“Introduction to C++ Programming” Online Course

Assignment 8 — Triangle Processing

A triangle has three sides. If all three sides are equal, it is called an equilateral triangle. If any two sides are equal, it is an isosceles triangle. If none of the three sides are equal, it is called a scalene triangle. For a triangle to even exist, the sum of any two sides must be longer than the remaining side.

Write a program inputs a set of three potential sides of a triangle; use doubles for their data type. After processing a set of sides, input another set of sides until end-of-file occurs.

For each set of data, echo print the original values, and then call two functions and display the results accordingly. The first function is called IsTriangle that is passed the three sides and returns a bool — either true if they make a triangle or false if they do not make a triangle. If the three sides do not make a triangle, display “Not a triangle” and get the next set of data.

If they form a triangle, then call a function GetTriangleType that is passed the three sides and returns an enumerated value. You need to setup an enumerated type whose values are Scalene, Isosceles, Equilateral. In the main program, store the return value from the GetTriangleType function call in an instance of this enum. Next, the main program switches on this stored return value (a Do Case) and displays an appropriate message based on the kind of triangle. For example, “This is an isosceles triangle.”

Thoroughly test your program. Turn in a printed copy of the source program and a screen shot that shows you have thoroughly tested the program.