

# Part

14

Java Programming Language  
Mr.Rungrote Phonkam  
rungrote@it.kmitl.ac.th

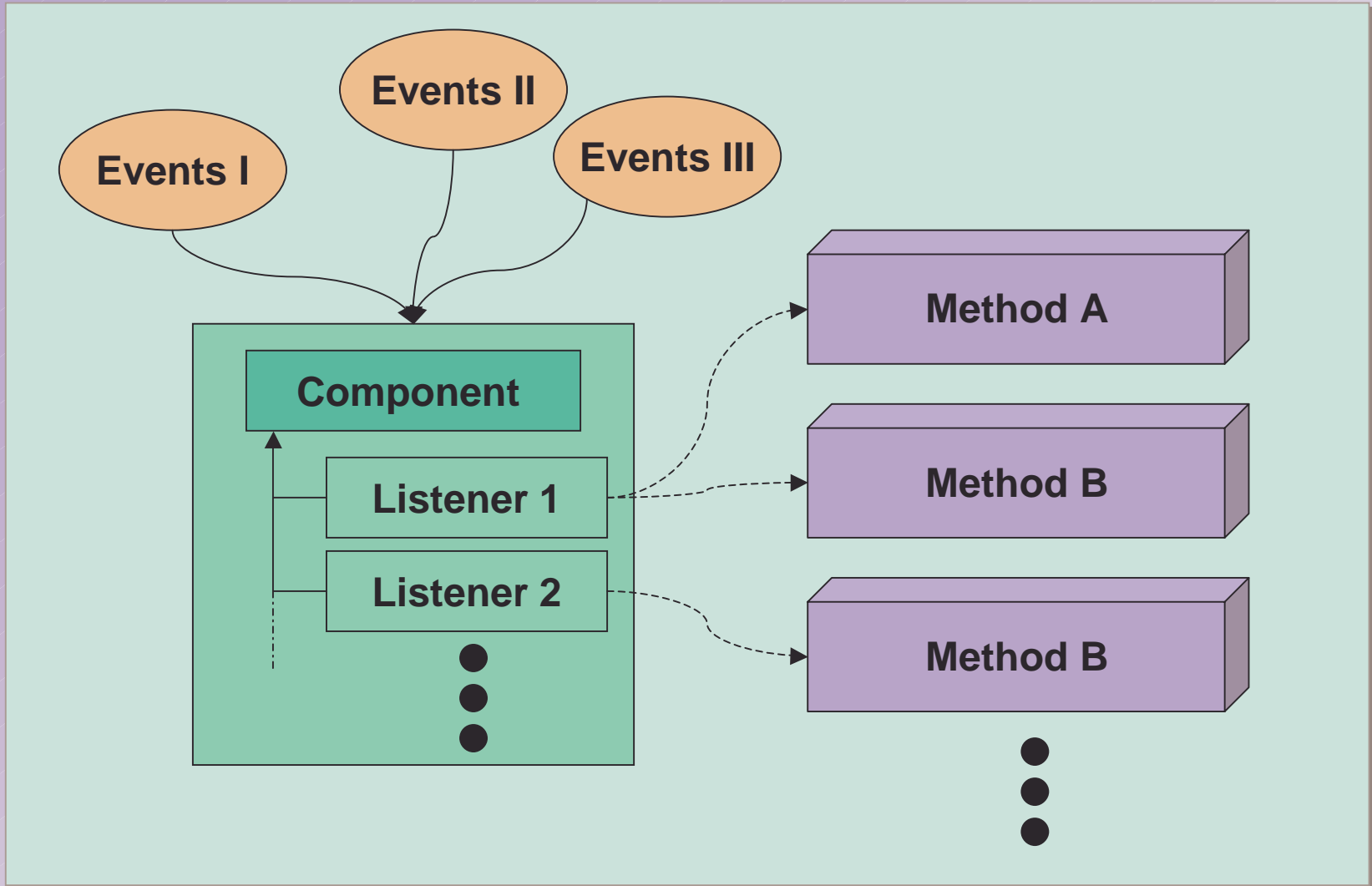


# Contents

1. Listener vs. Adapter
2. Events
3. Listener & Method
4. Component & Listener
5. GUI
6. Practice



# 1. Listener vs. Adapter





## 2. Events

### **AncestorEvent**

ancestor added, moved, removed

### **CaretEvent**

text caret changed

### **ChangeEvent**

state change

### **DocumentEvent**

document attributes change, content inserted, content removed (Note: *interface*)

