

Homework #5 Computer Organization

Due: March 4, 2011 (F) by 3 PM

Write a MARIE assembly language program to solve the following problem.

Calculate the sum of a set of numbers (e.g., homework scores). Scores should be input one at a time with a negative value being used to signal the end of data (the negative number is acting as a "*sentinel*" value).

For example, if you input the values: 10_{10} 5_{10} 0_{10} 15_{10} 20_{10} -1_{10} , then your program should output 60_{10} .

Before you start writing MARIE assembly language, write a high-level language algorithm. THEN, translate it to MARIE assembly language.

You can download the MARIE simulator at: http://computerscience.jbpub.com/eco/2e/student_resources.cfm
Extract it (right-click on the .zip file and select "Extract All...") In the MARIE simulator folder, double-click on MarieSim (executable jar file) if you have Java installed (which you probably do for your web-browser).

In the MARIE folder, is a QuickGuide.doc file containing instructions on using the simulator. I have a more tailored/updated version at: http://www.cs.uni.edu/~fienup/cs041s11/QuickGuide_UNI.pdf

You should turn in:

- a print-out of the listing of your program, e.g., hw5.lst. This file gets generated in the MARIE Assembler Code Editor when you select "Assemble | Assemble current file". You can print this listing directly from the MARIE Assembler Code Editor by select "Assemble | Show assembly listing" and clicking the "Print" button. (You can also open the listing with WordPad and print it)
- a window capture of the MarieSim program after running your assembly language program with the input values: 10_{10} 5_{10} 0_{10} 15_{10} 20_{10} -1_{10} and the output showing 60_{10} . You can capture this window by (1) right-clicking anywhere in the window to make it the "currently active" window, (2) while holding down the <Alt> key, press the <PrtScn> key to capture the window to the Windows clipboard, and (3) open some word processor (Word, Open Office, etc.) and paste the image into the document. Add your name to this document before printing it.