

Graphical User Interface using Swing

Part VI - Menus and ToolBars

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<http://docs.oracle.com/javase/tutorial/uiswing/>
<http://www.macs.hw.ac.uk/guidebook>

Menus in Swing - JMenuBar

```
public class MenuBarExample extends JFrame implements ... {
```

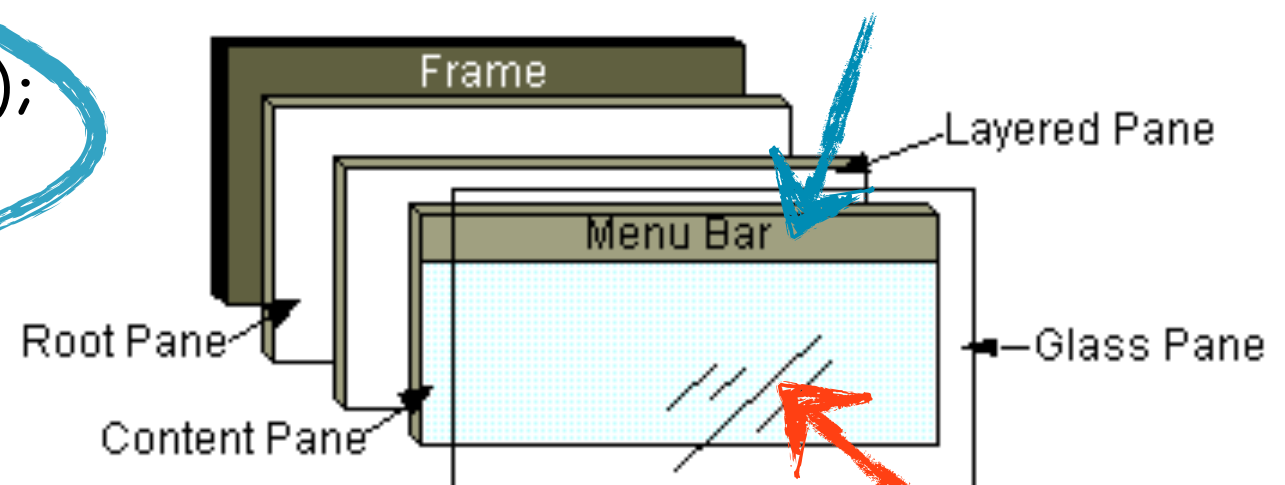
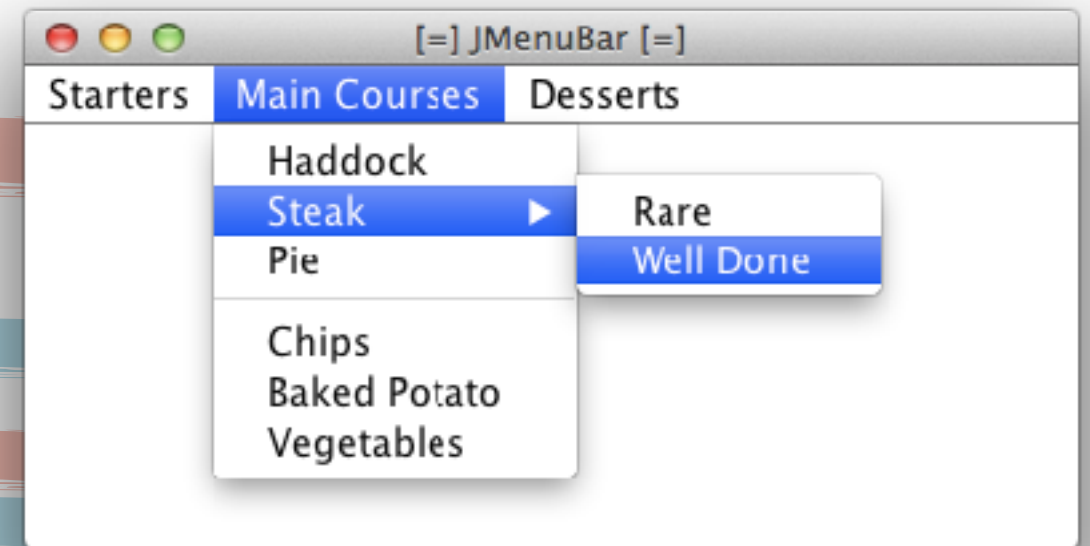
```
...  
private void initGUI() {  
    JPanel mainPanel = new JPanel();  
    mainPanel.setBackground(Color.white);  
    ...
```

```
    JMenuBar menu = createMenuBar();
```

```
    this.setContentPane(mainPanel);  
    this.setJMenuBar(menu);
```

```
    this.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);  
    this.pack();  
    this.setVisible(true);  
}
```

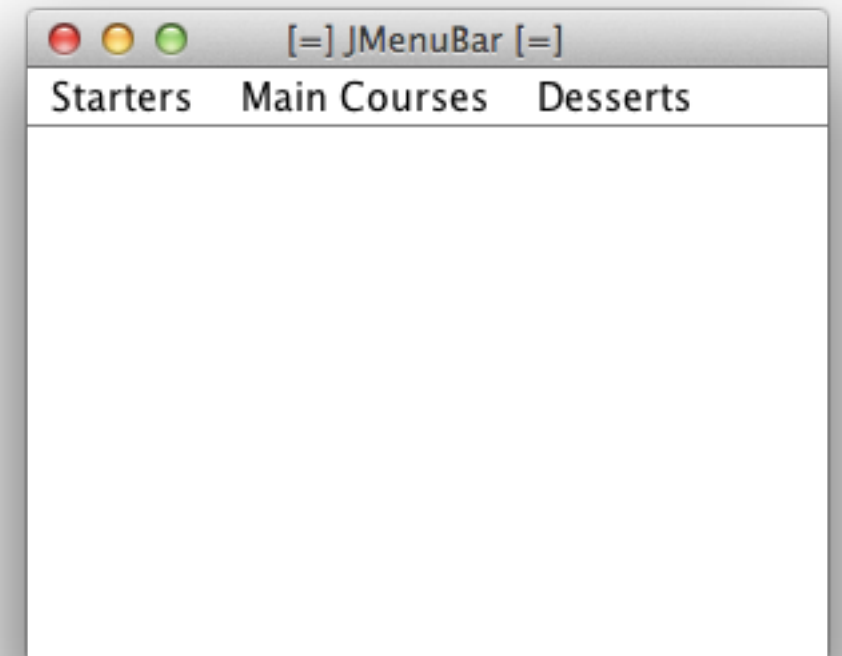
```
public JMenuBar createMenuBar() {  
    JMenuBar menuBar = new JMenuBar();  
    // add item to the menu  
    ...  
    return menuBar;  
}
```



see: [examples.swing.misc.MenuBarExample](#)