### **HyperlinkEvent**

hyperlink activated, entered, exited

### **InternalFrameEvent**

frame activated, closed, closing, deactivated, deiconified, iconified, opened

### **ListDataEvent**

contents changed, interval added or removed



## 2. Events

### **ListSelectionEvent**

list selection status change

### **MenuDragMouseEvent**

menu drag mouse dragged, entered, exited, released

### **MenuEvent**

menu selected/posted, deselected, canceled

### **MenuKeyEvent**

menu key pressed, released, typed

### **PopupMenuEvent**

popup menu selected/posted, becoming visible, becoming invisible

### **TableColumnModelEvent**

table column added, resized, moved, removed, selection changed  
TableModelEvent table model change



## 2. Events

### **TreeExpansionEvent**

tree expanded or collapsed

### **TreeModelEvent**

tree nodes changed, inserted, removed, or drastically changed

### **TreeSelectionEvent**

tree selection status changed

### **UndoableEditEvent**

undoable operation happened



# 3. Listener & Method

## **AncestorListener**

ancestorAdded (AncestorEvent)  
ancestorMoved (AncestorEvent)  
ancestorRemoved (AncestorEvent)

## **CaretListener**

caretUpdate (CaretEvent)

## **CellEditorListener**

editingCanceled (ChangeEvent)  
editingStopped (ChangeEvent)

## **ChangeListener**

stateChanged (ChangeEvent)

## **DocumentListener**

changedUpdate (DocumentEvent)  
insertUpdate (DocumentEvent)  
removeUpdate (DocumentEvent)

## **HyperlinkListener**

hyperlinkUpdate (HyperlinkEvent)



## 3. Listener & Method

### **InternalFrameListener**

internalFrameActivated (InternalFrameEvent)  
internalFrameClosed (InternalFrameEvent)  
internalFrameClosing (InternalFrameEvent)  
internalFrameDeactivated (InternalFrameEvent)  
internalFrameDeiconified (InternalFrameEvent)  
internalFrameIconified (InternalFrameEvent)  
internalFrameOpened (InternalFrameEvent)

### **ListDataListener**

contentsChanged (ListDataEvent)  
intervalAdded (ListDataEvent)  
intervalRemoved (ListDataEvent)

### **ListSelectionListener**

valueChanged (ListSelectionEvent)

### **MenuDragMouseListener**

menuDragMouseDragged (MenuDragMouseEvent)  
menuDragMouseEntered (MenuDragMouseEvent)  
menuDragMouseExited (MenuDragMouseEvent)  
menuDragMouseReleased (MenuDragMouseEvent)





# 3. Listener & Method

## **MenuKeyListener**

menuKeyPressed (MenuKeyEvent)  
menuKeyReleased (MenuKeyEvent)  
menuKeyTyped (MenuKeyEvent)

## **MouseListener**

menuCanceled (MenuEvent)  
menuDeselected (MenuEvent)  
menuSelected (MenuEvent)

## **MouseListener (implements MouseListener and MouseMotionListener)**

mouseClicked (MouseEvent)  
mouseDragged (MouseEvent)  
mouseEntered (MouseEvent)  
mouseExited (MouseEvent)  
mouseMoved (MouseEvent)  
mousePressed (MouseEvent)  
mouseReleased (MouseEvent)

## **PopupMenuListener**

popupmenuCanceled (PopupMenuEvent)  
popupMenuWillBecomeInvisible (PopupMenuEvent)  
popupMenuWillBecomeVisible (PopupMenuEvent)



