EE150 Intermediate Programming Concepts for Engineers Lab 3

Due one week after assigned.

Please turn in the assignment electronically.

In your home directory, create a directory ‘lab\_3’ exactly as you did for Lab 1 and 2. Create all your files within that directory; when you have finished the lab use the unix tar command on the directory and copy it over to my dropbox exactly as you did with Lab 1.

There are two parts to this lab: exercise A and exercise B.

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EXERCISE A:

1. Create the following files (separate files):

1. meanArray.c
2. medianArray.c
3. bubbleSort.c
4. main.c
5. arrayFunctions.h

All as described in lecture notes 4.

You may use the code in lecture notes 4; add your own comments as appropriate. There is no guarantee that the code in lecture notes 4 is perfect, of course; if there are errors you need to find and resolve them correctly.

2. Create a makeme file and an input.txt file as described on slide 14 of lecture notes 4. Make the makeme executable (using chmod) and run them. Assign the output to a file named output.txt. Assigning input and assigning output was described in the first lecture of the semester.

3. Tar the whole directory (including the input.txt file and the resulting output.txt file) and put it in my dropbox.

This assignment is focused on handling separate compilation, not so much upon the coding itself, which is why the code is provided to you in advance.

EXERCISE B:

1. Create the program command.c given in class notes 5, slide 17. Compile it using the –o option to create an executable file command.out

2. Create three files runme1, runme2, and runme3 each including text as described below. Each file has only one line of text as shown. Make the three files executable using chmod.

|  |  |
| --- | --- |
| Program name | Line of text |
| runme1 | ./command.out |
| runme2 | ./command.out able baker charlie |
| runme3 | ./command.out 1 2 3 4 5 6 7 8 9 10 |

3. test all three runme files by running them using “./runme1” (or runme2, or 3) to ensure they are working.

4. run them again, using output redirection to send the output of runme1 to a file named output1.txt, the output of runme2 to output2.txt, and similarly for runme3 and output3.txt

5. Tar the whole directory (including the input.txt file and the resulting output.txt file) and put it in my dropbox.

This assignment is focused on giving you familiarity with how command-line arguments work, not so much upon the coding itself, which is why the code is provided to you in advance.