Menus in Swing - JMenuBar

```
public JMenuBar createMenuBar() {  
  
    JMenuBar menuBar = new JMenuBar();  
  
    JMenu starter = new JMenu("Starters");  
    JMenu maincourse = new JMenu("Main Courses");  
    JMenu desserts = new JMenu("Desserts");  
  
    menuBar.add(starter);  
    menuBar.add(maincourse);  
    menuBar.add(desserts);  
  
    // starters code  
    ...  
    // maincourse code  
    ...  
    // dessert code  
    ...  
  
    return JMenuBar;  
}
```



see: [examples.swing.misc.MenuBarExample](#)

Menus in Swing - JMenuBar

```
public JMenuBar createMenuBar() {
```

```
    JMenuBar menuBar = new JMenuBar();
```

```
    JMenu starter = new JMenu("Starters");
```

```
    JMenu maincourse = new JMenu("Main Courses");
```

```
    JMenu desserts = new JMenu("Desserts");
```

```
    menuBar.add(starter);
```

```
    menuBar.add(maincourse);
```

```
    menuBar.add(desserts);
```

```
    // starters code
```

```
    ...
```

```
    // maincourse code
```

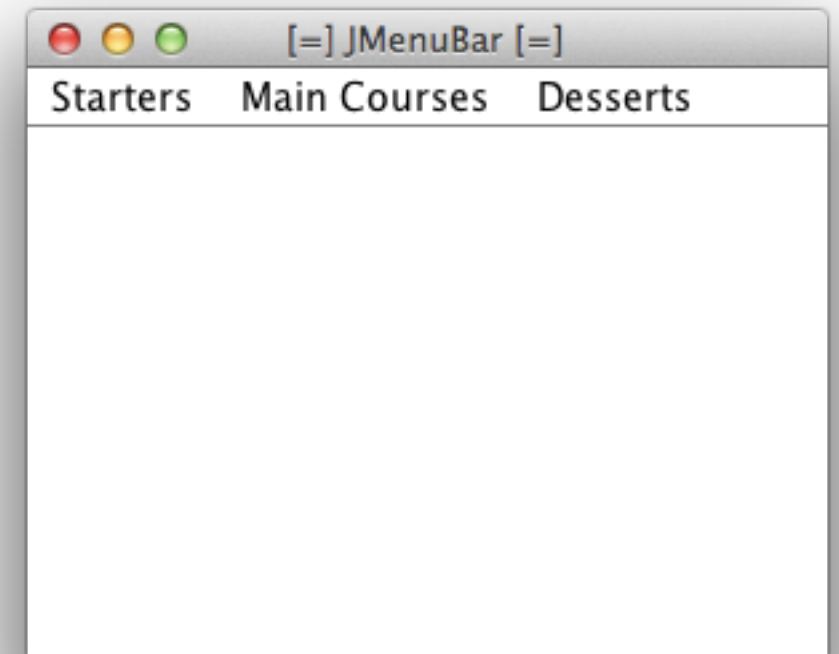
```
    ...
```

```
    // dessert code
```

```
    ...
```

```
    return JMenuBar;
```

```
}
```



see: [examples.swing.misc.MenuBarExample](#)

Menus in Swing - JMenuBar

```
public JMenuBar createMenuBar() {
```

```
    JMenuBar menuBar = new JMenuBar();
```

```
    JMenu starter = new JMenu("Starters");
```

```
    JMenu maincourse = new JMenu("Main Courses");
```

```
    JMenu desserts = new JMenu("Desserts");
```

```
    menuBar.add(starter);  
    menuBar.add(maincourse);  
    menuBar.add(desserts);
```

```
    // starters code
```

```
    ...
```

```
    // maincourse code
```

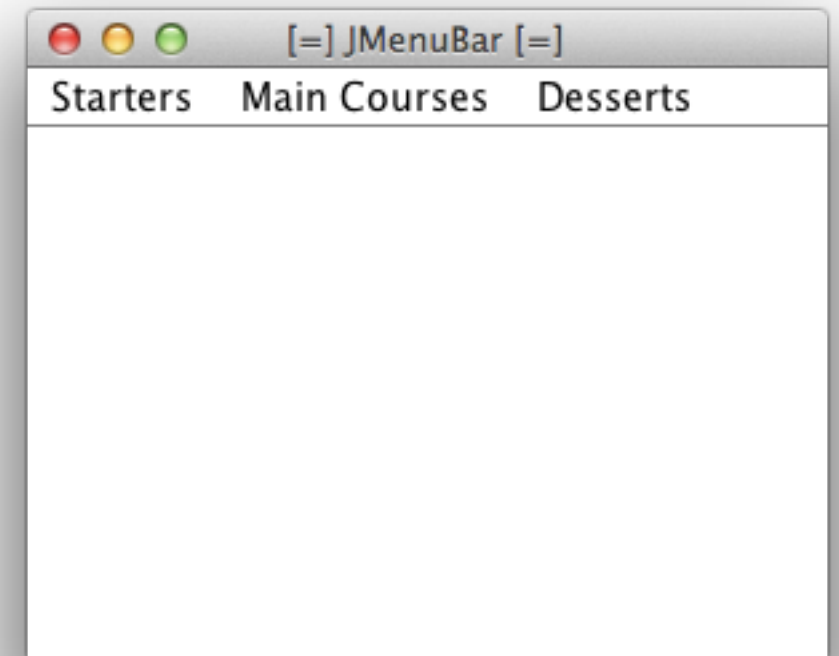
```
    ...
```

```
    // dessert code
```

```
    ...
```

```
    return JMenuBar;
```

```
}
```



see: [examples.swing.misc.MenuBarExample](#)

Menus in Swing - JMenuBar

// starters code

```
JMenuItem soup = new JMenuItem("Soup");  
JMenuItem pate = new JMenuItem("Pate");  
JMenuItem salad = new JMenuItem("Salad");
```

```
starter.add(soup);  
starter.add(pate);  
starter.add(salad);
```

