    a. Create a directory called submission inside ~/assignment.
    b. Explain the use of relative vs absolute path with the commands you used.
5. Try deleting the assignment directory immediately after creation using rmdir. Explain what error you get and why.
6. Now remove it successfully using the proper recursive command. Take a screenshot before and after deletion.

7. Use pushd to go to /usr/lib, then pushd again to /tmp, and finally use popd twice to return to your original directory.
8. Refer to man bash and explain what pushd and popd do. Capture and submit a screenshot of the explanation.
9. Use the file command to check the file types of:
    a. /usr/bin/head
    b. /etc/hostname
    c. /usr/bin/grep
10. Without changing directories, use ls to list the following in human-readable long format:
    a. /var
    b. /opt
    c. The home directory (~)

Activity 02:

1. Use the file command to determine the file types of:
    a. /usr/bin/echo
    b. /etc/resolv.conf
    c. /usr/bin/du
2. Create a directory called ~/shell_lab and enter it.
3. In one command, create the following files inside it: log1.txt, log2.txt, and system_backup.sh.
4. Use touch to set the timestamp of log1.txt to 3 days ago.
5. Copy log2.txt into a new file named log2_backup.txt.
6. Rename log1.txt to access.log.
7. Display detailed info (permissions, owner, timestamps) of all files in ~/shell_lab.
8. Use cat to create a file called report.txt with the following content:

    Alpha
    Beta
    Gamma
    Delta
    Omega
9. Display report.txt content in reverse order, using only a Linux command.
10. Use echo to display the following exactly as shown:

Linux
Bash
Echo\\Test
echo "This is a test line"

11. Create a custom alias named mystatus that displays the text:
    System check by [Your Name]
12. Then run the alias to confirm it works.
13. List all current aliases and find if there's an alias for ls. If so, remove it temporarily and confirm its removal.
14. Turn on shell tracing using set -x, and then run any two commands (like echo, mkdir, or ls). Turn off tracing using set +x. Take a screenshot during tracing.
15. Use one line to attempt to create a directory named project_lab, and print:
    "Created successfully" if it works.
    "Creation failed" if it doesn't.
16. Use echo to print the exact following output in one command:
    Linux   Rocks!
    $PATH contains system/bin:/usr/local/bin
    Let's code: if (x > y) { return x; }
    C:\\Users\\Student\\Documents\\linux.txt
    "Quoted" and \'escaped\' characters