

Exercises: Event Handling

Try to do all of the first four. If you have time left over, pick and choose among the remaining three.

- 1.** Make a popup window (JFrame) whose content pane (JPanel) toggles back and forth between red and blue each time you click in the window. Use a separate class as the mouse listener. Note that you don't need to manipulate any data structures in the JPanel or call repaint (as in the more complex circle-drawing examples in the lecture). However, your mousePressed method still needs to be able to call the panel's setBackground method (or call a custom method in the panel that uses setBackground internally).
- 2.** Repeat the previous problem, but this time put the mousePressed method directly in the JPanel subclass.
- 3.** Repeat the previous problem, but this time use a named inner class.
- 4.** Repeat the previous problem, but this time use an anonymous inner class. This is simple if you start by copying and renaming your solution to problem 3.
- 5.** Make a popup window that turns red when you press "r", yellow when you press "y", green when you press "g", and blue when you press "b". Use a KeyListener or KeyAdapter, and the keyTyped method. The notes show how to get a String from the KeyEvent. However, panels normally ignore keyboard events, so to make them respond, you must add these two lines to the constructor of your JPanel subclass:

```
setFocusable(true);
requestFocusInWindow();
```
- 6.** Make a popup window that is red when the mouse is on the left side of the window, and blue when it is on the right side of the window. Use a MouseMotionListener or MouseMotionAdapter, and the mouseMoved method. This method gets re-fired every few pixels.
- 7.** [Harder] Copy one of my circle-drawing examples from the event-handling project. If you want the one that uses named inner classes, copy Circle, CirclePanel, CircleFrame3, and CirclePanel3. Now, update the logic in mousePressed so that it *adds* a circle when you left-click anywhere, but *removes* a circle if you right-click on top of an existing circle. Hint 1: google for "distance formula" if you don't remember it from high school. Hint 2: Don't worry about overlapping circles; just remove the first circle in the List that contains the (x,y) point of the right-mouse click.