Java 2 Programming - SciTech

13 .

http://www.scitech.co.kr

- JFC
- AWT
-
- JFrame   ContentPane
- JPanel
-
- JApplet
- BoxLayout

JFC

- JFC(Java Foundation Classes)
  - API
  -

- JFC
  - AWT,   2D,   (Accessibility),
         (drag and drop)   (swing)

-

  -
  - AWT

AWT

- AWT 1.1   (widget)

-         1.0   .

-              AWT

- JComponent

-                                    (javabean)

- AWT

-                              (light weight component)

-                                    AWT 1.1

    MVC(Model/View/Controller)   .

- javax.swing

  –   ,   (adapter),

                                     ..

- javax.swing.event

  – java.awt.event   .

- javax.swing.plaf.*

  –   . plaf   pluggable
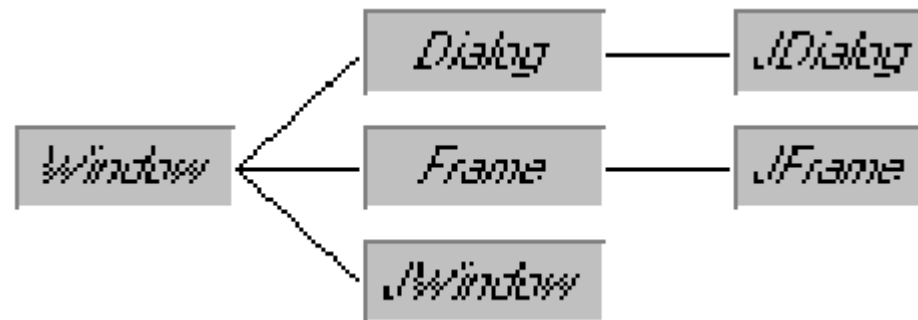
        look-and-feel   .

- javax.swing.table

  –   .

- javax.swing.tree

  –   .

JFrame JWindow

- JWindow JFrame :

- JWindow, JFrame, JDialog   JComponent
  WIndow   JWindow, JFrame,
  JDialog
- JFrame   (content pane)

Frame

-

  - JFrame():
  - JFrame(String title):

```
1.  import javax.swing.*;
2.  import java.awt.*;
3.  public class FrameTester {
4.   public static void main (String args[]) {
5.     JFrame f = new JFrame ("JFrame Example");
6.     Container c = f.getContentPane();
7.     c.setLayout (new FlowLayout());
8.     for (int i = 0; i < 5; i++) {
9.       c.add (new JButton ("No"));
10.      c.add (new Button ("Batter"));
11.    }
12.    c.add (new JLabel ("Swing"));
13.    f.setSize (300, 200);
14.    f.show();
15.   }
16. }
```
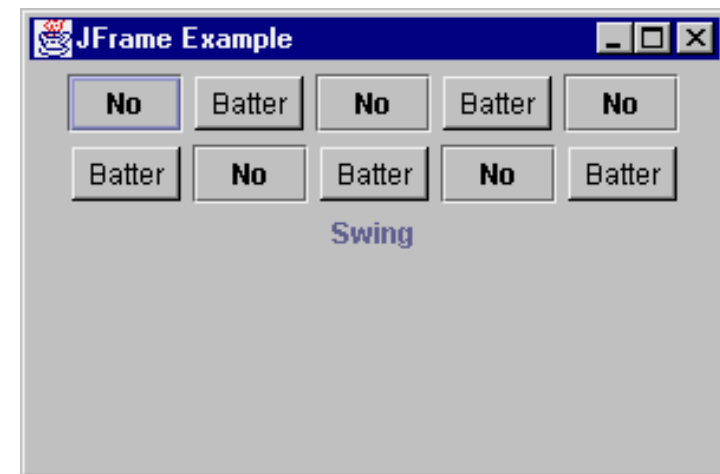
Content Pane

- Content Pane
  - JRootPane
  - JFrame ("x")

- JFrame : setDefaultCloseOperation()
  - DO_NOTHING_ON_CLOSE
    - AWT Frame
  - HIDE_ON_CLOSE
    - (default)
      . setVisible(true)
      .
  - DISPOSE_ON_CLOSE
    -

Content Pane (   )

- JRootPane
  - (glass pane)   (layered pane)

- (glass pane)
  -
  - (glass pane)

  - (popup)   (tool tip)

- (layered pane)
  -
  - (content pane)
  - (content pane)   AWT   Window, Dialog,
    Frame

Content Pane (   )

- AWT   Frame
    - aFrame.setLayout (new FlowLayout());
    - aFrame.add(aComponent);
- JFrame
    - aFrame.getContentPane().setLayout (new FlowLayout());
    - aFrame.getContentPane().add(aComponent);

-   .
    - Container getContentPane();
    - setContentPane (Container);
    - Component getGlassPane();
    - setGlassPane (Component);
    - JLayeredPane getLayeredPane();
    - setLayeredPane (JLayeredPane);
    - JMenuBar getMenuBar();
    - setMenuBar (JMenuBar);

Content Pane (   )

- JLayeredPane
  - JLayeredPane

    .

  - layeredPane.add (component, new Integer(5));

  - JLayeredPane.DEFAULT_LAYER   .

  .

