C Programming Practice

Introduction

The following exercises draw on the basic programming skills you will need for this unit. If you have a preferred C programming interface, you may use that. Otherwise, it is suggested that you create an account on replit.com and use that to complete the exercises. If you are unfamiliar with C syntax or need a refresher, the Learn C Programming website has excellent examples.

At the end of the lab, you should:

1. Be comfortable with implementing an algorithm in C code.
2. Write code that will automatically test the algorithm and print a pass/fail messages to the console.

Exercises

1. Using the template on iLearn as a starting point, complete the m_add and m_multiply functions in *myfunctions.c*. They should add and multiply the values in two matrices, respectively. Compile and run *matrix_math.c* to visually check that you have implemented the add and multiply functions correctly.

2. Complete the m_compare function which compares the values of two matrices. Write a test in the main function to ensure that your compare function works correctly. You should implement two tests, one where the matrices are the same and one where they are different.

3. Create two new matrices with the expected results of A+B and A*B. Use the compare function to compare the outputs of the add and multiply functions with the expected results. If the output of both the add and multiply functions matches the expected output, print a message that says “Pass” to the console and have the main function return a value of 0. Otherwise, print “Fail” and have the main function return -1 if the add function fails or -2 if the multiply function fails. Test your code to make sure that it works as expected for all cases.