LAB 2: PROGRAMS ON METHOD AND CONSTRUCTOR OVERLOADING

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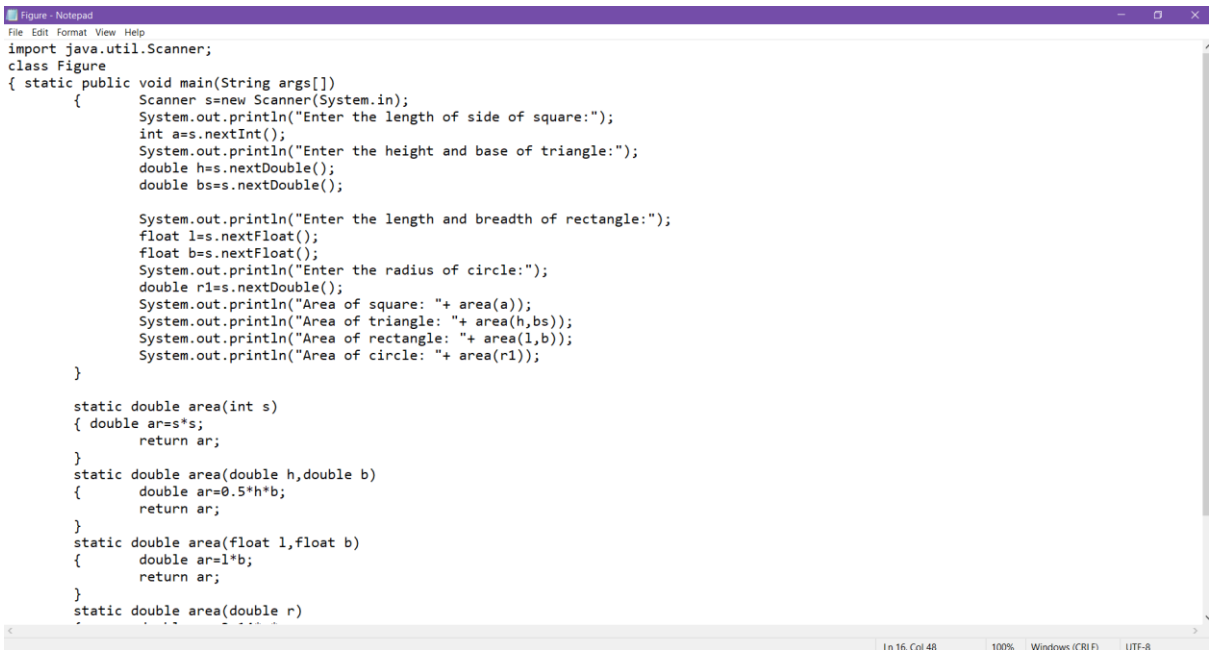
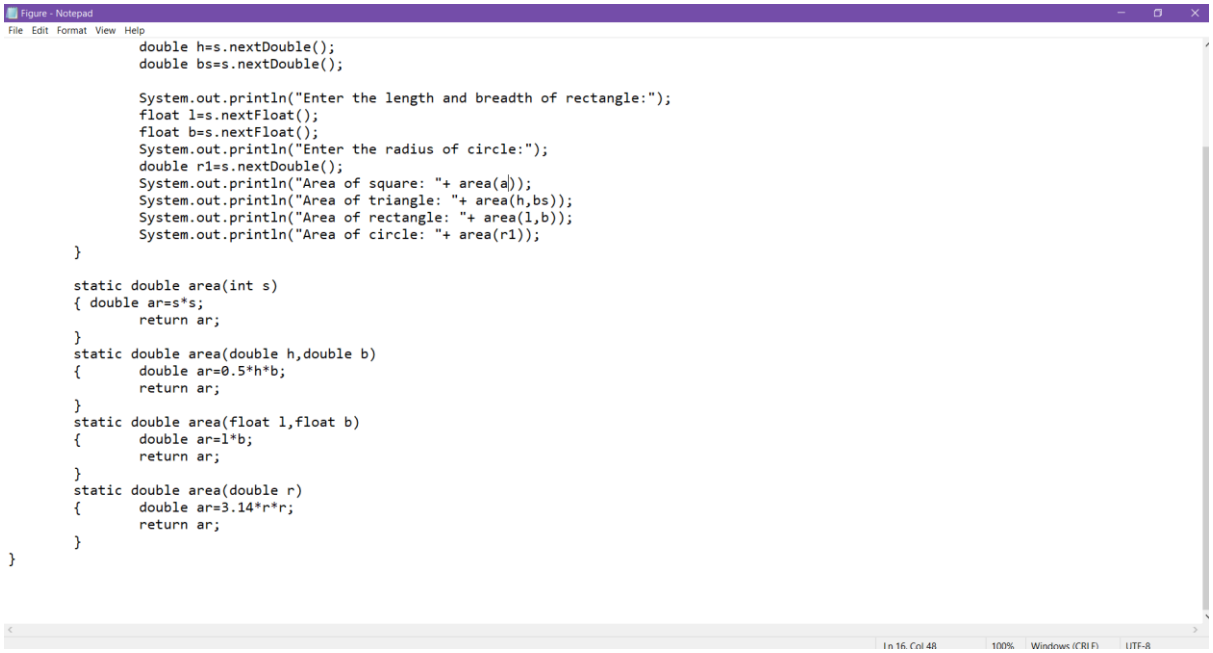
Q.1 Consider a class Figure and overload the function called area() to display the area of figures like square,triangle, Rectangle and circle.

