

# Lab02 - Example Panels

Due: Fri Apr 10, 2015

Concepts in Lab 02 include:

- ❑ Chapter 7 & 13 - GUI goodness
- ❑ Chapter 14.6-14.8 - Mouse events, Timers and Audio

## Wednesday - Three Panels

Today, we'll split into 3 teams. One per panel: mouse events, timer, and audio.

Each example:

- is-a `JPanel`
- is square: 500 by 500 pixels (use `JPanel.setPreferredSize( Dimension )`)
- has its own `main()` that creates a 500x500 `JFrame`, adds the panel and runs

I have a starting point for you in my k: drive: `ProfBillExample.java`.

### Team #1 - Ch 14.6 Mouse Events Example

Basics: Create a `button` that changes text based on some mouse events.

- I used a button that detected 3 mouse events: mouse entered, exited and was clicked.
- Use a `MouseAdapter` (p 905, code on p 910) rather than a listener
- You can change the text in a button dynamically, but then you have to tell it to update.

```
exampleButton.setText( "Mouse has entered");
exampleButton.validate();
exampleButton.repaint();
```

### Team #2 - Ch 14.7 Timer Example

Basics: Create a `Timer` object to do a countdown.

- I used a slider to set the total delay for my countdown. You can use whatever you like.
- I created a `JButton` that showed the countdown. You can use this or whatever you like to show your timer counting down. You have to `validate()` and `repaint()` as shown above
- I countdown each second. That's 1,000 milliseconds... yes.

### Team #3 - Ch 14.8 Audio Example

Play an audio clip from the internets.

- I got my audio clip off the internet. Here's how:

```
this.audio = null; // audio is an AudioClip var
try {
    URL url = new URL( webAddress); // webAddress is a string
    this.audio = Applet.newAudioClip( url);
```

```

    } catch( Exception exc) {
        System.out.println( exc);
    }

```

- Java can't play every WAV file. This restriction deals with the type of compression used and \$\$\$\$. So, it's trial and error. If something doesn't play, then try a different clip. Here are some that worked for me:

[www.mediacollege.com/downloads/sound-effects/city/traffic-01.wav](http://www.mediacollege.com/downloads/sound-effects/city/traffic-01.wav)

[www.mediacollege.com/downloads/sound-effects/city/factorywhistle-01.wav](http://www.mediacollege.com/downloads/sound-effects/city/factorywhistle-01.wav)

[www.mediacollege.com/downloads/sound-effects/movie/blues-brothers/sunglasses.wav](http://www.mediacollege.com/downloads/sound-effects/movie/blues-brothers/sunglasses.wav)

[www.mediacollege.com/downloads/sound-effects/explosion/bomb-06.wav](http://www.mediacollege.com/downloads/sound-effects/explosion/bomb-06.wav)

[www.pacdv.com/sounds/machine\\_sound\\_effects/dial-up-modem-1.wav](http://www.pacdv.com/sounds/machine_sound_effects/dial-up-modem-1.wav)

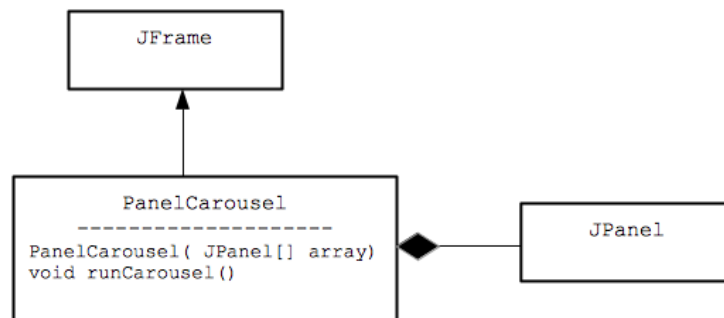
[www.mediacollege.com/downloads/sound-effects/star-trek/tos/enterprise/TransporterPad\\_01.wav](http://www.mediacollege.com/downloads/sound-effects/star-trek/tos/enterprise/TransporterPad_01.wav)

## Friday - Bring it all together

Now, we'll bring all our example panels together. The new classes are:

- Lab02 - just `main()` that creates an `PanelCarousel` object and runs it
- `PanelCarousel` - a class that flips through a number of panels, one at a time.

