

**CS-481**  
**C++ Programming**  
Prof. Jeff Blessing

**Assignment #1**

**A Complex User Class**

**Date:** Tuesday, December 8<sup>th</sup>, 1998

**Due:** Thursday, December 17<sup>th</sup>, 1998

Write a C++ program that implements a `complex` number class. Each complex object will have a real part and an imaginary part (both of which are private data members of type `double`). Also, write two member functions, `add()` and `sub()`, which perform complex addition and subtraction. Test out your program adequately. Lastly, if you need to try some advanced work, you can work ahead by looking into complex subtraction and division. Additionally, you could look into simple overloading of operators for your class. Overload the inserter (`<<`) and extractor (`>>`) operators to read in and write out complex numbers to the console. In either case, we'll cover overloading of operators in a later assignment.

Write your program in three parts: the header file (`complex.h`), which contains declarations, the implementation file (`complex.cpp`), which contains the implementation, and the end user file (`cmplxtest.cpp`), which contains the main program which uses the complex number class.

Turn in both a source file listing for the three files above, and a copy of the output which adequately exercises all features of your program.

**Related Reading:** Chapter 10 and Section 11.3 in Stroustrup.