CODE:

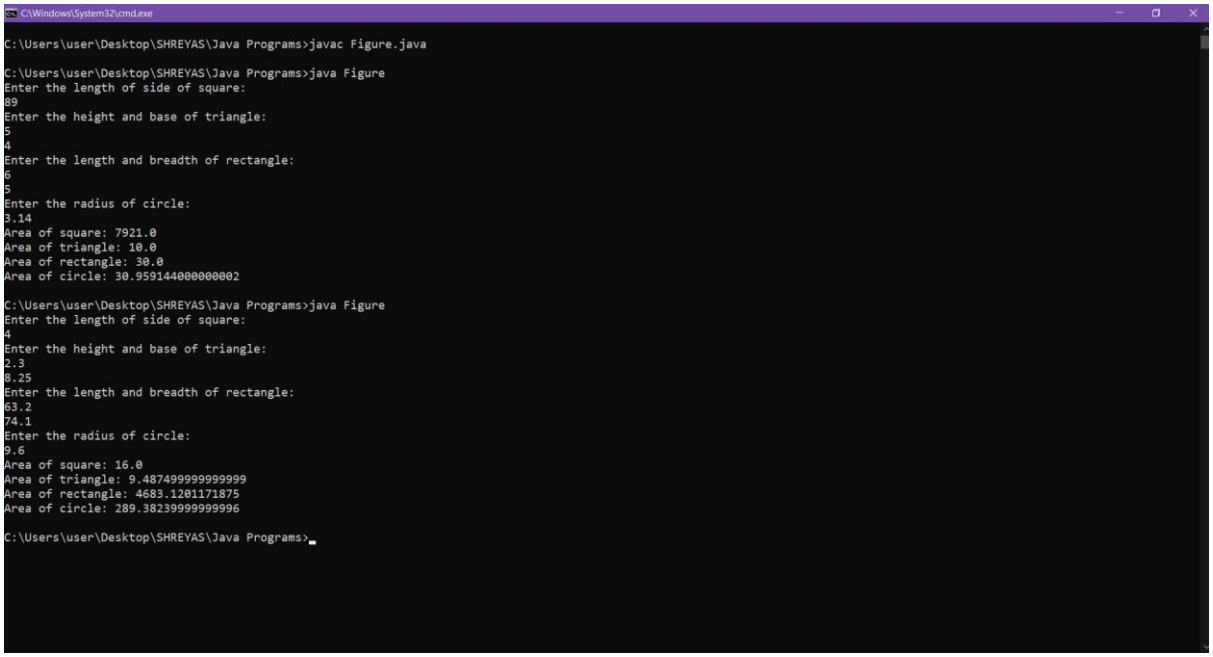


```
Figure - Notepad
File Edit Format View Help
import java.util.Scanner;
class Figure
{ static public void main(String args[])
        {       Scanner s=new Scanner(System.in);
                System.out.println("Enter the length of side of square:");
                int a=s.nextInt();
                System.out.println("Enter the height and base of triangle:");
                double h=s.nextDouble();
                double bs=s.nextDouble();

                System.out.println("Enter the length and breadth of rectangle:");
                float l=s.nextFloat();
                float b=s.nextFloat();
                System.out.println("Enter the radius of circle:");
                double r1=s.nextDouble();
                System.out.println("Area of square: "+ area(a));
                System.out.println("Area of triangle: "+ area(h,bs));
                System.out.println("Area of rectangle: "+ area(l,b));
                System.out.println("Area of circle: "+ area(r1));
        }

        static double area(int s)
        { double ar=s*s;
                return ar;
        }
        static double area(double h,double b)
        {       double ar=0.5*h*b;
                return ar;
        }
        static double area(float l,float b)
        {       double ar=l*b;
                return ar;
        }
        static double area(double r)
Ln 16, Col 48  100%  Windows (CRLF)  UTF-8
```



