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**Roll no. :- 44**

**Practical no. :- 4 \*/**

**//Program**

**import java.util.Scanner;**

**abstract class Shape {**

**double dim1;**

**double dim2;**

**void input() {**

**Scanner sc = new Scanner(System.in);**

**System.out.print("Enter first dimension ");**

**dim1 = sc.nextDouble();**

**System.out.print("Enter second dimension ");**

**dim2 = sc.nextDouble();**

**}**

**abstract double compute\_area(double one, double two); //abstract method**

**}**

**class Triangle extends Shape {**

**//implementing abstract method in child class**

**double compute\_area(double one, double two) {**

**return 0.5 \* one \* two;**

**}**

**}**

**class Rectangle extends Shape {**

**//implementing abstract method in child class**

**double compute\_area(double one, double two) {**

**return one \* two;**

**}**

**}**

**public class Assignment4 {**

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

**// TODO Auto-generated method stub**

**while (true) {**

**System.out.print("\n\t\tMenu\n\t1. AREA OF TRIANGLE\n\t2. AREA OF RECTANGLE\n\t3. EXIT \n");**

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

**int ch = s.nextInt();**

**switch (ch) {**

**case 1:**

**/\* Reference is of Shape type and object is Triangle type\*/**

**Shape obj1 = new Triangle(); //dynamic binding**

**System.out.println("Enter dimensions of triangle ");**

**obj1.input();**

**System.out.print("\nThe area of triangle with given dimension is ");**

**System.out.println(obj1.compute\_area(obj1.dim1, obj1.dim2));**

**break;**

**case 2:**

**/\* Reference is of Shape type and object is Rectangle type\*/**

**Shape obj2 = new Rectangle(); //dynamic binding**

**System.out.println("\n\nEnter dimensions of rectangle ");**

**obj2.input();**

**System.out.print("\nThe area of rectangle with given dimension is ");**

**System.out.println(obj2.compute\_area(obj2.dim1, obj2.dim2));**

**break;**

**case 3:**

**System.exit(0);**

**break;**

**default:**

**System.out.println("Invalid Choice");**

**break;**

**}}} }**

**OUTPUT**

Menu

1. AREA OF TRIANGLE

2. AREA OF RECTANGLE

3. EXIT

1

Enter dimensions of triangle

Enter first dimension 4

Enter second dimension 3

The area of triangle with given dimension is 6.0

Menu

1. AREA OF TRIANGLE

2. AREA OF RECTANGLE

3. EXIT

2

Enter dimensions of rectangle

Enter first dimension 7

Enter second dimension 9

The area of rectangle with given dimension is 63.0

Menu

1. AREA OF TRIANGLE

2. AREA OF RECTANGLE

3. EXIT

6

Invalid Choice

Menu

1. AREA OF TRIANGLE

2. AREA OF RECTANGLE

3. EXIT

3