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1 import java.awt.Dimension;
2 import java.awt.Graphics;
3 import javax.swing.JPanel;
4 import javax.swing.JFrame;
5
6 public class LineArt extends JPanel {
7
8     // Unique version ID for this class to ensure saved objects can be loaded safely
9     private static final long serialVersionUID = 1L;
10
11     // Initial width of height of the starting rectangle
12     private static int linesNum = 75;
13     private static int startX = 10;
14     private static int startY = 10;
15     private static int width = 980;
16     private static int height = 630;
17
18     // main method to launch the program as a standalone application - no need to
19     // modify
20     public static void main(String[] args) {
21         LineArt panel = new LineArt();
22         panel.setPreferredSize(new Dimension(width + 20, height + 20)); // content size window
23         dimensions
24         JFrame frame = new JFrame("Line Art"); // Title of frame
25         frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
26         frame.add(panel);
27         frame.pack();
28         frame.setVisible(true);
29     }
30
31     /**
32      * Draw the four corners of line art. Line art displays straight lines inside a rectangle
33      * from one side to
34      * a perpendicular side. The lines must be drawn in such a way that both the starting
35      * points of the lines on
36      * one side and the ending points on the other side are equi-distant along the sides. The
37      * size of the rectangle
38      * is 980 pixels wide by 630 pixels high.
39      *
40      * @param g the Graphics object used for drawing shapes, text, and images
41      */
42     public void drawLineArt(Graphics g, int linesNum, int startX, int startY, int width, int
43         height) {
44
45         // Draw the initial rectangle
46         g.drawRect(startX, startY, width, height);
47
48         // Draw bottom-left corner
49         for (int i = 0; i <= linesNum; i++) {
50             g.drawLine(startX + i * width / linesNum, startY + height, startX + width, height +
51                 startY - i * height / linesNum);
52             g.drawLine(startX + width - i * width / linesNum, startY + height, startX, height +
53                 startY - i * height / linesNum);
54             g.drawLine(startX + i * width / linesNum, startY, startX + width, startY + i *
55                 height / linesNum);
56             g.drawLine(startX + width - i * width / linesNum, startY, startX, startY + i *
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        height / linesNum);
50    }
51 }
52 /**
53  * Overrides JPanel's paintComponent method to perform custom drawing.
54  *
55  * @param g the Graphics object used for drawing shapes, text, and images
56  */
57 @Override
58 protected void paintComponent(Graphics g) {
59     super.paintComponent(g); // Clears the panel before drawing
60     drawLineArt(g, linesNum, startX, startY, width, height);
61     drawLineArt(g, 67, 255, 168, width/2, height/2);
62     drawLineArt(g, 50, 378, 248, width/4, height/4);
63 }
64
65 }
66
```