**COSC 2372 Computer Organization and Assembly Language**

**Assignment 4**

**Due: 23:59pm, Sept. 26, 2022**

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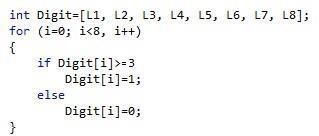
Lamar Number (L #) = [L1, L2, L3, L4, L5, L6, L7, L8]

Example: L Number=20456789, L1=2, L2=0, L3=4, L4=5, L5=6, L6=7, L7=8, L8=9;

Decimal representation L1L2L3 is 20410 (two hundred and four in base 10)

**IMPORTANT: Do NOT use 20456789 to do this assignment. It is just an example to show you what L1 to L8 are. You need to use YOUR OWN L number to do this assignment.**

1. Compute the **sum** of 1000 0011 and the ***binary output*** of the following program. Assume the sum is a **2’s complement representation** and convert it to **decimal representation** (50 points).



` Output: 00111000

1000 0011 -> 0111 1101 -> -12510

0011 1000 -> 5610

1011 1011 -> -6910

1. Convert **decimal representations** L7L8 and -65 (negative sixty-five in base 10) to **2’s complement representations** TC1 and TC2, and then **subtract TC1 from TC2**.

Is the result correct or not? Why? (50 points)

L7L8 = 01 -> 0000 0001 -> 1111 1111 TC1 2’s Compliment

-65 = (-) 0100 0001 -> 1011 1111 TC2

TC2 – TC1 -> TC2 + TC1 2’s Compliment

11111 111

1=1 1011 1111 -6510

Correct 1111 1111 -110

1011 1110 -> 0100 0010 -> -6610