JPanel

- JPanel　　　　　AWT　Panel
- 　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　(double buffering)

- JPanel
  - JPanel()
    - 　　　　　　　　　　　　　JPanel　　　　　　　FlowLayout
  - JPanel(boolean isDoubleBuffered)
    - 　　　　　　　　　　　　　　　　JPanel　　　　　　FlowLayout

  - JPanel(LayoutManager layout)
    - 　　　　　　　　　　　　JPanel
  - JPanel(LayoutManager layout, boolean isDoubleBuffered)
    - 　　　　　　　　　　　　JPanel

Icon

-
- JButton   JComponent
- Icon
- paintIcon()

- Icon
  ```
  public interface Icon {
     void paintIcon(Component c, Graphics g, int x, int y);
     int getIconWidth();
     int getIconHeight();
  }
  ```

- ImageIcon
  - Icon tinyPicture = new ImageIcon("TinyPicture.gif");
- Image   ImageIcon   MediaTracker
                                                        Image
               (serialization)

JLabel: LabelPanel.java

- JLabel   java.awt.Label

- /

- JLabel
  - JLabel()
    -
  - JLabel(Icon image)
    -
  - JLabel(Icon image, int horizontalAlignment)
    -
  - JLabel(String text)
    -
  - JLabel(String text, Icon icon, int horizontalAlignment)
    - ,
  - JLabel(String text, int horizontalAlignment)
    -

JButton: ButtonPanel.java, ButtonPanel2.java

- java.awt.Button

- ActionListener

- (Constructor) : JButton
  - JButton()
    -
  - JButton(Icon icon)
    -
  - JButton(String text)
    -
  - JButton(String text, Icon icon)
    -

- JButton   setIcon()
  -
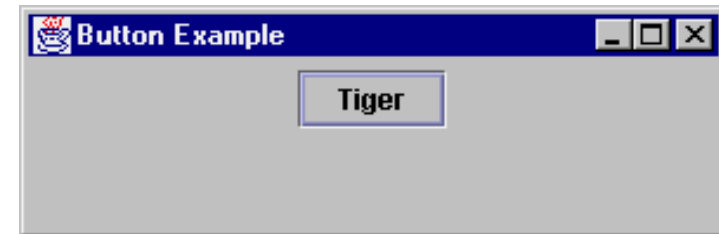
AbstractButton

- Icon   getIcon()   setIcon()   AbstractButton

- AbstractButton
    - setMnemonic()
        - .
    - doClick()
        - .
    - setDisabledIcon(), setDisabledSelectedIcon(), setPressedIcon(),
    - setRolloverIcon(), setRolloverSelectedIcon(), setSelectedIcon()
        - .
    - setVerticalAlignment(), setHorizontalAlignemnt()
        - .
    - setVerticalTextPosition(), setHorizontalTextPosition()
        - .

JCheckBox: CheckboxPanel.java

- CheckboxGroup
-
-          (Constructor) : JCheckbox
  - JCheckBox()
    -
  - JCheckBox(Icon icon)
    -
  - JCheckBox(Icon icon, boolean selected)
    -
  - JCheckBox(String text)
    -
  - JCheckBox(String text, boolean selected)
    -
  - JCheckBox(String text, Icon icon)
    -
  - JCheckBox(String text, Icon icon, boolean selected)
    -

CheckBox Example

■ Choose Me

☐ No Choose Me
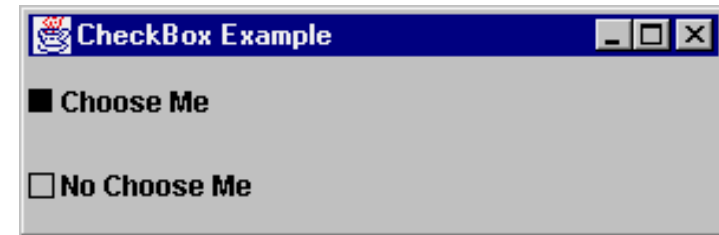
JRadioButton: RadioButtonPanel.java

- JRadioButton   ButtonGroup

- JRadioButton
  - JRadioButton()
    -
  - JRadioButton(Icon icon)
    -
  - JRadioButton(Icon icon, boolean selected)
    -
  - JRadioButton(String text)
    -
  - JRadioButton(String text, boolean selected)
    -
  - JRadioButton(String text, Icon icon)
    -
  - JRadioButton(String text, Icon icon, boolean selected)
   -

RadioButton Exam...

Annual Salary:

○ $45,000

◉ $60,000

○ $75,000
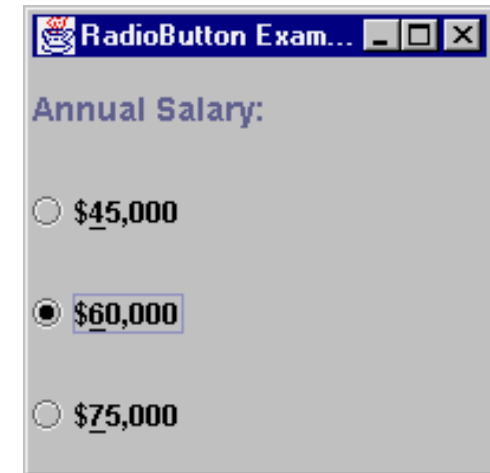
JToggleButton: ToggleButtonPanel.java

-

-        (Constructor) : JToggleButton
  - JToggleButton()
    -
  - JToggleButton(Icon icon)
    -
  - JToggleButton(Icon icon, boolean selected)
    -
  - JToggleButton(String text)
    -
  - JToggleButton(String text, boolean selected)
    -
  - JToggleButton(String text, Icon icon)
    -
  - JToggleButton(String text, Icon icon, boolean selected)
    -

JScrollPane: ScrollPanel.java

- ScrollPaneLayout
- JViewport   : getViewport()

  JViewport vport = someScrollPane.getViewport();
  vport.add(someComponent);

       ,
  someScrollPane.getViewport().add(someComponent);

       ,
  JScrollPane pane = new JScrollPane(someComponent);