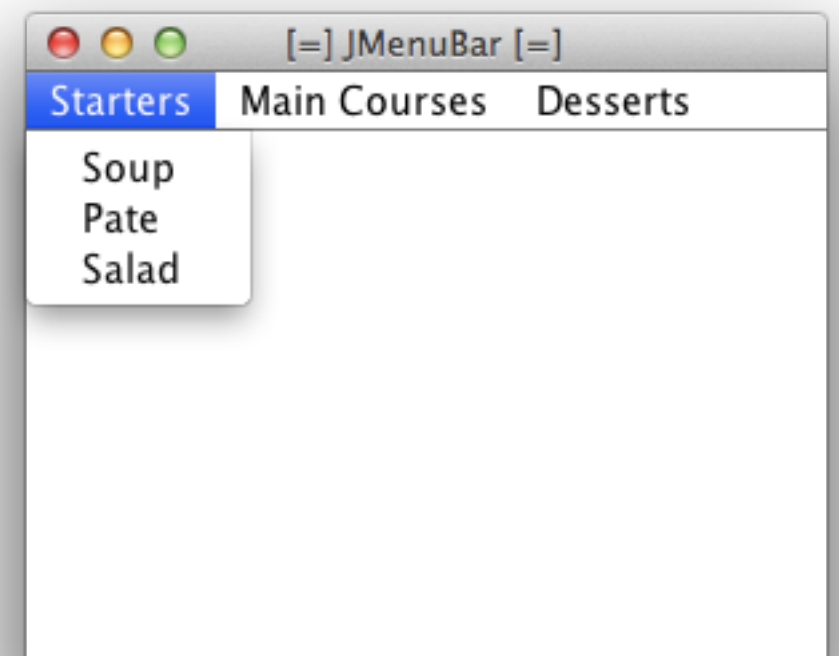


Menus in Swing - JMenuItem

// starters code

```
JMenuItem soup = new JMenuItem("Soup");  
JMenuItem pate = new JMenuItem("Pate");  
JMenuItem salad = new JMenuItem("Salad");
```

```
starter.add(soup);  
starter.add(pate);  
starter.add(salad);
```



Menus in Swing - JMenuItem

// starters code

```
JMenuItem soup = new JMenuItem("Soup");  
JMenuItem pate = new JMenuItem("Pate");  
JMenuItem salad = new JMenuItem("Salad");
```

```
starter.add(soup);  
starter.add(pate);  
starter.add(salad);
```



Menus - JRadioButtonMenuItem

// maincourse code

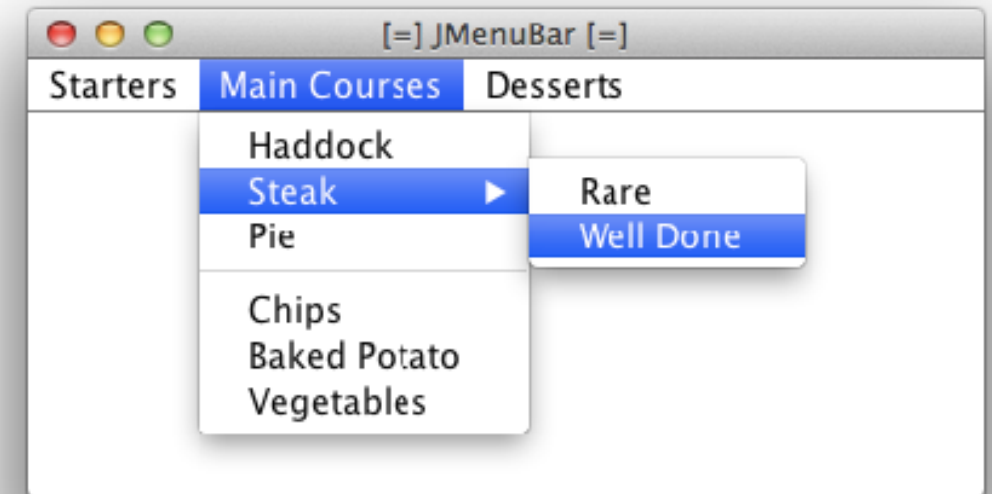
```
JMenuItem fish = new JMenuItem("Haddock");  
maincourse.add(fish);
```

```
JMenu steak = new JMenu("Steak");  
JMenuItem rare = new JMenuItem("Rare");  
JMenuItem welldone = new JMenuItem("Well Done");  
steak.add(rare);  
steak.add(welldone);  
maincourse.add(steak);
```

```
JMenuItem pie = new JMenuItem("Pie");  
maincourse.add(pie);
```

```
maincourse.addSeparator();
```

```
JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
JRadioButtonMenuItem vege = new JRadioButtonMenuItem("Vegetables");  
ButtonGroup sides = new ButtonGroup();  
sides.add(chips);  
sides.add(bp);  
sides.add(vege);  
maincourse.add(chips);  
maincourse.add(bp);  
maincourse.add(vege);
```



see: [examples.swing.misc.MenuBarExample](#)

Menus - JRadioButtonMenuItem

// maincourse code

```
JMenuItem fish = new JMenuItem("Haddock");  
maincourse.add(fish);
```

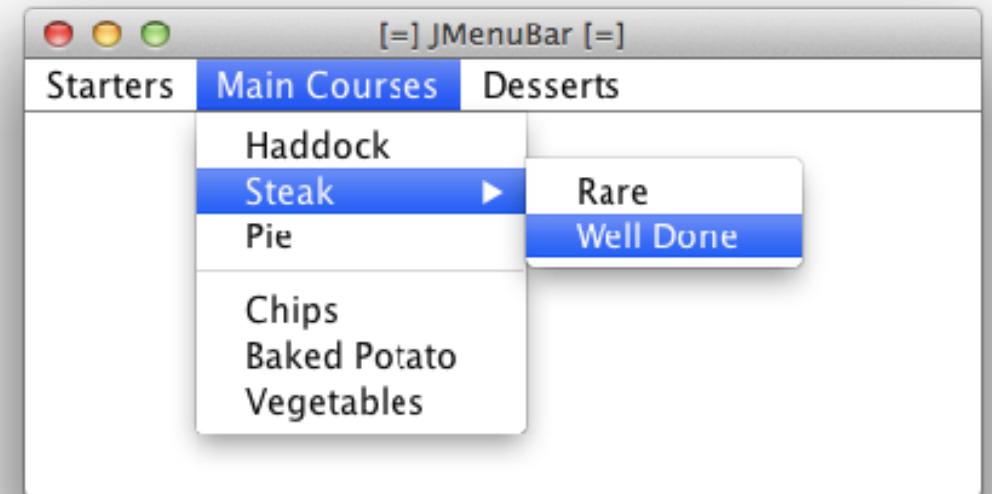
```
JMenu steak = new JMenu("Steak");  
JMenuItem rare = new JMenuItem("Rare");  
JMenuItem welldone = new JMenuItem("Well Done");  
steak.add(rare);  
steak.add(welldone);  
maincourse.add(steak);
```

```
JMenuItem pie = new JMenuItem("Pie");  
maincourse.add(pie);
```

```
maincourse.addSeparator();
```

```
JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
JRadioButtonMenuItem vege = new JRadioButtonMenuItem("Vegetables");  
ButtonGroup sides = new ButtonGroup();  
sides.add(chips);  
sides.add(bp);  
sides.add(vege);  
maincourse.add(chips);  
maincourse.add(bp);  
maincourse.add(vege);
```

see: [examples.swing.misc.MenuBarExample](#)



