ECS 50 Summer 2019
Homework Assignment 1

Due Date: No later than Friday, August 16, 9:00pm

Problem 1

Do the following exercises from Chapter 1 of the textbook <u>Principles of Computer Systems</u> by Karam and Bryant:

1-2 (b)

1-4 (b) (e) (h) (j)

1-5 (c) (d) (f)

1-6 (b) (d) (e)

1-7 (a) (c) (d)

1-11 (a ii) (b i)

Put your answers into a text file named `numbers.txt`. You don't need to show your work. Put your name and student ID number at the top of the file.

You could do this work with a calculator, but you won't be able to use a calculator at exam time. You might want to do all this without the aid of a calculator. Just a friendly suggestion.

Problem 2

Using CUSP and ASIDE, write the assembly language program specified in Exercise 3-5 in your textbook. Submit three files via Canvas. The file `mult.txt` should contain the high-level algorithm (i.e., multiplication by repeated addition) that you are using to guide the development of your assembly language program. You can write this algorithm in a programming language like C or Java or Python, or write it in some sort of pseudocode. The file `mult.csp` should contain your assembly language program. Run that program through the ASIDE assembler to generate the object file (i.e., the machine code) `mult.obj`. Of course, once you get to that point, you'll want to test it out by running the object code on the CUSP simulator, but there's no resulting file to submit. Just submit the three files `mult.txt`, `mult.csp`, and `mult.obj`.

Exercise 3-5 is not worded well, but it is asking you to do multiplication by repeated addition.

Important Notes

In case you've lost count, when you've completed the problems above, you should submit four files through Canvas: `numbers.txt, mult.txt, mult.csp,` and `mult.obj`

We'll tell you where to go to download CUSP and ASIDE on Tuesday so that you'll be able to work on problem 2. Until then, just work on problem 1.

There is no keyboard input required for problem 2. When we test your solution, we'll just put our test values in the indicated memory locations and see if the correct values appear where they are supposed to.

While you're not required to do the assembly for problem 2 without the ASIDE assembler, let me strongly suggest that you perform the assembly process by hand too. That is a skill that may come in handy on your upcoming exam.

Don't hesitate to ask for clarification on any of this.