**Assignment 1 – Week 2.**

**2’s complement exercise**

**1:** Show how -27\_10 would be expressed in two’s compliment notation.

00011011\_2 = 27\_10

11100100\_2 +1

11100101\_2 = -27\_10

**2:** Our numbers are 8-bits long, suppose we want to subtract 27\_10 from 155\_10, show how to perform binary subtraction using the two’s compliment method.

01110011\_2 = 115\_10

11100101\_2 = +(-)27\_10

01011000\_2 = 88\_10

**3:** Form the two’s complement for -115\_10 and the calculation 27\_10 – 115\_10 using two’s complement.

00011011\_2 = 27\_10

10001101\_2 = +(-)115\_10

10101000\_2 = -88\_10

**4:** Show how to convert the result to decimal using the two’s complement method.

10101000\_2 = -88\_10

01010111\_2 = 88\_10