Menus - JRadioButtonMenuItem

// maincourse code

```
JMenuItem fish = new JMenuItem("Haddock");  
maincourse.add(fish);
```

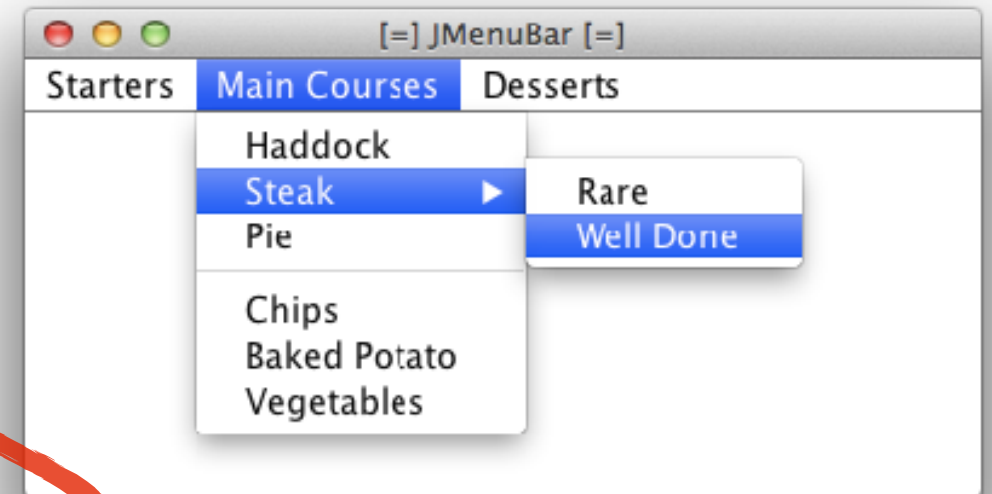
```
JMenu steak = new JMenu("Steak");  
JMenuItem rare = new JMenuItem("Rare");  
JMenuItem welldone = new JMenuItem("Well Done");  
steak.add(rare);  
steak.add(welldone);  
maincourse.add(steak);
```

```
JMenuItem pie = new JMenuItem("Pie");  
maincourse.add(pie);
```

```
maincourse.addSeparator();
```

```
JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
JRadioButtonMenuItem vege = new JRadioButtonMenuItem("Vegetables");  
ButtonGroup sides = new ButtonGroup();  
sides.add(chips);  
sides.add(bp);  
sides.add(vege);  
maincourse.add(chips);  
maincourse.add(bp);  
maincourse.add(vege);
```

see: [examples.swing.misc.MenuBarExample](#)



Menus - JRadioButtonMenuItem

// maincourse code

```
JMenuItem fish = new JMenuItem("Haddock");  
maincourse.add(fish);
```

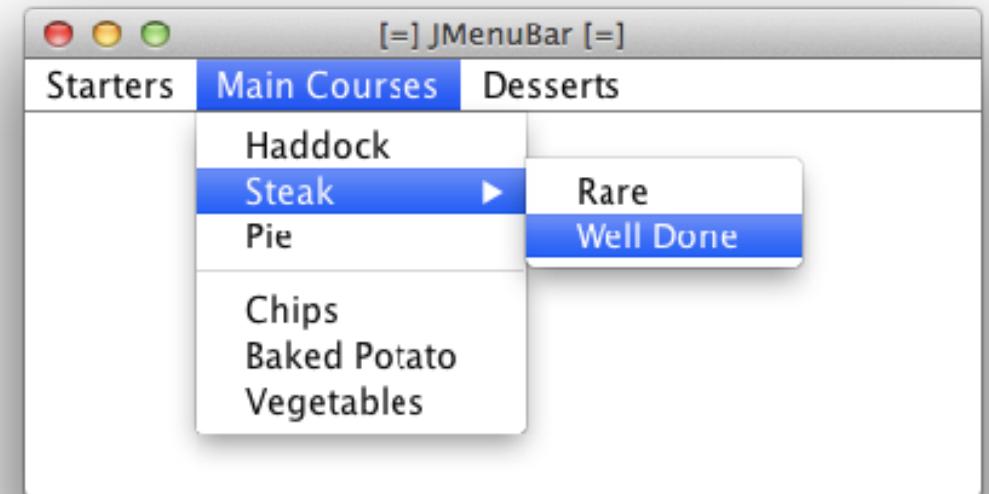
```
JMenu steak = new JMenu("Steak");  
JMenuItem rare = new JMenuItem("Rare");  
JMenuItem welldone = new JMenuItem("Well Done");  
steak.add(rare);  
steak.add(welldone);  
maincourse.add(steak);
```

```
JMenuItem pie = new JMenuItem("Pie");  
maincourse.add(pie);
```

```
maincourse.addSeparator();
```

```
JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
JRadioButtonMenuItem vege = new JRadioButtonMenuItem("Vegetables");  
ButtonGroup sides = new ButtonGroup();  
sides.add(chips);  
sides.add(bp);  
sides.add(vege);  
maincourse.add(chips);  
maincourse.add(bp);  
maincourse.add(vege);
```

see: [examples.swing.misc.MenuBarExample](#)



