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Aim: Design a base class shape with two double type values and member functions to input the data and compute\_area() for calculating area of figure. 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.

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Program:

import java.util.Scanner;

abstract class Shape{

double val1,val2;

void input() {

Scanner sc = new Scanner(System.in);

System.out.println("Enter first value");

val1 = sc.nextDouble();

System.out.println("Enter second value");

val2 = sc.nextDouble();

}

abstract void compute\_area();

}

class Triangle extends Shape {

void compute\_area() {

double area;

area = 1.0f/2.0f \* val1 \* val2;

System.out.println("Triangle Area: " + area);

}

}

class Rectangle extends Shape {

void compute\_area() {

double area;

area = val1 \* val2;

System.out.println("Rectangle Area: " + area);

}

}

public class Dynamic {

public static void main(String args[]) {

Shape s;

Triangle t = new Triangle();

Rectangle r = new Rectangle();

s = t;

s.input();

s.compute\_area();

s = r;

s.input();

s.compute\_area();

}

}

Output:

Enter first value

3

Enter second value

5

Triangle Area: 7.5

Enter first value

8

Enter second value

4

Rectangle Area: 32.0