

Fourth AP Edition

Java Methods

Object-Oriented Programming
and
Data Structures

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Appendix C: GUI Examples Index

For the complete list of constructors and methods refer to the Swing API documentation.

[JButton](#)

[JCheckBox](#)

[JColorChooser](#)

[JComboBox](#)

[JFileChooser](#)

[JFrame](#)

[JLabel](#)

[JMenuBar, JMenu, JMenuItem, etc.](#)

[JPanel](#)

[JPasswordField](#)

[JRadioButton](#)

[JSlider](#)

[JTextArea, JScrollPane](#)

[JTextField](#)

[JToggleButton](#)

JButton

Constructors:

```
JButton(String text);  
JButton(Icon picture);  
JButton(String text, Icon picture);
```

Methods:

```
void addActionListener(ActionListener object)  
void setText(String text);  
void setActionCommand(String cmd);  
void setIcon(Icon icon);  
void setEnabled(true/false);
```

Events:

```
... class ... implements ActionListener  
{  
    public void actionPerformed(ActionEvent e)  
    {  
        JButton b = (JButton)e.getSource();  
        String s = e.getActionCommand();  
        ...  
    }  
}
```

Examples:

```
JM\Ch04\BalloonDraw\ControlPanel.java  
JM\Ch05\Exercises\Bmi.java  
JM\Ch05\Poll\PollControlPanel.java  
JM\Ch08\Lipogrammer\Lipogrammer.java  
JM\Ch09\Fortunes\FortuneTeller.java  
JM\Ch10\SnackBar\VendingMachine.java  
JM\Ch14\Benchmarks\Benchmarks.java  
JM\Ch17\Ramblecs\ControlPanel.java  
JM\Ch18\SlideShow\ControlPanel.java  
JM\Ch20\Cryptogram\Cryptogram.java  
JM\Ch20\Giggle\Giggle.java
```

JCheckBox

Constructors:

```
JCheckBox(String text, boolean checked);
JCheckBox(Icon icon, boolean checked);
JCheckBox(String text, Icon icon, boolean checked);
```

Methods:

```
void addActionListener(ActionListener object)
void addItemListener(ItemListener object)
boolean isSelected()
void setSelected(boolean checked)
void setText(String text);
void setIcon(Icon icon);
```

Events:

```
... class ... implements ActionListener
{
    public void actionPerformed(ActionEvent e)
    {
        JCheckBox b = (JCheckBox)e.getSource();
        if (b == checkBox1 && b.isSelected())
            ...
    }
}
```

Examples:

```
JM\Ch16\Exercises\Boxes.java
JM\Ch17\Ramblecs\RamblecsMenu.java
```

JColorChooser

Constructors:

```
JColorChooser();  
JColorChooser(Color initialColor);
```

Methods:

```
static Color showDialog(Component c, String title, Color initialColor);
```

Examples:

```
Color pickedColor = JColorChooser.showDialog(this,  
                                             "pick a color", currentColor);  
JM\Ch04\BalloonDraw\DrawingPanel.java
```

JComboBox

Constructors:

```
JComboBox(Object items[]);  
// For example:  
//   String[] items = {"One", "Two", "Three"};  
//   JComboBox cb = new JComboBox(items);  
)
```

Methods:

```
void addItemListener(ItemListener object);  
void addActionListener(ActionListener object);  
int getSelectedIndex();  
Object getSelectedItem();  
// For example, String s = (String)cb.getSelectedItem();  
void setSelectedIndex(int itemNum);  
void setSelectedItem(String text);  
// finds the item that matches text and  
// makes it selected item
```

Events:

```
... class ... implements ItemListener  
{  
    public void itemStateChanged(ItemEvent e)  
    {  
        JComboBox cb = (JComboBox)e.getSource();  
        int index = cb.getSelectedIndex();  
        String item = (String)cb.getSelectedItem();  
        ...  
    }  
}  
  
... class ... implements ActionListener  
{  
    public void actionPerformed(ActionEvent e)  
    {  
        ...  
    }  
}
```

Examples:

```
JM\Ch14\Benchmarks\Benchmarks.java  
JM\Ch16\Exercises\Boxes.java  
JM\Ch18\SlideShow\ControlPanel.java
```

JFileChooser

Constructors:

```
JFileChooser (pathname);
```

Methods:

```
void setFileSelectionMode (JFileChooser.FILES_ONLY);  
void showOpenDialog (this);  
File getSelectedFile ();
```

Examples:

```
JM\Ch08\Lipogrammer\LipogrammerMenu.java  
JM\Ch20\Cryptogram\CryptogramMenu.java  
JM\Ch20\Giggle\Giggle.java
```

JFrame

Constructors:

```
JFrame();  
JFrame(String title);
```

Methods:

```
void setSize(int width, int height);  
void setBounds(int left, int top, int width, int height);  
void setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
void setResizable(true/false);  
void setVisible(true/false);  
Container getContentPane();
```