Menus - JRadioButtonMenuItem

// maincourse code

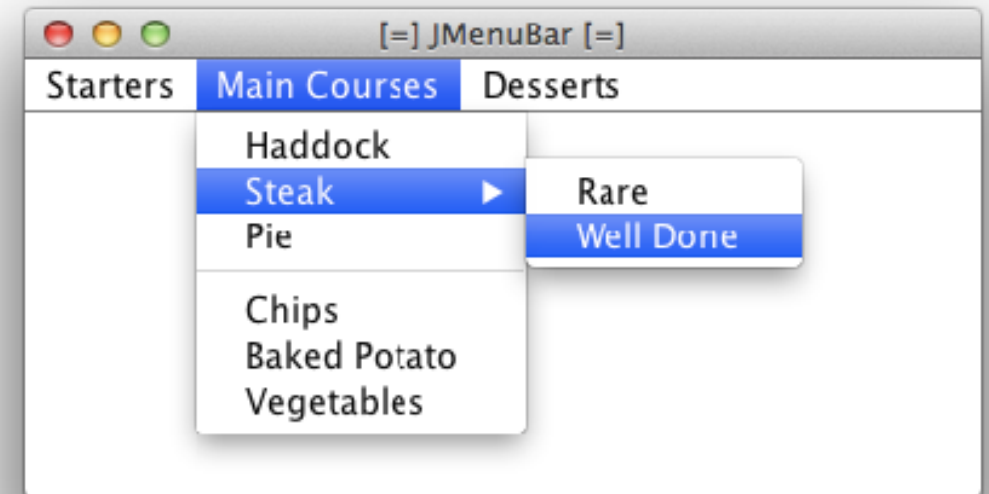
```
JMenuItem fish = new JMenuItem("Haddock");  
maincourse.add(fish);
```

```
JMenu steak = new JMenu("Steak");  
JMenuItem rare = new JMenuItem("Rare");  
JMenuItem welldone = new JMenuItem("Well Done");  
steak.add(rare);  
steak.add(welldone);  
maincourse.add(steak);
```

```
JMenuItem pie = new JMenuItem("Pie");  
maincourse.add(pie);
```

```
maincourse.addSeparator();
```

```
JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
JRadioButtonMenuItem vege = new JRadioButtonMenuItem("Vegetables");  
ButtonGroup sides = new ButtonGroup();  
sides.add(chips);  
sides.add(bp);  
sides.add(vege);  
maincourse.add(chips);  
maincourse.add(bp);  
maincourse.add(vege);
```



see: [examples.swing.misc.MenuBarExample](#)

Menus - JRadioButtonMenuItem

// maincourse code

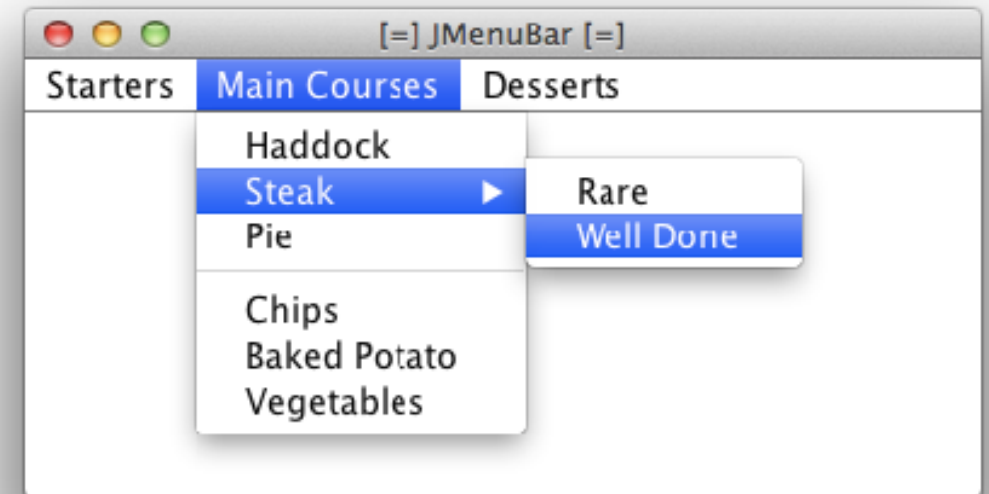
```
JMenuItem fish = new JMenuItem("Haddock");  
maincourse.add(fish);
```

```
JMenu steak = new JMenu("Steak");  
JMenuItem rare = new JMenuItem("Rare");  
JMenuItem welldone = new JMenuItem("Well Done");  
steak.add(rare);  
steak.add(welldone);  
maincourse.add(steak);
```

```
JMenuItem pie = new JMenuItem("Pie");  
maincourse.add(pie);
```

```
maincourse.addSeparator();
```

```
JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
JRadioButtonMenuItem vege = new JRadioButtonMenuItem("Vegetables");  
ButtonGroup sides = new ButtonGroup();  
sides.add(chips);  
sides.add(bp);  
sides.add(vege);  
maincourse.add(chips);  
maincourse.add(bp);  
maincourse.add(vege);
```



see: [examples.swing.misc.MenuBarExample](#)

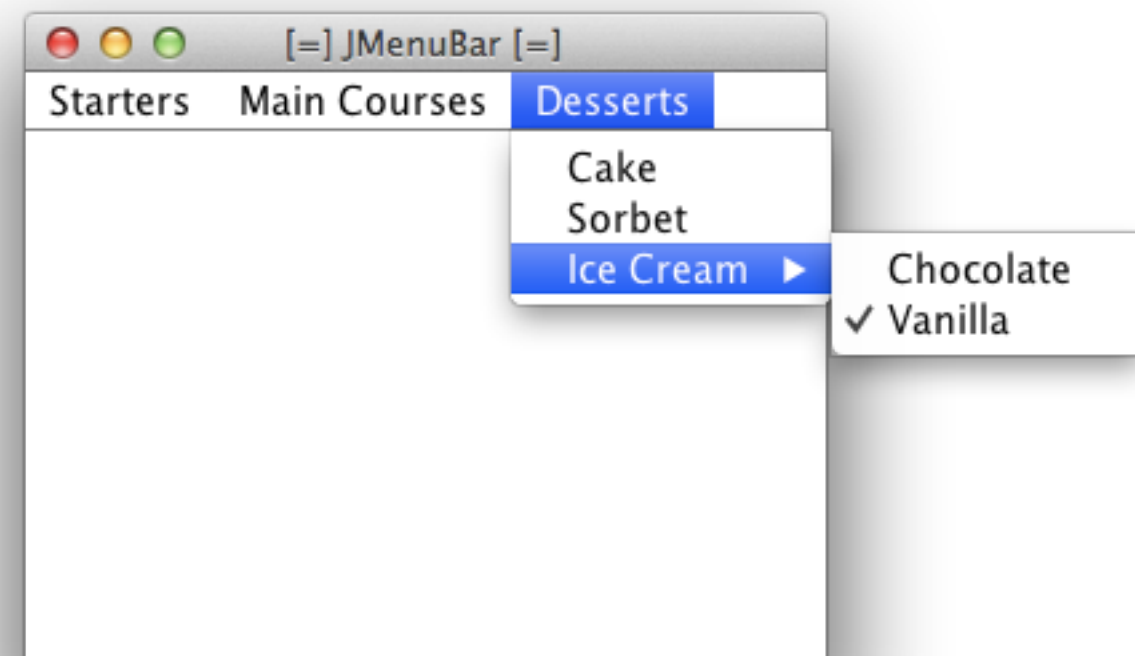
Menus - JCheckBoxMenuItem

// dessert code

```
JCheckBoxMenuItem cake = new JCheckBoxMenuItem("Cake");  
desserts.add(cake);
```

```
JCheckBoxMenuItem sorbet = new JCheckBoxMenuItem("Sorbet");  
desserts.add(sorbet);
```

```
JMenu icecream = new JMenu("Ice Cream");  
JCheckBoxMenuItem choc = new JCheckBoxMenuItem("Chocolate");  
JCheckBoxMenuItem vani = new JCheckBoxMenuItem("Vanilla");  
icecream.add(choc);  
icecream.add(vani);  
desserts.add(icecream);
```



see: [examples.swing.misc.MenuBarExample](#)

