Choice Based Assessment - 3

Category 1: Command Line Mastery (Filters & Pipes)

Choose one of the following tasks:

- **Option A (The Data Miner):** You have a large log file named access.log. Write a single-command pipeline that finds all lines containing the word "ERROR", extracts only the 3rd column (the timestamp), and saves the count of these errors to a file named report.txt.
- **Option B (The Cleanup Crew):** You have a list of names in users.txt that are messy (mixed case, extra spaces). Use a combination of tr, cut, and wc to convert all names to lowercase and provide a total count of users in the list.

Category 2: The VI Power User

Choose one of the following tasks:

- **Option A (Efficiency Challenge):** List the specific VI command sequences required to:
    1. Delete 5 lines of text starting from the cursor.
    2. Undo that deletion.
    3. Search for the word "Configuration" and replace it with "Setup" globally.
- **Option B (The Editor's Logic):** Explain the functional difference between **Command Mode**, **Insert Mode**, and **Last Line Mode**. Why does Linux use a modal editor like VI instead of a standard "point-and-click" interface for system administration?

Category 3: Security & User Management

Choose one of the following tasks:

- **Option A (The Permissions Audit):** You encounter a file with the permissions -rwxr-xr--.
    1. Translate this into octal (numeric) notation.
    2. Identify what the "Others" group can and cannot do.
    3. Provide the command to change this so the "Owner" and "Group" have full access, but "Others" have no access at all.
- **Option B (The Admin's Script):** Outline the steps (and commands) to create a new user named dev_user, assign them to a group called developers, and ensure they own the directory /home/project_alpha.

Category 4: System Navigation & Redirection

Choose one of the following tasks:

- **Option A (The Search Party):** Use the find command to locate all files ending in .sh within the /etc directory that are larger than 10k. How would you redirect any "Permission Denied" errors to /dev/null so they don't clutter your screen?
- **Option B (The Tee Connection):** Explain a scenario where using the tee command is superior to using a simple > redirection. Provide a code example demonstrating its use in a real-world system update or log monitoring task.

Submission Rules:

1. Sumit the assessment in PDF format.
2. For each category choose one option.
3. PDF should contain the screenshot/snapshots of the commands executed for each category followed by the answer to the question asked in each option.