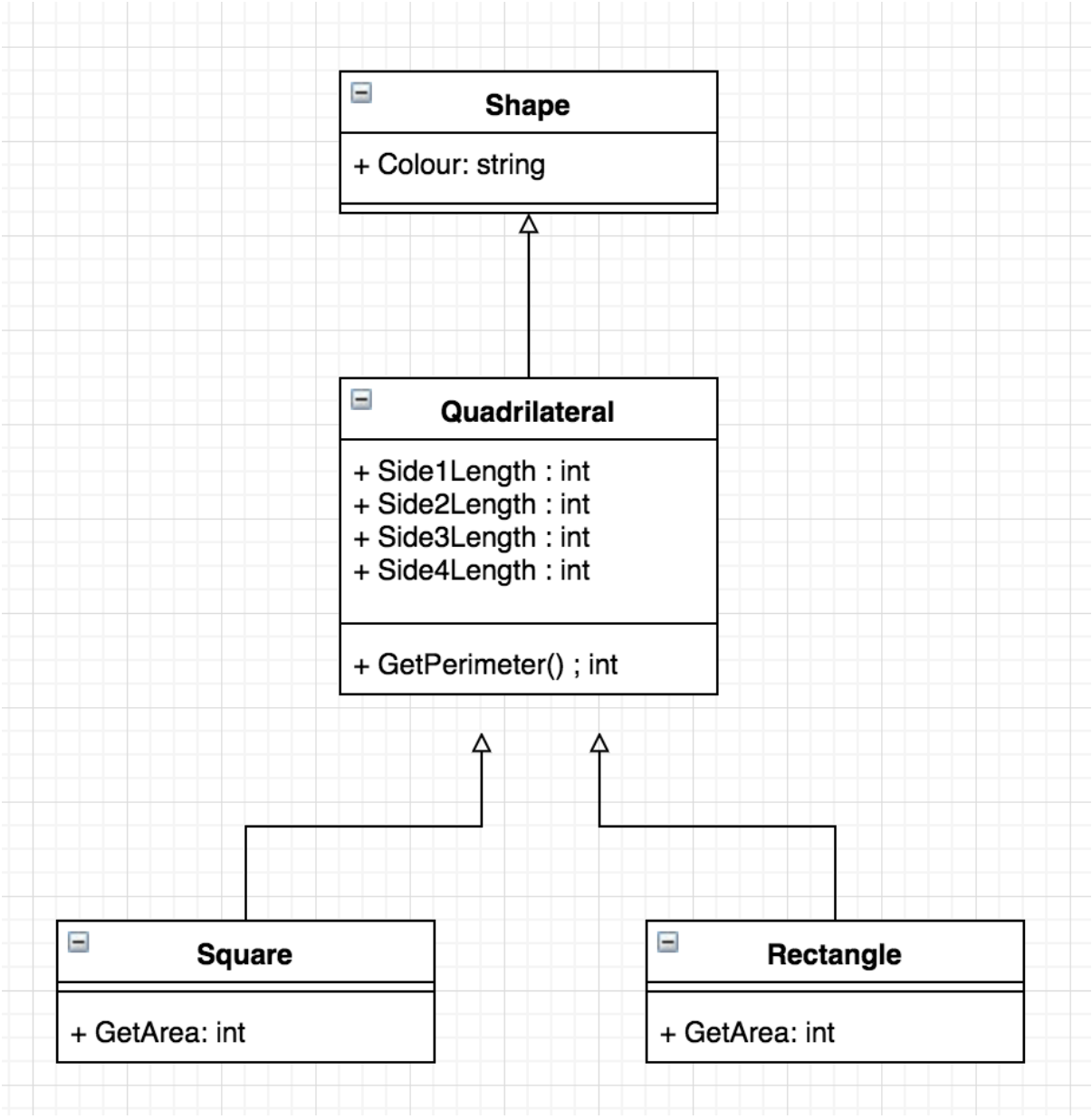
OO Programming
Challenge 1
Shapes Program

Pass Tasks (Only these are required to pass)

1. Create a system for shapes using the class diagram below:



- Perimeter is addition of all sides
- Area for a square is Side1Length * Side1Length;
- Area for a square is Side1Length * Side2Length;