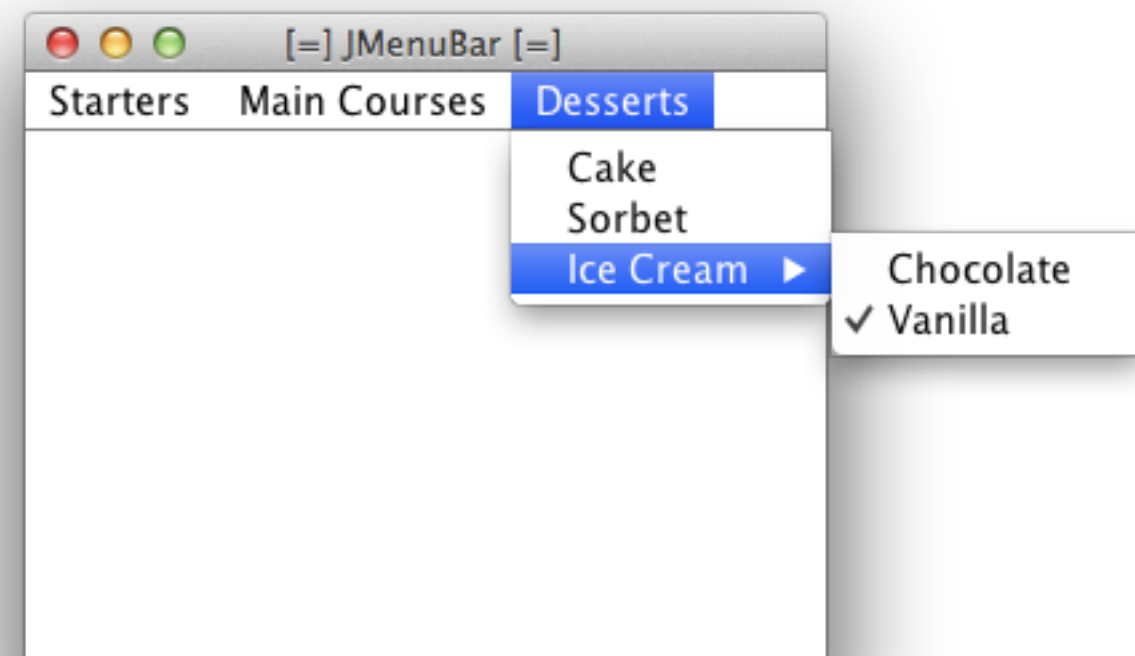
Menus - JCheckBoxMenuItem

// dessert code

```
JCheckBoxMenuItem cake = new JCheckBoxMenuItem("Cake");  
desserts.add(cake);
```

```
JCheckBoxMenuItem sorbet = new JCheckBoxMenuItem("Sorbet");  
desserts.add(sorbet);
```

```
JMenu icecream = new JMenu("Ice Cream");  
JCheckBoxMenuItem choc = new JCheckBoxMenuItem("Chocolate");  
JCheckBoxMenuItem vani = new JCheckBoxMenuItem("Vanilla");  
icecream.add(choc);  
icecream.add(vani);  
desserts.add(icecream);
```



see: [examples.swing.misc.MenuBarExample](#)

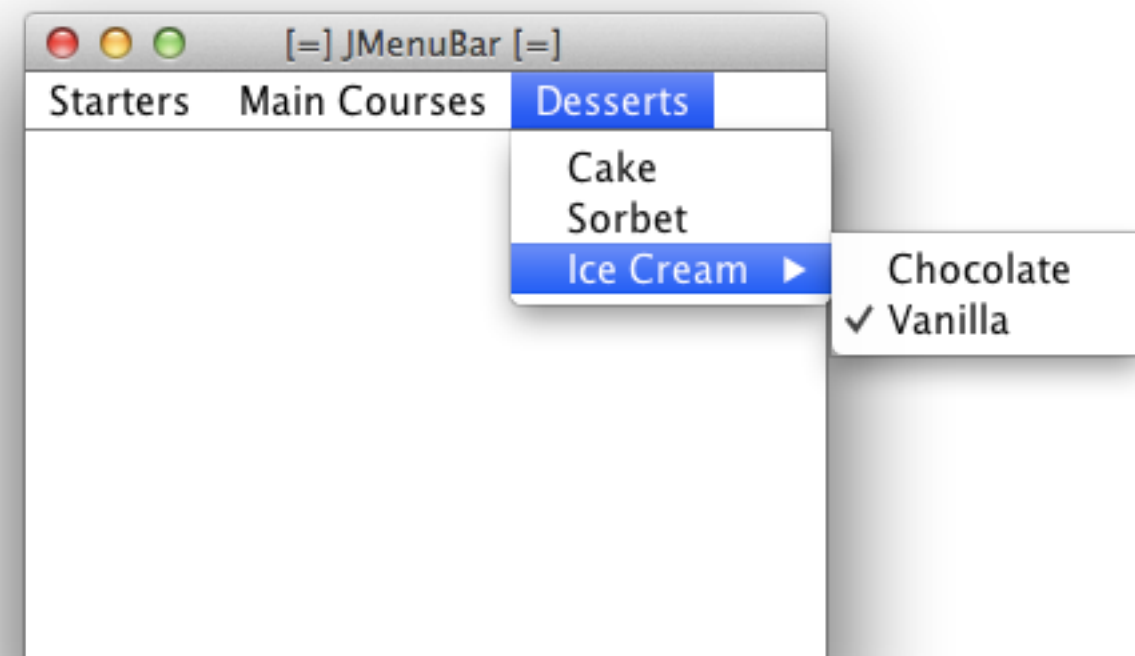
Menus - JCheckBoxMenuItem

// dessert code

```
JCheckBoxMenuItem cake = new JCheckBoxMenuItem("Cake");  
desserts.add(cake);
```

```
JCheckBoxMenuItem sorbet = new JCheckBoxMenuItem("Sorbet");  
desserts.add(sorbet);
```

```
JMenu icecream = new JMenu("Ice Cream");  
JCheckBoxMenuItem choc = new JCheckBoxMenuItem("Chocolate");  
JCheckBoxMenuItem vani = new JCheckBoxMenuItem("Vanilla");  
icecream.add(choc);  
icecream.add(vani);  
desserts.add(icecream);
```



see: [examples.swing.misc.MenuBarExample](#)