- (Constructor) : JScrollPane
  - JScrollPane()
    -
  - JScrollPane(Component view)
    -
  - JScrollPane(Component view, int vsbPolicy, int hsbPolicy)
    -
  - JScrollPane(int vsbPolicy, int hsbPolicy)
    -

JScrollPane Example
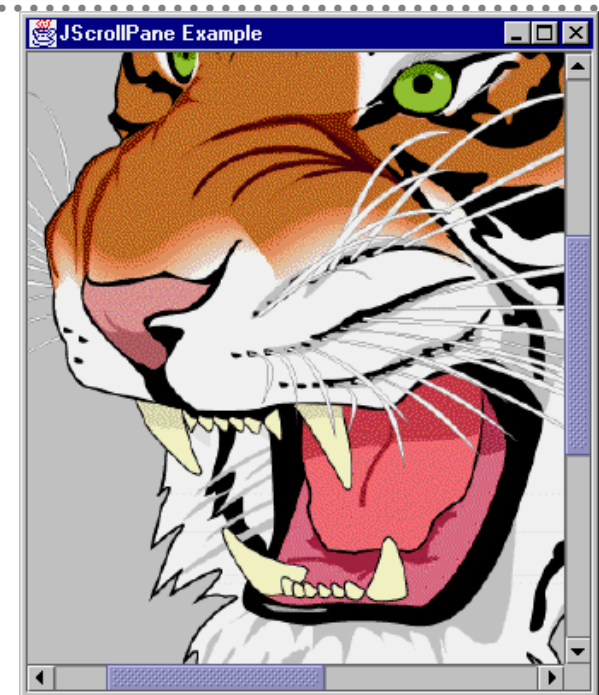
JViewPort

- JViewport
  - JScrollPane   .

- (Constructor) : JViewport
  - JViewport()
    -
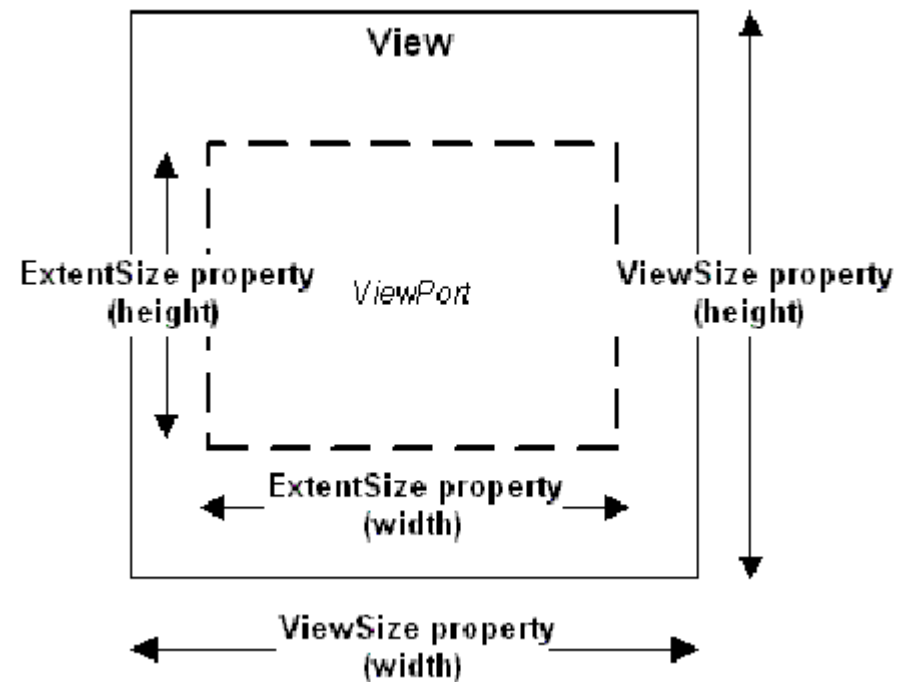
JTextComponent

-
-
  - copy() / cut() / paste()
  - getSelectedText()
  - setSelectionStart()
  - setSelectionEnd()
  - selectAll()
  - replaceSelection()
  - getText()
  - setText()
  - setEditable()
  - setCaretPosition()

-
- : JTextField, JTextArea, JEditorPane, JPasswordField, JTextPane

JTextField

-       (Constructor) : JTextField
  - JTextField() : TextField
  - JTextField(Document doc, String text, int columns)
    -                         TextField
  - JTextField(int columns) :   TextField
  - JTextField(String text) :   TextField
  - JTextField(String text, int columns)
    -                     TextField

-       (Usage)

```
// TextField
JTextField tf = new JTextField();
//
tf.setText("TextField");
add(tf);
```

JTextArea

- JTextArea JScrollPane
- (Constructor) : JTextArea
  - JTextArea() : TextArea
  - JTextArea(Document doc) : TextArea
  - JTextArea(Document doc, String text, int rows, int columns)
    - TextArea
  - JTextArea(int rows, int columns) : TextArea
  - JTextArea(String text) : TextArea
  - JTextArea(String text, int rows, int columns) :

- (Usage)

  // TextArea
  JTextArea ta = new JTextArea();
  //
  ta.setText("JTextAreaAllows Multiple Lines");
  add(new JScrollPane(ta));

JTextPane: TextPanel.java

-

.
- 　　　　(Constructor) : JTextPane
  - JTextPane()
  - 　　　　JTextPane
  - JTextPane(StyledDocument doc)
  - 　　　　　　　　JTextPane

