Lab 5

Abstract class

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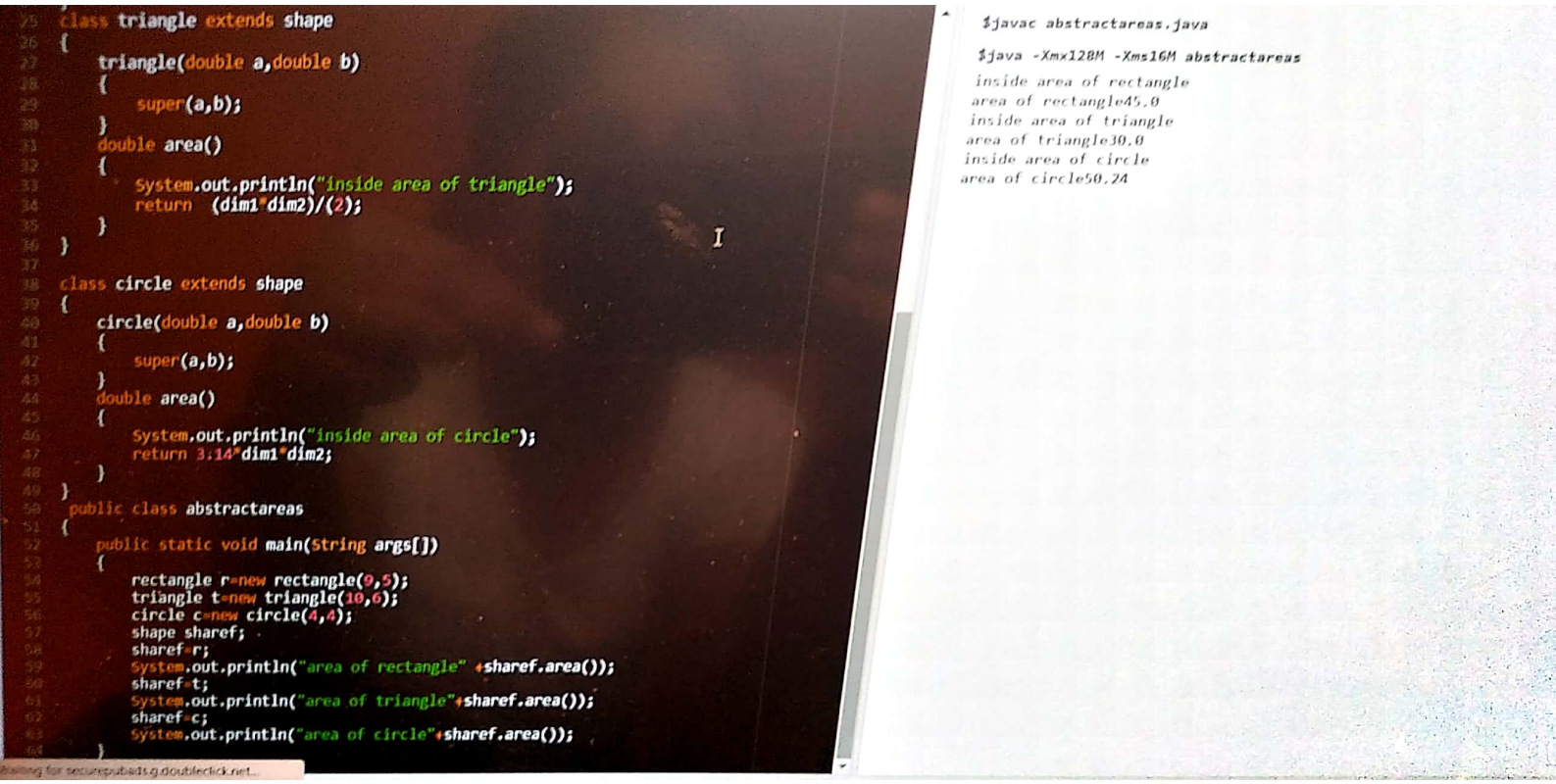
```
Abstract class shape
{
double dim1;
double dim2;
shape (double a, double b)
{
dim1 = a;
dim2 = b;
}
abstract double area()
}
class rectangle extends shape
{
rectangle (double a, double b) {
super (a, b);
}
double area()
{
system.out.println(" inside area of rectangle");
return dim1 * dim2;
}
}
class triangle extends shape
{
triangle (double a, double b)
{
super(a,b);
}
```

```
double area()
{
System.out.println("inside area of triangle");
return (dim1 * dim2)/(2);
}
}
class circle extends shape
{
circle (double a, double b) {
super(a, b);
}
double area()
{
System.out.println("inside area of circle");
return (dim1 * dim2 * 3.14);
}
}
public class Abstractclass
{
public static void main (String args[])
{
rectangle r = new rectangle (9, 5);
triangle t = new triangle (10, 6);
circle c = new circle (4, 4);
shape sharef;
System. sharef = r;
System.out.println("area of rectangle" +
sharef.area());
```

```
sharef = t;
System.out.println("area of triangle" + sharef.area());
sharef = c;
System.out.println("area of circle" + sharef.area());
    }
}
```

Output :-

```
inside area of rectangle
 area of rectangle 45.0
inside area of triangle
 area of triangle 30.0
inside area of circle
 area of circle 50.24.
```



```
class triangle extends shape
{
    triangle(double a,double b)
    {
        super(a,b);
    }
    double area()
    {
        System.out.println("inside area of triangle");
        return  (dim1*dim2)/(2);
    }
}

class circle extends shape
{
    circle(double a,double b)
    {
        super(a,b);
    }
    double area()
    {
        System.out.println("inside area of circle");
        return 3.14*dim1*dim2;
    }
}
 public class abstractareas
{
    public static void main(String args[])
    {
        rectangle r=new rectangle(9,5);
        triangle t=new triangle(10,6);
        circle c=new circle(4,4);
        shape sharef;
        sharef=r;
        System.out.println("area of rectangle" +sharef.area());
        sharef=t;
        System.out.println("area of triangle"+sharef.area());
        sharef=c;
        System.out.println("area of circle"+sharef.area());
    }
```

```
$javac abstractareas.java

$java -Xmx128M -Xms16M abstractareas
inside area of rectangle
area of rectangle45.0
inside area of triangle
area of triangle30.0
inside area of circle
area of circle50.24
```