```
package rolodex;

import java.util.Iterator;
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
import mvp.*;

/****
 *
 * Class ErrorMessageDialog contains labels displaying up to five error
 * messages.
 *
 */

public class ErrorMessageDialog extends View {

    /**
     * Construct this with the given grandparent view, which is used restore
     * the pre-error display area when the user presses OK in the error dialog.
     */
    public ErrorMessageDialog(RolodexMenuUI rumi) {
        super(null, null);
        this.rmui = rmui;
        labels = new JLabel[NUM_MESSAGES];
        outer_box = new Box(BoxLayout.Y_AXIS);
    }

    /**
     * Compose this by inserting the five labes in a vertical box with some
     * spacing in between.
     */
    public void compose() {
        int i;                          // Loop var
        JLabel jl;                      // Temp top message label var

        /*
         * Make the widget of this the outer vertical box, wrapped in an opaque
         * JPanel.
         */
        widget = new JPanel();
        ((JPanel) widget).setOpaque(true);
        ((JPanel) widget).add(outer_box);
        ((JPanel) widget).setAlignmentX(JFrame.LEFT_ALIGNMENT);

        /*
         * Stick some spacing above the prompting message.
         */
        outer_box.add(Box.createVerticalStrut(VERTICAL_SPACING));

        /*
         * Insert the prompting message into the top of the box.  Set its font
         * to Bold 16 point.  Set its alignment to centered.
         */
        jl = new JLabel("Error:");
        jl.setAlignmentX(JFrame.LEFT_ALIGNMENT);
        jl.setFont(new Font(RolodexMenuUI.LABEL_FONT_NAME, Font.BOLD, 18));
        jl.setForeground(Color.red);
        outer_box.add(jl);

        /*
         * Stick some spacing between the message and the text fields below.
         */
        //outer_box.add(Box.createVerticalStrut(VERTICAL_SPACING));

        /**
         * Allocate the labels and put some spacing around them.
         */
        for (i = 0; i < NUM_MESSAGES; i++) {

            /*
             * Allocate the label, setting its alignment, font, and pen color.
             */
            labels[i] = new JLabel("");
            labels[i].setAlignmentX(JFrame.LEFT_ALIGNMENT);
            labels[i].setFont(new Font(RolodexMenuUI.LABEL_FONT_NAME,
                Font.PLAIN, 14));
            labels[i].setForeground(Color.black);

            /*
             * Stick some spacing above the label.
             */
            outer_box.add(Box.createVerticalStrut(VERTICAL_SPACING));

            /*
             * Add the label to box.
             */
            outer_box.add(labels[i]);

        }
    }

    /**
     * Clear out all messages.
     */
    public void clearMessages() {
        int pos;                                // Position in iterated list

        for (pos = 0; pos < NUM_MESSAGES; pos++) {
            setMessage(new String(""), pos);
        }
    }

    /**
     * Put the given elements of the given string list into the label(s), in
     * the same order as they appear in the list.
     */
    public void setMessages(StringList sl) {
        Iterator i = sl.iterator();             // String list iterator
        int pos;                                // Position in iterated list

        for (pos = 0; i.hasNext(); pos++) {
```

```
113             setMessage((String) i.next(), pos);
114         }
115     }
116
117     /**
118      * Single-message overload of <a href="#setMessages(StringList)">
119      * setMessages(StringList))</a>, q.v.
120      */
121     public void setMessage(String sl) {
122
123     }
124
125     /**
126      * Put the given string into the label at the given position.  Used by
127      * setMessages(StringList) and setMessages(String).
128      */
129     protected void setMessage(String s, int pos){
130         labels[pos].setText(s);
131     }
132
133
134     /** Horizontal box for holding all of the components */
135     protected Box outer_box;
136
137     /** The grandparent view */
138     protected RolodexMenuUI rmui;
139
140     /**
141      * Max number of error messages.
142      */
143     protected static final int NUM_MESSAGES = 5;
144
145     /** Size of vertical spacing between UI elements (in pixels) */
146     protected static final int VERTICAL_SPACING = 10;
147
148     /**
149      * The list of labels for displaying error messages.
150      */
151     protected JLabel labels[];
152
153 }
```