- 　　　(Usage)
  - JTextPane tp = new JTextPane();
  - MutableAttributeSet attr = new SimpleAttributeSet();
  - StyleConstants.setFontFamily(attr, "Serif");
  - StyleConstants.setFontSize(attr, 18);
  - StyleConstants.setBold(attr, true);
  - tp.setCharacterAttributes(attr, false);
  - add(new JScrollPane(tp));
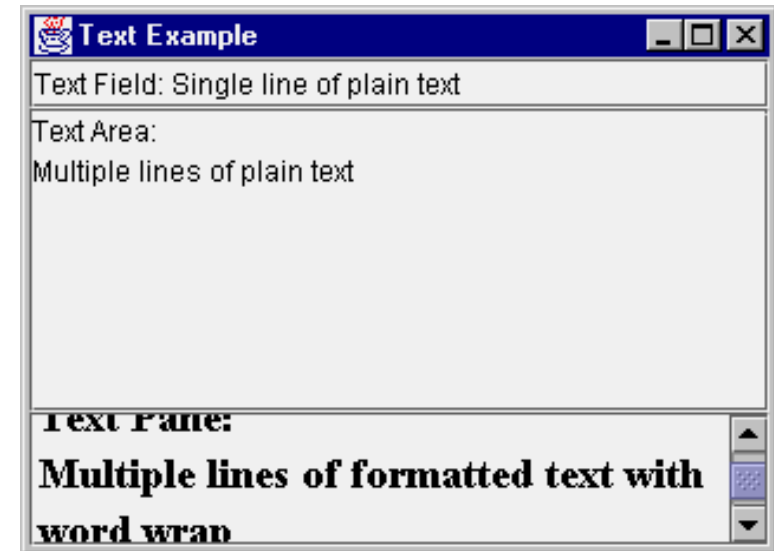
JPasswordField: PasswordPanel.java

- JPasswordField   "*"
- setEchoChar()
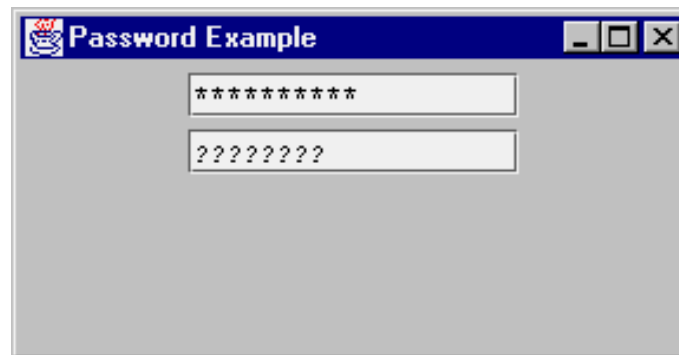
JEditorPane: Browser.java

- HTML   RTF

JScrollBar: ScrollbarPanel.java

- java.awt.Scrollbar

- (Constructor) : JScrollbar

  - JScrollBar()

  –

  - JScrollBar(int orientation)

  –

  - JScrollBar(int orientation, int value, int extent, int min, int max)

  –   ,   ,   ,
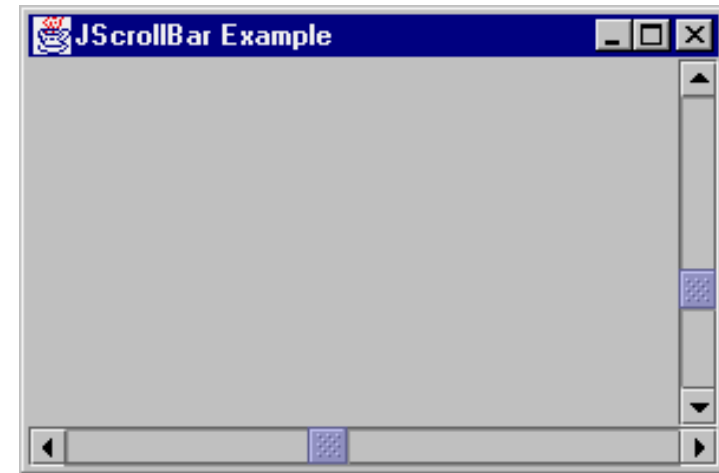
JSlider: SilderPanel.java

-

- (Constructor) : JSlider
  - JSlider()
    - 0   100   ,   50
  - JSlider(BoundedRangeModel brm)
    - BoundedRangeModel
  - JSlider(int orientation)
    - 0   100
  - JSlider(int min, int max)
    - ,   50
  - JSlider(int min, int max, int value)
    -
  - JSlider(int orientation, int min, int max, int value)
    - ,   ,
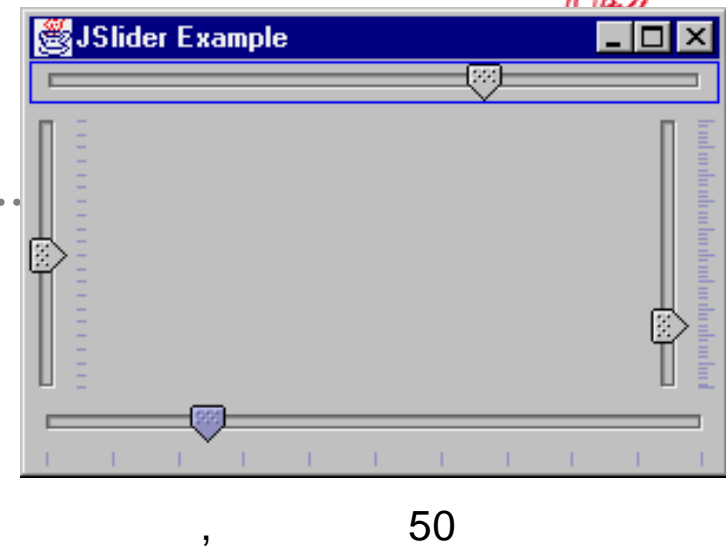
ProgressBar: ProgressBarPanel.java

- JProgressBar   .