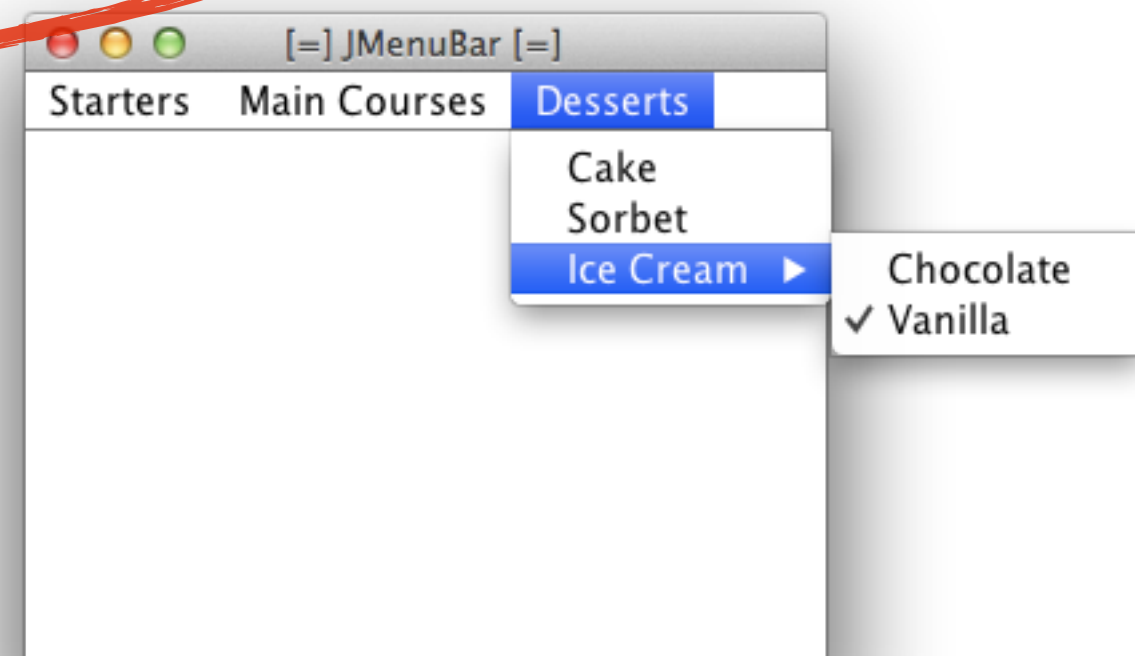
Menus - JCheckBoxMenuItem

// dessert code

```
JCheckBoxMenuItem cake = new JCheckBoxMenuItem("Cake");  
desserts.add(cake);
```

```
JCheckBoxMenuItem sorbet = new JCheckBoxMenuItem("Sorbet");  
desserts.add(sorbet);
```

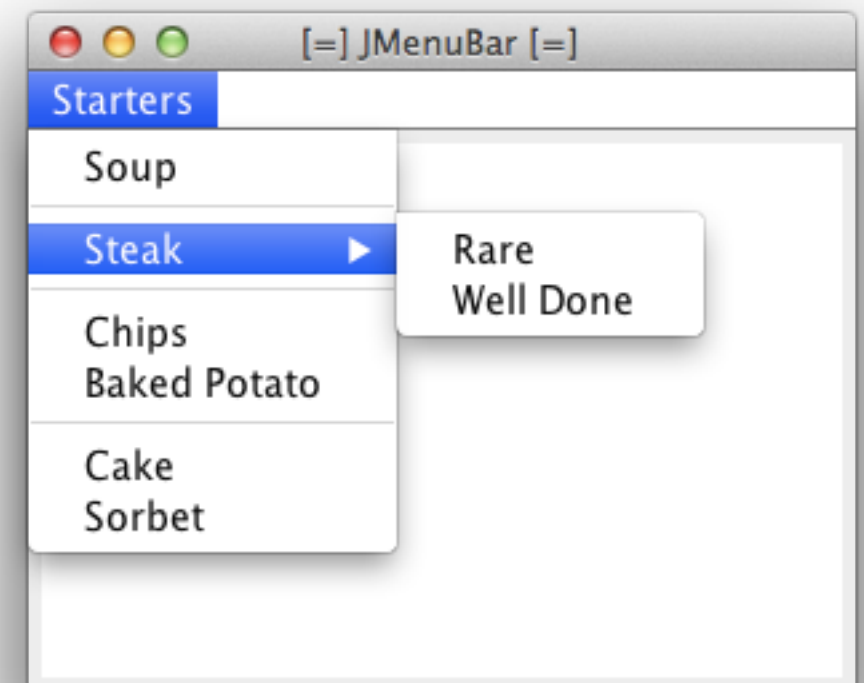
```
JMenu icecream = new JMenu("Ice Cream");  
JCheckBoxMenuItem choc = new JCheckBoxMenuItem("Chocolate");  
JCheckBoxMenuItem vani = new JCheckBoxMenuItem("Vanilla");  
icecream.add(choc);  
icecream.add(vani);  
desserts.add(icecream);
```



see: [examples.swing.misc.MenuBarExample](#)

