

Date: _____

Goals

- ## The Assignment

<http://www.cs.colostate.edu/~cs270/.Fall14/recitations/R11/r11.asm>

;; Main program

Each comment may correspond to one or more assembly instructions. Note that the stack pointer is initialized already. You must **1)** load each of the parameters to `COMPUTE` from memory, **2)** push these parameters on the stack in reverse order, then **3)** call `COMPUTE`. On return, you must **4)** pop the result into a register, **5)** clean up (or pop) the stack to remove the three parameters, and **6)** store the result in memory. The `COMPUTE` function is completely defined, and has a comment that shows how it would be implemented in C. The parameter values for the call and a memory location for the result are already allocated. When the code is complete, assemble it and run in the simulator:

```
$ ~cs270/lc3tools/lc3as r11.asm
$ ~cs270/lc3tools/lc3sim-tk &
```

Now step the code in the simulator, drawing a picture of the stack using the table below. Even though the stack addresses are already filled in, do not assume that all of the locations shown are used.

<i>Address</i>	<i>Stack Description</i>	<i>Real Value</i>
x3ff9		
x3ffa		
x3ffb		
x3ffc		
x3ffd		
x3ffe		
x3fff		

What is the final value of the stack pointer in R6 when HALT is executed? _____

Has the program restored the stack pointer after the function call? _____

What is the value stored in RESULT when HALT is executed? _____

Is RESULT correct based on the implementation of Compute defined in the comment? _____

When finished, please show this answer sheet to the teaching assistant, and turn in r11.asm to the dropbox to receive credit for the recitation.