OOP Assignment 2

Name :- Prince Kailash Vyas
PRN :- B24CE1062
Batch :- A

Program :-

```
#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;
   }

   complex operator+(complex);


   friend complex operator*(complex, complex);


   friend istream &operator>>(istream &, complex &);
   friend ostream &operator<<(ostream &, const complex &);

   void display() {
      cout << real << " + i" << imag << "\n";
   }
};


complex complex::operator+(complex c) {
```

```
    complex temp;
    temp.real = real + c.real;
    temp.imag = imag + c.imag;
    return temp;
}


complex operator*(complex c1, complex c2) {
    complex temp;
    temp.real = (c1.real * c2.real) - (c1.imag * c2.imag);
    temp.imag = (c1.real * c2.imag) + (c1.imag * c2.real);
    return temp;
}

istream &operator>>(istream &in, complex &c) {
    cout << "Enter real part: ";
    in >> c.real;
    cout << "Enter imaginary part: ";
    in >> c.imag;
    return in;
}

ostream &operator<<(ostream &out, const complex &c) {
    out << " + "<< c.real ;
    out<<"i" << c.imag;
    return out;
}


int main() {
    complex C1, C2;

    cout << "Enter first complex number:\n";
    cin >> C1;

    cout << "Enter second complex number:\n";
    cin >> C2;

    complex C3 = C1 + C2;
    complex C4 = C1 * C2;

    cout << "\nC1 = " << C1 << endl;
    cout << "C2 = " << C2 << endl;
    cout << "Addition = " << C3 << endl;
```

```
    cout << "Multiplication = " << C4 << endl;

    return 0;
}
```

Output:-

```
Enter first complex number:
Enter real part: 15
Enter imaginary part: 18
Enter second complex number:
Enter real part: 45
Enter imaginary part: 36

C1 =  + 15i18
C2 =  + 45i36
Addition =  + 60i54
Multiplication =  + 27i1350
```