

Lab-4

- 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 methods given above.

```
import java.util.Scanner;  
class InputScanner  
{  
    Scanner sc = new Scanner(System.in);
```

```
abstract class Shape extends InputScanner
```

```
{  
    double a, b;  
    abstract void printArea();  
    abstract void getInput();  
}
```

```
class Rectangle extends Shape
```

```
{  
    void getInput()
```

```
{  
        System.out.println("Enter dimensions");  
        a = sc.nextDouble();  
        b = sc.nextDouble();  
    }
```

```
    void printArea()
```

```
{  
        System.out.println("Area=" + (a * b));  
    }
```

```
}
```



```
class Triangle extends Shape
```

```
{  
    void getInput()
```

```
{  
    System.out.println("Enter dimensions");  
    a = sc.nextDouble();  
    b = sc.nextDouble();  
}
```

```
}  
    void printArea()
```

```
{  
    System.out.println("Area=" + ((a * b) / 2));  
}
```

```
}  
class Circle extends Shape
```

```
{  
    void getInput()
```

```
{  
    System.out.println("Enter dimensions for Circle");  
    a = sc.nextDouble();  
}
```

```
}  
    void printArea()
```

```
{  
    System.out.println("Area=" + (3.14 * a * a));  
}
```

```
}  
public class Main
```

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

```
{  
        Rectangle r = new Rectangle();
```

```
        r.getInput();
```

```
        r.printArea();  
    }  
}
```


Triangle t = new Triangle();
t.getInput();
t.printArea();

Circle c = new Circle();
c.getInput();
c.printArea();

System.out.println("Shruti Khandelia", "BM22CS274")

Output

Enter dimension

4

5

Area = 20.0

Enter dimension

4

3

Area = 6.0

Enter dimensions for circle

3

Area = 28.2599999

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