# 3. Listener & Method

## **TableColumnModelListener**

columnAdded (TableColumnModelEvent)  
columnMarginChanged (ChangeEvent)  
columnMoved (TableColumnModelEvent)  
columnRemoved (TableColumnModelEvent)  
columnSelectionChanged (ListSelectionEvent)

## **TableModelListener**

tableChanged (TableModelEvent)

## **TreeExpansionListener**

treeCollapsed (TreeExpansionEvent)  
treeExpanded (TreeExpansionEvent)

## **TreeModelListener**

treeNodesChanged (TreeModelEvent)  
treeNodesInserted (TreeModelEvent)  
treeNodesRemoved (TreeModelEvent)  
treeStructureChanged (TreeModelEvent)

## **TreeSelectionListener**

valueChanged (TreeSelectionEvent)

## **UndoableEditListener**

undoableEditHappened (UndoableEditEvent)



# 4. Component & Listener

## **ActionListener**

AbstractButton, DefaultButtonModel, JComboBox, JFileChooser, JTextField, Timer

## **AdjustmentListener**

JScrollBar

## **AncestorListener**

JComponent

## **CaretListener**

JTextComponent

## **CellEditorListener**

DefaultCellEditor, DefaultTreeCellEditor

## **ChangeListener**

AbstractButton, DefaultBoundedRangeModel, DefaultButtonModel, DefaultCaret, DefaultColorSelectionModel, DefaultSingleSelectionModel, JProgressBar, JSlider, JTabbedPane, JViewport, MenuSelectionManager, StyleContext, StyleContext.NamedStyle



# 4. Component & Listener

## **ColumnModelListener**

DefaultTableColumnModel

## **DocumentListener**

AbstractDocument, DefaultStyledDocument

## **HyperlinkListener**

JEditorPane

## **InternalFrameListener**

JInternalFrame

## **ItemListener**

AbstractButton, DefaultButtonModel, JComboBox

## **ListDataListener**

AbstractListModel

## **ListSelectionListener**

DefaultListSelectionModel, JList



# 4. Component & Listener

## **MenuDragMouseListener**

JMenuItem

## **MenuKeyListener**

JMenuItem

## **MenuListener**

JMenu

## **PopupMenuListener**

JPopupMenu

## **PropertyChangeListener**

AbstractAction, DefaultTreeSelectionModel,  
JComponent, SwingPropertyChangeSupport,  
TableColumn, UIDefaults, UIManager



# 4. Component & Listener

## **TableModelListener**

AbstractTableModel

## **TreeExpansionListener**

JTree

## **TreeModelListener**

DefaultTreeModel

## **TreeSelectionListener**

DefaultTreeSelectionModel, JTree

## **UndoableEditListener**

AbstractDocument, UndoableEditSupport

## **VetoableChangeListener**

JComponent



# 5. GUI

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
class SimplePanel extends JPanel {
    JTextField textField; JButton button;
    public SimplePanel() {
        button = new JButton("Clear Text"); add(button);
        textField = new JTextField(10); add(textField);

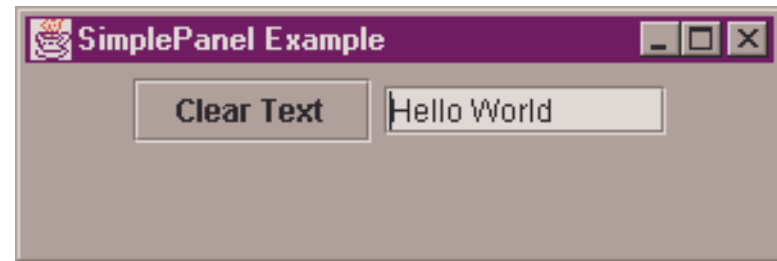
        button.addActionListener(new ActionListener() {
            public void actionPerformed(ActionEvent e) {
                textField.setText("");
            }
        });
    }
}
```

มีต่อ



# 5. GUI

