CPE 101
Fall 2009
Laboratory 4 (function practice and testing)

Due Date

- Friday October 16, at the end of lab
- You must turn in your source electronically on vogon using the handin command – instructions are provided in below.

Objectives

- To practice writing functions
- To practice writing test cases

Resources

- This is an individual assignment
- You may use your instructor, peers, texts, and your own innate capabilities and resourcefulness!

This lab requires that you implement a single program to compute the area and perimeter of a rectangle. Develop the following program in a file named lab4.c. **You are required to write test functions to make sure that your computation (and code) is correct.**

Part 1: Develop a function to compute the area of a rectangle from its width and height. You must pick an appropriate name for the function and appropriate data types for the parameters and for the return type.

Part 2: Develop a function to compute the perimeter of a rectangle from its width and height. You must pick an appropriate name for the function and appropriate data types for the parameters and for the return type.

Part 3: User Interaction

- Using printf, prompt the user for the height and width of a rectangle. Using scanf, read the user input. Invoke the functions that you defined above (after you've tested them) to compute the area and perimeter of the rectangle and print the results for the user to see.

Part 4: Test Cases

- **For this lab, you must develop three test cases for each of the functions described in the next section. It is recommended that you develop these test cases before you write the code for each function. Place the test cases in main and make sure they print out a result for each case. Your test cases should**

demonstrate that you understand what the results should be and that you've correctly implemented the functions.

Part 5: Handing in Your Source Electronically…

1. Transfer your file (lab4.c) to vogon as you've done for previous labs
2. Log on to vogon using the Secure Shell Client program (or your favorite equivalent).
3. Change directory (cd-command) to the directory containing the source file or files to hand in.
4. Execute the following command:

    handin zwood csc101lab04 lab4.c

5. You should see messages that indicate handin occurred without error. You can (and should) always verify what has been handed in by executing the following command:

    handin zwood csc101lab04