- JProgressBar

  ```java
  JProgressBar progressBar = new JProgressBar();
  progressBar.setMinimum(0);
  progressBar.setMaximum(numberSubOperations);
  ```

-
  ```java
  progressBar.setValue(progressBar.getMinimum());
  for (int i = 0; i < numberSubOperations; i++) {
    //
    SwingUtilities.invokeAndWait(runner);
  }
  ```

- for   Runnable
  ```java
  Runnable runner = new Runnable() {
    public void run() {
      int value = progressBar.getValue();
      progressBar.setValue(value+1);
    }
  };
  ```

- ProgressMonitorInputStream :
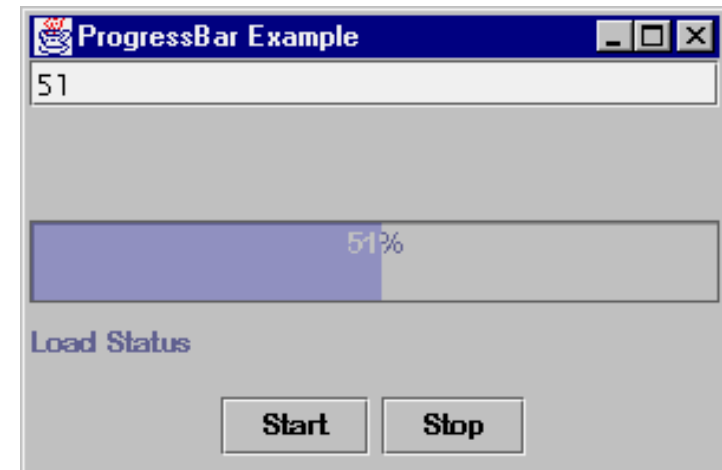
JComboBox: ComboPanel.java

- Choice
- KeySelectionManager   (inner class)

-
-                     (Constructor) : JComboBox
  - JComboBox()
  -                               JComboBox
  - JComboBox(ComboBoxModel aModel)
  -                               JComboBox
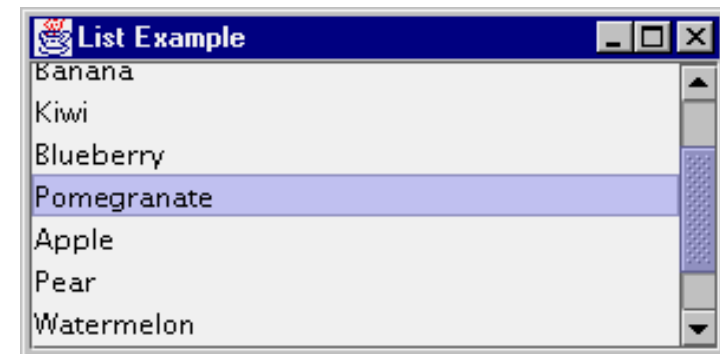 - JComboBox(Object[] items)
  -                               JComboBox
  - JComboBox(Vector items)
  -                               JComboBox
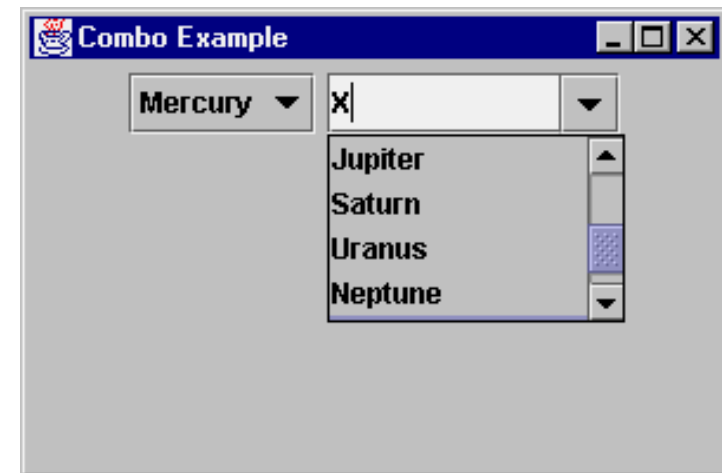
JList: ListPanel.java

- String[]   Vector   setListData()

- JList   JScrollPane   JList   .

- (Constructor) : JList
  - JList()
  -                              JList
  - JList(ListModel dataModel)
  -                              JList
  - JList(Object[] items)
  -                              JList
  - JList(Vector items)
  -                              JList

Borders: BorderPanel.java

-

- public Insets getBorderInsets(Component c)

  – .

- public boolean isBorderOpaque()

  – .

- public void paintBorder (Component c, Graphics g, int x, int y, int width, int height)

  – .

