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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.

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import java.io.\*;

import java.util.Scanner;

abstract class Shape{

double dim1;

double dim2;

void input()

{

Scanner sc= new Scanner(System.in);

System.out.println("Enter First Dimension: ");

dim1=sc.nextDouble();

System.out.println("Enter Second Dimension:");

dim2=sc.nextDouble();

}

abstract double compute\_area(double one,double two);

}

class Triangle extends Shape{

double compute\_area(double one,double two)

{

return 0.5\*one\*two;

}

}

class Rectangle extends Shape{

double compute\_area(double one,double two)

{

return one\*two;

}

}

public class Prathamesh

{

public static void main(String[]args)

{

while(true){

System.out.println("\n\t\t MENU\n\n\t(1) AREA OF TRIANGLE\n\t(2) AREA OF RECTANGLE \n\t(3) EXIT");

Scanner s=new Scanner(System.in);

int ch=s.nextInt();

switch(ch){

case 1:

Shape obj1=new Triangle();

obj1.input();

System.out.println("\nThe area of Triangle with the given dimensions is\n");

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

break;

case 2:

Shape obj2=new Rectangle();

obj2.input();

System.out.println("\nThe area of Rectangle with the given dimensions is\n");

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

break;

case 3:

System.exit(0);

break;

default:

System.out.println("Invalid choice");

break;

}

}

}

}

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// OUTPUT

MENU

(1) AREA OF TRIANGLE

(2) AREA OF RECTANGLE

(3) EXIT

1

Enter First Dimension:

12

Enter Second Dimension:

21

The area of Triangle with the given dimensions is

126.0

MENU

(1) AREA OF TRIANGLE

(2) AREA OF RECTANGLE

(3) EXIT

2

Enter First Dimension:

12

Enter Second Dimension:

21

The area of Rectangle with the given dimensions is

252.0

MENU

(1) AREA OF TRIANGLE

(2) AREA OF RECTANGLE

(3) EXIT

3