CIS 122 Spring 2016  
Project 2: Hello, Turtle  
Due: Monday, April 18, 2016 6p  

Goals  
By the end of this assignment, you will have  
• practice with exploring Python modules  
• practice with Python turtle graphics  

Getting Started  
Open a new Editor window and save it as cis122project2.py. You should use ONLY Python code that has been covered in textbook readings and class lecture/lab, and code from the Python turtle module, to solve the problem.  

Remember to include from turtle import * at the top of your Project 2 Python file (in the editor window).  

(0) Sunshine on a Cloudy Day  

The diameter of the Sun is 1,392,000 km, while the equatorial diameter of the Earth is 12,756 km (a ratio of about 109:1). Use Python turtle graphics to illustrate the relative size of the sun and the earth by drawing two circles.  

Look at turtle built-in function circle. Some other turtle functions that will be helpful are begin_fill, end_fill, and fillcolor. When begin_fill is called, the turtle keeps track of its starting point, and all the lines it has drawn until end_fill is called. When end_fill is called, the turtle fills in the space enclosed by the lines that the turtle has drawn.  

Other turtle functions that may be helpful here are setposition (setpos) and penup (up) and pendown (down). up and down lift the turtle “pen” from the canvas and put it back down, respectively. setpos will move the turtle directly to the x,y position specified by its arguments. (That is, the setpos args specify an absolute position, not relative movement.  

Explore turtle functions using the built-in help function or using Python documentation.  

(1) More Turtle Graphics  

(1a) Write Python code to draw a square, using turtle movement commands (e.g., fd, bk, lt, rt). Then, edit this code to draw a square where the color of the square is the color specified via the input function.  

(1b) Write Python code to draw a triangle, where the color of the triangle is specified via the input function.
As for drawing the square, the turtle will need to rotate 360 degrees to complete the triangle and return to its initial heading. For the square, the turtle made four turns; for a triangle it will be three.

(2) Art show

Write Python code to have the turtle draw a simple line drawing of anything you like (for example, a house). Then add details.

Finishing & submitting your work

When you have completed all of the problems, use the Save command from the IDLE File menu to save the Editor window as a file with the name cis122project2.py.

Submit your file via Canvas. You may re-submit your project up until the project deadline (i.e., as long as the submission link is available). Only the final submission will be graded.

Note: as per CIS 122 class policy (see Syllabus), it is not possible to submit a project after the deadline. Projects that are not submitted by the deadline will receive a default grade of zero. Two project grades will be dropped at the end of the term, to provide the flexibility you need for busy weeks, individual technical difficulties, misunderstandings, etc. You do not need to contact the CIS 122 instructional staff about this; it will happen automatically.

Even if you do not submit a project, you should complete the project and check your work against the posted solution.

Grading Rubric

8 points possible (2 pts. per problem):

1: Python program written using good style: a comment with the project identification, author, credits, and short description at the top of the program file; comments for each individual problem; code is easy to read, e.g., includes good use of white space.

1: Code correctly implements the project specification.