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OOCCJ LAB ASSIGNMENT 3A

CODE:-

```
#include <iostream>
using namespace std;
class complex
{
 float real;
 float image;
public:
   complex ()
 {
   real = 0;
   image = 0;
 }

 complex (float x, float y)
 {
   real = x;
   image = y;
 }

 friend complex operator+ (complex & c1, complex & c2);
 friend complex operator- (complex & c1, complex & c2);
 complex operator / (complex com)
 {
   complex t;
   t.real = (real) / (com.real);
   t.image = (image) / (com.image);
   return t;
 }

 complex operator * (complex com)
 {
   complex t;
   t.real = (real) * (com.real);
   t.image = (image) + (com.image);
   return t;
 }

 void display (void);
```

```
};

complex
operator + (complex & ca, complex & cb)
{
  complex t;
  t.real = ca.real + cb.real;
  t.image = ca.image + cb.image;
  return t;
}

complex
operator - (complex & ca, complex & cb)
{
  complex t;
  t.real = ca.real - cb.real;
  t.image = ca.image - cb.image;
  return t;
}

void
complex::display (void)
{
  cout << real << "+ j" << image << "\n";
}

int
main ()
{
  cout << "PC 23 Devanshu Surana" << endl;
  complex ca1, ca2, ca3;
  ca1 = complex (2.7, 4.2);
  ca2 = complex (4.7, 1.5);
  ca3 = ca1 + ca2;
  ca1.display ();
  ca2.display ();
  ca3.display ();
  cout << "For Subtraction" << endl;
  complex cs1, cs2, cs3;
  cs1 = complex (2.7, 4.2);
  cs2 = complex (4.7, 1.5);
  cs3 = cs1 - cs2;
  cs1.display ();

  cs2.display ();
  cs3.display ();
  cout << "For division" << endl;
```

```
  complex cd1, cd2, cd3;
  cd1 = complex (2.7, 4.2);
  cd2 = complex (4.7, 1.5);
  cd3 = cd1 / cd2;
  cd1.display ();
  cd2.display ();
  cd3.display ();
  cout << "For MUltiplication" << endl;
  complex cm1, cm2, cm3;
  cm1 = complex (2.7, 4.2);
  cm2 = complex (4.7, 1.5);
  cm3 = cm1 * cm2;
  cm1.display ();
  cm2.display ();
  cm3.display ();
  return 0;
}
```

OUTPUT:-

```
PC 23 Devanshu Surana
2.7+ j4.2
4.7+ j1.5
7.4+ j5.7
For Subtraction
2.7+ j4.2
4.7+ j1.5
-2+ j2.7
For division
2.7+ j4.2
4.7+ j1.5
0.574468+ j2.8
For MUltiplication
2.7+ j4.2
4.7+ j1.5
12.69+ j5.7
```

3.1:-

CODE:-

```
#include <iostream>
using namespace std;
class rectangle
{
  int length;
  int breadth;
public:
```

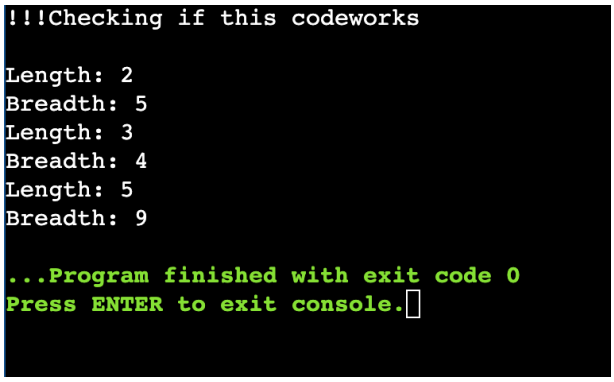
```
   rectangle ()
  {
    length = 0;
    breadth = 0;
  }
  rectangle (int l, int b)
  {
    length = l;
    breadth = b;
  }
  rectangle operator + (rectangle rec)
  {
    rectangle r;
    r.length = length + rec.length;
    r.breadth = breadth + rec.breadth;
    return r;
  }
  void display (void);
};

void
rectangle::display (void)
{
  cout << "\nLength: " << length;
  cout << "\nBreadth: " << breadth;
}

int
main ()
{

  cout << "!!!Checking if this codeworks" << endl;
  rectangle r1, r2, r3;
  r1 = rectangle (2, 5);
  r2 = rectangle (3, 4);
  r3 = r1 + (r2);
  r1.display ();
  r2.display ();
  r3.display ();
  return 0;
}
```

OUTPUT:-



3.2:-
CODE:-

```
#include <iostream>
using namespace std;
class complex{
	float real;
	float image;
public:
	complex(){}
	complex(float x,float y){
		real=x;
		image=y;
	}
	friend complex operator+(complex& c1,complex& c2);
	void display(void);
};
complex operator +(complex& ca,complex& cb){
	complex t;
	t.real=ca.real+cb.real;
	t.image=ca.image+cb.image;
	return t;
}

void complex::display(void){
		cout<<real<<"+ j"<<image<<"\n";
}
int main() {
	cout << "PC 23 Devanshu Surana" << endl;
	complex c1,c2,c3;
	c1=complex(2.5,3.6);
	c2=complex(5.2,1.2);
	c3= c1+c2;
	c1.display();
```

```
        c2.display();
        c3.display();
        return 0;
}
```

OUTPUT:-

```
PC 23 Devanshu Surana
2.5+ j3.6
5.2+ j1.2
7.7+ j4.8
```

3.3:-

CODE:-

```
                #include <iostream>
using namespace std;

class beta;
class alpha{
                int data;
public:
                alpha(){
                        data = 3;
                }
                friend int frifunc(alpha,beta);
};
class beta{
                int data;
public:
                beta(){
                        data = 7;
                }
                friend int frifunc(alpha,beta);
};

int frifunc(alpha a,beta b){
                return (a.data + b.data);
}
```

```
int main() {
		cout << "PC 23 Devanshu Surana" << endl;
		alpha aa;
		beta bb;
		cout<<frifunc(aa,bb)<<endl;
		return 0;
}
```

OUTPUT:-

```
PC 23 Devanshu Surana
10
```