**C++ Program to Subtract Complex Number Using Operator Overloading**

In this example, you'll learn to subtract complex numbers using operator overloading of the - operator.

To understand this example, you should have the knowledge of the following [C++ programming](https://www.programiz.com/cpp-programming) topics:

* [C++ Classes and Objects](https://www.programiz.com/cpp-programming/object-class)
* [C++ Constructors](https://www.programiz.com/cpp-programming/constructors)
* [C++ Operator Overloading](https://www.programiz.com/cpp-programming/operator-overloading)

Since - is a binary operator( operator that operates on two operands ), one of the operands should be passed as argument to the operator function and the rest process is similar to the [overloading of unary operators](https://www.programiz.com/cpp-programming/increment-decrement-operator-overloading).

**Example: Binary Operator Overloading to Subtract Complex Number**

#include <iostream>

using namespace std;

class Complex

{

private:

float real;

float imag;

public:

Complex(): real(0), imag(0){ }

void input()

{

cout << "Enter real and imaginary parts respectively: ";

cin >> real;

cin >> imag;

}

// Operator overloading

Complex operator - (Complex c2)

{

Complex temp;

temp.real = real - c2.real;

temp.imag = imag - c2.imag;

return temp;

}

void output()

{

if(imag < 0)

cout << "Output Complex number: "<< real << imag << "i";

else

cout << "Output Complex number: " << real << "+" << imag << "i";

}

};

int main()

{

Complex c1, c2, result;

cout<<"Enter first complex number:\n";

c1.input();

cout<<"Enter second complex number:\n";

c2.input();

// In case of operator overloading of binary operators in C++ programming,

// the object on right hand side of operator is always assumed as argument by compiler.

result = c1 - c2;

result.output();

return 0;

}

In this program, three objects of type Complex are created and user is asked to enter the real and imaginary parts for two complex numbers which are stored in objects c1 and c2.

Then statement result = c1 -c 2 is executed. This statement invokes the operator function Complex operator - (Complex c2).

When result = c1 - c2 is executed, c2 is passed as argument to the operator function.

**In case of operator overloading of binary operators in C++ programming, the object on right hand side of operator is always assumed as argument by compiler.**

Then, this function returns the resultant complex number (object) to main() function which is displayed on to the screen.

Though, this tutorial contains the overloading of - operators, binary operators in C++ programming like: +, \*, <, += etc. can be overloaded in a similar manner.