CSE 4502 (SWE) [Operating Systems Lab]
Lab #07

Lab Task:

1. **Task: Create a Script to Calculate File Sizes in a Directory and Generate a Size Report**
   Description: Develop a script that calculates and generates a report of the total size of files (in bytes) in a specified directory and its subdirectories. The report should include the size breakdown by file extension.
   Hint: Use ***find, stat***, and text manipulation tools like awk to calculate file sizes and generate the report.
   '***find***' – To locate files and directories `(find [path…] [expression])`
   '***stat***' – To display detailed information about files `(stat [options] file e.g., stat -c %s $file)`

2. **Task: Organize Files by Modified Date into Separate Directories**
   Description: Write a script that automatically sorts files in a directory into subdirectories based on their modification date. For example, files modified in the last 7 days go into one folder, those modified in the last 30 days go into another, and so on.
   Hint: Use ***find -mtime*** to search for files based on modification date and ***mkdir*** to create directory and ***mv*** to move files to specific directory.

3. **Task: Search and Replace Text in Multiple Files with User Input**
   Description: Write a script that prompts the user for a search string and a replacement string. It should then search for and replace occurrences of the search string with the replacement string in multiple text files within a directory.
   Hint: Use a ***loop*** to iterate through files, and ***sed*** for search and replace operations.

4. **Task: Search and Replace Text in Multiple Files with User Input**
   Description: Write a script that prompts the user for a search string and a replacement string. It should then search for and replace occurrences of the search string with the replacement string in multiple text files within a directory.
   Hint: Utilize ***find -mtime*** and ***cp*** to locate and copy files based on their modification time.

5. **Task: Count and List Files by Size Range**
   Description: Create a script that counts and lists files in a directory based on their size ranges (e.g., small, medium, large). You can define the size ranges based on your criteria.
   Hint: Use ***find, stat***, and conditional statements in your script to categorize files by size.