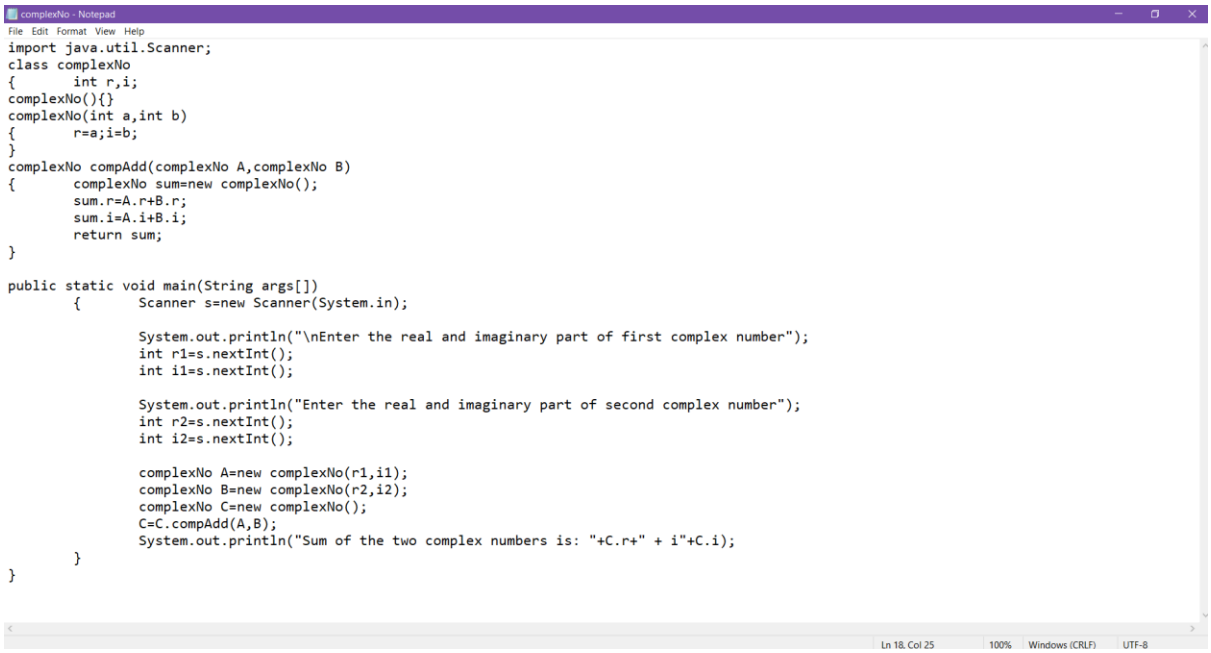
```
Figure - Notepad
File Edit Format View Help
                double h=s.nextDouble();
                double bs=s.nextDouble();

                System.out.println("Enter the length and breadth of rectangle:");
                float l=s.nextFloat();
                float b=s.nextFloat();
                System.out.println("Enter the radius of circle:");
                double r1=s.nextDouble();
                System.out.println("Area of square: "+ area(a));
                System.out.println("Area of triangle: "+ area(h,bs));
                System.out.println("Area of rectangle: "+ area(l,b));
                System.out.println("Area of circle: "+ area(r1));
        }

        static double area(int s)
        { double ar=s*s;
                return ar;
        }
        static double area(double h,double b)
        {       double ar=0.5*h*b;
                return ar;
        }
        static double area(float l,float b)
        {       double ar=l*b;
                return ar;
        }
        static double area(double r)
        {       double ar=3.14*r*r;
                return ar;
        }
}
Ln 16, Col 48  100%  Windows (CRLF)  UTF-8
```

OUTPUT:


C:\Windows\System32\cmd.exe
C:\Users\user\Desktop\SHREYAS\Java Programs>javac Figure.java
C:\Users\user\Desktop\SHREYAS\Java Programs>java Figure
Enter the length of side of square:
89
Enter the height and base of triangle:
5
4
Enter the length and breadth of rectangle:
6
5
Enter the radius of circle:
3.14
Area of square: 7921.0
Area of triangle: 10.0
Area of rectangle: 30.0
Area of circle: 30.959144000000002
C:\Users\user\Desktop\SHREYAS\Java Programs>java Figure
Enter the length of side of square:
4
Enter the height and base of triangle:
2.3
8.25
Enter the length and breadth of rectangle:
63.2
74.1
Enter the radius of circle:
9.6
Area of square: 16.0
Area of triangle: 9.487499999999999
Area of rectangle: 4683.1201171875
Area of circle: 289.3823999999996
C:\Users\user\Desktop\SHREYAS\Java Programs>

