**ASSIGNMENT 4 OOPS**

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/\*Implement a class Complex which represents the Complex Number.

Implement the following functions Using Operator Overloading:

1. Constructors ( Include all constructor types)

2. Overload operator + to add two complex numbers using member function

3. Overload operator \* to multiply two complex numbers using friend function

4. Overload operators << and >> to output and accept Complex Numbers \*/

#include <iostream>

using namespace std;

class Complex

{

float real, imag;

public:

Complex()

{

real = 0;

imag = 0;

}

Complex(float a, float b)

{

real = a;

imag = b;

}

//Addition Operator

Complex operator +(Complex c)

{

Complex temp;

temp.real = real + c.real;

temp.imag = imag + c.imag ;

return temp;

}

friend Complex operator\*(Complex other1, Complex other2);

void Display()

{

cout << real << " + j" << imag << "\n";

}

friend istream &operator>>(istream &, Complex &);

friend ostream &operator<<(ostream &, Complex &);

};

Complex operator\*(Complex other1, Complex other2)

{

Complex result;

result.real = (other1.real \* other2.real) - (other1.imag \* other2.imag);

result.imag = (other1.real \* other2.imag) + (other1.imag \* other2.real);

return result;

}

istream &operator>>(istream &in, Complex &obj)

{

cout << "Enter real Number: ";

in >> obj.real;

cout << "Enter imag Number: ";

in >> obj.imag;

return in;

}

ostream &operator<<(ostream &out, Complex &obj)

{

out << obj.real << "+";

out << obj.imag << "i";

return out;

}

int main()

{

Complex C1, C2, C3, C4;

cout << "Enter Real and Imaginary Part of 1st Complex Number \n";

cin >> C1;

cout << "Enter Real and Imaginary Part of 2nd Complex Number \n";

cin >> C2;

C3 = C1 + C2;

C4 = C1 \* C2;

cout << "Sum: " << C3 << endl;

cout << "Product: " << C4 << endl;

return 0;

}

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