

02/01/2023

LAB-04:-

Q 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 extends the class Shape. Each one of the classes contains only the method printArea() that prints the area of the given shape.

Soln

```
import java.util.Scanner;
```

```
abstract class Shape
```

```
{
```

```
    int length;
```

```
    int breadth;
```

```
    abstract void printArea();
```

```
}
```

```
class Rectangle extends Shape {
```

```
    void printArea()
```

```
    {
```

```
        Scanner s = new Scanner(System.in);
```

```
        System.out.println("Enter length and breadth of rectangle :");
```

```
        length = s.nextInt();
```

```
        breadth = s.nextInt();
```

```
        System.out.println("The Area of Rectangle is " + (length * breadth));
```

```
}
```

```
}
```



```

class Triangle extends Shape
{
    void printArea()
    {
        Scanner S = new Scanner (System.in);
        System.out.println ("Enter the dimension
        of Triangle :");
        length = S.nextInt();
        breadth = S.nextInt();
        System.out.println ("The Area of
        Triangle is " + (0.5 * length * breadth));
    }
}

```

```

class Circle extends Shape
{
    void printArea()
    {
        Scanner S = new Scanner (System.in);
        System.out.println ("Enter the dimension
        of Circle :");
        length = S.nextInt();
        System.out.println ("The Area of Circle
        is " + (3.14 * length * length));
    }
}

```

```

public class Main
{
    public static void main (String args[])
    {
        Shape shape;
    }
}

```



```

shape = new Rectangle();
shape.printArea();
shape = new Triangle();
shape.printArea();
shape = new Circle();
shape.printArea();
}
}

```

Output:-

Enter the dimensions of the Rectangle :
7 9

Area of rectangle is 63

Enter the dimensions of the Triangle :
5 8

Area of triangle is 20

Enter the dimension of the Circle :
9

Area of circle is 254.34 //

~~Ans~~
02/01/24