

# EE306 Introduction to Computing

## Lab 1

**Course Instructor:** Dr. Nina Telang

**TAs:** Benjamin Thorell, Satya Boddu, Diondre Dubose, Jefferson Lint, Simoni Maniar, Nick Riveira

**All Lab assignments must be completed individually. You are not permitted to seek help or clarification from anyone other than the instructor or the TAs.**

**Your file should be named exactly after your EID, for example, xy1234.asm. Your program will not be graded if you fail to follow the file naming convention.**

**Purpose:** The purpose of this assignment is to write a program in [LC-3 assembly language](#) code to find the sum and difference of two 8-bit unsigned numbers and store the result back in memory. The two unsigned numbers are specified in memory locations x4500 and x4501. Each 8-bit number is stored in bits [7:0]. Do not assume that bits [15:8] are zeros.

Your program should store the sum of the two numbers in memory location **x4502**.

Your program should store the difference of the two numbers (Number1 – Number2) in memory location **x4503**.

**Example:** If the memory location x4500 contains 1100100101111100 (xC97C), and memory location x4501 contains 0101101000111111 (x5A3F), then your program should:

- (i) Add x007C with x003F, which is x00BB, and store this sum in memory location x4502.
- (ii) Subtract x003F from x007C, which is x003D, and store this difference in memory location x4503.

### Notes:

- The first line of your program must specify the memory address of the first instruction of your program. The LC-3 simulator will place your program starting at that address. For this assignment, you should place your program starting at **x3000** (i.e. the first line of your program needs to be .ORIG x3000).
- Use the LC3Edit program to type in your programs. Your program needs to be in LC-3 assembly language. Please ask any TA or Dr. Telang if you have any questions.
- **Your file should be named exactly after your EID, for example, xy1234.asm. Your program will not be graded if you fail to follow the file naming convention.**