Lab Files Chosen

- **Lab 3:** Basic Commands
- **Lab 5:** User & Group Management

LAB 3 – Basic Commands

1. Navigation Commands

a) `pwd`

```
pwd
```

Sample Output: `/home/yourusername/Unit-1`

Explanation: `pwd` shows the current working directory. Helps confirm where you are before running other commands.

---

b) `ls`

```
ls
```

Sample Output: `Lab3.txt Lab5.txt`

Explanation: Lists files and directories in the current folder.

---

c) `cd`

```
cd ..
```

Sample Output: (No output – moves you up one folder.)

Explanation: Changes the current directory. `cd ..` moves one step up, while `cd foldername` moves into a specific folder.

---

2. File & Directory Management

a) `mkdir`

```

```

```
mkdir test_folder
```

Explanation: Creates a new directory.

---

b) `touch`

```
touch file1.txt
```

Explanation: Creates an empty file (or updates its timestamp if it already exists).

---

c) `cp`

```
cp file1.txt file2.txt
```

Explanation: Copies file1.txt to file2.txt.

---

d) `mv`

```
mv file2.txt test_folder/
```

Explanation: Moves (or renames) files/directories.

---

e) `rm`

```
rm file1.txt
```

Explanation: Deletes a file. Use `rm -r foldername` for directories.

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3. File Viewing & Editing

a) `cat`

```
cat file2.txt
```

Explanation: Displays the contents of a file on the screen.

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b) `nano`

```
nano file2.txt
```

Explanation: Opens the file for editing using Nano text editor.

---

c) `clear`

```
clear
```

Explanation: Clears the terminal screen.

---

4. System Commands

a) `echo`

```
echo "Hello World"
```

Explanation: Prints text or variables to the screen.

---

b) `whoami`

```
whoami
```

Explanation: Displays the current logged-in username.

---

c) `man`

```
man ls
```

Explanation: Opens the manual page for `ls`, showing its usage and options.

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5. Searching & Finding

a) `find`

```
find . -name "file2.txt"
```

Explanation: Searches for a file by name in the current directory (and subdirectories).

---

b) `grep`

```
grep "Hello" file2.txt
```

Explanation: Searches for a word or pattern inside a file.

LAB 5 – User & Group Management

1. Create a New User

```
sudo useradd -m newuser
```

Explanation: Creates a new user with a home directory `/home/newuser`.

---

2. Create a New Group

```
sudo groupadd newgroup
```

Explanation: Creates a new group named `newgroup`.

---

3. Add User to Group

```
sudo usermod -aG newgroup newuser
```

Explanation: Adds `newuser` to `newgroup`. `-aG` ensures the user keeps membership in existing groups.

---

4. Create a File and Check Ownership

```
touch testfile.txt
ls -l testfile.txt
```

Sample Output:

```
-rw-r--r-- 1 youruser youruser 0 Sep 10 14:02 testfile.txt
```

Explanation: Creates a file named `testfile.txt`. `ls -l` shows its owner (your current user) and permissions.

---

5. Change Ownership

```
sudo chown newuser:newgroup testfile.txt
```

Explanation: Changes the file's owner to `newuser` and group to `newgroup`.

---

6. Verify Ownership

```
ls -l testfile.txt
```

Sample Output:

```
-rw-r--r-- 1 newuser newgroup 0 Sep 10 14:02 testfile.txt
```

Explanation: Confirms that ownership has been updated successfully.

Extra Questions

1. Difference between `chmod` and `chown`

Command	Purpose	Example
chmod	Changes permissions (read, write, execute) of a file or directory.	`chmod 755 file.txt`
chown	Changes ownership of a file or directory (user and/or group).	`chown newuser:newgroup file.txt`

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2. How to Check Current Directory & User

- **Current Directory:** `pwd`

- **Current User:** `whoami`
