

**C++ Programming
Assignment #3
Prof. Blessing**

Operator Overloading

Date: Monday, January 25, 1999

Due: Monday, February 1, 1999

The assignment is to write overloaded operators to perform addition, subtraction, multiplication, and division of complex numbers, using operator overloading in C++. Also, overload the inserter and extractor operators so that complex objects can be read and written using these basic stream operators. Be sure to provide for both a unary and binary minus operator. Also, overload all the operators that make sense for the complex class (i.e. +, -, *, /, <<, >>, ==, !=, >, >=, <, <=, +=, -=, etc.).

The definition of complex multiplication and division is defined as follows:

Complex Multiplication:

$$(a+bi) * (c+di) = (a*c-b*d) + (a*d+b*c)i$$

Complex Division:

$$(a+bi) / (c+di) = (a*c+b*d)/(c*c+d*d) + ((b*c-a*d)/(c*c+d*d))i$$

As always, make full use of other elements of C++ learned to date (such as the use of `const`). Make sure that you thoroughly test your operators and provide adequate output to demonstrate the functionality of your program.

Reading: Chapter 11 from Stroustrup.