

PROGRAM 4

Title: Dynamic Binding

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.

SOLUTION:

```
import java.util.Scanner;
```

```
abstract class Base
```

```
{
```

```
double l,b,area;
```

```
void setDimentions()
```

```
{
```

```
double length,height;
```

```
System.out.println(" Enter the length : ");
```

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

```
length=s.nextDouble();
```

```
System.out.println(" Enter the height : ");
```

```
height=s.nextDouble();
```

```
this.l=length; this.b=height;
```

```
}
```

```
abstract void computeArea();
```

```
}
```

```
class Triangle extends Base
```

```
{
```

```

void computeArea()
{
    area=(l*b)/2;
    System.out.println("Area of triangle is : "+this.area);
}
}

class Rectangle extends Base
{
    void computeArea()
    {
        area=(l*b);
        System.out.println("Area of rectangle is : "+this.area);
    }
}

public class DynamicBinding
{
    public static void main(String[] args)
    {
        Triangle t=new Triangle();
        Rectangle r=new Rectangle();
        System.out.println("calculating Area of Triangle");
        t.setDimentions();
        t.computeArea();
        System.out.println("calcularing Area of Rectangle");
        r.setDimentions(); ///setting values of l and b for rectangle
        r.computeArea();
    } }

```

OUTPUT:

```
Problems @ Javadoc Declaration Console × Debug
<terminated> DynamicBinding [Java Application] C:\Users\adity\p2\pool\plugins\org.eclipse.justj.openjdk.h
calculating Area of Triangle
Enter the length :
45
Enter the height :
23
Area of triangle is : 517.5
calculating Area of Rectangle
Enter the length :
60
Enter the height :
37
Area of rectangle is : 2220.0
```