Examples:

```
JM\Ch02\HelloGui\HelloGraphics.java  
JM\Ch02\HelloGui\HelloGui.java  
JM\Ch03\Syntax\MovingDisk.java  
JM\Ch04\BalloonDraw\BalloonDraw.java  
JM\Ch04\Exercises\CoinTest.java  
JM\Ch05\Poll\Poll.java  
JM\Ch06\Craps\Craps.java, CrapsStats.java, CrapsTest1.java  
JM\Ch08\Lipogrammer\Lipogrammer.java  
JM\Ch09\Chomp\Chomp.java  
JM\Ch10\SnackBar\SnackBar.java  
JM\Ch12\happyBirthday\HappyBirthday.java  
JM\Ch14\Benchmarks\Benchmarks.java  
JM\Ch16\Puzzle\Puzzle.java  
JM\Ch17\Ramblecs\Ramblecs.java  
JM\Ch18\SlideShow\SlideShow.java  
JM\Ch20\Cryptogram\Cryptogram.java  
JM\Ch20\Giggle\Giggle.java
```

JLabel

Constructors:

```
JLabel(String text);  
JLabel(Icon icon);  
JLabel(String text, Icon icon, JLabel.LEFT);  
    // or CENTER, RIGHT, LEADING, TRAILING.
```

Methods:

```
void setText(String text);  
void setIcon(Icon icon);
```

Events: None

Examples:

```
JM\Ch06\Craps\CrapsStats.java, CrapsTest1.java  
JM\Ch10\SnackBar\SnackBar.java  
JM\Ch14\Benchmarks\Benchmarks.java  
JM\Ch17\Ramblecs\ControlPanel.java  
JM\Ch20\Cryptogram\Cryptogram.java  
JM\Ch20\Giggle\Giggle.java
```

JMenuBar, JMenu, JMenuItem, etc.

Constructors:

```
JMenuBar();

JMenu(String text);
JMenuItem(String text);
JMenuItem(Icon icon);
JMenuItem(String text, Icon icon);
JMenuItem(String text, int kbMnemonic);

JCheckBoxMenuItem(String text);
JCheckBoxMenuItem(Icon icon);
JCheckBoxMenuItem(String text, Icon icon);
JCheckBoxMenuItem(String text, boolean checked);
JCheckBoxMenuItem(String text, Icon icon, boolean checked);

JRadioButtonMenuItem(String text);
JRadioButtonMenuItem(Icon icon);
JRadioButtonMenuItem(String text, Icon icon);
JRadioButtonMenuItem(String text, boolean selected);
JRadioButtonMenuItem(Icon icon, boolean selected);
JRadioButtonMenuItem(String text, Icon icon, boolean selected);
```

Methods:

```
void add(JMenu);
void addSeparator();
void addActionListener(ActionListener object)
void setText(String text);
void setActionCommand(String cmd);
void setIcon(Icon icon);
void setEnabled(true/false);
```

Examples:

```
JM\Ch08\Lipogrammer\Lipogrammer.java, LipogrammerMenu.java
JM\Ch17\Ramblecs\Ramblecs.java, RamblecsMenu.java
JM\Ch20\Cryptogram\Cryptogram.java, CryptogramMenu.java
JM\Ch20\Giggle\Giggle.java
```

JPanel

Constructors:

```
JPanel();
```

Methods:

```
void addMouseListener(ActionListener object)
void add(JComponent component);
void paintComponent(Graphics g);
```

Events:

```
... class ... implements MouseListener
{
    public void mousePressed(MouseEvent e)
    {
        int x = e.getX();
        int y = e.getY();
        ...
    }
}
```

Examples:

```
JM\Ch02\HelloGui\HelloGraphics.java
JM\Ch03\Syntax\MovingDisk.java
JM\Ch04\BalloonDraw\ControlPanel.java, DrawingPanel.java
JM\Ch04\Exercises\CoinTest.java
JM\Ch05\Poll\PollControlPanel.java, PollDisplayPanel.java
JM\Ch06\Craps\Craps.java
JM\Ch10\SnackBar\SnackBar.java, VendingMachine.java
JM\Ch12\happyBirthday\HappyBirthday.java
JM\Ch16\Puzzle\Puzzle.java, PuzzleCell.java
JM\Ch17\Ramblecs\ControlPanel.java
JM\Ch18\SlideShow\ControlPanel.java, ImagePanel.java
JM\Ch20\Cryptogram\Cryptogram.java
JM\Ch20\Giggle\Giggle.java
```

JPasswordField

extends JTextField

Constructors:

```
JPasswordField(String text);
JPasswordField(int cols);
JPasswordField(String text, int cols);
```

Methods:

```
void addActionListener(ActionListener object)
void setText(String text);
void setBackground(Color c);
void setForeground(Color c);
void setFont(Font font);
void requestFocus();
char[] getPassword();
void selectAll();
```

Events:

```
... class ... implements ActionListener
{
    public void actionPerformed(ActionEvent e)
    {
        // When the user strikes <Enter>:
        JPasswordField pf = (JPasswordField)e.getSource();
        String s = new String(pf.getPassword());
        ...
    }
}
```

