Cptr380 Homework #3 Winter, 2018

MIPS Programming

DUE: Monday, January 22, Start of class

Objective

Gain an understanding of the MIPS architecture through a programming exercise.

Note

You may work solo or in teams of two. Each person needs to be sure to submit the program to the D2L dropbox. Include instructions on how to execute your progam if it is not obvious.

To Do

1) Download and install the free MIPS simulator, QTSpim. Note that there are versions for Windows, Mac, and Linux. As an alternative, you may prefer the MARS simulator. Links to both are on the course web page. Note – be sure you get the **QTSpim** simulator and not the SPIM simulator.
2) Copy a zip file of various example programs from the class web page: http://people.wallawalla.edu/~curt.nelson/cptr380/qtspim/Examples.zip
3) Write a MIPS assembly language program that implements Booth's multiplication algorithm. Run it on the MARS or QTSpim simulators with a range of inputs to verify correct operation. Program notes:
    a. Communicate clearly to the person running the program:
        i. How to enter the numbers to be multiplied.
        ii. How to terminate the program.
    b. Test your program with positive numbers, negative numbers, and 0.

To Turn In

1) A printed copy of your MARS or QTSpim program stapled to the back of this handout.
2) Place a copy of your source file in the HW#3 dropbox in D2L. Use the following format for your file name: lastname_firstname.asm or lastname_firstname.s
   When you submit your program, be sure and include directions in the dropbox on how to run your program.