

Assignment no:04

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Subject : OOP

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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

//*****PROGRAM*****

```
import java.util.Scanner;
abstract class shape {
    Double base,height;
    Double length,breadth,area;
    abstract void compute_area(); //declare
}
class triangle extends shape {
    void input() {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter base:");
        base=sc.nextDouble();
        System.out.print("Enter height:");
        height=sc.nextDouble();
    }
    void compute_area() {
        area=0.5*base*height;
        System.out.print("Area of Triangle is:"+area);
    }
}
class rectangle extends shape {
    void input()
    {
        Scanner sc=new Scanner(System.in);
        System.out.print("Enter length :");
        length=sc.nextDouble();
        System.out.print("Enter breadth:");
        breadth=sc.nextDouble();
    }
    void compute_area() {
        area=length*breadth;
        System.out.print("Area of rectangle is:"+area);
    }
}
public class Assign_4 {
    public static void main(String arg[]) {
        int choice;
        Scanner sc=new Scanner(System.in);
        System.out.println("choose a shape the area you want to find");
        System.out.println("1.triangle\n2.Rectangle\n3.exit");
```

```

        System.out.print("Enter your choice:");
        choice=sc.nextInt();
        switch(choice) {
        case 1: {

                triangle t = new triangle();
                t.input();
                t.compute_area();
                break;
        }
        case 2: {
                rectangle r= new rectangle();
                r.input();
                r.compute_area();
                break;
        }
        case 3: {
                System.out.print("Your are Successfully exited");
                break;
        }
        default:
                System.out.print("Invalid choice");
                break;
        }
    }
}

```

//*****OUTPUT*****

```

choose a shape the area you want to find
1.triangle
2.Rectanglel
3.exit
Enter your choice:1
Enter base:4
Enter height:6
Area of Triangle is:12.0
choose a shape the area you want to find
1.triangle
2.Rectanglel
3.exit
Enter your choice:2
Enter length :5
Enter breadth:7
Area of rectangle is:35.0
choose a shape the area you want to find
1.triangle
2.Rectanglel
3.exit
Enter your choice:3
Your are Successfully exited

```