

Class PrizePanel

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```
1  /**
2   * Class PrizePanel draws a ball and polkadot counting how many times they overlap
3   *
4   * @author Nathan Chen
5   * @author Benjamin Tu
6   * @period 2
7   * @version 10-23-18
8   * @teacher Coglianese
9   */
10 import javax.swing.*;
11 import java.awt.*;
12 import java.awt.event.*;
13 import java.awt.image.*;
14 public class PrizePanel extends JPanel
15 {
16     private static final int FRAME = 400;
17     private static final Color BACKGROUND = new Color(204, 204, 204);
18     private BufferedImage myImage;
19     private Graphics myBuffer;
20     private Ball myBall;
21     private Polkadot myPDot;
22     private Timer myTimer;
23     private int hits = 0;
24     /**
25      * Constructor with no arguments that draws Ball and Polkadot and refreshes them
26      */
27     public PrizePanel()
28     {
29         myImage = new BufferedImage(FRAME, FRAME, BufferedImage.TYPE_INT_RGB);
30         myBuffer = myImage.getGraphics();
31         myBuffer.setColor(BACKGROUND);
32         myBuffer.fillRect(0, 0, FRAME, FRAME);
33         int xPos = (int) (Math.random() * (FRAME-100) + 50);
34         int yPos = (int) (Math.random() * (FRAME-100)+ 50);
35         myBall = new Ball(xPos, yPos, 50, Color.BLACK);
36         myPDot = new Polkadot(xPos, yPos, 25, Color.RED);
37         myPDot.jump(FRAME,FRAME);
38         myTimer = new Timer(5, new Listener());
39         myTimer.start();
40     }
41
42     /**
43      * paintComponent used draw image
44      *
45      * @param g    graphics panel where thisn are drawn
46      */
```

Class PrizePanel (continued)

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```
47     public void paintComponent(Graphics g)
48     {
49         g.drawImage(myImage, 0, 0, getWidth(), getHeight(), null);
50     }
51     /**
52      * Class Listener redraws things
53      */
54     private class Listener implements ActionListener
55     {
56         /**
57          * actionPerformed is what is done every refresh
58          *
59          * @params e    ActionEvent not used
60          */
61         public void actionPerformed(ActionEvent e)
62         {
63             myBuffer.setColor(BACKGROUND);
64             myBuffer.fillRect(0,0,FRAME,FRAME);
65
66             myBall.move(FRAME, FRAME);
67             collide(myBall, myPDot);
68
69             myBall.draw(myBuffer);
70             myPDot.draw(myBuffer);
71
72             myBuffer.setColor(Color.BLACK);
73             myBuffer.setFont(new Font("Monospaced", Font.BOLD, 24));
74             myBuffer.drawString("Count: " + hits, FRAME - 150, 25);
75             repaint();
76         }
77     }
78     /**
79      * collide adds to hits if distance between balls is less than 75
80      *
81      * @param ballIn Ball class being checked
82      * @param pDot   Polkadot being checked
83      */
84     private void collide(Ball ballIn, Polkadot pDot)
85     {
86         double d = distance(ballIn.getX(),ballIn.getY(),pDot.getX(),pDot.
87         getY());
88         if (d<=75)
89             hits++;
90     }
91     /**
92      * Distance calculator between "object" 1 and 2 given x and y coordin
93      * ates of each
94      *
```

Class PrizePanel (continued)**3/3**

```
94     * @param    x1  X coordinate of "object" 1
95     * @param    y1  Y coordinate of "object" 1
96     * @param    x2  X coordinate of "object" 2
97     * @param    y2  Y coordinate of "object" 2
98
99     private double distance(double x1, double y1, double x2, double y2)
100    {
101        return Math.sqrt(Math.pow(x2-x1,2) + Math.pow(y2-y1,2));
102    }
103 }
```