```
 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       * 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         Frame frame         = new Frame();
106         TrafficLight light  = new TrafficLight();
107         frame.add( light );
108         frame.addWindowListener( new ShutDownLight() );
109         frame.pack();
110         frame.show();
111     }
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 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
```