UNIVERSITY OF THE WEST INDIES

Department of Computing
COMP3101 – Operating Systems (Semester I, 2020)
Lecturer: Dr. Kevin Miller

BASIC INSTRUCTION CYCLE

Problem Definition

In this assignment, you will simulate a very simple machine by the name SimpleOS.
SimpleOS is so basic that it currently can only allow for the execution of only 6 basic instructions. You can increase the instructions to no greater than 9 instructions to complete the task that will be given below.

0001 # Load AC from memory
0010 # Store AC to memory
0101 #Add to AC from memory
0100 # Subtract from AC from memory
0011 # Load AC from stdin
0111 # Store AC to stdout

The problem that you will solve with this simple machine is to simulate the printing of Fibonacci numbers to stdout. You should have an appropriate mechanism to stop the program at some point.

You will begin by giving instructions to store the value zero (0) and one (1) in the first 2 free contiguous storage locations. These values will be given from the standard input. You should decide on the initial value of the Program Counter so that you can jump start your execution.
What you are basically simulating is the instruction cycle (fetch and execute stages).

Some skeleton code is given to you as a guide to the completion of this project. You must look in the README.txt to see the instructions to compile and run the application. The structure of the application should not change, so be careful of the IDE that you will use. I encourage you to use an editor like Visual Studio Code or Sublime Text, and then compile and run from the command line. There are many other editors that you can use.

Only the source code should be zipped and uploaded. A submission container will be available at the appropriate time. This project will be marked mostly automatically, so you must follow the instructions given. You should document your code as much as possible. You should also print appropriate messages so that I can follow what you are doing (Don't use too many print statements).

For this assignment you should use jdk 8.

NB: DO NOT COPY CODE

DEADLINE: Sunday, October 11, 2020 @ 10PM

**** THE END ****