- JComponent
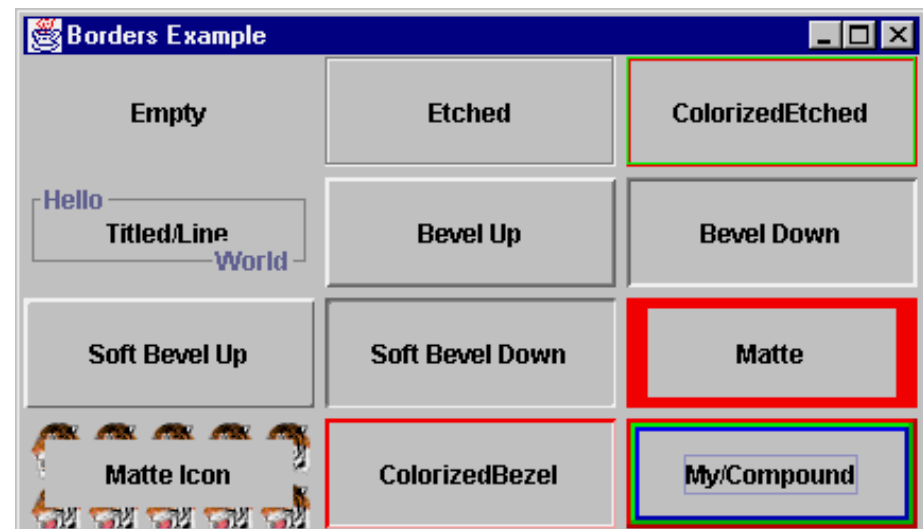
Menus: MenuTester.java

-                 AWT   .
  -             (JMenuItem, JCheckBoxMenuItem, JMenu, JMenuBar)   JComponent
  - JMenuBar   (container)
  - JApplet   setJMenuBar()   JMenuBar

  - JRadioButtonMenuItem
  - JMenuItem   Icon
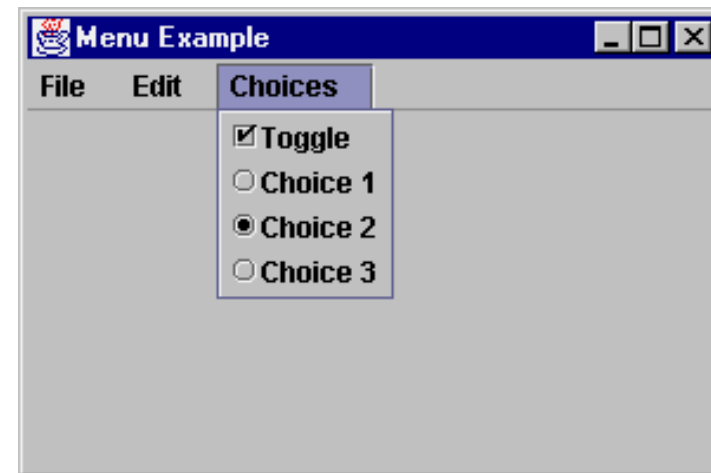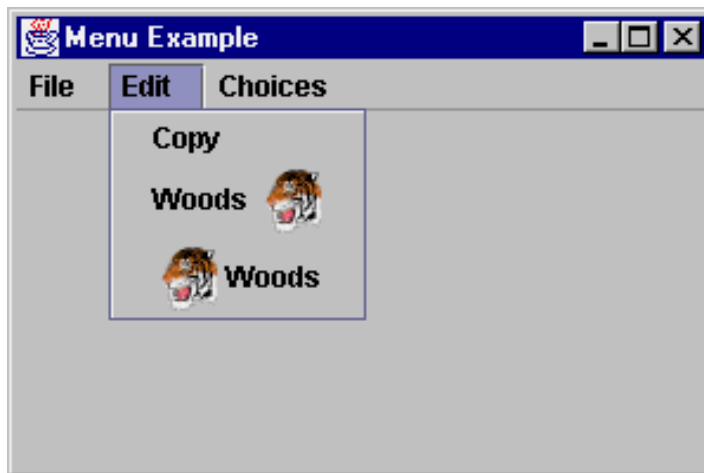
JSeparator

- JSeparator

  .   "Open"   "Close"

- JSeparator

- JMenu   addSeparator()

-
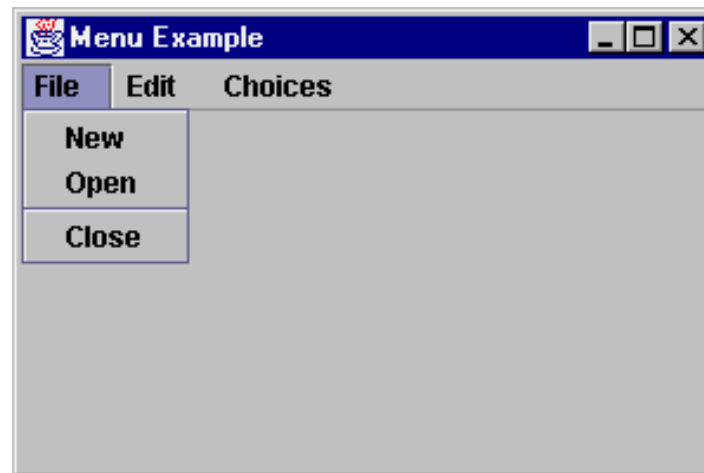
- addSeparator()
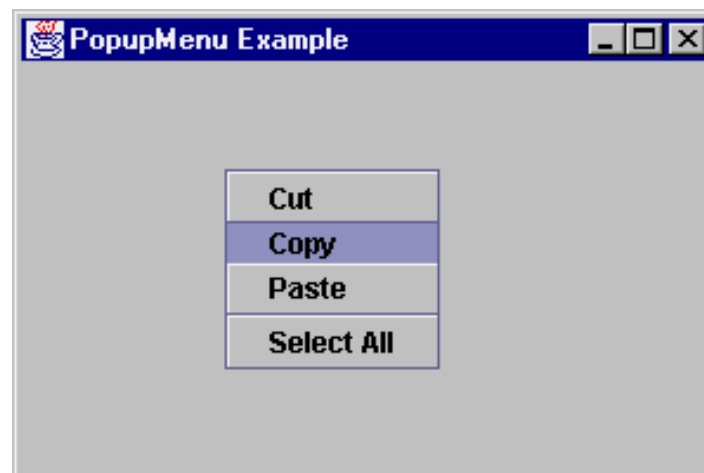
JApplet: AppTester.java

