

# Homework 3

## Range Widgets, Container Widgets and Windows and Dialogs

due before class on **October 5<sup>th</sup>**

### Outline

In this assignments, students will create a simple GUI for a transcoding system. (We will only be creating a GUI, we won't actually be doing any transcoding.)

Students will turn in their submissions using iCollege. Students should submit a zip-file containing their project directory. Students should ensure that their code is submitted in a buildable form.

### The Transcode Widget

The Transcode Widget represents a single transcoding process. It should have the following components:

- On one line, a read-only text-field and a button that says “Get Source”; we will call these the “source text-field” and “source button”, respectively.
- On another line, a read-only text-field and a button that says “Get Target” (the “target text-field” and “target button”)
- On another line, a slider, with a range from 1 to 9 (the “quality slider”).
- On another line, a single button that says “Start”.
- On the last line, a progress bar and a button that says “Step”.

Each row should take up the full width of the widget; any excess height allocated to the widget should be left blank beneath the last row. The buttons should remain at their natural size, and the other components (the text-fields, sliders and progress-bars) should grow horizontally to take up the extra space. (JavaFX reminder: you can get the progress bar to grow horizontally by setting its preferred size to some arbitrarily large number.) Any extra vertical space should be left unused at the bottom of the widget.

When the program starts, the source and target text-fields should be blank. If the user clicks the source button, an open-file dialog should be displayed; if the user picks a file, then that file's path should be displayed in the source text-field (if they does not select a file, the contents of the source text-filed should not be altered). Likewise, when the user clicks target button, a save file-dialog should be displayed, and the path selected should be displayed in the target text-field (if the user selected a file).

When the user clicks the start button, you should do the following:

- if either the source or target text-fields are empty, display an error (with an error dialog);
- if both the source and target text-fields have values, you should record the current source, target and quality, and then set the progress-bar to 0% progress (and to normal, not-indeterminate mode).

When the user clicks the step button, you should do the following:

- if valid settings haven't been stored, display an error (with an error dialog);
- if the progress-bar is at less than 100%, advance it by 10%;
- if the progress-bar is at 100%, set it to indeterminate mode and display a message to the user

- that their encoding is complete (using a message dialog);
- if the progress-bar is in indeterminate mode, do nothing.

## The Main Interface

In your main window, you should have a single button in the bottom-right corner that says “Add Transcode”, and a tab-manager that takes up all of the remaining space.

When the “Add Transcode” button is clicked, you should add a new tab to the tab-manager; this tab should contain a single scroller, and that scroller should contain a single TranscodeWidget. (You can set the title of the tab to anything you’d like.)

## Submission

Creating two separate widgets and adding them to the same layout is simple in JavaFX, but is a little tricky in some other kits. Since we haven’t talked about that in-depth yet, you do *not* need to display both widgets together. You can create both widgets separately – possibly in two entirely separate projects, if that is what is easiest for you! In that case, be sure to include both projects in your submission.

## Graduate Students

When the TranscodeWidget is constructed, the step button should be disabled. When the start button is clicked, if valid selections were made, the start button should be *disabled* and the step button should be *enabled*. Then, when the step button is clicked, if the transcode is finished (that is, when it displayed the dialog box saying the transcode is finished), it should *disable* the step button and *enable* the start button again.