

## LAB ASSIGNMENT #2

### RandomFunTester.java and DrawCircles.java

#### Background:

We will improve our ideas of object orientation by linking a driver `RandomFunTester.java` with two old files – `DrawSquare.java` and `DrawHouse.java` and one new file – `DrawCircles.java`.

`DrawSquare.java` and `DrawHouse.java` will be used without modification. Make copies of them and put them in a new folder named `RandomFunTester`. New files `DrawCircles.java` and `RandomFunTester.java` will be created by you as directed below. It is important that these two new files are also in the same folder.

**IMPORTANT:** In order to use the `Random` class, you must gain access to the files with an import statement as follows:

```
import java.util.Random;
```

As with all import statements, it must be placed prior to the beginning of the class declaration.

#### **RandomFunTester.java:**

Random number generation and a `switch` statement will be used to decide whether a house, square or set of circles will be drawn with each run of your program. Look at the Movies and Lecture Notes link on our home page for tips on both topics. In your `main()` method, the first thing you should do is set up the random number generator object. Then randomly pick a number between 1 and 3, inclusive. Use this value in your `switch` statement to draw one of the three objects. A “roll” of 1 should draw a house; a 2 should draw a square; a 3 should draw a set of circles as described in the `DrawCircles` class below. Each of the choices 1 and 2 should do two things: create a new object of the correct type and then ask it to draw itself using the method identifier `draw()` \*. A choice of 3 will create a set of circles which is a little more complicated. Inside the switch statement for case 3, randomly generate another number between and including both 20 and 50. This random number will be the integer you pass to the constructor of the `DrawCircles` class. Finally, your `switch` statement should include a default case that should just print out an error message, like the problems.

#### **DrawCircles.java:**

This class will be a hybrid of `Coins.java` and `DrawSquare.java` as follows: As in `Coins.java`, your constructor will accept an integer value. This integer will represent the radius of the circles to be drawn. As in `DrawSquare.java`, you will use the `DrawingTool` class to draw 3 different circles on the screen and have `DrawingTool` and `Sketchpad` objects. Your `DrawCircles` class will thus have 3 different private data variables:

```
private DrawingTool pen;  
private SketchPad canvas;  
private int myRadius;
```

You will get the value of the radius from the driver as described above. Your `DrawCircles` class will then draw three circles with the given radius centered at the following coordinates: (0, 0), (-75, -75) and (100, 50). Your circles must be three different colors.

*\* details on the call to `draw()` a `DrawHouse` object: If you used a method other than EXACTLY `draw()` in your driver in order to draw your `DrawHouse`, come see me. I will use my `DrawHouse` file to grade this lab and it only contains `draw()`, not any other methods.*

**What to turn in:** When you are done with this lab you will upload the source code for the two new files (`RandomFunTester.java`, `DrawCircles.java`) to me via Canvas. I will run your program using MY `DrawSquare.java` and `DrawHouse.java`.