GROUP A:Assignment No.01

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BATCH: C1
ROLL NO: S213003
BRANCH: COMPUTER

PROBLEM STATEMENT:

Implement a class complex which represents the complex number data type. Implement the following
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.

CODE:

```
#include<iostream>
using namespace std;
class complex
{
float x,y;
public:
complex ()
{
x=0;
y=0;
}
complex operator + (complex);
complex operator *(complex);
friend istream &operator >>(istream &input,complex &t)
{
cout<<"Enter the real parts:";
input>>t.x;
cout<<"Enter the imaginary part:";
input>>t.y;
return input;
}
```

```
friend ostream &operator <<(ostream & output,complex &t)
{
output<<t.x<<"+"<<t.y<<"i\n";
return output;
}
};
complex complex ::operator +(complex c)
{
complex temp;
temp.x=x+c.x;
temp.y=y+c.y;
return temp;
}
complex complex::operator *(complex c)
{
complex temp2;
temp2.x=(x*c.x)-(y*c.y);
temp2.y=(y*c.x)+(x*c.y);
return temp2;
}
int main()
{
complex c1,c2,c3,c4;
cout<<"Default constructor value:\n";
cout<<c1;
cout<<"\nEnter 1st no:\n";
cin>>c1;
cout<<"\nEnter 2nd no:\n";
cin>>c2;
c3=c1+c2;
c4=c1*c2;
cout<<"\nThe 1st no is:";
cout<<c1;
cout<<"\nThe 2nd no is:";
cout<<c2;
cout<<"The addition is:";
cout<<c3;
cout<<"The multiplication is:";
cout<<c4;
return 0;
}
```

INPUT:

```
Default constructor value:
0+0i

Enter 1st no:
Enter the real parts: 5
Enter the imaginary part:7

Enter 2nd no:
Enter the real parts:8
Enter the imaginary part:10
```

OUTPUT:

```
The 1st no is:5+7i

The 2nd no is:8+10i
The addition is:13+17i
The multiplication is:-30+106i
d_comp_sli_22@d-comp-sli-22:~$
```