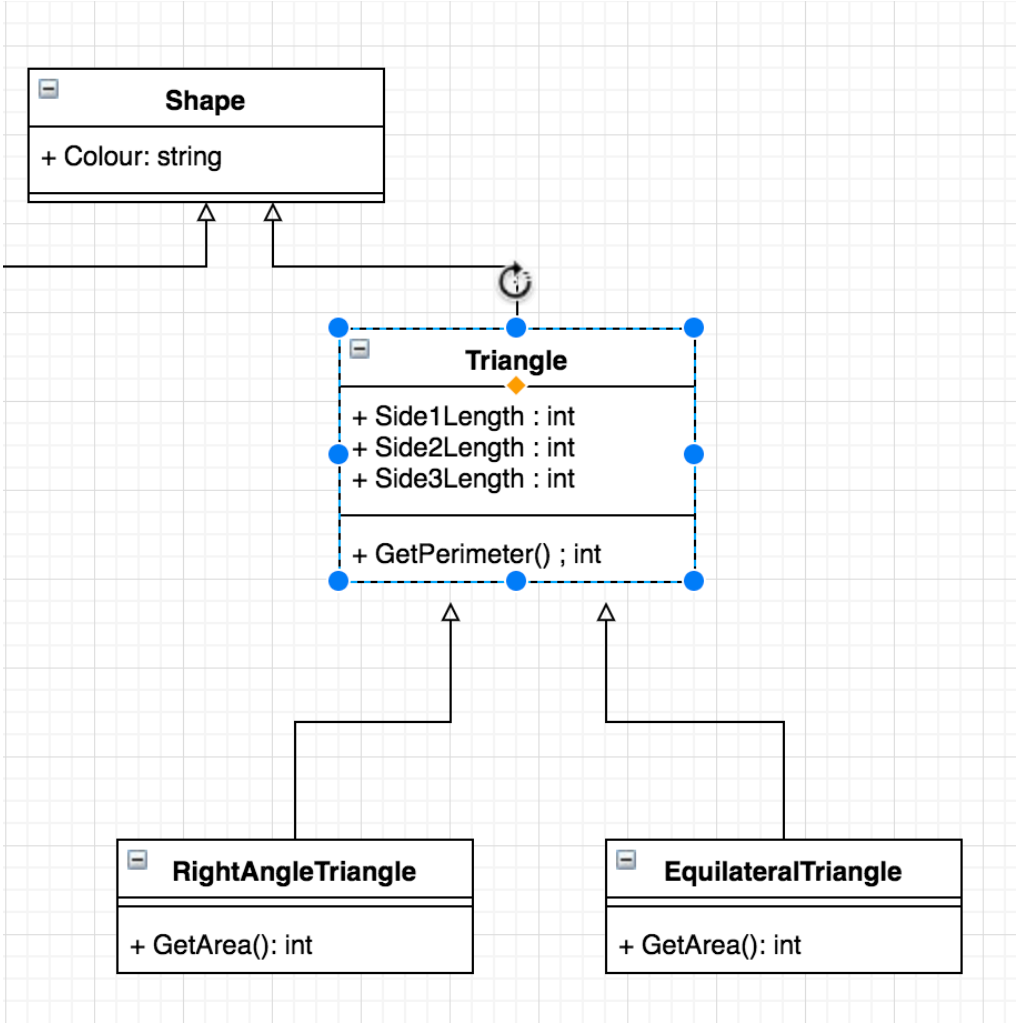
2. Run your created class against the unit tests provided
   https://github.com/ubkychin/CIV-OO-Challenge-1

3. Create a console program that allows the creation of squares and rectangles.

   a. Menu driven
   b. Catch format exceptions for non-numeric input
   c. Create and catch an exception that will not allow the user to enter lengths of less than one.

Credit Task

1. Add to Triangles and children to shapes from class diagram below:



- The third side of a Right-Angled triangle is calculated using Pythagora's theorem. a2 + b2 = c
- The area for a Righ-Angled Triangle is ½ * side1Length * side2Length
- The area for an EquilateralTriangle is $\frac{\sqrt{3}}{4} * side1Length^2$

Run against supplied unit tests.
https://github.com/ubkychin/CIV-OO-Challenge-1

Distinction Task

1. Add to your console program to allow the creation of Right-Angled and Equilateral Triangles.
    a. Create and catch an exception that will not allow the user to enter lengths that are decimal.

High Distinction Task

1. Allow the program to store shapes that are created. Allow the user to select shapes to view info on the shape chosen.