Assignment Question:

You are tasked with implementing a simple `Rectangle` class to represent rectangles in a 2D plane. The `Rectangle` class should have the following features:

1. Member variables:
   - `width` (double): the width of the rectangle.
   - `height` (double): the height of the rectangle.

2. Member functions:
   - `Rectangle()`: a default constructor that initializes `width` and `height` to 0.0.
   - `Rectangle(double w, double h)`: a parameterized constructor that initializes `width` to the given `w` and `height` to the given `h`.
   - `double getArea() const`: a function that returns the area of the rectangle (width * height).
   - `double getPerimeter() const`: a function that returns the perimeter of the rectangle (2 * width + 2 * height).

You need to organize your code into separate header and source files following best practices. Create the `Rectangle` class declaration in a header file (e.g., `Rectangle.h`) and the class implementation in a source file (e.g., `Rectangle.cpp`). Also, provide a `main` function in a separate source file (e.g., `main.cpp`) to test the `Rectangle` class.

Requirements:

1. Create a header file named `Rectangle.h` for the `Rectangle` class declaration.

2. Create a source file named `Rectangle.cpp` for the `Rectangle` class implementation.

3. Include appropriate include guards in the header file (`Rectangle.h`) to prevent multiple inclusions.

4. Implement the `Rectangle` class methods in the `Rectangle.cpp` source file.

5. Write a `main` function in a separate source file (e.g., `main.cpp`) to demonstrate the usage of the `Rectangle` class by creating instances of rectangles, calculating their area and perimeter, and displaying the results.

6. Make sure to compile and link all source files to create an executable program.

This assignment will help students practice organizing code using header and source files, creating classes, and implementing class methods. It will also reinforce concepts related to constructors, member variables, and member functions.