CPSC 2735, Assignment One

Implement the Circle class according to the following:

Circle
- center : Point - radius : double
+ Circle(centerIn : Point, radiusIn : double) + toString() : String + getCenter() : Point + getRadius() : Point + setCenter(centerIn : Point) : void + setRadius(radiusIn : double) : void + distanceFrom(Circle : other) : double

The distanceFrom one circle to another is the [Pythagorean distance between the centers] minus the [sum of the radii of the two circles]. If this value is negative, the circles overlap.

Use this class in a java application to count how many circles overlap with a circle specified by the user at run-time.

The program accepts the name of a data file from the command line. This file contains values for a number of circles. The first line of the data file is the number of circles in the file. The remaining lines have three floating point values separated by one or more spaces:

- the x coordinate of the circle's center
- the y coordinate of the circle's center
- the circle's radius

The program interactively reads the values for a single circle: x, y, and radius.

The program counts how many of the circles read from the file overlap with the circle entered by the user. The program outputs the circles read from the file, indicating which ones overlap with the user-entered circle. The session below shows the intended behavior:

```
codio@extra-mister:~/workspace/Circles$ java CompareCircles fiveCircles.dat
Enter the x & y values of a circle's center: 0 0
Enter the radius of the circle: 1
You entered this circle: [center: (0.0,0.0), radius: 1.0]
Read data for 5 circles:
        center: (1.0,1.0), radius: 1.0 <-- overlaps
        center: (2.0,3.0), radius: 1.0
        center: (4.0,4.0), radius: 3.0
        center: (-3.0,-3.0), radius: 6.0 <-- overlaps
        center: (-3.0,4.0), radius: 2.0
2 of those overlap with the circle [center: (0.0,0.0), radius: 1.0]
codio@extra-mister:~/workspace/Circles$
```