Lab Activity 4 Classes and Constructors

Objective: Create a C++ application that utilizes the core concepts of designing and creating classes, objects, properties and methods.

Class: ResistorClass
-string ResistorName; - double ResValue; - double Tolerance; - double MinResistance; - double MaxResistance;
+ void DisplayResistor() + void EnterResistance () + void AddSeries (ResistorClass Resistor1, ResistorClass Resistor2) + ResistorClass( ) + ResistorClass(string Name, double nominalResistance, double Tolerance)

Resistor Class Member Specifications:

Member Variables	Specification
string ResistorName	Stores the resistors name
double ResValue	Stores the resistor's nominal value
double Tolerance	The resistor's ohm tolerance stored as a decimal value
double MinResistance	The resistor's minimum resistance in ohms
double MaxResistance	The resistor's maximum resistance in ohms
New Member Functions	**Specification**
ResistorClass( )	Prompt the user to input a name for the resistor object. Store the name in the member variable ResistorName. Initialize the resistor data members to the following values: ResValue = 1000.0 Tolerance = 0.10 The value of MinResistance and MaxResistance should be calculated using the member variables ResValue and Tolerance. Use the formula

	MinResistance = ResValue; MaxResistance =ResValue+ Tolerance
ResistorClass(string Name, double nominalResistance, double tol)	This is a parameterized constructor that accepts arguments for the resistor's name, nominal resistance and tol. The parameters nominalResistance and Tolerance will be used to initialize the member variables ResValue and Tolerance. The value of MinResistance and MaxResistance should be calculated using the provided formula
DisplayResistor()	Displays all the attributes of ResistorClass
EnterResistance()	Take the resistor name, resistance value and tolerance as input from user.
AddResistance(ResistanceClass r1, ResistanceClass r2)	Takes two resistor objects as parameters and add their resistance values.

In the main function:

1. Create a Resistor Class object called oResOne. This object should be instantiated using the default constructor.
2. Create a Resistor Class object called oResTwo. This object should be instantiated using the parameterized constructor with the following arguments:
   Name = "Resistor 2"
   Nominal resistance = 4700 ohms
   Resistor tolerance = 20%
3. The program should then display the current values of the two Resistor objects using the member function DisplayResistor( ).
4. The program should then call AddResistance(ResistanceClass r1, ResistanceClass r2) that add their corresponding resistances.

-- The End☺---