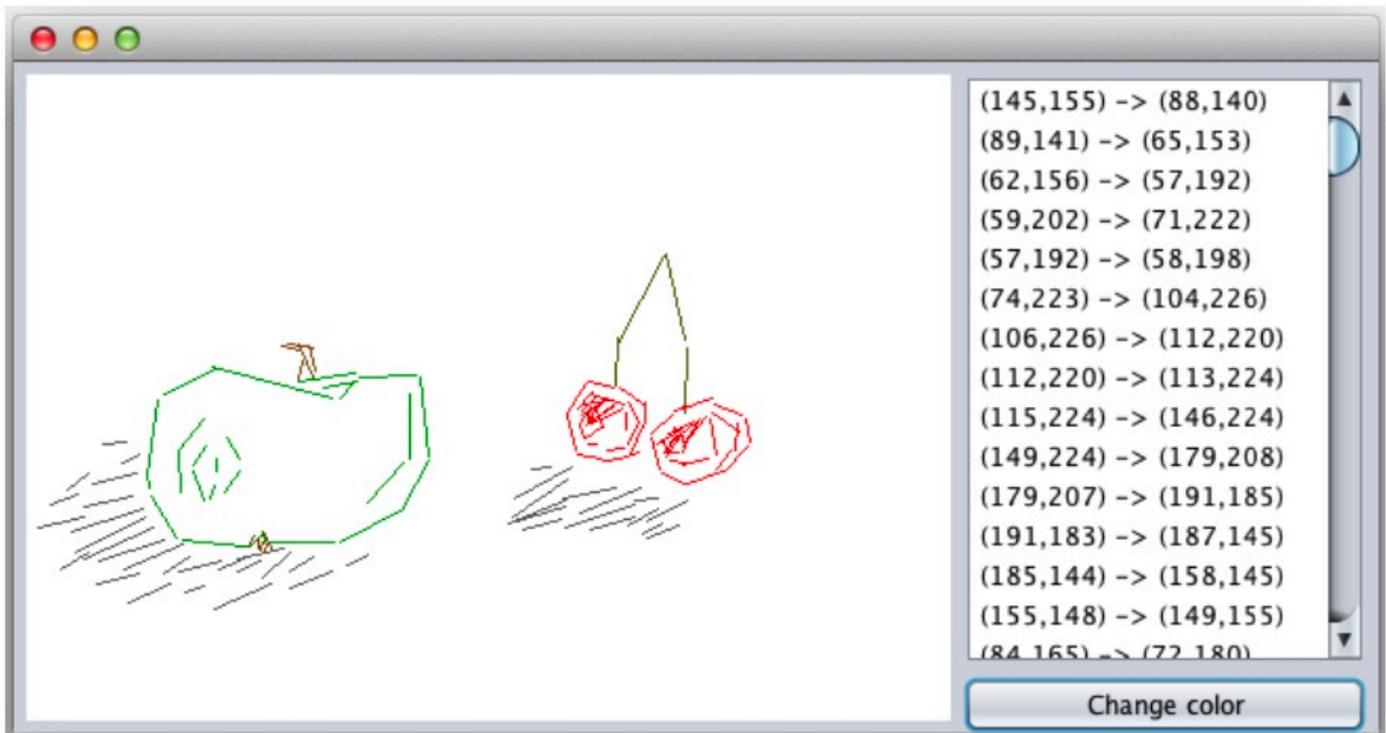# Exercice E.3: Traceur de lignes en couleur

Effectuer les actions suivantes :

- Ajoutez à la classe **Line** la propriété **color** (du type **Color**) permettant de stocker la couleur de la ligne ! Initialisez la couleur de la ligne lors de sa création. Faites dessiner chaque ligne dans *sa* propre couleur !

- Ajoutez à la classe **MainFrame** la propriété **drawColor** (du type **Color**) permettant de mémoriser la couleur utilisée pour la création des nouvelles lignes.

- La ligne de code suivante affiche un dialogue permettant de choisir une nouvelle couleur et de sauvegarder cette dernière dans une variable **newColor** :

```
Color newColor = JColorChooser.showDialog(this,"Choix d'une couleur", oldColor)
```

