

CS 1316 – Homework 9 – GUI

Due: Friday April 2nd, 2010 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 Program

For this assignment, you will be building a Graphical User Interface (GUI) program. Your program should allow the user (your TA) to select and open a file (either a picture or a sound, your choice) and modify it in multiple ways. For example, your program could allow the user to flip a picture, or darken the picture, or lighten the picture. For a sound, your program could allow the user to make the sound louder or quieter, or to crop the sound to remove silence at the beginning or end.

Using your program: When your program is run, a GUI window (JFrame) should appear that allows the user (your TA) to pick the file they want to modify. Your window should also allow the user to pick an action to take on the {picture/sound} and adjust several other parameters of your action (e.g. starting position, speed, color, action direction, etc). For example, the user could apply a border to a picture, using a slider to pick the borders thickness, a color chooser to pick the color, and a checkbox to select if it should be dashed or not.

Requirements:

We recommend that your application is a subclass of JFrame, but you may incorporate a JFrame as an object variable instead if you would like. 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 the file (sound/picture), and a way to display the name of the currently selected image file to the user.
2. **Three different** action parameters controlled by three **different** user input widgets. For example, you could have a JSlider control the width of a border (in pixels) to apply to an image. a JColorChooser to pick the color of a sprite you are

going to draw on the image, or a JComboBox select between one of three orientations for a picture flipping application.. You may use any three widgets, as long as they are different.

3. At least one button, named whatever you feel is appropriate, to “trigger” the action your program performs. After the "action" is completed, you can either do a picture.show() or sound.play() automatically, or have a second button to display/play the result.
4. While your program is working, you must use System.out.println(...) statements to display the progress of your operation.
5. Your program should be able to work more than “once”. So if the user opens a source file and flips it over, they should be able to flip it back by applying the same operation a 2nd time without crashing your program.

This assignment is very open ended as to the actual actions your program does. As the main point is to give you experience making Java GUI's, the action(s) themselves can be repeats from previous homework or code taken from the textbook. They don't have to be especially cool or practical to get full credit, but a really slick program may get you extra credit.

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

- Display a thumbnail of the image (sound?) in your GUI when it is selected.
- Display a thumbnail/preview image of how the parameters will affect the final image/sound in “real time”. (When the user changes a slider or drop down menu, render a sample output to put in a preview area of your GUI.)
- Play an updated sound “on the fly” as the user modifies the GUI parameters.

Grading Criteria

GUI displays correctly, includes required widgets.....	10 pts
File chooser works	10 pts
Three adjustable action parameters (3 different widgets).....	30 pts
User is kept informed of progress with print statements.....	10 pts
Sound/Picture is modified correctly based upon adjustable parameters	30 pts
Program works correctly multiple times	10 pts