CSE1030 Lab 03

Tuesday, July 10, 2014
Due: Monday, July 14, 2014, before 17:00

Introduction

The goals of this lab are to implement a small class representing rectangles with their positions and sizes.

You will need to implement the following features in your class:

- constructors
- accessor methods
- mutator methods
- `equals` method
- `toString` method

Question 1: Implement a small immutable class

Implement the class named `ResizableRectangle` that represents a rectangle on a real 2D plane. Every `ResizableRectangle` object has *x*, and *y* coordinates, and horizontal and vertical sizes.

In eclipse:

1. Create a new Java Project (perhaps called `lab3`)
2. In your project, create a new Package named `cse1030.drawing`
3. In the package `cse1030.drawing` create a new Java class named `ResizableRectangle`.
4. Complete the class `ResizableRectangle` so that it implements the API (given separately):

This means that you must create and complete the following fields, constructors, and methods:

- a class constant containing the number of sides, `NUM_SIDES=4`
- `ResizableRectangle ()`
- `ResizableRectangle (double x, double y, double xSize, double ySize)`
- `getXPos()`
- `getYPos()`
- `getXSize()`
- `getYSize()`
- `setPos(double x, double y)`
- `setXPos(double x)`
- `setYPos(double y)`
- `setSize(double xSize, double ySize)`
- `setXSize(double xSize)`
- `setYSize(double ySize)`

- o intersect(ResizableRectangle other)
- o numInstances()
- o equals(Object obj)
- o toString()

5. Finally, create a main function that demonstrate how your code works. E.g.,

```
Rectangle 1: (3.0, 3.2, [4.0 x 4.6])
Rectangle 2: (5.0, 3.8, [3.0 x 5.5])
Rectangle 3: (6.0, 3.7, [5.6 x 6.0])
Rectangle 4: (6.0, 3.7, [4.6 x 6.0])

R1 & R2 intersect: (true or false)
R2 & R3 intersect: (true or false)
R1 & R4 intersect: (true or false)

R2 is equal to R4: false
R3 is equal to R4: false
```

Submit

Submit your solution using the `submit` command. Remember that you first need to find your workspace directory, then you need to find your project directory.

```
submit 1030 L3 ResizableRectangle.java
```

Alternatively, you may use the web form at
`https://webapp.eecs.yorku.ca/submit/index.php`

Some things to think about

- Which of the fields needed to be kept static or non-static, private or public, final or non-final?