

Program 4:

Develop a Java Program to create abstract class called `Shape` that contains two integer and an empty method name `print area()`. Also write three class name `rectangle`, `triangle` such that each one of class extends class `Shape`. Each one of class contain only the method `print area()` that print the area of given shape.

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

```
abstract class Shape {
```

```
    int h, b;
```

```
    abstract void printArea();
```

```
}
```

```
Class rectangle extends Shape {
```

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

```
    void printArea();
```

```
    System.out.println("Enter the breadth and height of  
        rectangle");
```

```
    int h = s.nextInt();
```

```
    int b = s.nextInt();
```

```
    System.out.println("The area of rectangle is " + b * h);
```

```
}
```

```
rectangle() {}
```

```
}
```


class triangle extends shape {

Scanner sc = new Scanner(System.in);

void printArea()

{

System.out.println("Enter the base and height of triangle");

int b = sc.nextInt();

int h = sc.nextInt();

System.out.println("The Area of triangle is" + $0.5 * b * h$);

Class circle extends Shape {

Scanner sc = new Scanner(System.in);

void printArea()

{

System.out.println("Enter the radius of circle");

int r = sc.nextInt();

System.out.println("The radius of circle is" + $3.14 * r * r$);

circle() {}

}


```
class main {  
    public static void main (String args[]) {  
        rectangle = new rectangle();  
        r.printArea();  
        triangle t = new triangle();  
        t.printArea();  
        circle c = new circle();  
        c.printArea();  
    }  
}
```

Output:

Enter height and base of Triangle Rectangle.

10

20

Area of Rectangle is 200

Enter height and base of Triangle

30

40

Area of Triangle is 600.0

Enter radius of circle

50

Area of circle is 7850.0

```
Command Prompt
Microsoft Windows [Version 10.0.22000.1455]
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C:\Users\hp>cd C:\Users\hp\OneDrive\Desktop\1bm21cs008
C:\Users\hp\OneDrive\Desktop\1bm21cs008>javac main.java
C:\Users\hp\OneDrive\Desktop\1bm21cs008>java main
Enter height and width of rectangle
3
1
Area of Rectangle is 210
Enter height and base of triangle
3
9
Area of Triangle is 600.0
Enter radius of Circle
39
Area of Circle is 7850.0
C:\Users\hp\OneDrive\Desktop\1bm21cs008>
```