

```

1  /*
2  * AP(r) Computer Science GridWorld Case Study:
3  * Copyright(c) 2005-2006 Cay S. Horstmann (http://horstmann.com)
4  *
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12 * GNU General Public License for more details.
13 *
14 * @author Cay Horstmann
15 */
16
17 package info.gridworld.actor;
18
19 import java.awt.Color;
20
21 /**
22 * A <code>Flower</code> is an actor that darkens over time. Some actors drop
23 * flowers as they move. <br />
24 * The API of this class is testable on the AP CS A and AB exams.
25 */
26
27 public class Flower extends Actor
28 {
29     private static final Color DEFAULT_COLOR = Color.PINK;
30     private static final double DARKENING_FACTOR = 0.05;
31
32     // lose 5% of color value in each step
33
34     /**
35      * Constructs a pink flower.
36      */
37     public Flower()
38     {
39         setColor(DEFAULT_COLOR);
40     }
41
42     /**
43      * Constructs a flower of a given color.
44      * @param initialColor the initial color of this flower
45      */
46     public Flower(Color initialColor)
47     {
48         setColor(initialColor);
49     }
50
51     /**
52      * Causes the color of this flower to darken.
53      */
54     public void act()
55     {
56         Color c = getColor();
57         int red = (int) (c.getRed() * (1 - DARKENING_FACTOR));
58         int green = (int) (c.getGreen() * (1 - DARKENING_FACTOR));
59         int blue = (int) (c.getBlue() * (1 - DARKENING_FACTOR));
60
61         setColor(new Color(red, green, blue));
62     }
63 }
64

```