M8.B4: Programming Assignment 4: Linux Shell Scripting

Due Nov 7, 2021 by 11:59pm **Points** 100 **Submitting** a file upload

All programming assignments are developed using GCC in Linux. Be sure your program has proper documentation, including a description of the purpose of the program and your name. To make your program easier to read and debug, use indentation and spacing appropriately. Refer to examples in your reading and practice activities. To earn full credit, you must follow all instructions exactly.

INSTRUCTIONS:

Write a C program that will take a command-line argument to specify the starting point of a directory listing. The program will display the complete contents of the directory.

Each file in the directory should be listed on a line by itself. Each subdirectory has its name followed by a slash and the files listed in it are indented by four spaces. List the size of the file.

The program should begin with an output statement indicating the directory in which it begins and when complete, displays a message indicating the list is complete. Display the cumulative space usage and the total number of files.

An example:

```
$>  ./program4  /usr/include | more

Directory listing of /usr/include:

dir1
   file1   size
   subdir1 /
      file1   size
      file2   size

Total space usage:  total_size
Total number of files:  #files

Done.
```

TO DO:

Upload your .c file into the Canvas dropbox before the due date and time. You may resubmit as many times as needed prior to the due date. But please note that the assignment will not be graded by your instructor until after the due date.

Grading Rubric for Programming Assignments

Criteria	Ratings			Pts
Solution	**40 to >35.0 pts** **Exemplary** A completed solution runs without errors. It meets all the specifications and works for all test data.	**35 to >28.0 pts** **Developing Competence** A completed solution is implemented on the required platform, and uses the shell specified. It runs, but has logic errors.	**28 to >0 pts** **Insufficient** An incomplete solution is implemented on the required platform. It does not compile and/or run.	40 pts
Program Design	**40 to >35.0 pts** **Exemplary** The program design uses appropriate structures. The overall program design is appropriate.	**35 to >28.0 pts** **Developing Competence** Not all of the selected structures are appropriate. Some of the program elements are appropriately designed	**28 to >0 pts** **Insufficient** Few of the selected structures are appropriate. Program elements are not well designed.	40 pts
Code Readability	**20 to >18.0 pts** **Exemplary** All required documentation is present, the program is correctly indented, and appropriate identifiers are selected.	**18 to >14.0 pts** **Developing Competence** Program is minimally documented; some identifiers are inappropriate or inconsistent in indentation.	**14 to >0 pts** **Insufficient** Insufficient program documentation, and/or poor identifier selection.	20 pts
				Total Points: 100