JTextComponent 3
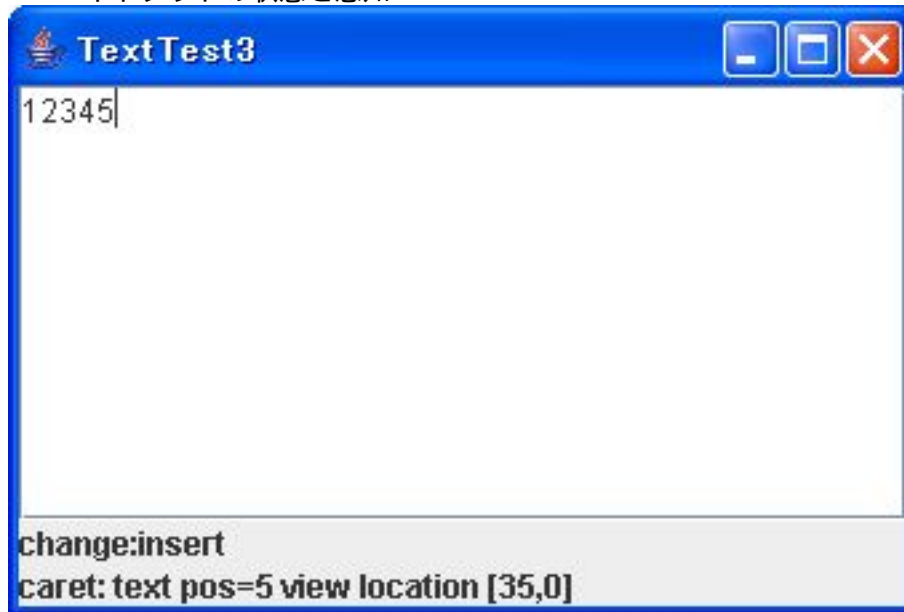


```java
import java.awt.BorderLayout;
import java.awt.Rectangle;

import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JPanel;
import javax.swing.JScrollPane;
import javax.swing.JTextArea;
import javax.swing.SwingUtilities;
import javax.swing.event.CaretEvent;
import javax.swing.event.CaretListener;
import javax.swing.event.DocumentEvent;
import javax.swing.event.DocumentListener;

/**
 * @see http://java.sun.com/docs/books/tutorial/uiswing/components/generaltext.html
 */
public class JTextTest3 {
    private JFrame frame;
    private JTextArea txtArea;
    private JLabel changeStats;
    private CaretListenerLabel caretStats;

    private void createUI() {
        frame = new JFrame("TextTest3");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        caretStats  = new CaretListenerLabel("caret:");
        changeStats = new JLabel("change:");
        JPanel statusPanel = new JPanel(new BorderLayout());
        statusPanel.add(changeStats, BorderLayout.CENTER);
        statusPanel.add(caretStats, BorderLayout.SOUTH);

        txtArea = new JTextArea(10, 30);

        JPanel basePanel = new JPanel(new BorderLayout());
        basePanel.add(new JScrollPane(txtArea), BorderLayout.CENTER);
        basePanel.add(statusPanel, BorderLayout.SOUTH);

        txtArea.getDocument().addDocumentListener(
                new MyDocumentListener());
        txtArea.addCaretListener(caretStats);

        frame.getContentPane().add(basePanel);
        frame.pack();
```

```java
            frame.setVisible(true);
        }
        public static void main(String[] args) {
            SwingUtilities.invokeLater(
                    new Runnable(){
                        public void run() {
                            JTextTest3 jft = new JTextTest3();
                            jft.createUI();
                        }
                    }
            );
        }
        /**
         *
         */
        class MyDocumentListener implements DocumentListener {
            public void changedUpdate(DocumentEvent e) {
                changeStats.setText("chage:chage");
            }
            public void insertUpdate(DocumentEvent e) {
                changeStats.setText("change:insert");
            }
            public void removeUpdate(DocumentEvent e) {
                changeStats.setText("change:remove");
            }
        }
        /**
         *
         */
        @SuppressWarnings("serial")
        class CaretListenerLabel extends JLabel
                                        implements CaretListener {
            public CaretListenerLabel(String label) {
                super(label);
            }
            public void caretUpdate(CaretEvent e) {
                try {
                    int dot = e.getDot();
                    //
                    Rectangle rect = txtArea.modelToView(dot);
                    caretStats.setText("caret: text pos=" + dot
                                    + " view location [" + rect.x + "," + rect.y + "]");
                } catch (Exception ex) {
                    ex.printStackTrace();
                }
            }
        }
    }
```