
UNB

Faculty of Computer Science

Assignment 3 CS2253 Fall 2021

Due Date: October 14, 2021 - 8:30 am

Purpose: practice writing assembly language programs.

Problem 1

Given a list of 2's complement numbers starting at location `x4002`, write an LC-3 assembly language program (starting at `x3000`) to find the sum of the positive numbers and store the result in `x4000` and the sum of the negative numbers and store the result in `x4001`. The length of the list of numbers is not known: it is indicated by the number zero.

Test your program using multiple sets of input values. Make sure your program works for different lengths of the list and different combinations of positive and negative numbers.

Submit the assembly code and screen shots of your runs.

Problem 2

Given an array of ten 2's complement numbers starting a location `x4001`, write a program (starting at `x3000`) that will check if the numbers are sorted in ascending order. If they are sorted, then store a 1 at location `x4000` otherwise store 0 at the same location. You may assume that there are no duplicate numbers in the array.

Test your program using 2 sets of input values. Submit the assembly code and screen shots of your runs.

To pass in the assignment: Create a single .zip file containing the two assembly language programs (.asm files) and a pdf file with the screenshots. Name your document `LastName.FirstName_A3.zip` and submit it via D2L.