# 1 Homework Assignment 2ip90 – Circle

## General Description

On input are $8$ floating point numbers, representing two circles and a point in a 2D Cartesian coordinate system.

The first two numbers represent the midpoint of the first circle, first its $x$- and then its $y$-coordinate. The third number represents its radius. The next three numbers describe the second circle in exactly the same fashion. Finally, the last two numbers on input represent the point. Again, its $x$-coordinate is followed by its $y$-coordinate.

The program has to decide which circles (including their borders), if any, the point lies inside.

If the point does not lie in any of the two circles, the output should read "The point does not lie in either circle". In the case where the point lies in just a single circle, the output should read either "The point lies in the first circle" or "The point lies in the second circle", depending on which circle the point is located in. If the point lies in both circles, the output should read "The point lies in both circles".

The program must output just "input error" if either circle is ill-defined, i.e., if their radius is negative.

## Design

Use the provided template file Circle.java, and make sure to fill in your names, IDs and group number in the top comment.

## Remarks

- **Hint** Make use of boolean variables.
- The output should be exactly as described. Deviations (e.g., printing "Please provide your input" or "error!", or printing additional white space) will lead to subtraction of points.
- Use descriptive variable names. Names such as `a`, `b`, `c` or `x1`, `x2`, `x3` do not provide a reader of your code with enough information.
- Upon submission Momotor will report back the result of some tests. Consult these results! You can resubmit as often as you want (until the deadline passes).
- If you encounter problems with submission contact the 2IP90 helpdesk at `course2ip90@gmail.com`.

## Examples

**input:** 0 0 3 0 0 1 2 2
**output:** The point lies in the first circle

**input:** 0 0 16 -1.0 -1.0 12 -4.1 -4.2
**output:** The point lies in both circles

**input:** 0 0 -3 0 0 2 4 5
**output:** input error