→ Lab Exercises - 4 and 5

Develop a Java program to create an abstract class named shape that contains 2 integers and an empty method named printArea(). Provide three classes name Rectangle, Triangle and Circle such that each one of the classes contains the method printArea() that prints the area of the given shape

```
import java.util.*;

class Shape {
    int sl;
    int sb;
    void printArea(){
    }
    Scanner s_inp = new Scanner(System.in);
}
class Rectangle extends Shape{
    void printArea(){
        System.out.println("Enter the length of Rectangle");
        sl = s_inp.nextInt();
        System.out.println("Enter the breadth of Rectangle");
        sb = s_inp.nextInt();
        System.out.println("the area of Rectangle is :" + (sb * sl));
    }
}
class Triangle extends shape {
    void Print Area(){
```

```
        System.out.println("Enter the height :");
        sl = S_inp.nextInt();
        System.out.println("Enter the base :");
        sb = S_inp.nextInt();
        System.out.println("Area of triangle is :"
                + (0.5*sb*sl));
    }
}
class Circle extends Shape {
    void printArea(){
        System.out.println("Enter the radius :");
        s1 = S_inp.nextInt();
        System.out.println("area of circle is :"
                + (3.143* s1 *s2));
    }
}
Public class MainA {
    public static void main (String[] args)
    {
        Rectangle R1 = new Rectangle();
        Triangle T1 = new Triangle();
        Circle C1 = new Circle();
        R1.PrintArea();
        T1.PrintArea();
        C1.PrintArea();
    }
}
```

```
//Lab Exercise 4
import java.util.*;

class Shape{
   int Sl;
   int Sb;

   void printArea(){

   }

   Scanner S_inp = new Scanner(System.in);
}

class Rectangle extends Shape{
   void printArea(){
      System.out.println("Enter the lenght of Rectangle");
      Sl = S_inp.nextInt();
      System.out.println("Enter the breadth of Rectangle");
      Sb = S_inp.nextInt();

      System.out.println("The AREA of RECTANGLE is  : "+ (Sb*Sl));
   }
}

class Trinagle extends Shape{
   void printArea(){
      System.out.println("Enter the Height : ");
      Sl = S_inp.nextFloat();
      System.out.println("Enter the Base : ");
      Sb = S_inp.nextInt();
```

```
        System.out.println("The AREA of TRIANGLE is : " +(.5*Sb*Sl));
    }
}

class Circle extends Shape{
    void printArea(){
        System.out.println("Enter the Radius :");
        Sl = S_inp.nextInt();

        System.out.println("The AREA of CIRCLE is : "+(3.143*Sl*Sl));
    }
}



public class MainA {
    public static void main(String[] args){

        Rectangle R1 = new Rectangle();
        Trinagle T1 = new Trinagle();
        Circle C1 = new Circle();

        R1.printArea();
        T1.printArea();
        C1.printArea();
    }
}
```

```
C:\Users\Samarth\Documents>java MainA
Enter the lenght of Rectangle
12
Enter the breadth of Rectangle
13
The AREA of RECTANGLE is  : 156
Enter the Height :
3
Enter the Base :
3
The AREA of TRIANGLE is : 4.5
Enter the Radius :
3
The AREA of CIRCLE is : 28.286999999999995

C:\Users\Samarth\Documents>java MainA
Enter the lenght of Rectangle
13
Enter the breadth of Rectangle
0
The AREA of RECTANGLE is  : 0
Enter the Height :
2
Enter the Base :
2
The AREA of TRIANGLE is : 2.0
Enter the Radius :
7
The AREA of CIRCLE is : 154.00699999999998

C:\Users\Samarth\Documents>exit
```