Graded Lab 2 IInd Year Ist Batch

Submitting

You will submit (upload) this assignment in Blackboard in pdf form. Email/paper submissions will not be accepted.

- Write code for the program after each question in this document followed by the screen print of output.
- Questions must be answered in the given order.
- Name this document as GL2_2015_John_Doe.pdf in case your name is John Doe.

Grading Criteria

Correct and to-the-point answers will be awarded full points. The points will be awarded based on degree of modularity and usage of object oriented concepts in coding. **This Lab has 5 points (with weightage of 5% in your overall 100 points).**

1. Define a class "Point". The logic to check whether a point is in circle or not is already known. Given three corner points of a triangle ABC, and one more point P. The procedure to check whether P lies within the triangle or not is as follows. Let the coordinates of three corners be (x1, y1), (x2, y2) and (x3, y3). And coordinates of the given point P be (x, y).

- Calculate area of the given triangle, i.e., area of the triangle ABC. Let this area be A.
- Calculate area of the triangle PAB. Let this area be A1.
- Calculate area of the triangle PBC. Let this area be A2.
- Calculate area of the triangle PAC. Let this area be A3.
- If P lies inside the triangle, then A1 + A2 + A3 must be equal to A.

The following code framework should execute.

```
public static void main(String…){
Scanner s=new Scanner(System.in);
Point x=new Point();
Triangle t=new Triangle();
Circle c=new Circle();
…….
continue = true;
while(continue){
        System.out.println("Checking a given point is in a triangle or a circle. Continue Y/N");
        char choice = s.nextChar();
        //if choice is Y then perform
        x.setFromUser();
        //else do appropriate
        System.out.println("Checking for Circle(C) or Triangle(T) or Neither (n)?)
        choice = s.nextChar();
```

```
//based on choice the code will either call
        t.setFromUser();
        System.out.println(“ The answer is:”+x.isInside(t));
        or
        c.setFromUser();
        System.out.println(x.isInside(c));
        or
        // continue to perform action for next point
        or
        message for incorrect choice.
// if wrong choice input it again from user}
```