Introduction to Computer Science

Lab 2.1 - Squares and Triangles Redux

In this lab, you will rewrite your SNAP programs from Lab 1.3 to draw shapes using loops.


Content
Ways to modify existing code to meet a particular purpose

Computer programmers rarely begin a large project with a blank screen in front of them. Often they will reuse blocks of code from previous projects, or they will alter existing code so that it serves a new function.

In this lab you are going to alter previously written code and you will add to it. As you do so, consider how you can reuse other code or programs that you have written in the course.

Section 1 - Back In Time

1. Open your solution to the original "Squares and Triangles and Stars, Oh My!"activity. Go to the "File" menu and select "Save as..." to give your project a new name.
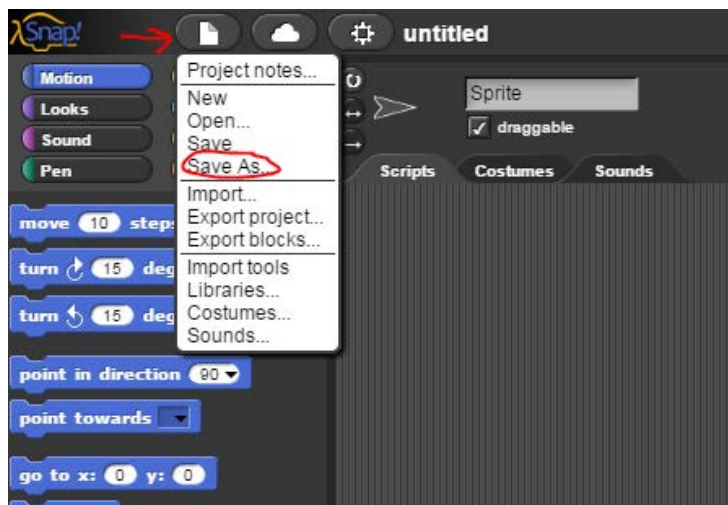
Section 2 - Simplifying Code

1. Look at your code to draw a square. It is probably quite long and has lots of repeated blocks. Using what you have learned about loops, rewrite this script to be shorter and have less redundancy. Make sure that your code still works as originally intended.

2. Now modify your other shape scripts to also use loops. In all cases, try to have as few blocks and as little redundancy as possible while still keeping your code easy to read and understand.

Section 3 - Adding More Shapes

1. Add code to your program to draw the extra shapes below. Follow all the original guidelines (different color and line thickness for each shape, say the name while drawing) and use loops to keep your scripts as short as possible.

When this key is pressed...	Draw a...
7	Decagon (10-sided polygon)
8	Circle

You may not be able to draw a true circle, but you should get as close as you can.

Grading Scheme/Rubric

Lab 1.4 Criteria	
2.2 Square using loop	0.5 points
Section 3	
Decagon	0.5 points
Circle	0.5 points
Minimum redundancy in all	0.5 points
PROJECT TOTAL	**2.0 points**

Big Ideas
Tools and technologies can be adapted for specific purposes.

As you progress through the course and start to create larger and larger programs, think carefully about the components of these programs and how they can be adapted to serve other purposes. For example, code that can draw squares, rectangles, triangles and circles can be combined to draw a house, or an emoji, or a scene from a movie or book.

As you learn more complex commands, think about your daily life and your community around you. How can some of the programming commands be used to solve problems or to improve life?