

Week 4

4. Develop a Java program to create an abstract class named Shape that contains two integers and an empty method named printArea(). Provide three classes named Rectangle, Triangle and Circle such that each one of the classes extends the class Shape. Each one of the classes contain only the method printArea() that prints the area of the given shape.

```
import java.util.Scanner;
abstract class shape
{
    shape(){}
    int h,b;
    abstract void printArea();
}
class rectangle extends shape
{
    Scanner s=new Scanner(System.in);
    void printArea()
    {
        System.out.println("Enter height and width of rectangle");
        h=s.nextInt();
        b=s.nextInt();
        System.out.println("Area of Rectangle is "+b*h);
    }
    rectangle(){}
}

class triangle extends shape
{
    Scanner s=new Scanner(System.in);
    void printArea()
    {
        System.out.println("Enter height and base of rectangle");
        h=s.nextInt();
```

```

        b=s.nextInt();
        System.out.println("Area of Trianle is "+0.5*b*h);
    }
    triangle(){
}

```

```

class circle extends shape
{
    Scanner s=new Scanner(System.in);
    void printArea()
    {
        System.out.println("Enter radius of Circle");
        h=s.nextInt();
        System.out.println("Area of Circle is "+3.14*h*h);
    }
    circle(){
}
}

```

```

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

```

```

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C:\Users\BMSCE>cd C:\Users\BMSCE\Desktop\1BM21CS059\shapes

C:\Users\BMSCE\Desktop\1BM21CS059\shapes>
C:\Users\BMSCE\Desktop\1BM21CS059\shapes>javac main.java

C:\Users\BMSCE\Desktop\1BM21CS059\shapes>java main
Enter height and width of rectangle
33
44
Area of Rectangle is 1452
Enter height and base of rectangle
44
55
Area of Trianle is 1210.0
Enter radius of Circle
55
Area of Circle is 9498.5000000000002

C:\Users\BMSCE\Desktop\1BM21CS059\shapes>

```