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Lab program IV

Develop Java program to create abstract class named Shape that contains 2 integers and an empty method named printArea(). Provide 3 classes named Rectangle, Triangle and Circle such that each one of the classes extends class Shape. Each one of the classes contain only the method printArea() that prints area of given Shape.

```
import java.util.Scanner;
abstract class Shape
{
    Float dim1, dim2;
    Shape() { }
    abstract void printArea();
}
class Rectangle extends Shape
{
    Rectangle() { }
    void getd()
    {
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter length of rectangle:");
        dim1 = sc.nextFloat();
        System.out.println ("Enter breadth of rectangle:");
        dim2 = sc.nextFloat();
    }
    void printArea()
    {
        double area = dim1 * dim2;
        System.out.println ("Area of rectangle: " + area);
    }
}
```

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```
class Triangle extends Shape
{
    Triangle(){}
    void getd()
    {
        Scanner sc = new Scanner(System.in);
        System.out.println("Enter height of triangle:");
        dim1 = sc.nextFloat();
        System.out.println("Enter base of triangle:");
        dim2 = sc.nextFloat();
    }
    void printArea()
    {
        double area = 0.5 * dim1 * dim2;
        System.out.println("Area of triangle: "+area);
    }
}

class Circle extends Shape
{
    Circle(){}
    void getd()
    {
        Scanner sc = next Scanner(System.in);
        System.out.println("Enter radius of circle:");
        dim1 = sc.nextFloat();
        dim2 = 0.0f;
    }
    void printArea().
    {
        double area = Math.PI * dim1 * dim1;
        System.out.println("Area of circle:" +area);
    }
}
```

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```
class Main{
{ public static void main (String [] args)
  { Rectangle rect = new Rectangle();
    Triangle tri = new Triangle();
    Circle circ = new Circle();
rect.getd();
    tri.getd();
    circ.getd();
    rect.printArea();
    tri.printArea();
    circ.printArea();
  }
}
```

Output :

```
Enter length of rectangle:
2.5
Enter breadth of rectangle:
2.5
Enter height of triangle:
4.2
Enter base of traingle:
2
Enter radius of circle
5.5
Area of Rectangle: 6.25
Area of Triangle: 4.199999
Area of circle: 95.03317
```

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```
import java.util.Scanner;
abstract class Shape
{
	float dim1, dim2;
	abstract void printArea();
}

class Rectangle extends Shape
{
	void getd()
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter length of rectangle:");
		dim1=sc.nextFloat();
		System.out.println("Enter breadth of rectangle:");
		dim2=sc.nextFloat();
	}

	void printArea()
	{
	double area = dim1 * dim2;
	System.out.println("Area of Rectangle: " + area);
	}
}

class Triangle extends Shape
{
	void getd()
	{
		Scanner sc = new Scanner(System.in);
		System.out.println("Enter height of triangle:");
```

```
                dim1=sc.nextFloat();
                System.out.println("Enter base of triangle:");
                dim2=sc.nextFloat();
        }
        void printArea()
        {
        double area = 0.5 * dim1 * dim2;
        System.out.println("Area of Triangle: " + area);
        }
}

class Circle extends Shape
{
   Circle() {}
        void getd()
        {
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter radius of circle:");
                dim1=sc.nextFloat();
                dim2=0.0f;
        }
        void printArea()
        {
        double area = Math.PI * dim1 * dim1;
        System.out.println("Area of Circle: " + area);
        }
}

class Main1
{
   public static void main(String[] args)
```

```
        {
        Rectangle rect = new Rectangle();
        Triangle tri = new Triangle();
        Circle circ = new Circle();
                rect.getd();
                tri.getd();
                circ.getd();
        rect.printArea();
        tri.printArea();
        circ.printArea();
        }
}
```

```
D:\1BM23CS330>java Main1
Enter length of rectangle:
2.5
Enter breadth of rectangle:
2.5
Enter height of triangle:
4.2
Enter base of triangle:
2
Enter radius of circle:
5.5
Area of Rectangle: 6.25
Area of Triangle: 4.199999809265137
Area of Circle: 95.03317777109123

D:\1BM23CS330>
```