DUE DATES:
Monday recitations: 9:00 PM on 11/6
Wednesday recitations: 9:00 PM on 11/8
Thursday recitations: 9:00 PM on 11/9
Friday recitations: 9:00 PM on 11/10
Saturday recitations: 9:00 PM on 11/11

Preliminaries
This lab is the first of three labs (lab 8, lab 10 and lab 11) that in the end will have you build a single-player matching game like Candy Crush.

In lab 8 you will apply what you have learned in lecture to build some elements that we will need for labs 10 and 11. Lab 9 will be an unrelated lab.

The due dates for labs 8, 10 and 11 are arranged to that we can provide a solution to lab 8 as a starting point for lab 10, in case you do not complete lab 8 fully. Similarly, we will be able to provide a solution to lab 10 as a starting point for lab 11, in case you do not complete lab 10 fully.

Keep in mind that any work you submit must be your own. Submitting work done by someone else as your own is academically dishonest, and will result in immediate failure in the course. We will use software tools to detect inappropriate collaboration.

Ready!
They say "What happens in Vegas stays in Vegas." But maybe we can bring some of that excitement to class! In this lab you will build a simple graphical simulation of a slot machine. Of course, it won't pay out money, but it will display "YOU WIN!" if you match three symbols. And really, what more could you want?

You will need to use many concepts that you've learned so far to solve this lab. The more important and recent ones are:

- collections
- loops
- conditionals
- creating a simple graphical user interface (GUI), including
    a. containers
    b. components
    c. event handling

This lab will also introduce you to an important design idea,

- model-view separation

Your TAs will give you an overview of the lab and hints of how to proceed in recitation. You should expect to have to put in time outside of recitation to finish this lab. We therefore recommend that you bring your laptop to recitation so you can more easily continue to work outside of Baldy 21.

During office hours TAs will give priority to students who have attended recitation. It is not acceptable to skip recitation and then expect one-on-one assistance in office hours. Some aspects of this lab will ONLY be discussed in recitation, and TAs will NOT answer basic questions about these topics during office hours.

Because this lab gives you a great deal of freedom in how you write the code there is NO AUTOMATED GRADING. When you submit to Web-CAT the only score you will see is your early bonus or late penalty. The functionality of this lab will be manually graded by the TAs.

Set!

1. Log in
2. Start Eclipse
3. Switch to the CVS Repository Exploring perspective
4. Check out the CSE115-Lab8 project from the Labs repository
5. Switch to the Java perspective

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Go!

The CSE115-Lab8 project does not give you any code to start with – you need to write it all yourself. The project does contain three image files in the Images folder: Green.png, Purple.png, and Red.png. The corresponding images are , , and .
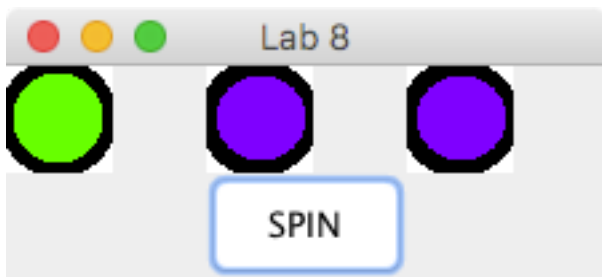
Your task in this lab is to build a "slot machine" simulation. The finished product should look something like this:
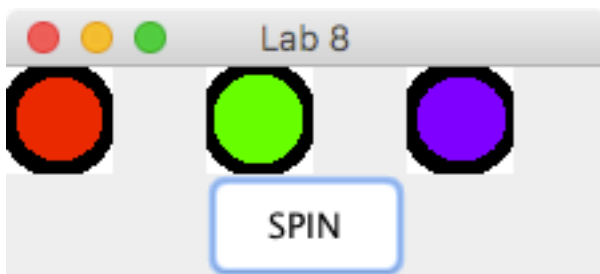
There are 3 JLabels, each displaying one of the three images, chosen at random. Clicking on the SPIN JButton randomly selects a new image for each label:

If you click SPIN enough times you may get the same picture showing on all three labels. If this happens, the JButton will display "YOU WIN!" and the game is over (the JButton is disabled so that no more spins can happen):
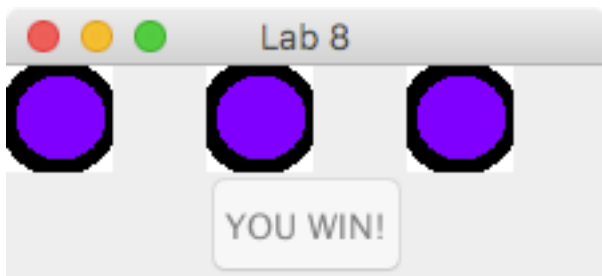
Required functionality

[5 points] Display a JFrame whose title is your first and last name, followed by "'s Lab 8". For example, the title of my JFrame must be "Carl Alphonce's Lab 8". Notice that the screenshots above do NOT show the correct title.

[10 points] Display three JLabels in one row, each displaying one of the supplied images. (TA's will give RECITATION ONLY HINT #1 and RECITATION ONLY HINT #2 for this.)

[5 points] Display one JButton in by itself in the row below the JButtons, in the middle. (TA's will give RECITATION ONLY HINT #3 for this.) The text of the JButton must be "SPIN".

[15 points] Handle a button-click on the JButton by randomly choosing an image (from the ones supplied) to display on each of the three JLabels. (TA's will give RECITATION ONLY HINT #4 for this.)

[20 points] If all three JLabels display the same image, change the text of the JButton to "YOU WIN!", and disable it. (TA's will give RECITATION ONLY HINT #5 for this.)

[15 points] Make appropriate use of conditionals (if-else or if statements) and loops (while, for, or enhanced for statements) to minimize code duplication.

[30 points] Structure the code to achieve a model-view separation. (TA's will give RECITATION ONLY HINT #6 for this.)

Grading

This lab will be graded manually, with points allocated as indicated in the description. DESIGN IS IMPORTANT. Notice that you will not get 100% on this lab if you do not maintain a model-view separation.

Submitting your project to Web-CAT

Make sure you submit your work on time; due dates are listed at the beginning of this lab description. There is NO automated grading for this lab. You may submit as many times as you wish. Your last submission is the one that counts (so consider carefully whether you want to make any late submissions, as the late penalty is 20 points per day or portion thereof late).