Assignment – 4

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* Code:-

import java.util.\*; //importing java scanner class

abstract class shape{ //abstract class shape

    double num1,num2; //variables of type float

    shape(){ //using constructor to set values

        num1=0;

        num2=0;

    }

    abstract public void compute\_area(); //abstract function to compute area

}

class rectangle extends shape{ //class rectangle inherited from class shape

    rectangle(){ //constructor to scan and set values

        super();

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter the length of rectangle =>");

        num1=sc.nextDouble();

        System.out.println("Enter the breadth of rectangle =>");

        num2=sc.nextDouble();

    }

    public void compute\_area(){ //defining the abstract function compute area from parent class

        double area=num1\*num2; //calculating area

        System.out.println("The area of rectangle is =>"+area);

        System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

    }

}

class triangle extends shape{ //class triangle inherited from class shape

    triangle(){ //constructor to scan and set values

        super();

        Scanner sc=new Scanner(System.in);

        System.out.println("Enter the base of triangle =>");

        num1=sc.nextDouble();

        System.out.println("Enter the height of triangle =>");

        num2=sc.nextDouble();

    }

    public void compute\_area(){ //defining the abstract function compute area from parent class

        double area=num1\*num2\*0.5; //calculating area

        System.out.println("The area of triangle is => "+area);

        System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

    }

}

public class dynamic\_binding {

    public static void main(String[] args) { //main function

        System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

        int choice;

        Scanner sc=new Scanner(System.in);

        do{

            System.out.println("Enter the operation to be performed\n1.Compute area of rectangle\n2.Compute area of triangle\n3.Exit");

            choice=sc.nextInt(); //accepting required operation to be performed from user

            switch(choice){

                case 1:

                System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

                shape rect=new rectangle();

                rect.compute\_area();

                break;

                case 2:

                System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

                shape tri=new triangle();

                tri.compute\_area();

                break;

                case 3:

                System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

                System.out.println("Exiting the program");

                break;

                default:

                System.out.println("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*");

                System.out.println("Enter valid choice");

            }

        }while(choice!=3);

    }

}

* Output:-

Text

Description automatically generated