20CS2028 – Summer 2015

Instructor: Anca Ralescu

**Programming Assignment #1**

Assigned May 14, 2015

Due on BlackBoard May 21, 2015 (11:59PM)

**This assignment is worth 20 points**

OK, so to get you started on some C++ programming, this assignment asks you to write a C++ program that has a **Polygon** interface that has the abstract functions **area()** and **perimeter().**

Implement classes for **Triangle, Quadrilateral, Pentagon, Hexagon**, and **Octagon**, which implement this interface.

Implement the classes **IsoscelesTriangle, EquilateralTriangle, Rectangle, Square**, which have the appropriate inheritance relationships.

Write a simple interface that would allow a user to:

* create polygons of various types,
* input their geometric dimensions
* output their area and perimeter.

For each programming assignment you should do the following:

1. **How to name the file(s) you submit**: use the last names of all students in the team followed by the assignment number. So, for example, if the team members are Brown, Smith and Johnson and the assignment number is 1 you file should be named

BrownSmithJohnson1 (with the appropriate extension, e.g., .cpp)

1. In the file containing the main function you must write at the top in a comment section the following information
   1. Author: Chuck Brown, Ben Smith, Bill Johnson
   2. Course title: Data Structures
   3. Course number: CS2028
2. Instructor: Anca Ralescu
3. TA: Suryadip Chakraborty
4. Abstract: Assignment 1 main.cpp uses the abstract interface Polygon and abstract functions area() and perimeter() to implement classes for …. and to compute their respective areas and perimeters
5. Preconditions: ….
6. Postconditions: …..
7. Credit: specify here sources that you may have used, including code.