- Ajoutez un bouton '*Change color*' pour modifier la couleur de **drawColor**.

```java
1
2  import java.awt.Color;
3  import java.awt.Graphics;
4
5  /*
5   * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.
6  txt to change this license
6   * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JPanel.java to
7  edit this template
8   */
9
10 /**
11  *
12  * @author luxformel
13  */
14 public class DrawPanel extends javax.swing.JPanel {
15     private Lines lines;
16
17     public void setLines(Lines pLines){
18         lines = pLines;
19     }
20     /**
21      * Creates new form DrawPanel
22      */
23     public DrawPanel() {
24         initComponents();
25     }
26
27     @Override
28     protected void paintComponent(Graphics g) {
28         super.paintComponent(g); // Generated from nbfs:
29 //nbhost/SystemFileSystem/Templates/Classes/Code/OverriddenMethodBody
30         g.setColor(Color.white);
31         g.fillRect(0, 0, getWidth(), getHeight());
32         if (lines != null)
33             lines.draw(g);
34     }
35
36     /**
36      * This method is called from within the constructor to initialize the
37 form.
37      * WARNING: Do NOT modify this code. The content of this method is
38 always
39      * regenerated by the Form Editor.
40      */
43     @SuppressWarnings("unchecked")
55
56
57
58     // Variables declaration - do not modify//GEN-BEGIN:variables
59     // End of variables declaration//GEN-END:variables
60 }
```

```java
1
2   import java.awt.Color;
3   import java.awt.Graphics;
4   import java.awt.Point;
5
6   /*
6    * To change this license header, choose License Headers in Project
7   Properties.
8    * To change this template file, choose Tools | Templates
9    * and open the template in the editor.
10   */
11
12  /**
13   *
14   * @author luxformel
15   */
16  public class Line {
17      private Point from;
18      private Point to;
19      private Color color;
20
21      public Line(Point from, Point to, Color pColor) {
22          this.from = from;
23          this.to = to;
24          color = pColor;
25      }
26
27      public Line(int pX1, int pY1, int pX2, int pY2, Color pColor) {
28          from = new Point();
29          from.x = pX1;
30          from.y = pY1;
31
32          //Soit on instancie directement l'objet avec les coordonnés
33          to = new Point(pX2, pY2);
34
35          color = pColor;
36      }
37
38      public Point getFrom() {
39          return from;
40      }
41
42      public void setFrom(Point from) {
43          this.from = from;
44      }
45
46      public Point getTo() {
47          return to;
48      }
49
50      public void setTo(Point to) {
51          this.to = to;
```

```java
52      }
53
54      public void draw(Graphics g){
55          g.setColor(color);
56          g.drawLine(from.x, from.y, to.x, to.y);
57      }
58
59      public String toString(){
59          return "(" + from.x + "," + from.y + ") -> (" + to.x + "," + to.y +
60 ")";
61      }
62 }
63
```

```java
import java.awt.Graphics;
import java.util.ArrayList;

/*
 * To change this license header, choose License Headers in Project
Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */

/**
 *
 * @author luxformel
 */
public class Lines {
    private ArrayList<Line> alLines = new ArrayList<>();

    public boolean add(Line e) {
        return alLines.add(e);
    }

    public void clear() {
        alLines.clear();
    }

    public Object[] toArray() {
        return alLines.toArray();
    }

    public void draw(Graphics g){
        for (int i = 0; i < alLines.size(); i++){
            Line line = alLines.get(i);
            line.draw(g);
        }
    }
}
```

```java
1
2    import java.awt.Color;
3    import java.awt.Point;
4    import javax.swing.JColorChooser;
5
6    /*
6     * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.
7    txt to change this license
7     * Click nbfs://nbhost/SystemFileSystem/Templates/GUIForms/JFrame.java to
8    edit this template
9     */
10
11   /**
12    *
13    * @author luxformel
14    */
15   public class MainFrame extends javax.swing.JFrame {
16
17       private Lines lines;// = new Lines();
18       private Line line;
19       private Color color = Color.black;
20       /**
21        * Creates new form MainFrame
22        */
23       public MainFrame() {
24           initComponents();
25           //Instancier/créer l'objet lines
26           lines = new Lines();
27
28           //informer le drawPanel du nouvel objet lines
29           drawPanel.setLines(lines);
30
31           //Afficher le contenu de la arrayList qui est vide
32           //Donc le contenu de la JList est vide aussi
33           linesList.setListData(lines.toArray());
34       }
35
36       /**
36        * This method is called from within the constructor to initialize the
37   form.
37        * WARNING: Do NOT modify this code. The content of this method is
38   always
39        * regenerated by the Form Editor.
40        */
43       @SuppressWarnings("unchecked")
48
50

64

75

82

89

115
```

```java
118
119
120     private void drawPanelMousePressed(java.awt.event.MouseEvent evt) {
121         line = new Line(evt.getPoint(), evt.getPoint(), color);
122         lines.add(line);
123         drawPanel.repaint();
124         linesList.setListData(lines.toArray());
125     }
126
127     private void drawPanelMouseReleased(java.awt.event.MouseEvent evt) {
128         line.setTo(evt.getPoint());
129         drawPanel.repaint();
130         linesList.setListData(lines.toArray());
131     }
132
133     private void drawPanelMouseDragged(java.awt.event.MouseEvent evt) {
134         line.setTo(evt.getPoint());
135         drawPanel.repaint();
136         linesList.setListData(lines.toArray());
137
138     }
139
139     private void changeColorButtonActionPerformed(java.awt.event.
140 ActionEvent evt) {
140         color = JColorChooser.showDialog(this, "Please choose a color",
141 color);
142     }
143
144     /**
145      * @param args the command line arguments
146      */
147     public static void main(String args[]) {
169         /* Set the Nimbus look and feel */
170
171         /* Create and display the form */
172         java.awt.EventQueue.invokeLater(new Runnable() {
173             public void run() {
174                 new MainFrame().setVisible(true);
175             }
176         });
177     }
178
179     // Variables declaration - do not modify//GEN-BEGIN:variables
180     private javax.swing.JButton changeColorButton;
181     private DrawPanel drawPanel;
182     private javax.swing.JScrollPane jScrollPane1;
183     private javax.swing.JList linesList;
184     // End of variables declaration//GEN-END:variables
185 }
186
```