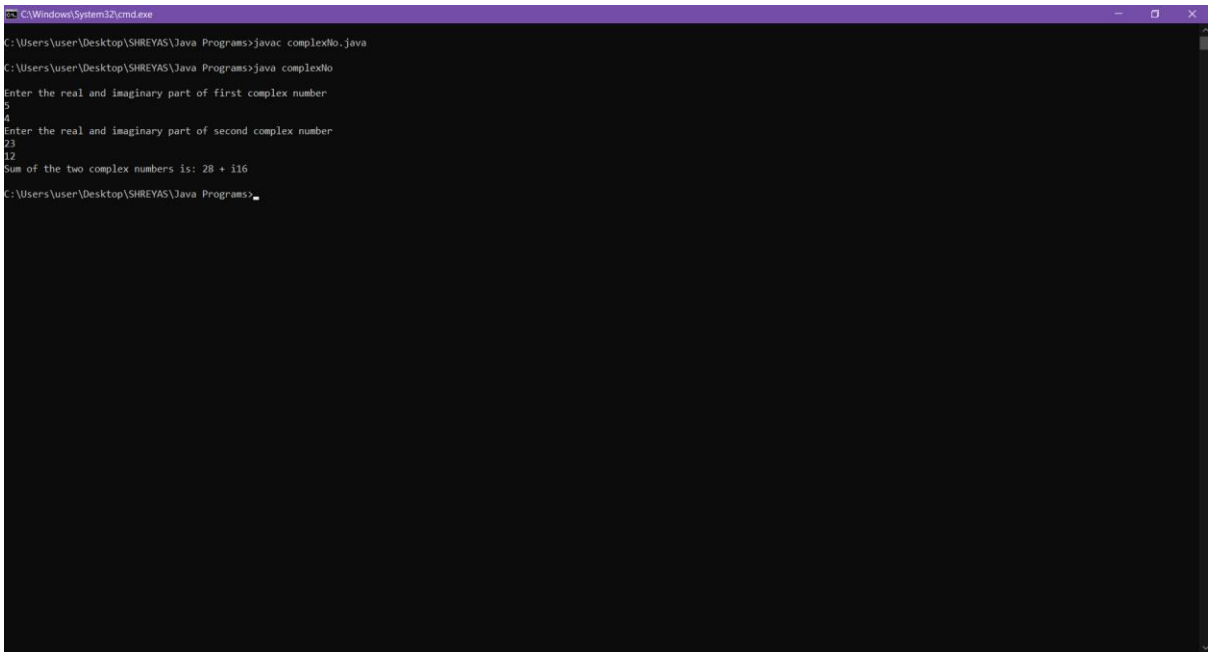
Q.2 Write a Program for Complex Number addition using Constructor.

CODE:



```
import java.util.Scanner;
class complexNo
{       int r,i;
complexNo(){}
complexNo(int a,int b)
{       r=a;i=b;
}
complexNo compAdd(complexNo A,complexNo B)
{       complexNo sum=new complexNo();
        sum.r=A.r+B.r;
        sum.i=A.i+B.i;
        return sum;
}

public static void main(String args[])
        {       Scanner s=new Scanner(System.in);

                System.out.println("\nEnter the real and imaginary part of first complex number");
                int r1=s.nextInt();
                int i1=s.nextInt();

                System.out.println("Enter the real and imaginary part of second complex number");
                int r2=s.nextInt();
                int i2=s.nextInt();

                complexNo A=new complexNo(r1,i1);
                complexNo B=new complexNo(r2,i2);
                complexNo C=new complexNo();
                C=C.compAdd(A,B);
                System.out.println("Sum of the two complex numbers is: "+C.r+" + i"+C.i);
        }
}
```

OUTPUT:



```
C:\Users\user\Desktop\SHREYAS\Java Programs>javac complexNo.java

C:\Users\user\Desktop\SHREYAS\Java Programs>java complexNo

Enter the real and imaginary part of first complex number
5
4
Enter the real and imaginary part of second complex number
23
12
Sum of the two complex numbers is: 28 + i16

C:\Users\user\Desktop\SHREYAS\Java Programs>
```