

15-112: Introduction to Programming and Computer Science, Spring 2020

Homework 1 Programming: Sequential Execution

Due: Tuesday, January 21, 2020 by 22:00

Welcome to 15-112! This programming homework is designed to get you more practice with writing and visualizing algorithms using the Turtle library.

Your submission will be made through the web interface of Autolab. To do so, please name your file “YourAndrewIDLab1.py” and submit this file at:

<https://autolab.andrew.cmu.edu/courses/15112q-s20>

1 Drawing a Rectangle

Task 1 (1 pt) Write a function called *drawRect* that takes two input parameters (look at class slides for lecture 2 to see how to pass arguments to functions): the length and height of a rectangle. The function should then use the turtle commands to create a rectangle with the dimensions according to the values passed in.

2 Drawing Numbers

Task 2 (10 pts) In this task, you will write several functions that will draw different numbers. Here are a list of functions that you should write - for each function the pensize should be 3 and the height of the digit should be 24 units.

- Write a function called *drawOne* that uses the turtle library to draw the number 1.
- Write a function called *drawTwo* that uses the turtle library to draw the number 2.
- Write a function called *drawThree* that uses the turtle library to draw the number 3.
- Write a function called *drawSix* that uses the turtle library to draw the number 6.
- Write a function called *drawNine* that uses the turtle library to draw the number 9.

3 What time is it?

Task 3 (6 pts) *In this task, you will use the functions you defined in task 2 to create a clock face. This function should be called `drawClock`. Your output should look similar to the one given in figure 1.*

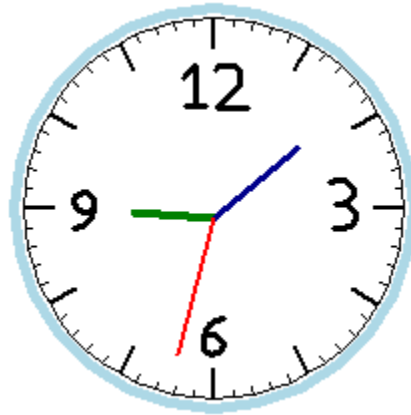


Figure 1: Image of a clock face drawn using Turtle library

4 Clock Tower

Task 4 (6 pts) Write a function called `drawClockTower` that uses the functions in tasks 1 and 3 to draw a clock tower as shown in figure 2.

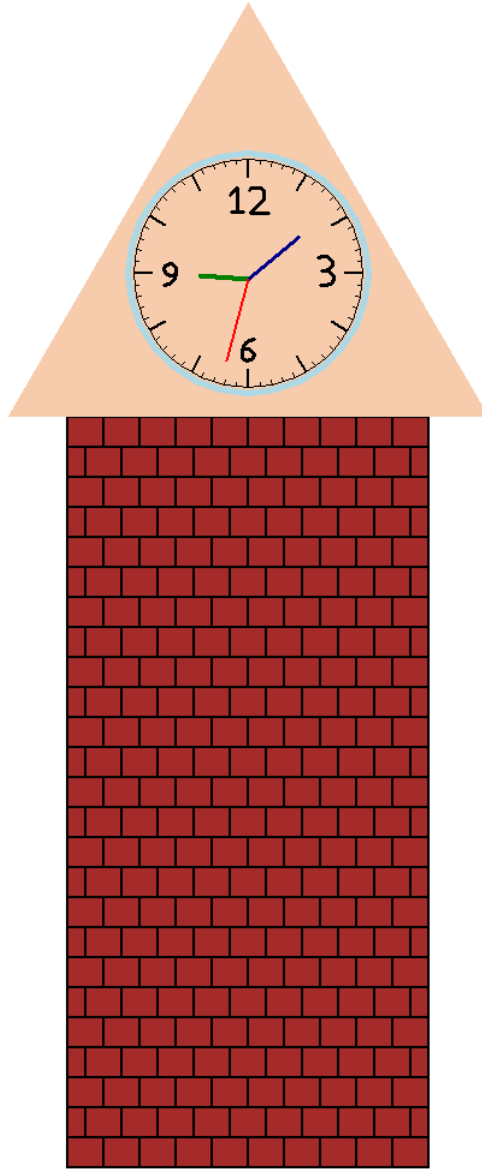


Figure 2: Image of a clock tower drawn using Turtle library