Homework assignment 04

Complete the following programs for this week's homework.

Programming assignments

Animate an array of Balls (70 points)

Write a processing sketch that contains an array of 10 Ball objects and displays them on the screen. When the user clicks the sketch, the balls should fall towards the bottom of the screen.

- The Ball class should have the following private data fields:
  - size
  - xPos
  - yPos
- The Ball class should have the following methods:
  - setSize (passing an int for the size)
  - setPosition (passing 2 ints for x and y position)
  - getXPostion
  - getYPostion
  - getSize
  - drop (drop method should move the ball down the screen 1 pixel at a time)

Some tips:
- Don't try drawing the ball from the Ball class, instead, from the main class, get all the variables you'll need to draw each ball - This also means that you shouldn't need to import processing or extend PApplet in the Ball class

Erect a rectangle (30 points)

Write a class named Rectangle to represent a rectangle The class should have the following:

- 2 double data fields, width and height with default values of 1
- A no-arg constructor that creates a default rectangle
- A constructor that creates a rectangle with a given width and height
• A static count object that keeps track of how many rectangles are created
• a getArea() method that returns the area
• a getPerimeter() method that returns the perimeter

Then write a simple test class that will create 2 rectangles, one with the no-arg constructor and one passing in the width and height. Print out the perimeter and area of each rectangle, as well as the count (from the static data field)

Remember that comments and good naming conventions factor into your grade! Don't forget.