

# *Java*

# *Methods*

*A & AB*

Object-Oriented Programming  
and  
Data Structures

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## Appendix D: GUI Examples Index

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

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- [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:*

```
Ch06\Poll\PollControlPanel.java
Ch09\SnackBar\VendingMachine.java
Ch12\Fortunes\FortuneTeller.java
Ch16\Ramblecs\ControlPanel.java
Ch21\Browser\BrowserControlPanel.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:*

```
Ch15\Exercises\Boxes.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:

```
Ch13\Benchmarks\Benchmarks.java  
Ch23\Messenger\MsgWindow.java
```

## **JFileChooser**

### *Constructors:*

```
JFileChooser(pathname);
```

### *Methods:*

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

### *Examples:*

```
Ch10\Lipogrammer\LipogrammerMenu.java  
Ch24\Cryptogram\CryptogramMenu.java  
Ch24\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:*

```
Ch02\HelloGui\HelloGui.java  
Ch02\HelloGui\HelloGraphics.java  
Ch06\Poll\Poll.java  
Ch07\Craps\Craps.java  
Ch12\Chomp\Chomp.java  
Ch11\DanceStudio\DanceLesson.java  
Ch15\Puzzle\Puzzle.java  
Ch19\SafeTrade\SafeTrade.java  
Ch23\MorseCode\Telegraph.java  
Ch23\Messenger\Messenger.java  
Ch23\Messenger\MsgWindow.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:*

```
Ch06\Exercises\Bmi.java  
Ch07\Craps\CrapsStats.java  
Ch09\Exercises\Temperature.java  
Ch09\SnackBar\SnackBar.java  
Ch13\Benchmarks\Benchmarks.java  
Ch24\Cryptogram\Cryptogram.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:*

```
Ch10\Lipogrammer\Lipogrammer.java
Ch16\Ramblecs\RamblecsMenu.java
Ch24\Cryptogram\CryptogramMenu.java
Ch24\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:*

```
Ch02\HelloGui\HelloGraphics.java
Ch06\Poll\PollControlPanel.java
Ch09\SnackBar\VendingMachine.java
Ch12\Chomp\BoardPanel.java
Ch15\Puzzle\Puzzle.java
Ch15\Puzzle\PuzzleCell.java
Ch20\Teletext\TeletextDisplay.java
Ch21\Browser\BrowserView.java
Ch24\Cryptogram\Cryptogram.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:*

```
Ch09\SnackBar\SnackBar.java  
Ch19\SafeTrade\LoginWindow.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:*

```
Ch07\Exercises\Rps.java
Ch19\SafeTrade\TraderWindow.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:*

See Section 16.6.

## 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:*

```
Ch23\MorseCode\Telegraph.java
```

### *Examples with JScrollPane:*

```
Ch07\Craps\CrapsTest1
Ch10\Lipogrammer\Lipogrammer.java
Ch19\SafeTrade\TraderWindow.java
Ch21\Actors\ActorsWorld.java
Ch24\Cryptogram\Cryptogram.java
Ch25\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:

```
Ch02\HelloGui\HelloGui.java
Ch06\Exercises\Bmi.java
Ch07\Craps\CrapsTest1.java
Ch07\Craps\CrapsStats.java
Ch07\Exercises\Wages.java
Ch09\Exercises\Temperature.java
Ch10\Exercises\StringTest.java
Ch12\Fortunes\FortuneTeller.java
Ch13\Benchmarks\Benchmarks.java
Ch20\Teletext\TeletextInput.java
Ch23\MorseCode\Telegraph.java
Ch24\Cryptogram\Cryptogram.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())  
            ...  
    }  
}
```