Assignment 6: Programming in Scratch

Objective:

The purpose of this assignment is to experience the computer programming using the Scratch graphical programming environment. Scratch can either be run from your web browser or offline if installed on your computer.

Procedure:

1. Go to https://scratch.mit.edu/ and sign up for an online account. If you have time there are good tutorials on Scratch at:
   https://www.coursera.org/learn/intro-programming
   https://www.pluralsight.com/courses/learning-programming-scratch

2. Work through my PowerPoint Slide Set 8 - Programming Introduction and open the linked programs on Scratch web site. Use these as samples to understand the Scratch programming environment.

3. Create a **Specification Document** for a program you would like to create. This document should include analysis of requirements, goals of program, mathematical equations, and a minimum of three data input items and display a minimum of one output item. The document should also contain known test data to verify the program works properly.

   One suggestion for this assignment is to create a Casino Chip Counter program.
   Have the user enter the quantity of each of the four colors with the following values:

   - Black = $5
   - Blue = $20
   - Red = $50
   - Green = $100

    After user enters the quantity of chips the user should then calculate the total value of chips.

   A second suggestion for the mathematically minded is to make a program that will solve a Quadratic Equation using the Quadratic formula:

   $$ax^2 + bx + c = 0 \qquad\qquad x_{1,}\, x_2 = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

4. Implement your program using Scratch at https://scratch.mit.edu using your account.

5. In the file menu, select Download to your computer which will download a Scratch filename.sb2 file of your working program.

6. Upload your **Specification Document** and Scratch downloaded file **filename.sb2** to LEO in the Assignment folder. In the submission area also paste the URL for your Scratch program. I will examine your work and determine a score out 20 points.

Programming can be very fun and I hope you enjoy this assignment.
This assignment is due the last class. No assignments will be accepted after the last class.