02/01/24

LAB- 04

* Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea(). provide three classes named Rectangle, Triangle and circle such that each one of the classes expends the shape. Each one of the classes contain only the method PrintArea() that print the area of the given shape.

⇒

```
import java.util.*;
class inputScanner{
    protected Scanner s;
    public inputScanner()
    {
        s=new Scanner(System.in);
    }
    Public double getDoubleInput(String message)
    {
        System.out.println(message);
        return s.nextDouble();
    }
    Public void closeScanner()
    {
        s.close();
    }
}
abstract class Shape extends inputScanner
{
```

```
Protected double dim1;
protected double dim2;
Shape()
{
    super();
}
Public abstract void PrintArea();
}
class Rectangle extends Shape
{
    public Rectangle()
    {
        super();
    }
    Public void PrintArea()
    {
        dim1 = getDoubleInput("enter length of the
                rectangle");
        dim2 = getDoubleInput("enter breadth of the
                rectangle");
        double area = dim1 * dim2;
        System.out.println("area of the rectangle"
                + area);
    }
}
Class Triangle extends Shape
{
    public Triangle()
    {
        super();
    }
```

```
Public void printArea()
{
dim1=getDoubleinput("enter base of the
        triangle");
dim2=getDoubleinput("enter height of the
        triangle");
double area=0.5*dim1*dim2;
System.out.println("area of the triangle
                    "+area);
}
}.
class circle extends shape
{
Public circle()
{
   super();
}
public void printAreea()
{
dim1=getDoubleinput("enter radiies of the
                    circle");
double area=Math.PI*dim1*dim1;
System.out.println("area of the circle:"+
                    area);
}
}
public class Abstract
{
public static void main(String[] args)
{
Rectangle r=new Rectangle();
Triangle t=new Triangle();
```

```
r.PrintArea();
t.PrintArea();
c.PrintArea();
r.closeScanner();
    }
}
```

Output

```
Enter length of the rectangle
6

Enter breadth of the rectangle
3

area of the rectangle: 18.0
enter base of the triangle
7

Enter height of the triangle
3

area of the triangle: 10.5
enter radius of the circle
3

area of the circle: 28.274333882308138
```

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