**Systems and Networks Assessed Exercise 2**

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a)

I successfully manged to make a program that counted through the 8-bit numbers and display them each on port B. When executing the lights quickly flicker as they display the 8 bit numbers being counted through.

b)

In this part I added the delay loop so that I could observe the port lights counting at a much slower pace. The code I created for this part works as required.

c)

I modified the previous code to include a stack and prepared the CPU for an interrupt. In the place of the increment instruction that facilitated counting through the 8-bit numbers there was instead an if else statement that would either increment the A register or decrement according to the value of a toggle variable called count. The interrupt service routine increments this variable and then integer divides by two. This means that the variable has two states 0 or 1 and the interrupt service routine switches between them. The code I created functions as required.