Let's start out with the UML:



Details:

- We definitely need an `ActionListener` for our `JButton`. This listener should display the next panel in the array.
- Worry about GUI formatting **last!** After your basics are working, try a `BorderLayout` to put the panel in the NORTH and the button in the SOUTH.
- How do you swap panels in/out of a frame?

```

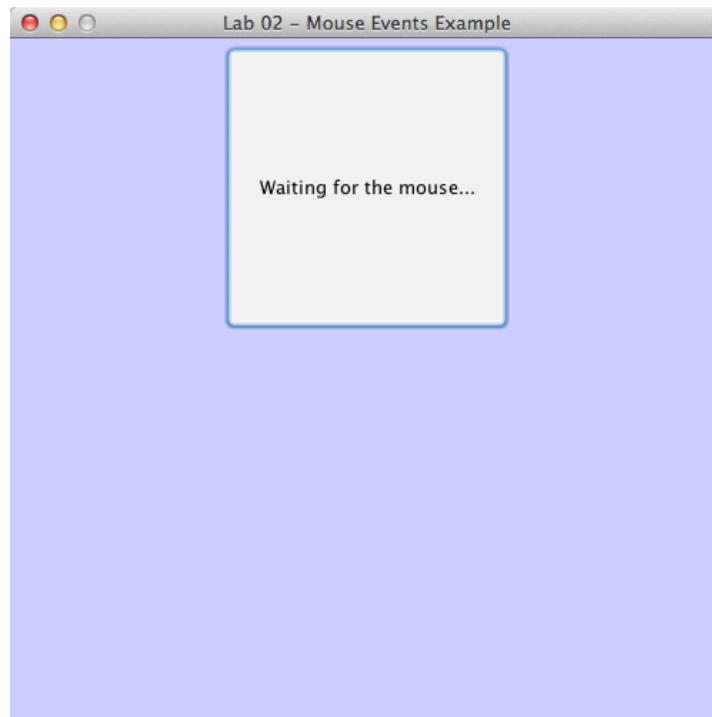
// assuming f is a JFrame
f.getContentPane().removeall(); // rm current panel from frame
f.setContentPane( nextPanel); // set content to next panel
f.pack();

```

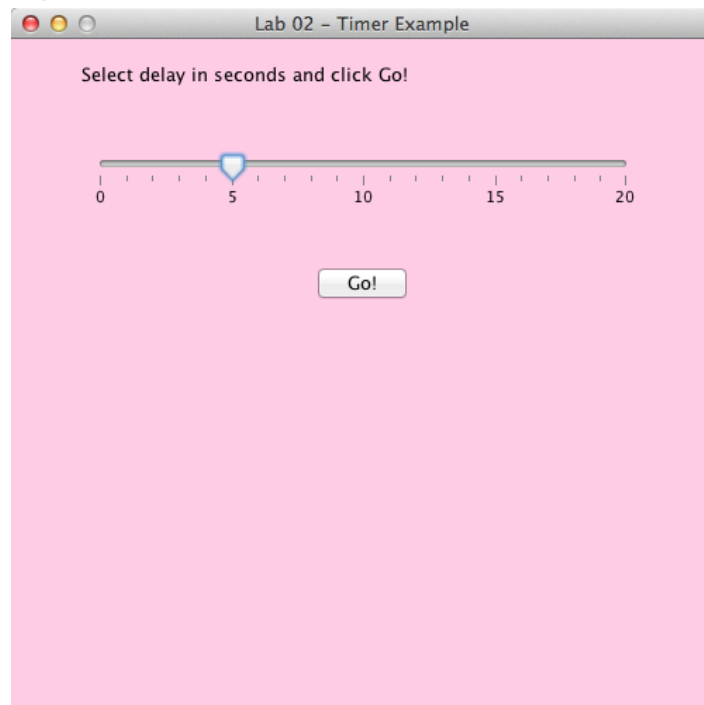
In this lab, I want to show you the power of inheritance. Also, complex guys like `JFrame` and `JPanel` are objects just like any other. You can manipulate `JPanel` objects to do powerful things in your GUI.

## Example Panel Examples

From 14.6, mouse events example:



From 14.7, timer example:



From 14.8, audio example:



The BIG Friday Finale - PanelCarousel class with 1) current panel being viewed and 2) the "Next Panel" button.

