

Practical-4.(a)

Aim: Write a C++ program to design a class representing complex numbers and having the functionality of performing addition & multiplication of two complex numbers using operator overloading.

Algorithm:(i)Start

(ii)class{..};void{..};

(iii)Main function

(iv)Print the result

(v)Stop

Theory:In this practical,we will see a C++ program to design a class representing complex numbers and having the functionality of performing addition & multiplication of two complex numbers using operator overloading.

Program:

```
#include <iostream>
```

```
//Creating class Complex
```

```
class Complex
```

```
{
```

```
    public:
```

```
    int real,img;
```

```
//add function to add two matrices
```

```
void add(Complex c1,Complex c2)
```

```
{
```

```
    int x,y;
```

```
    x=c1.real+c2.real;
```

```
    y=c1.img+c2.img;
```

```
std::cout<<"\n(" <<c1.real<<"+" <<c1.img<<"i)+(" <<c2.real<  
<"+" <<c2.img<<"i)=(" <<x<<"+" <<y<<"i)";
```

```
}
```

```

//multiply function to multiply two complex numbers
void multiply(Complex c1,Complex c2)
{
    int x,y;
    x=c1.real*c2.real-c1.img*c2.img;
    y=c1.real*c2.img+c1.img*c2.real;

    std::cout<<"\n("&<<c1.real<<"+"<<c1.img<<"i)*("<<c2.real<
    <"+"<<c2.img<<"i)=("<<x<<"+"<<y<<"i)";

}
};

int main()
{
    std::cout<<"08_Rabin Nadar";
    Complex a,b,c,d,e;
    std::cout<<"\nEnter real and imaginary part of first
complex number: ";
    std::cin>>a.real>>a.img;

    std::cout<<"\nEnter real and imaginary part of second
complex number: ";

```

```
std::cin>>b.real>>b.img;  
c.add(a,b);  
d.multiply(a,b);  
return 0;  
}
```

Output:

Output Clear

```
/tmp/I83NlMHTgi.o  
08_Rabin Nadar  
Enter real and imaginary part of first complex number: 2 5  
Enter real and imaginary part of second complex number: 7 9  
(2+5i)+(7+9i)=(9+14i)  
(2+5i)*(7+9i)=(-31+53i)
```

Conclusion:

We have successfully written the code and executed it.