S.No: 14	Exp. Name: ***Write a Java program to find Areas of different Shapes using abstract class***	Date:2023-09-23

Aim:

Write a Java program to illustrate the **abstract class** concept.

Create an abstract class `CalcArea` and declare the methods **triangleArea(double b, double h)**, **rectangleArea(double l, double b)**, **squareArea(double s)**, **circleArea(double r)**.

Create a class `FindArea` which extends the abstract class `CalcArea` used to find areas of triangle, rectangle, square, circle.

Write a class `Area` with the **main()** method which will receive **two** arguments and convert them to **double** type.

If the input is given as command line arguments to the **main()** as **"1.2","2.7"** then the program should print the output as:

```
Area of triangle : 1.62
Area of rectangle : 3.24
Area of square : 1.44
Area of circle : 22.890600000000006
```

Note: Please don't change the package name.

Source Code:

q11286/Area.java

```
package q11286;
public class Area {
   public static void main(String args[]) {
      FindArea area = new FindArea();
      area.triangleArea(Double.parseDouble(args[0]), Double.parseDouble(args[1]));
      area.rectangleArea(Double.parseDouble(args[0]), Double.parseDouble(args[1]));
      area.squareArea(Double.parseDouble(args[0]));
      area.circleArea(Double.parseDouble(args[1]));
   }
}
// Write all the classes with definitions
abstract class CalcArea
{
   abstract void triangleArea(double b,double h);
   abstract void rectangleArea(double l,double b1);
   abstract void squareArea(double s);
   abstract void circleArea(double r);
}
class FindArea extends CalcArea
{
   void triangleArea(double b,double h)
   {
      System.out.println("Area of triangle : "+(0.5*b*h));
   }
```

```
    void rectangleArea(double l,double b1)
    {
       System.out.println("Area of rectangle : "+l*b1);
    }
    void squareArea(double s)
    {
       System.out.println("Area of square : "+s*s);
    }
    void circleArea(double r)
    {
       System.out.println("Area of circle : "+3.14*r*r);
    }
 }
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Area of triangle : 7.529400000000001
Area of rectangle : 15.058800000000002
Area of square : 12.6736
Area of circle : 56.18370600000001

Test Case - 2
User Output
Area of triangle : 83.14375000000001
Area of rectangle : 166.28750000000002
Area of square : 157.50250000000003
Area of circle : 551.26625

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