CS-M10B – Object Oriented Programming Using C++

Project Assignment #4

Student Name: .

Student ID Number: .

Enhance the class *Rectangle* (see lesson plan #3) that we have covered in week 3 as follows:

The class stores only the Cartesian coordinates of the four corners of the rectangle. The constructor calls a *setCorners* function that accepts four sets of coordinates and verifies that each of these is in the first quadrant with no single x- or y-coordinate larger than 20.0. The *setCorners* function also verifies that the supplied coordinates do, in fact, specify a rectangle. Provide member functions that calculate the *length*, *width*, *perimeter* and *area*. The *length* is the larger of the two dimensions.

Provide member functions *getLength*, *getWidth*, *getPerimeter* and *getArea* that return the values of the *length*, *width*, *perimeter* and *area* respectively.

Write a test program that exercises the class features. It prompts the user for coordinate values.

Please make sure that the test program fully exercises the class features.

Please submit the following:

* The source code for the test program, in a file named *week4.cpp*
* Class definition in a file named *rectangle.h*
* Class implementation (member function definition) in a file named *rectangle.cpp*