```
public class SimplePanelTest extends JFrame {
    static final int WIDTH = 300; static final int HEIGHT = 100;
    SimplePanelTest(String title) {
        super(title); SimplePanel simplePanel = new SimplePanel();
        Container c = getContentPane();
        c.add(simplePanel, BorderLayout.CENTER);
    }
    public static void main(String args[]) {
        JFrame frame = new SimplePanelTest("SimplePanel Example");
        frame.addWindowListener(new WindowAdapter() {
            public void windowClosing(WindowEvent e) {
                System.exit(0);
            }
        });
        frame.setSize(WIDTH, HEIGHT);
        frame.setVisible(true);
    }
}
```







## 5. GUI

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
public class SimpleEvents extends JFrame {
    static final int WIDTH=350; static final int HEIGHT=180;
    JTextField textField; JTextArea textList; JScrollPane pane;
    public SimpleEvents(String lab) {
        super(lab);
        JPanel textPanel = new JPanel();
        textPanel.setBorder (BorderFactory.createEtchedBorder());
        textPanel.setLayout(new BorderLayout());
        JLabel textTitle = new JLabel("Type and hit <ENTER>");
        textPanel.add(textTitle, BorderLayout.NORTH);
        textField = new JTextField();
        textPanel.add(textField, BorderLayout.SOUTH);
        textPanel.add(Box.createVerticalStrut(6));
```

มีต่อ



## 5. GUI

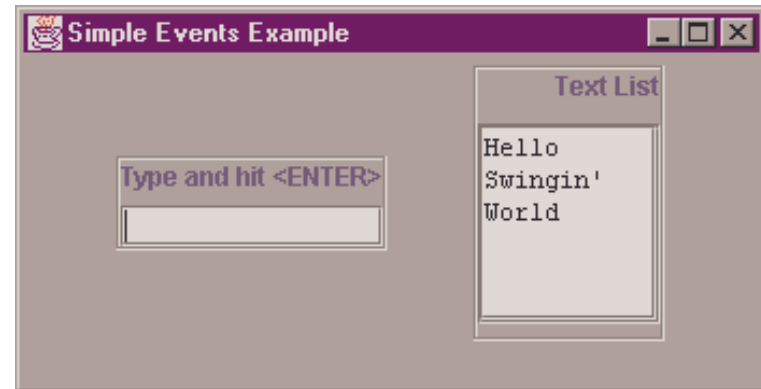
```
JPanel listPanel = new JPanel();
listPanel.setBorder (BorderFactory.createEtchedBorder());
listPanel.setLayout(new BorderLayout(listPanel,BorderLayout.Y_AXIS));
JLabel title = new JLabel("Text List");
listPanel.add(title);
listPanel.add(Box.createVerticalStrut(10));
textList=new JTextArea("", 6, 10);
textList.setEditable(false);
pane = new JScrollPane (textList);
listPanel.add(pane);
listPanel.add(Box.createVerticalStrut(6));
textField.addActionListener(new ActionListener() {
    public void actionPerformed(ActionEvent e) {
        // Append the textField's text to textList
        textList.append(textField.getText());
        textList.append("\n");
        // Reset the textField
        textField.setText("");    } });
```

มีต่อ



# 5. GUI

```
Container c = getContentPane();
    c.setLayout (new FlowLayout());
    c.add(textPanel);
    c.add(Box.createHorizontalStrut(30));
    c.add(listPanel);
}
public static void main(String args[]) {
    SimpleEvents frame = new SimpleEvents("Simple Events Example");
    frame.addWindowListener(new WindowAdapter() {
        public void windowClosing(WindowEvent e) {
            System.exit(0);
        }
    });
    frame.setSize(WIDTH, HEIGHT);
    frame.setVisible(true);
}
}
```





## 6. Practice

จากตัวอย่างแบบฝึกหัดเครื่องคิดเลข ให้ใส่ Listener เกี่ยวกับการคลิกปุ่มกด และทำให้การทำงานของโปรแกรมเป็นโปรแกรมเครื่องคิดเลข

