```
# include<iostream>
using namespace std;
class Complex                    //decaring Class Complex
 {
 double real;
 double img;
 public:
 Complex();          // Default Constructor
 friend istream & operator >> (istream &, Complex &); // Input
 friend ostream & operator << (ostream &, const Complex &); // Output
 Complex operator + (Complex); // Addition
 Complex operator * (Complex); // Multiplication
 };
 Complex::Complex()              // Default Constructor
 {
 real = 0;
 img = 0;
 }
 istream & operator >> (istream &, Complex & i)
 {
 cin >> i.real >> i.img;
 return cin;
 }
 ostream & operator << (ostream &, const Complex & d)
 {
 cout << d.real << " + " << d.img << "i" << endl;
 return cout;
 }
 Complex Complex::operator + (Complex c1)   // Overloading + operator
 {
 Complex temp;
```

```
temp.real = real + c1.real;
temp.img = img + c1.img;
return temp;
}
Complex Complex::operator * (Complex c2)   // Overloading * Operator
{
Complex tmp;
tmp.real = real * c2.real - img * c2.img;
tmp.img = real * c2.img + img * c2.real;
return tmp;
}
int main()
{
Complex C1, C2, C3, C4;
int flag = 1;
char b;
while (flag == 1)
{
cout << "Enter Real and Imaginary part of the Complex Number 1 : \n";
cin >> C1;
cout << "Enter Real and Imaginary part of the Complex Number 2 : \n";
cin >> C2;
int f = 1;
while (f == 1)
{
cout << "Complex Number 1 : " << C1 << endl;
cout << "Complex Number 2 : " << C2 << endl;
cout << "***MENU***" << endl;
cout << "1. Addition of Complex Numbers" << endl;
cout << "2. Multiplication of Complex Numbers" << endl;
cout << "3. Exit\n";
```

```
int a;
cout << "Enter your choice from above MENU (1 to 3) : ";
cin >> a;
if (a == 1)
{
C3 = C1+C2;
cout << "Addition : " << C3 << endl;
cout << "Do you wan to perform another operation (y/n) : \n";
cin >> b;
if (b == 'y' || b == 'Y')
{
f=1;
}
else
{
cout << "Thanks for using this program!!\n";
flag=0;
f=0;
}
}
else if (a == 2)
{
C4 = C1 * C2;
cout << "Multiplication : " << C4 << endl;
cout << "Do you wan to perform another operation (y/n) : \n";
cin >> b;
if (b == 'y' || b == 'Y')
{
f=1;
}
else
```

```
{
cout << "Thanks for using this program!!\n";
flag=0;
f=0;
}
}
else
{
cout << "Thanks for using this program!!\n";
flag=0;
f=0;
}
}
}
return 0;
}
```

OUTPUT:-

```
MOHINI KATE
SE AIDS      ROLL NO.-18
Enter Real and Imaginary part of the Complex Number 1 :
5
2
Enter Real and Imaginary part of the Complex Number 2 :
6
3
Complex Number 1 : 5 + 2i

Complex Number 2 : 6 + 3i

***MENU***
1. Addition of Complex Numbers
2. Multiplication of Complex Numbers
3. Exit
Enter your choice from above MENU (1 to 3) : 1
Addition : 11 + 5i

Do you wan to perform another operation (y/n) :
y
Complex Number 1 : 5 + 2i
```

Output

```
Complex Number 2 : 6 + 3i

***MENU***
1. Addition of Complex Numbers
2. Multiplication of Complex Numbers
3. Exit
Enter your choice from above MENU (1 to 3) : 2
Multiplication : 24 + 27i

Do you wan to perform another operation (y/n) :
y
Complex Number 1 : 5 + 2i

Complex Number 2 : 6 + 3i

***MENU***
1. Addition of Complex Numbers
2. Multiplication of Complex Numbers
3. Exit
Enter your choice from above MENU (1 to 3) : 3
Thanks for using this program!!
```