

### Assignment No. 3

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**Class:** Computer Engineering

**Division:** D

**Batch:** 3

#### **Problem Statement**

Calculate area of triangle, square & circle using function overloading. Function parameter accept from user. Create Base Class **Shape** and Derived Classes **Triangle**, **Square**, **Circle** respectively. Implement **getInputs()** Method for accepting inputs, and Overload **setArea()** method for calculating area of respective shapes.

Use Class **Tester** for creating objects.

#### **Sample Input and Output**

Sample Input/Parameter for Triangle	Values	Expected Output
Height (H)	50	2500
Base (B)	100	

Sample Input/Parameter for Circle	Values	Expected Output
$\pi$ (Pie)	3.14	7853.98
Radius (R)	50	

Sample Input/Parameter for Square	Values	Expected Output
Side (S)	15	225

#### **Program:**

```
import java.util.Scanner;

class Shape {
    public float height, base, radius;
    int side;

    Scanner s = new Scanner(System.in);
    void setArea(float h, float b) {
        System.out.print("Area of Triangle: "+0.5*b*h);
    }

    void setArea(int s) {
```

```

        System.out.print("Area of Square: "+s*s);
    }

    void setArea(float r) {
        System.out.print("Area of Circle: "+ r*r*3.14);
    }
}

class Triangle extends Shape{
    void getInputs() {
        System.out.print("\nEnter Height and Base of Triangle:\n");
        super.height = s.nextFloat();
        super.base = s.nextFloat();
        setArea(height,base);
    }
}

class Square extends Shape{
    void getInputs() {
        System.out.print("\nEnter Side of Square:");
        super.side = s.nextInt();
        setArea(side);
    }
}

class Circle extends Shape{
    void getInputs() {
        System.out.print("\nEnter Radius of Circle:");
        super.radius = s.nextFloat();
        setArea(radius);
    }
}

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

        Triangle triangle = new Triangle();
        triangle.getInputs();

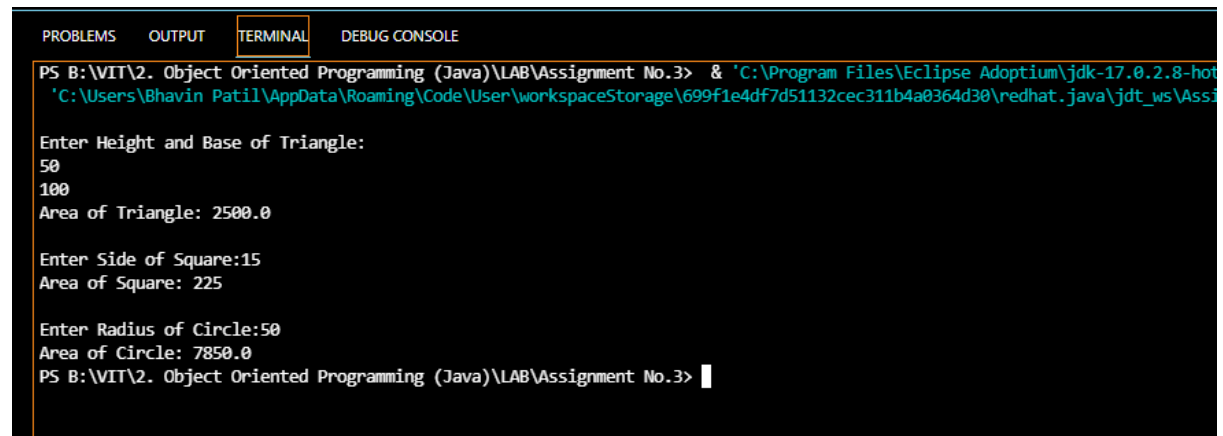
        Square square = new Square();
        square.getInputs();

        Circle circle = new Circle();
        circle.getInputs();
    }
}

```

## Results:

### Actual Output



```
PS B:\VIT\2. Object Oriented Programming (Java)\LAB\Assignment No.3> & 'C:\Program Files\Eclipse Adoptium\jdk-17.0.2.8-hotspot\bin\java.exe' -Xms1g -Xmx1g -Djava.class.path=. -Djava.library.path=. -jar 'C:\Users\Bhavin Patil\AppData\Roaming\Code\User\workspaceStorage\699f1e4df7d51132cec311b4a0364d30\redhat.java\jdt_ws\AssignmentNo3\bin\AssignmentNo3.jar'

Enter Height and Base of Triangle:
50
100
Area of Triangle: 2500.0

Enter Side of Square:15
Area of Square: 225

Enter Radius of Circle:50
Area of Circle: 7850.0
PS B:\VIT\2. Object Oriented Programming (Java)\LAB\Assignment No.3> |
```