//Lab Exercise 3

```
package P1;
abstract public class Shape{
    public String shape;
    public String getShape(){
        return "";
    }
    abstract public double getArea();
}
```

```
package P2;
import P1.Shape;
import java.util.Scanner;
public class Rectangle extends Shape{
    double length;
    double breadth;

    public Rectangle(){
        Scanner sc =new Scanner(System.in);
        System.out.println("Enter Length");
        length=sc.nextDouble();
        System.out.println("Enter Breadth");
        breadth=sc.nextDouble();
        shape="Rectangle";
    }
    public Rectangle(int length,int breadth){
        this.length=length;
        this.breadth=breadth;
        shape="Rectangle";
    }
    public String getShape(){
        return shape;
    }
    public double getArea(){
        return length*breadth;
    }
}
```

```java
package P3;
import java.util.Scanner;
import P1.Shape;
public class Circle extends Shape{
    double radius;
    public Circle(){
        Scanner sc=new Scanner(System.in);
        System.out.println("Enter Radius of circle");
        radius = sc.nextDouble();

    }


    public Circle(double radius){
        this.radius=radius;
    }
    public double getArea(){
        return (3.14159*radius*radius);
    }
     public String getShape(){
        return shape;
    }


}
```

```java
import P1.Shape;
import P2.Rectangle;
import P3.Circle;
import java.util.Scanner;
public class Driver1{
    public static void main(String [] args){
        Shape s1;

        Scanner scan=new Scanner(System.in);
        System.out.println("1: Rectangle , 2 Circle");
        int op= scan.nextInt();
        choice:{
```

```
            switch (op){
                case 1:{
                    s1=new Rectangle();
                    System.out.println(s1.getArea());
                    break;
                }
                case 2:{
                    s1=new Circle();
                    System.out.println(s1.getArea());
                    break;
                }
            }
        }

    }
}
```

OUTPUT

```
1: Rectangle , 2 Circle
1
Enter Length
10
Enter Breadth
12
120.0
```

```
1: Rectangle , 2 Circle
2
Enter Radius of circle
100
31415.899999999998
```