

Aim:

Implement a Python program using a class named **Complex** to perform operations on complex numbers. The class has the following methods:

1. **initComplex()**: A method that takes user input for the real and imaginary parts to initialize a complex number.
2. **display()**: A method that displays the complex number in the form "**a + bi**".
3. **sum()**: A method that computes the sum of two complex numbers and stores the result in the current instance.

The program creates three instances of the **Complex** class, initializes two complex numbers, displays them, computes their sum, and displays the result.

Source Code:complex_class.py

```
class Complex ():
    def __init__(self):
        self.real=0
        self.imaginary=0

    def initComplex(self):
        self.real=int(input("Real Part: "))
        self.imaginary=int(input("Imaginary Part: "))

    def display(self):
        if self.imaginary>=0:
            print(f"{self.real}+{self.imaginary}i")
        else:
            print(f"{self.real}{self.imaginary}i")

    def sum(self,c1,c2):
        self.real = c1.real+c2.real
        self.imaginary = c1.imaginary+c2.imaginary

c1 = Complex()
c2 = Complex()
c3 = Complex()
print("complex number 1")
c1.initComplex()
c1.display()
print("complex number 2")
c2.initComplex()
c2.display()
print("Sum:",end=" ")
c3.sum(c1,c2)
c3.display()
```

Execution Results - All test cases have succeeded!

Test Case - 1

User Output
complex number 1 3
Real Part: 3
Imaginary Part: 4
3+4i -9
complex number 2 -9
Real Part: -9
Imaginary Part: 5
-9+5i
Sum: -6+9i

Test Case - 2
User Output
complex number 1 -5
Real Part: -5
Imaginary Part: 0
-5+0i -8
complex number 2 -8
Real Part: -8
Imaginary Part: 0
-8+0i
Sum: -13+0i