Examples:

```
JM\Ch10\SnackBar\SnackBar.java
```

JRadioButton

Constructors:

```
JRadioButton(String text); // default: unselected
JRadioButton(String text, boolean selected);
JRadioButton(Icon icon);
JRadioButton(Icon icon, boolean selected);
JRadioButton(String text, Icon icon, boolean selected);
```

Methods:

```
void addActionListener(ActionListener object)
boolean isSelected()
void setSelected(boolean selected)
void setText(String text);
void setIcon(Icon icon);
```

```
...
ButtonGroup gr = new ButtonGroup();
gr.add(radioButton1);
gr.add(radioButton2);
...
```

Events:

```
... class ... implements ActionListener
{
    public void actionPerformed(ActionEvent e)
    {
        JRadioButton b = (JRadioButton)e.getSource();
        if (b == radioButton1 && b.isSelected())
            ...
    }
}
```

Examples:

```
JM\Ch06\Exercises\Rps.java
```

JSlider

Imports (Not in java.awt.event.*)

```
import javax.swing.event.ChangeListener;
import javax.swing.event.ChangeEvent;
```

Constructors:

```
JSlider(JSlider.VERTICAL, int min, int max, int current);
    // or HORIZONTAL
```

Methods:

```
void addChangeListener(ChangeListener object);
void setInverted(true/false);
void setMajorTickSpacing(int n); // in "slider" units
void setMinorTickSpacing(int n);
void setPaintLabels(true/false);
void setPaintTicks(true/false);
int getValue();
void setValue(int x); // calls listener's stateChanged
```

Events:

```
... class ... implements ChangeListener
{
    public void stateChanged(ChangeEvent e)
    {
        JSlider slider = (JSlider)e.getSource();
        int x = slider.getValue();
        ...
    }
}
```

Examples:

```
JM\Ch17\Ramblecs\ControlPanel.java
```

JTextArea

Constructors:

```
JTextArea(String text);  
JTextArea(int rows, int cols);  
JTextArea(String text, int rows, int cols);
```

Methods:

```
void setEditable(true/false);  
int getCaretPosition();  
void append(String text);  
void insert(String text, int pos);  
void setText(String text);  
void setBackground(Color c);  
void setForeground(Color c);  
void setFont(Font font);  
void requestFocus();  
String getText();  
void selectAll();  
void setCaretPosition(int pos);  
void moveCaretPosition(int pos);
```

Examples:

```
JM\Ch06\Craps\CrapsTest1.java  
JM\Ch08\Lipogrammer\Lipogrammer.java  
JM\Ch22\Actors\ThreeKittens.java  
JM\Ch24\MorseCode\Telegraph.java  
JM\Ch20\Cryptogram\Cryptogram.java  
JM\Ch20\Giggle\Giggle.java  
JM\Ch20\Exercises\Giggle.java
```

Examples with JScrollPane:

```
JM\Ch06\Craps\CrapsTest1.java  
JM\Ch08\Lipogrammer\Lipogrammer.java  
JM\Ch20\Cryptogram\Cryptogram.java  
JM\Ch20\Giggle\Giggle.java  
JM\Ch20\Exercises\Giggle.java
```

JTextField

Constructors:

```
JTextField(String text);
JTextField(int cols);
JTextField(String text, int cols);
```

Methods:

```
void addActionListener(ActionListener object)
void setEditable(true/false);
void setText(String text);
void setBackground(Color c);
void setForeground(Color c);
void setFont(Font font);
void requestFocus();
String getText();
void selectAll();
void setCaretPosition(int pos);
void moveCaretPosition(int pos);
```

Events:

```
... class ... implements ActionListener
{
    public void actionPerformed(ActionEvent e)
    {
        // <Enter> is pressed:
        JTextField tf = (JTextField)e.getSource();
        String s = tf.getText();
    }
}
```

Examples:

```
JM\Ch06\Craps\CrapsStats.java, CrapsTest1.java
JM\Ch08\Exercises\StringTest.java
JM\Ch09\Fortunes\FortuneTeller.java
JM\Ch09\Chomp\Chomp.java
JM\Ch10\SnackBar\VendingMachine.java
JM\Ch14\Benchmarks\Benchmarks.java
JM\Ch20\Cryptogram\Cryptogram.java
JM\Ch20\Giggle\Giggle.java
```

JToggleButton

Constructors:

```
JToggleButton(String text, boolean selected);
JToggleButton(Icon icon, boolean selected);
JToggleButton(String text, Icon icon, boolean selected);
```

Methods:

```
void addActionListener(ActionListener object)
boolean isSelected()
void setSelected(boolean selected)
void setText(String text);
void setIcon(Icon icon);
```

Events:

```
class ... implements ActionListener
{
    public void actionPerformed(ActionEvent e)
    {
        JToggleButton tb = (JToggleButton)e.getSource();
        if (tb.isSelected())
            ...
    }
}
```