

## CS 1316 – Homework 10 – GUI Movie Render

**Due: Friday Nov 13<sup>th</sup>, 2009 before 6pm - 100 points**

### THIS IS AN INDIVIDUAL ASSIGNMENT!

You should work individually on this assignment. You may collaborate with other students in this class. Collaboration means talking through problems, assisting with debugging, explaining a concept, etc. You should not exchange code or write code for others. For individual assignments, each student must turn in a unique program. Your submission must not be substantially similar to another student's submission.

Collaboration at a reasonable level will not result in substantially similar code.

## GUI Movie Renderer

For this assignment, you will be building a Graphical User Interface (GUI) that allows a user (your TA) to build a movie. Your GUI will allow the user to specify an image that will be used as the background of your movie, as well as affecting various parameters of your movie.

Using your program: When your program is ran, a GUI window (JFrame) should appear that allows the user (your TA) to pick a background image, as well as adjust several other parameters of your movie (e.g. Number, speed, color, starting-position or orientation of the sprites, the ending of your movie, the number of frames, etc). After the user specifies the parameters they wish, they will press a “Render” button that will render your movie into a hidden frameSequencer. The progress of the render should be displayed to the user using System.out.println(...) statements. After the movie is finished rendering, a “Play” button will be enabled (before the movie is rendered it will be grayed out, or disabled, so that the user can not press it too early). When the user presses the play button, the frameSequencer will play the movie.

If the user changes the parameters of your movie and presses the “Render” button again, the old movie will be cleared, and a new movie will be generated. (You can leave the Play button enabled during the 2nd render.)

## Requirements:

Your application will be a class called **MyMovieMaker**. We recommend that it subclass JFrame. It may use either anonymous inner classes to handle user input action events, or it may implement the ActionListener interface itself.

Your application must have:

1. A way for the user to select a background image, and a way to display the name of the currently selected image file.

2. **Three different** movie parameters controlled by three **different** user input widgets. For example, you could have a JSlider control the size of a sprite, a JColorChooser pick the color of a sprite, and a JComboBox select between one of three endings for your movie. You may use any three widgets, as long as they are different.
3. Your GUI must include at a minimum the following GUI widgets: JButton, JComboBox, JSlider, JTextField.
4. Two buttons, Render and Play. The Render button must erase any existing movie and re-create the movie based upon the currently selected movie control parameters (and background image). While no movie exists, the “Play” button must be disabled (grayed out) so that the user can not press it.
5. While a movie is being rendered, you must use System.out.println(...) statements to display the progress of your render (updating every time you complete a frame in the movie). Also, the frameSequencer may not be visible while the movie is being rendered.
6. Your completed movie must be at least 30 frames in length.
7. You must use a sceneGraph (Chapter 9 from the PSDS textbook) to construct your movie which will be stored in the frameSequencer. You may make the X,Y locations of MoveBranches or the separation amount of a VBranch or HBranch be some of your movie control parameters.

Here are some optional ideas for making your movie rendering GUI cool, and possibly earning extra credit:

- Display a thumbnail of the background image in your GUI when it is selected.
- Display a thumbnail/preview image of how the parameters will affect the final movie in “real time”. (When the user changes a slider or drop down menu, render a single frame to put in a preview area of your GUI.)

## Grading Criteria

|  |        |
|--|--------|
| GUI displays correctly, includes required widgets.....               | 10 pts |
| Background image chooser works .....                                 | 10 pts |
| Three adjustable movie parameters (3 different widgets).....         | 30 pts |
| Play button is disabled/enabled appropriately.....                   | 10 pts |
| User is kept informed of progress with print statements.....         | 10 pts |
| Movie renders based upon adjustable parameters using sceneGraph..... | 30 pts |