Write a C++ program that simulates the behavior of an LRC resonant filter. In particular, it should simulate the response of the resonant filter to the unknown signal provided in class.

As input, the program should take
- The inductance
- The capacitance
- The resistance
- The end time

As output, the program should return
- A graph of the initial signal
- A graph of the output signal
- The preferred frequency of the circuit

The program should let the user enter the inductance, capacitance, resistance, and end time using either slider bars or by directly entering the value in text boxes.

The input data is provided in the form of a class CInputData. It has methods to retrieve the data, and its derivative. It contains the values of the input signal sampled at 1000 equally spaced points in the interval [0,1]. The initial data is periodic with period 1, and so this class can be used to retrieve the data for all times.

The input data is the sum of two sinusoids of different and unknown frequencies. You are to use your simulation to determine these unknown frequencies. You should carefully explain your reasoning.

The program should be written using good object oriented programming techniques.

Your grade for the project will be based on the following criteria:
- The quality of your program
- The quality of your results
- The quality of your written report