```
 1  // joi/1/lights/Lens.java
 2  //
 3  //
 4  // Copyright 2003 Bill Campbell and Ethan Bolker
 5
 6  import java.awt.*;
 7
 8  /**
 9   * A Lens has a certain color and can either be turned on
10   * (the color) or turned off (black).
11   *
12   * @version 1
13   */
14
15  public class Lens extends Canvas
16  {
17      private Color onColor;               // color on
18      private Color offColor = Color.black; // color off
19      private Color currentColor;          // color the lens is now
20
21      private final static int SIZE = 100;  // how big is this Lens?
22      private final static int OFFSET = 20; // offset of Lens in Canvas
23
24      /**
25       * Construct a Lens to display a given color.
26       *
27       * The lens is black when it's turned off.
28       *
29       * @param color the color of the lens when it is turned on.
30       */
31
32      public Lens( Color color )
33      {
34          this.setBackground( Color.black );
35          this.onColor = color;
36          this.setSize( SIZE , SIZE );
37          this.turnOff();
38      }
39
40      /**
41       * How this Lens paints itself.
42       *
43       * @param g a Graphics object to manage brush and color information.
44       */
45
46      public void paint( Graphics g )
47      {
48          g.setColor( this.currentColor );
49          g.fillOval( OFFSET, OFFSET,
50                      SIZE - OFFSET*2, SIZE - OFFSET*2 );
51      }
52
53      /**
54       * Have this Lens display its color.
55       */
56
```



```
57      public void turnOn()
58      {
59          currentColor = onColor;
60          this.repaint();
61      }
62
63      /**
64       * Darken this lens.
65       */
66
67      public void turnOff()
68      {
69          currentColor = offColor;
70          this.repaint();
71      }
72  }
```