Assignment 7
Hand-in date: Monday 26-10-2015 15:00h

7.1 Design a class named **MyDouble**. The class contains:

- A **double** data field named **'value'** that stores the **double** value represented by this object.
- A constructor that creates a **MyDouble** object for the specified **double** value.
- A getter method for the **value** field.
- The method **equals(MyDouble d)** that returns true if the specified object's value is equal to this object's value.

7.2 Modify the Rectangle class from exercise 6.1 such that:

- The width and height data fields are of type **MyDouble**.
- The return types of the **getArea()** and **getPerimeter()** methods are **MyDouble**s.
- It contains the methods **widthEquals(Rectangle r)**, **heightEquals(Rectangle r)**, **areaEquals(Rectangle r)** and **perimeterEquals Rectangle r)**, that return true if the width, height, area or perimeter values are equal to the specified Rectangle's values respectively.

7.3 Imagine a coordinate system with a lot of geometric figures (like rectangles, circles and triangles) in it. All geometric figures have a color and a center. The colour can be specified by a **String** and the center can be specified by an x and a y coordinate (For simplicity let's use **int**egers). A geometric figure also has a method for checking if the color of another geometric figure is the same as its own color. Implement the **GeometricFigure** class as described above.

7.4 Let the **Rectangle** class from exercise 7.2 extend the **GeometricFigure** class and modify the constructor to also consider the center and the color of the rectangle. Design a **Circle** class that also extends **GeometricFigure** and has a **MyDouble** data field called radius and a constructor that creates a **Circle** with the specified radius, center and color.

7.5 For both the **Rectangle** and the **Circle** class implement the method **containsCenter(GeometricFigure g)** that returns true if the center of g is inside the rectangle or circle in the coordinate system.

7.6 (OPTIONAL) In the **Rectangle** class, write the method **contains(Rectangle r)** that returns true if the specified rectangle is inside this rectangle. (See figure below)

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7.7 (OPTIONAL) Write the corresponding contains method for the **Circle** class.