ITEC 3450

Dr. Kairui Chen

Assignment 02 – Processing Basics

Topics: Processing

Objectives:

This assignment will help you become comfortable with the basics of Processing.

Reminders:

- Any evidence of sharing of code and/or other cheating will result in a 0 on this assignment for all involved parties. No make-ups will be allowed.
- If your program crashes, you will receive a 0 but will be allowed to make up the assignment for partial credit. Be sure you know how to debug your code!

Resources:

- The instructor
- Your fellow classmates
- Processing tutorials: https://processing.org/tutorials/.
- Processing API at: https://processing.org/reference/.
- The book Learning Processing, if you have it (optional).
- Google

Instructions:

- This assignment gives you three short problems to help you become comfortable with Processing and its API. You will NOT learn everything you need to know about Processing for this class. Instead, I will expect you to get into the habit of teaching yourself additional concepts as you need them.
- Because it is important to develop good coding habits, and because Processing is a Java -based language, I will ask you to observe proper Javadoc style. For this assignment, please include the following Javadoc comment at the top of each program:

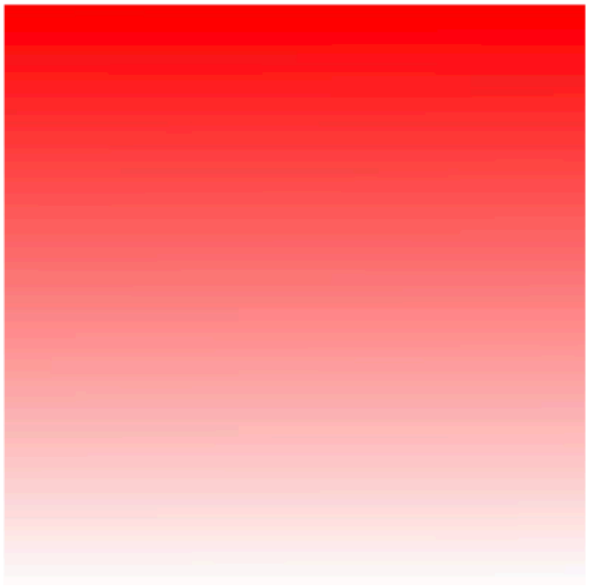
```
/ **
* Short summary of what the program does
*
* @author Your name, first and last (preferred names are
okay)
* @version Assign a version number (usually 1.0) and the
date
*/
```

  For example,

```
/ **
* Prints a message to the screen.
*
* @author Kairui Chen
* @version 1.0 8/21/2019
*/
```

- We will discuss comments for individual classes and methods in a later assignment.

1. Gradients involve the gradual transition from one color to another. Submit a Processing program that displays a 400x400-pixel square with a horizontal gradient from red to white. You must use a loop to create your array of colors:



Notes:

- Notes:
    - There are many ways to solve this problem.
    - You are welcome to define your colors using either hexadecimal notation or the color(…) function.
    - The picture shows transition of pure red color fading into white. For fun, you can make it transition into another color, for example, from pure red into white at the middle and then into pure blue at the bottom.
    - When you're done, please save your program out as LastnameFirstname_Asgt02_1. Make sure your program folder contains only your *.pde files for this program
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2. Create a Zoog referencing examples 2-1, 3-5, 4-8, 6-10 and the user keyboard control example we went over in class, with the following requirements:
    - Zoog will be controlled by UP, LEFT, DOWN and RIGHT keys for movement;
    - Zoog cannot go through border, it will stop there instead waiting for other controls;
    - When R/r is pressed, program resets Zoog at center.

- When you're done, please save your program out as LastnameFirstname_Asgt02_2. Make sure your program folder contains only your *.pde files for this program

3. Draw two circles on screen moving in random directions straightly and will bounce off the border following law of physics.
   Notes:
   - When two balls collide, both balls will disappear, nothing on the screen. (hint: use distance between two centers to help checking if two balls are colliding;
   - When r/R key is pressed, program will run with two balls back;
   - LastnameFirstname_Asgt02_3. Make sure your program folder contains only your *.pde files for this program.

4. Those are basic requirements, feel free to make your programs more interesting and dynamic. When you are done, zip three folders from above into LastnameFirstname_Asgt02.zip for submission to D2L.