

```

1 // fo1/1/lights/TrafficLight.java
2 //
3 //
4 // Copyright 2003 Bill Campbell and Ethan Bolker
5
6 import java.awt.*;
7 import java.awt.event.*;
8
9 /**
10  * A TrafficLight has three lenses: red, yellow and green.
11  * It can be set to signal Go, Caution, Stop or Walk.
12  */
13 * @version 1
14 */
15
16 public class TrafficLight extends Panel
17 {
18     // Three Lenses and a Button
19
20     private Lens red      = new Lens( Color.red );
21     private Lens yellow   = new Lens( Color.yellow );
22     private Lens green    = new Lens( Color.green );
23     private Button nextButton = new Button("Next");
24
25     /**
26      * Construct a traffic light.
27      */
28
29     public TrafficLight()
30     {
31         this.setLayout(new BorderLayout());
32
33         // create a Panel for the Lenses
34         Panel lensPanel = new Panel();
35         lensPanel.setLayout( new GridLayout( 3, 1 ) );
36         lensPanel.add( red );
37         lensPanel.add( yellow );
38         lensPanel.add( green );
39         this.add( BorderLayout.NORTH, lensPanel );
40
41         // configure the "Next" button
42         Sequencer sequencer = new Sequencer( this );
43         NextButtonListener payAttention =
44             new NextButtonListener( sequencer );
45         nextButton.addActionListener( payAttention );
46         this.add( BorderLayout.CENTER, nextButton);
47     }
48
49     // Methods that change the light
50
51     /**
52      * Set the light to stop (red).
53      */
54
55     public void setStop()
56     {

```

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57         red.turnOn();
58         yellow.turnOff();
59         green.turnOff();
60     }
61
62     /**
63      * Set the light to caution (yellow).
64      */
65
66     public void setCaution()
67     {
68         red.turnOff();
69         yellow.turnOn();
70         green.turnOff();
71     }
72
73     /**
74      * Set the light to go (green).
75      */
76
77     public void setGo()
78     {
79         red.turnOff();
80         yellow.turnOff();
81         green.turnOn();
82     }
83
84     /**
85      * Set the light to walk.
86      */
87     * (In Boston, red and yellow signal walk.)
88     */
89
90     public void setWalk()
91     {
92         red.turnOn();
93         yellow.turnOn();
94         green.turnOff();
95     }
96
97     /**
98      * The traffic light simulation starts at main.
99      */
100     * @param args ignored.
101     */
102
103     public static void main( String[] args )
104     {
105         JFrame frame
106             = new JFrame();
107         TrafficLight light = new TrafficLight();
108         frame.add( light );
109         frame.addWindowListener( new ShutdownLight() );
110         frame.pack();
111         frame.show();
112     }

```

```
113 // A Shutdownlight instance handles close events generated
114 // by the underlying window system with its windowClosing
115 // method.
116 //
117 // This is an inner class, declared inside the
118 // TrafficLight class since it's used only here.
119
120 private static class ShutdownLight extends WindowAdaptrer
121 {
122     // Close the window by shutting down the light.
123     public void windowClosing (WindowEvent e)
124     {
125         System.exit(0);
126     }
127 }
128 }
129 }
130 }
131 }
```