- Applet   JApplet
- JApplet   JMenuBar
- JFrame   JContentPane
-   BorderLayout

```java
import java.awt.*;
import javax.swing.*;
public class AppTester extends JApplet {
 public void init () {
   Container c = getContentPane();
   JButton jb = new JButton ("Default");
   c.add (jb, BorderLayout.WEST);
   jb = new JButton ("LayoutManager");
   c.add (jb, BorderLayout.CENTER);
   jb = new JButton ("is");
   c.add (jb, BorderLayout.EAST);
   jb = new JButton ("BorderLayout: " +
     (c.getLayout() instanceof BorderLayout));
   c.add (jb, BorderLayout.SOUTH);
 } }
```

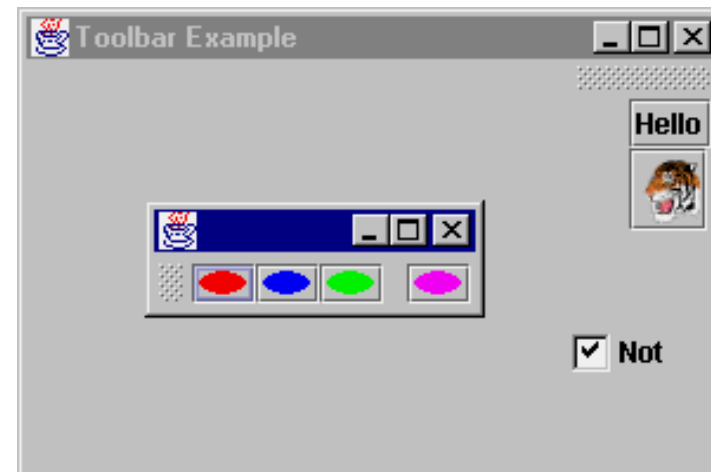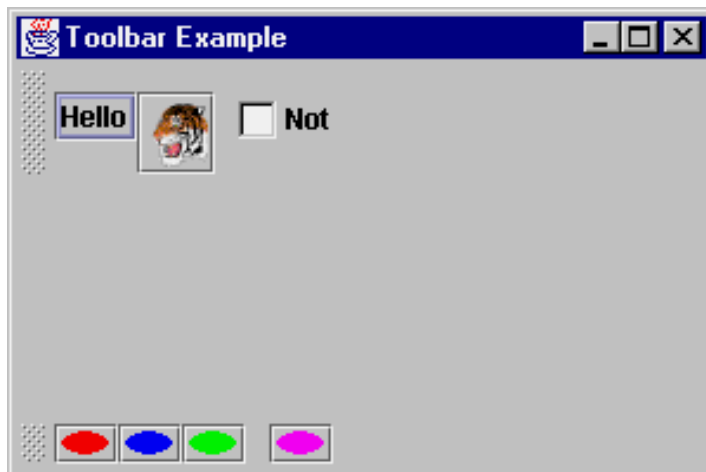| Default	LayoutManager	is
BorderLayout: true		

page 37
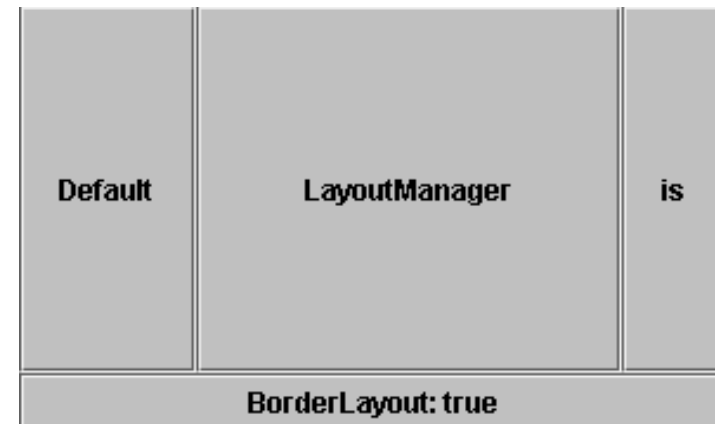
JToolTip: TooltipPanel.java

- (tooltip)

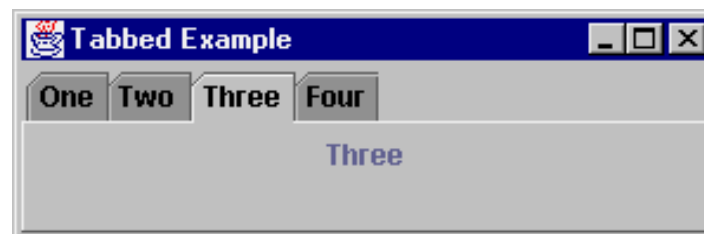- JComponent setToolTipText()
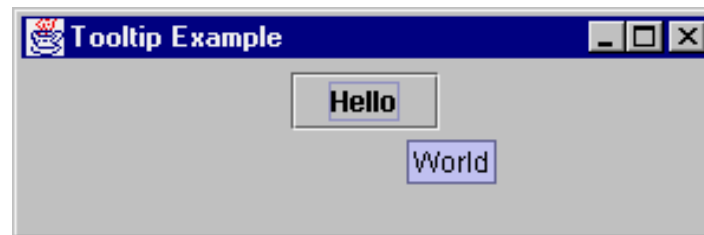
JToolBar: ToolbarPanel.java

-
-
- (default)

- //
- aToolBar.setFloatable (false);

