```
 1  // joi/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      {
```

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

```
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 WindowAdapter
121    {
122        // Close the window by shutting down the light.
123
124        public void windowClosing (WindowEvent e)
125        {
126            System.exit(0);
127        }
128    }
129 }
130
131
```