| /\* |  |
| --- | --- |
|  | \* AP(r) Computer Science GridWorld Case Study: |
|  | \* Copyright(c) 2005-2006 Cay S. Horstmann (http://horstmann.com) |
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|  | \* |
|  | \* @author Cay Horstmann |
|  | \*/ |
|  |  |
|  | package info.gridworld.actor; |
|  |  |
|  | import java.awt.Color; |
|  |  |
|  | /\*\* |
|  | \* A <code>Flower</code> is an actor that darkens over time. Some actors drop |
|  | \* flowers as they move. <br /> |
|  | \* The API of this class is testable on the AP CS A and AB exams. |
|  | \*/ |
|  |  |
|  | public class Flower extends Actor |
|  | { |
|  | private static final Color DEFAULT\_COLOR = Color.PINK; |
|  | protected static final double DARKENING\_FACTOR = 0.05; |
|  |  |
|  | // lose 5% of color value in each step |
|  |  |
|  | /\*\* |
|  | \* Constructs a pink flower. |
|  | \*/ |
|  | public Flower() |
|  | { |
|  | setColor(DEFAULT\_COLOR); |
|  | } |
|  |  |
|  | /\*\* |
|  | \* Constructs a flower of a given color. |
|  | \* @param initialColor the initial color of this flower |
|  | \*/ |
|  | public Flower(Color initialColor) |
|  | { |
|  | setColor(initialColor); |
|  | } |
|  |  |
|  | /\*\* |
|  | \* Causes the color of this flower to darken. |
|  | \*/ |
|  | public void act() |
|  | { |
|  | Color c = getColor(); |
|  | int red = (int) (c.getRed() \* (1 - DARKENING\_FACTOR)); |
|  | int green = (int) (c.getGreen() \* (1 - DARKENING\_FACTOR)); |
|  | int blue = (int) (c.getBlue() \* (1 - DARKENING\_FACTOR)); |
|  |  |
|  | setColor(new Color(red, green, blue)); |
|  | } |
|  | } |