Lab 1: Directory and File Creation Script
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****Introduction****
This project involves creating a shell script in Linux to automate the creation of directories and files with specific naming conventions and contents. The script is designed to enhance familiarity with basic shell scripting, directory and file manipulation, and essential Linux commands. By completing this project, users gain experience in automating repetitive tasks and working with the Linux command line.

****How the Script Works****
The shell script automates the following tasks:

1. Create the Main Directory
   - The script uses the `date` command to generate the current date and time in the format `YYYY-MM-DD_HH-MM-SS`.
   - This string is used as the name of the main directory, which is created using the `mkdir` command.

2. Create Subdirectories
   - A loop iterates ten times to create subdirectories named `file101` to `file110` inside the main directory.

3. Generate .txt Files with Programming Languages
   - Inside each subdirectory, a `.txt` file named `tuser50X.txt` is created, where `X` corresponds to the subdirectory number (e.g., `tuser50101.txt` in `file101`).
   - Each `.txt` file contains a unique programming language, such as Python, Java, or C++.

****Example Output Structure****
```
2025-01-27_12-34-56/
        file101/
        tuser50101.txt (contains "Python")
        file102/
        tuser50102.txt (contains "Java")
        file103/
        tuser50103.txt (contains "C++")
        ...
```

****Linux Commands Overview****

`mkdir`
- *Description:* Creates directories.
- *Usage:* `mkdir directory_name`
- *Example in Script:* Creates the main directory and subdirectories.

`echo`
- *Description:* Outputs text to the terminal or writes text to a file.
- *Usage:* `echo "text" > file_name`
- *Example in Script:* Writes programming language names into `.txt` files.

`chmod`
- *Description:* Changes file permissions.
- *Usage:* `chmod +x script_name`
- *Example in Script:* Makes the shell script executable.

`date`
- *Description:* Fetches the current date and time.
- *Usage:* `date +"%Y-%m-%d_%H-%M-%S"`
- *Example in Script:* Generates the name for the main directory.

****Screenshots****

1. Folder Structure:
   - A screenshot showing the created main directory (`2025-01-27_XX-XX-XX`), subdirectories (`file101` to `file110`), and `.txt` files.

2. File Contents:
   - A screenshot of the contents of one `.txt` file (e.g., `tuser50101.txt` containing "Python").

****GitHub Link****
https://github.com/dylanwinter200/linux-file-script

****Conclusion****

This project demonstrates the power and utility of Linux shell scripting to automate repetitive tasks such as creating directories and files with specific contents. By using commands like `mkdir`, `echo`, `chmod`, and `date`, this script effectively simplifies directory and file management. The project provides valuable experience in scripting and the Linux command line, contributing to practical skills in automation and system administration.