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CS 212
Assignment 2
Turtle Python Module
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Program Description

This program draws four different shapes using the Turtle Python Module. These shapes are drawn with four different turtle instances, in four quadrants, with four different functions. These shapes are a nine-pointed star, a house outline, a cylinder (drawn in 2D) and a donut. They all leave from the origin (moving with a white line). The functions for these shapes are described below.

The nine-pointed star is draw using a four loop to draw each out. The algorithm is angle right 110 degrees, move forward 30 pixels, angle left 70 degrees and move forward 30 more pixels. This algorithm repeats nine times to draw the star. The inputs are the instance of turtle (start), and its coordinates relative to (0,0) used to move the turtle to its starting position to draw.

The house outline is drawn with the input of its size. The size is the length of the walls. The roof is draw using trigonometry (Pythagorean Theorem) to get the correct lengths to make an isosceles triangle. The math library is included (cosine and pi).

The donut is drawn by the same function that could draw a circle but while the circle is drawn it dips down and moves toward the center and returns to the circle. The width of the line is increased to fill the donut in more. The inputs are the instance of turtle (start), and its coordinates relative to (0,0) used to move the turtle to its starting position to draw.

The cylinder is drawn by first drawing ¼ of a large circle, then mirroring the same ¼ circle. This creates an oval. Then the length is draw. Another ¼ circle is drawn to show the third dimension of the shape. A line is then drawn back to the original oval to complete the shape. The inputs are the instance of turtle (start), and its coordinates relative to (0,0) used to move the turtle to its starting position to draw.

The last element of the output you will notice is the four quadrants are separated with lines to show that none of the shapes are touching each other per the assignment guidelines. This is done using its own function and turtle instance.

Output