

Programming Assignment 3

File Organizer Script

Objective

The purpose of this assignment is to develop a shell script that automatically organizes files within a specified directory by grouping them into subdirectories based on their file types. This task will help students gain practical experience in file manipulation, directory management, and basic shell scripting constructs such as loops, conditionals, and command-line arguments.

Assignment Description

You are required to write a shell script that takes the path to a target directory as input. The script will analyze the files in the specified directory and sort them into corresponding subdirectories based on their file extensions. For example:

- All .jpg, .png, and .gif files should be moved into an Images/ subdirectory.
- All .pdf, .docx, and .txt files should be moved into a Documents/ subdirectory.
- All .mp3, .wav files should be moved into a Music/ subdirectory.
- All .mp4, .avi, .mkv files should be moved into a Videos/ subdirectory.
- Files with extensions not explicitly handled should be moved into an Others/ subdirectory.

The script should create the necessary subdirectories automatically (if they do not already exist) and should handle the case where a file with the same name already exists in the target subdirectory (e.g., by renaming or skipping with a warning message).

Requirements:

Your script must:

- Accept the directory path as a command-line argument.
- Validate that the argument is a valid directory.
- Create subdirectories (Images/, Documents/, Music/, Videos/, Others/) as needed.
- Move files into the correct subdirectories based on their file extensions.
- Display informative messages about what the script is doing (e.g., "Moving file photo1.jpg to Images/").
- Handle duplicate filenames gracefully.
- Include comments in the script explaining the logic.
- Be executable and tested on a Unix-like operating system (e.g., Linux, macOS).

Deliverables:

- Your shell script file (e.g., file_organizer.sh).
- A brief README.md file explaining how to run your script, its features, and any assumptions you made.
- Please use eLearning to submit your homework. Any submission via email or other communication channels (e.g., MS Teams) will be ignored.