Introduction to Computing

CPIT 201 - Homework 2 - Due **September 19**

1. Store **XX** in an 8-bit memory location using unsigned representation? Show your work?
2. Store **-XX** in an 8-bit memory location using sign-and-magnitude representation? Show your work?
3. Store **-XX** in an 8-bit memory location using two’s complement representation? Show your work?

*Where* ***XX*** *= the last 2 digits of your student number. Example -****XX*** *= -76. If you have one/two digits 0s, use 5/55 instead of zeros digits X5/ 5X/55.*

1. Retrieve the integer that stored as 11100111 in memory in unsigned format? Show your work?
2. Retrieve the integer that stored as 11100111 in memory in sign-and-magnitude format? Show your work?
3. Retrieve the integer that stored as 11010101 in memory in two’s complement format? Show your work?
4. Using floating-point representation (IEEE\_127) (single precision), show the process how (-**XX.XX**) is represented?

*Where* ***XX.XX*** *= the last 2 digits of your student number. Example -****XX.XX*** *= -76.76 (no more than 4 digits in the fractional parts)*

1. The bit pattern (01000111000000000010110101010000)2 is stored in IEEE\_127 format. Show the value in decimal? Show your work?
2. Use the **last digit** of your student number as **X**-bit memory location in **two’s complement**.

(1 point)

a) How many different patterns (symbols) can be represented using **X** bits?

b) show the range for all numbers that can be represented (minimum and maximum values)?

c) Show the binary representation of the **first two numbers** and the **last two numbers**? d) Discuss when an overflow would happen?

*If* ***X <= 2****, use* ***X = 5****.*