JTabbedPane: TabbedPanePanel.java

-
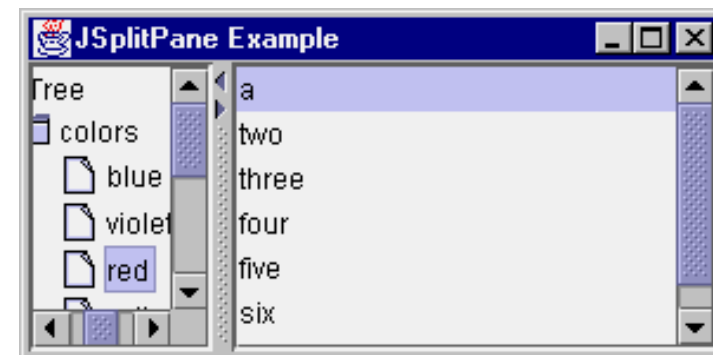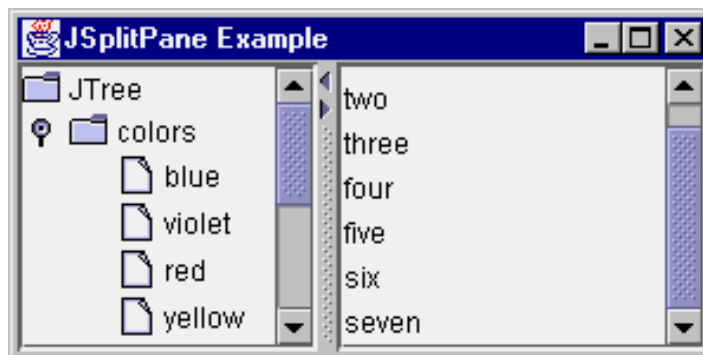
- addTab()

  – addTab(String title, Component component)

    - .

  – addTab(String title, Icon icon, Component component)

    - addTab()   .

  – addTab(String title, Icon icon, Component component, String tip)

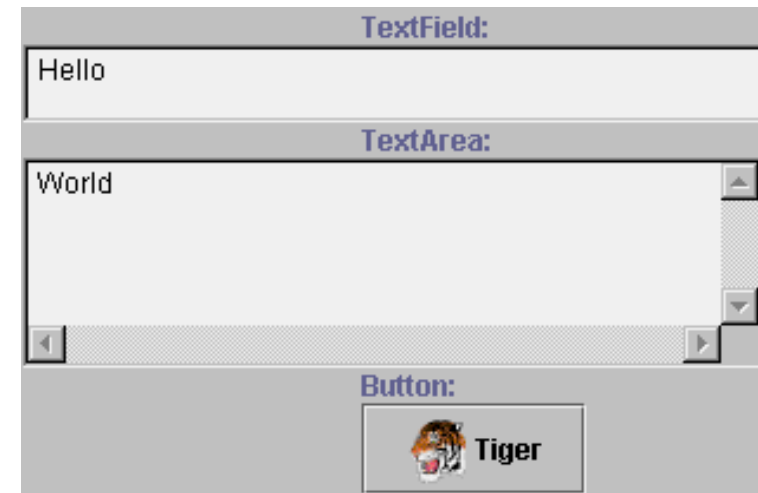   - addTab()   .

JSpiltPane: SpiltPanel.java

-
- JSplitPane   JSplitPane
-
  - setContinuousLayout :

  - dividerLocation :
  - oneTouchExpandable :

-         JTree   JList   JSplitPane   .

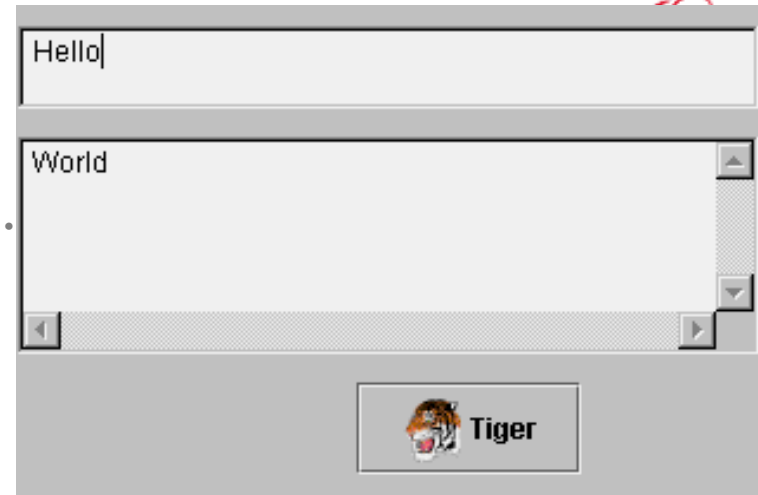# BoxLayout: BoxLayoutTest.java

- X   Y

- , Y   BoxLayout

-

-

-

- setLayout(new BoxLayout(this, BoxLayout.Y_AXIS));
  -

- add(myComponent);

TextField:
Hello

TextArea:
World

Button:
Tiger

Box: BoxTest.java

- BoxLayout

-

createVerticalStrut(int)	
createHorizontalStrut(int)	
createVerticalGlue()	
createHorizontalGlue()	
createGlue()	Y X
createRigidArea(Dimension)	

ScrollPaneLayout

- ScrollPaneLayout   JScrollPane

- JScrollPane   9   .
    - Jviewport:
    - JScrollBar   :
    - JViewport   :
    - Component   :

- JScrollPane
- LOWER_LEFT_CORNER, LOWER_RIGHT_CORNER,
- UPPER_LEFT_CORNER, UPPER_RIGHT_CORNER

- JViewport

ViewportLayout

- ViewportLayout   JViewport

  JViewPort   JViewPort
      (property)   .

Memo