

Lab 8
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Q1.

```
//T.DAMAN 2005839
//wap using overloading to overload operator -- using friend function
#include <iostream>
using namespace std;
class num
{
    int a, b, c;
public:
    num(int i, int j, int k)
    {
        a = i;
        b = j;
        c = k;
    }
    void show()
    {
        cout << a << " "<<b<<" "<< c << endl;
    }
    void operator--()
    {
        a = --a;
        b = --b;
        c = --c;
    }
};
int main()
{
    num N(3, 4, 5);
    N.show();
    --N;
    N.show();
    return 0;
}
```

Output:

3 4 5

2 3 4

Q2

```
//T.DAMAN 2005839
//WRITE A PROGRAM TO OVERLOAD MULTIPLICATION OPERATOR FOR COMPLEX NUMBERS USING friend function.
#include<iostream>
using namespace std;
class complex
{
    double real;
    double imag;
public:
    complex operator*(complex c)
    {
        double real1,real2;
        real1=real;
        real2=c.real;
        real=(real*c.real)-(imag*c.imag);
        imag=(real1*c.imag)+(imag*real2);
    }
};
```

```

complex temp;
temp.real=real;
temp.imag=imag;
return temp;
}
void display()
{
cout<<"the resultant comlex no. is "<<real<<" + "<<imag<<"i"<<endl;
}
void set()
{
cout<<"Enter real no.: "<<endl;
cin>>real;
cout<<"Enter imag no.: "<<endl;
cin>>imag;
}
};
int main()
{
complex c1,c2;
c1.set();
cout<<"Enter 2nd complex no: "<<endl;
c2.set();
c1*c2;
c1.display();
return 0;
}

```

Output:-

Enter real no.:

10

Enter imag no.:

20

Enter 2nd complex no:

Enter real no.:

5

Enter imag no.:

5

the resultant comlex no. is -50 + 150i

Q3.

```

//T.DAMAN 2005839
//WAP to overload insertion and extraction operator
#include<iostream>
using namespace std;
class A
{
    float height;
    float width;
    float vol ;

    public :
    friend istream & operator >> (istream &, A &);
    friend ostream & operator << (ostream &, A &);
};

istream & operator >> (istream &din, A &b)
{
    cout << "Enter Height: " ; din >> b.height ;
    cout << "Enter Width : " ; din >> b.width ;
}

```

```

        return (din) ;
    }
ostream & operator << (ostream &dout,  &b)
{
    cout << endl;
    b.vol = b.height * b.width ;

    cout << "The Volume is: " << b.vol << endl;

    return(dout) ;
}
int main()
{
    A b1;
    cin >> b1;
    cout << b1;
return 0;
}

```

OUTPUT:-

Enter Height: 12

Enter Width : 13

The Volume is : 156

Q4.

```

//T.DAMAN 2005839
//Wap to overload binary operator using friend function
#include<iostream>
using namespace std;
class Complex
{
int num1, num2;
public:
void accept()
{
cout<<"\n Enter Two Complex Numbers : ";
cin>>num1>>num2;
}
friend Complex operator+(Complex c1, Complex c2);
void display()
{
    cout<<num1<<"+ "<<num2<<"i"<<"\n";
}
};
Complex operator+(Complex c1,    Complex c2)
{
    Complex c;
    c.num1=c1.num1+c2.num1;
    c.num2=c1.num2+c2.num2;
    return(c);
}
int main()
{
    Complex c1,c2, sum;
    c1.accept();
    c2.accept();
    sum = c1+c2;
    c1.display();
    c2.display();
    sum.display();
    return 0;
}

```

Output:-

Enter Two Complex Numbers : 2 3

Enter Two Complex Numbers : 2 4

$2+3i$

$2+4i$

$4+7i$