**D. Y. Patil College of Engineering, Akurdi, Pune**

**Department of Information Technology**

**Object Oriented Lab Practical Examination**

**Name: RISHABH JAIN**

**Roll No: SEITA47**

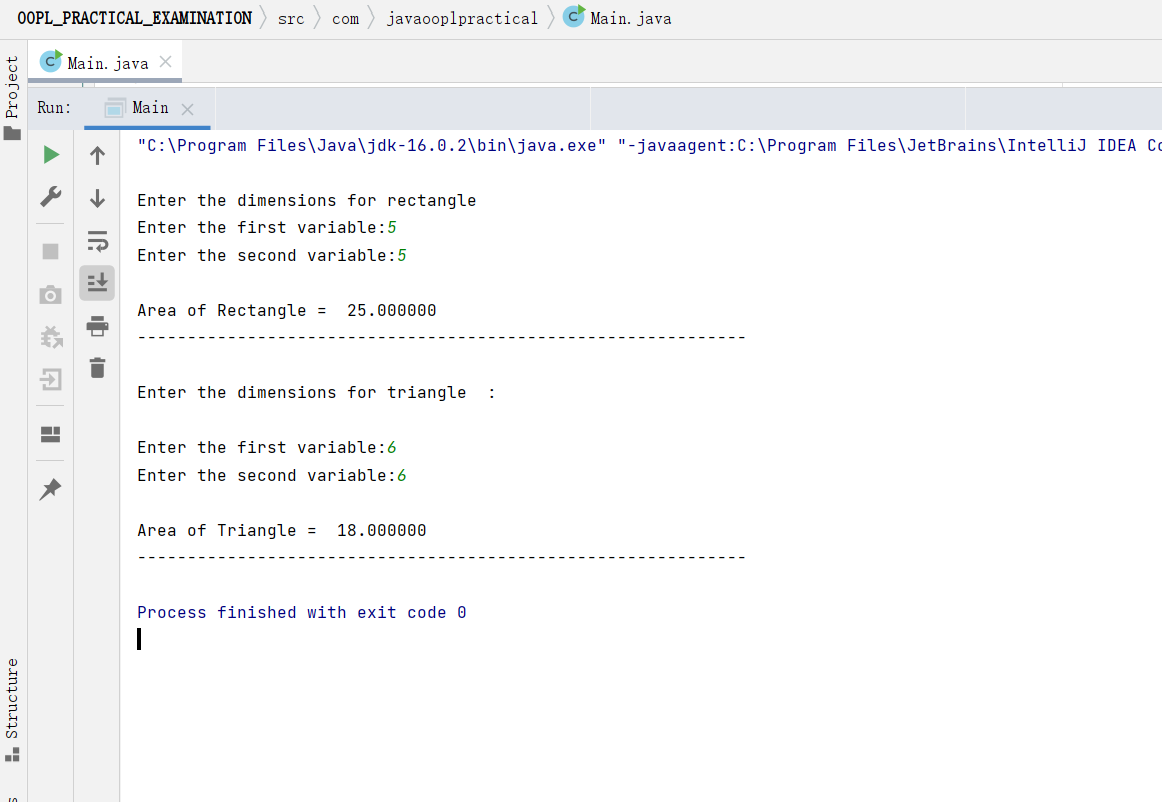
**PRN No: 72139725F**

**Problem Statement:** **4. Dynamic Binding Design a base class shape with two double type values and member functions to input the data and compute\_area() for calculating area of shape. Derive two classes: triangle and rectangle. Make compute\_area() as abstract function and redefine this function in the derived class to suit their requirements. Write a program that accepts dimensions of triangle/rectangle and display calculated area. Implement dynamic binding for given case study.**

**Code:**

package com.javaooplpractical;  
*/\*  
Name: Rishabh Jain  
Roll No: SEITA047  
 \*/  
/\*  
4.Dynamic Binding  
Design a base class shape with double type values and member functions to input the data and  
compute\_area() for calculating area of shape. Derive two classes: triangle and rectangle. Make  
compute\_area() as abstract function and redefine this function in the derived class to suit their  
requirements. Write a program that accepts dimensions of triangle/rectangle and display calculated  
area. Implement dynamic binding for given case study.  
 \*/*import java.util.Scanner;  
abstract class Shape{*//created an abstract class shape* double a,b;*//initialized the variables* Scanner in = new Scanner(System.*in*);  
 void input(){*//method to take dimensions as input from user* System.*out*.print("\nEnter the first variable:");  
 a=in.nextDouble();*//take variable 1 from the user.* System.*out*.print("Enter the second variable:");  
 b=in.nextDouble();*//take variable 2 from the user.* }  
 abstract public void compute\_area();*//abstract method to calculate area*}  
  
  
class Triangle extends Shape{public void compute\_area(){*//calling the abstract compute\_method for triangle* double area;*//initializing the area function.* area = (a\*b\*0.5);*//computing the area for the triangle* System.*out*.printf("\nArea of Triangle = %f",area);*//printing the area of the triangle* System.*out*.println("\n-------------------------------------------------------------");  
 }  
}  
  
  
class Rectangle extends Shape{  
 public void compute\_area(){*//calling the abstract compute\_method for rectangle* double area;*//initializing the area function.* area = a\*b;*//computing the area for the rectangle* System.*out*.printf("\nArea of Rectangle = %f ",area);*//printing the area of the rectangle* System.*out*.println("\n-------------------------------------------------------------");  
 }  
}  
  
  
public class Main {  
  
 public static void main(String[] args) {*//main method  
 //reference variable of super class Shape* Shape s = new Rectangle();  
 */\*  
 /\*  
 here the dynamic binding concept of java is being used as both rectangle and triangle have the same instance,  
 so it gets decided at compile time, and it will call the compute\_area of rectangle.  
 \*/* System.*out*.print("\nEnter the dimensions for rectangle ");  
 s.input();  
 s.compute\_area();  
  
  
 s = new Triangle();  
 */\*  
 here the dynamic binding concept of java is being used as both rectangle and triangle have the same instance,  
 so it gets decided at compile time, and it will call the compute\_area of triangle.  
 \*/* System.*out*.println("\nEnter the dimensions for triangle :");  
 s.input();  
 s.compute\_area();  
 }  
}

**Output:**

****