15-112: Introduction to Programming and Computer Science, Fall 2019

Homework 1 Programming: Sequential Execution

Due: Tuesday, September 3, 2019 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-f19`

1 Drawing a line

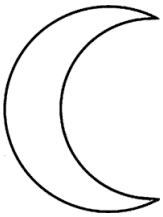
Task 1 (1 pt) *Write a function called drawLine that takes two input parameters (look at class slides for lecture 2 to see how to pass arguments to functions): an angle and a length. The function should turn the turle left by the angle passed to the function and then move the turtle forward by the distance provided. For example, calling the function as drawLine(45,100) will turn the turle left by 45 degrees and then move the turtle foward by 100cm.*

2 Star gazing!

Task 2 (3 pts) *Write a function called drawStar that draws a star using the Turtle library. The function should take an input argument for length of each side of the star. For this question, you should only use a sequence of drawLine functions and no other code.*

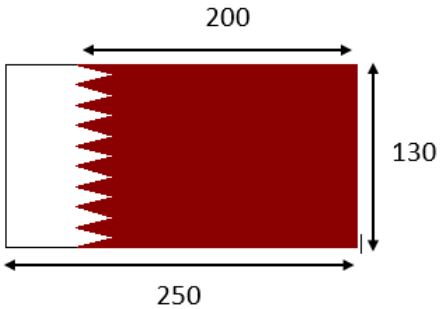
3 The Crescent!

Task 3 (2 pts) *Write a function called drawCrescent that draws a crescent using the Turtle library as shown below. The function should take as input the size (radius) and color of the cresent as input parameters)*



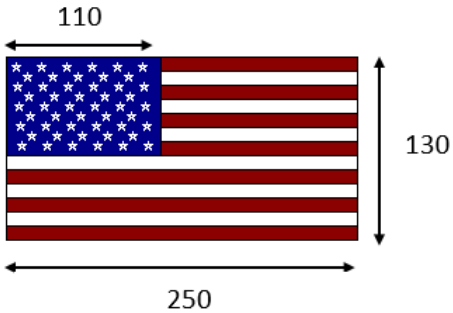
4 Qatar Flag

Task 4 (4 pts) *Write a function called drawQatarFlag that draws the Qatari Flag as shown below. You might need to look up turtle library functions to figure out how to fill in shapes.*



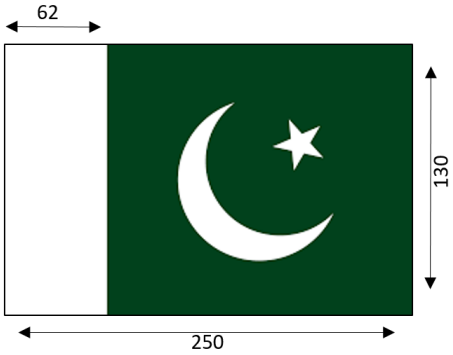
5 The US Flag

Task 5 (4 pts) *Write a function called drawUSFlag that draws the Flag for United States as shown below. You should use the star function you wrote earlier.*



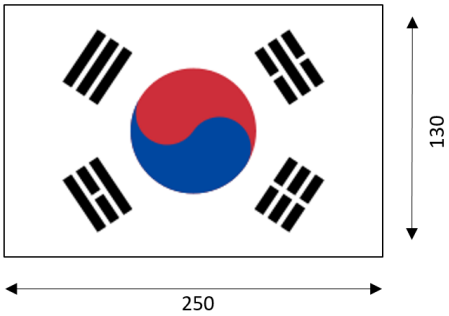
6 The Pakistan Flag

Task 6 (4 pts) *Write a function called drawPAKFlag that draws the Flag for Pakistan as shown below. You should use the star and crescent functions you wrote earlier.*



7 The South Korea Flag

Task 7 (4 pts) *Write a function called drawSKFlag that draws the Flag for South Korea as shown below.*



8 Put it all together

Task 8 (3 pts) *Write a function called drawAllFlags that draws the Qatar and US flags together and then Pakistan and South Korea Flags on the next line.*

Your file should contain all the function definitions and should only contain a call to this (drawFlags) function.