**ASSIGNMENT 2**

**STATEMENT**: Implement a class Complex which represents the Complex Number data type.Implement the following operations:

1. Constructor (including a default constructor which creates the complex number 0+0i).

2. Overloaded operator+ to add two complex numbers.

3. Overloaded operator\* to multiply two complex numbers.

4. Overloaded << and >> to print and read Complex Numbers.

**AIM**: To add and multiply two complex numbers using operator overloading.

**DESCRIPTION**: Create a class ‘Complex’ which consists of a constructor and a default constructor which creates the complex number. In this class, overload the respective operators to add, multiply, read and print the complex numbers.

**OOP CONCEPT USED**:

1. **Default constructor**-:A defaultconstructor is a constructor that either has no parameters, or if it has parameters, all the parameters have default values.
2. **Operator overloading**-:Operator overloading is a compile-time polymorphism in which the operator is overloaded to provide the special meaning to the user-defined data type. Operator overloading is used to overload or redefines most of the operators available in C++. It is used to perform the operation on the user-defined data type.

**Sourcecode:**

#include<iostream>

using namespace std;

class A

{

int a,b;

public:

A(){};

A(int i,int j)

{

a=i;

b=j;

}

void show()

{

cout<<a<<"+i"<<b;

}

A operator +(A);

};

A A::operator +(A obj)

{

A temp;

temp.a=a+obj.a;

temp.b=b+obj.b;

return(temp);

}

int main()

{

int a1,b1,a2,b2;

cout<<"Enter real and imaginary part for 1st expression\n";

cin>>a1>>b1;

cout<<"Enter real and imaginary part for 2nd expression\n";

cin>>a2>>b2;

A c1(a1,b1),c2(a2,b2),c3;

cout<<"The 1st no. is:";

c1.show();

cout<<"\nThe 2nd no. is:";

c2.show();

c3=c1+c2;

cout<<"\nSum is:";

c3.show();

return 0;

}

**Output**:

Enter real and imaginary part for 1st expression

4

5

Enter real and imaginary part for 2nd expression

8

9

The 1st no. is:4+i5

The 2nd no. is:8+i9

Sum is:12+i14

**CONCLUSION**: In this assignment, we learned and implemented the concept of operator overloading to add and multiply two complex numbers.