Coursework 3

Computer Processors (COMP1212)

You should follow the instructions below on how to prepare your submission. Late submissions are not accepted without mitigating circumstances. Each day, or part of a day, will incur a 5% penalty. Feedback on late submissions may not be provided within 3 weeks of submission.

Submission You **must** submit your work via Gradescope.

Deadline **Please see Gradescope for the deadline**.

Weighting This piece of summative coursework is worth 25% of the module grade.

1. Write a program in HACK assembly, without using symbols, that computes the bitwise exclusive or (XOR) of the values stored in RAM[1] and the value of the memory location with address stored in RAM[2]. The result of the computation should be stored in RAM[0].

   You can think of RAM[2] as being a pointer to where the second operand of the XOR is stored.

   The solution should be submitted in a file called "q1.asm".

2. Write a program in HACK assembly, without using symbols, that sums the consecutive set of memory locations starting from the memory address stored in RAM[1] up to, but not including, the memory address RAM[1] + RAM[2]. The result of the computation should be stored in RAM[0]. Note, you need not consider the case of an overflow.

   You can think of RAM[1] as being a pointer to an array of numbers, and RAM[2] as being the length of the array you are summing over.

   The solution should be submitted in a file called "q2.asm".

Question 1 is worth **10 marks**, and Question 2 is worth **15 marks**.