Menus in Swing - Listeners

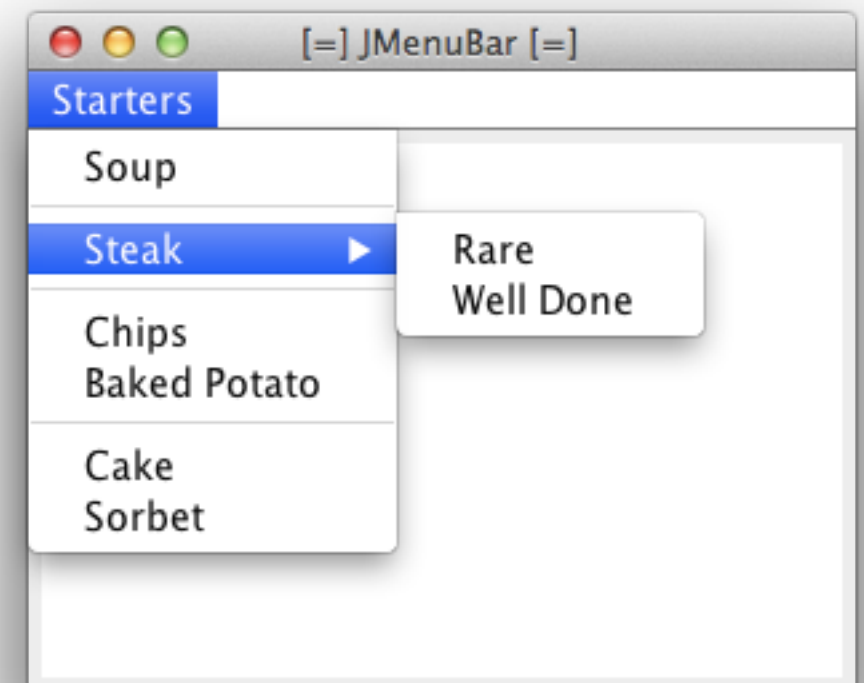
```
public JMenuBar createMenuBar() {  
    ...  
    JMenuItem soup = new JMenuItem("Soup");  
    soup.addActionListener(this);  
  
    JMenuItem rare = new JMenuItem("Rare");  
    rare.addActionListener(this);  
    JMenuItem welldone = new JMenuItem("Well Done");  
    welldone.addActionListener(this);  
    ...  
  
    JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
    JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
    chips.addActionListener(this);  
    bp.addActionListener(this);  
    ...  
  
    cake = new JCheckBoxMenuItem("Cake");  
    sorbet = new JCheckBoxMenuItem("Sorbet");  
    sorbet.addItemListener(this);  
    cake.addItemListener(this);  
    ....  
}
```



see: [examples.swing.misc.MenuBarExample_1](#)

Menus in Swing - Listeners

```
public JMenuBar createMenuBar() {  
    ...  
    JMenuItem soup = new JMenuItem("Soup");  
    soup.addActionListener(this);  
  
    JMenuItem rare = new JMenuItem("Rare");  
    rare.addActionListener(this);  
    JMenuItem welldone = new JMenuItem("Well Done");  
    welldone.addActionListener(this);  
    ...  
}
```



```
    JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
    JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");
```

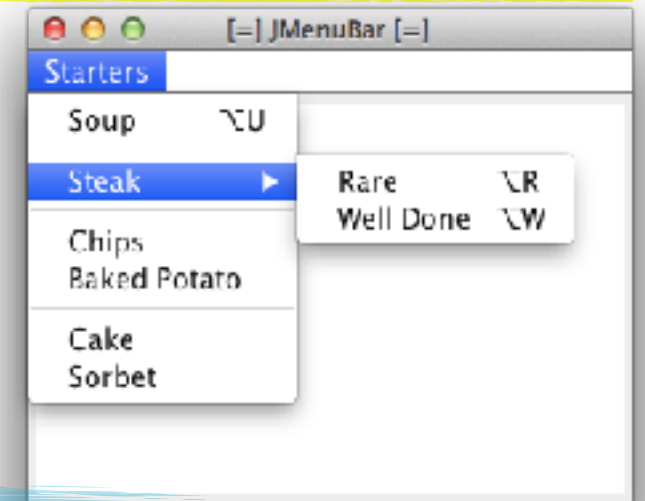
```
    chips.addActionListener(this);  
    bp.addActionListener(this);  
    ...
```

```
    cake = new JCheckBoxMenuItem("Cake");  
    sorbet = new JCheckBoxMenuItem("Sorbet");  
    sorbet.addItemListener(this);  
    cake.addItemListener(this);  
    ...
```

```
    public void actionPerformed(ActionEvent e) {  
        whitebox.append(  
            e.getActionCommand() + " Selected \n");  
    }  
  
    public void itemStateChanged(ItemEvent e) {  
        if(e.getSource() == cake) {  
            whitebox.append("Cake Clicked\n");  
        } else if(e.getSource() == sorbet) {  
            whitebox.append("Sorbet Clicked\n");  
        }  
    }  
}
```

Menu - Mnemonic/Accelerators

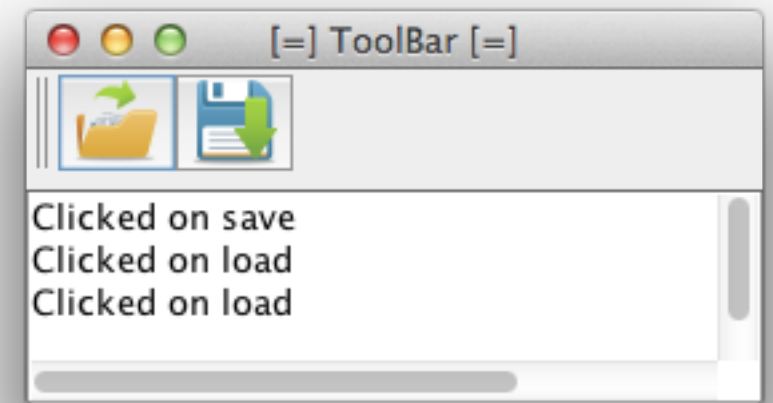
```
public JMenuBar createMenuBar() {  
    ...  
    JMenu starter = new JMenu("Starters");  
    starter.setMnemonic(KeyEvent.VK_S);  
    menuBar.add(starter);  
    ...  
    JMenuItem soup = new JMenuItem("Soup");  
    soup.setMnemonic(KeyEvent.VK_U);  
    soup.setAccelerator(  
        KeyStroke.getKeyStroke(KeyEvent.VK_U, ActionEvent.ALT_MASK));  
    ...  
    JMenu steak = new JMenu("Steak");  
    steak.setMnemonic(KeyEvent.VK_T);  
    ...  
    JMenuItem rare = new JMenuItem("Rare");  
    rare.setMnemonic(KeyEvent.VK_R);  
    rare.setAccelerator(  
        KeyStroke.getKeyStroke(KeyEvent.VK_R, ActionEvent.ALT_MASK));  
    ...  
    JMenuItem welldone = new JMenuItem("Well Done");  
    welldone.setMnemonic(KeyEvent.VK_W);  
    welldone.setAccelerator(  
        KeyStroke.getKeyStroke(KeyEvent.VK_W, ActionEvent.ALT_MASK));  
    ...  
    JRadioButtonMenuItem chips = new JRadioButtonMenuItem("Chips");  
    chips.setMnemonic(KeyEvent.VK_C);  
    JRadioButtonMenuItem bp = new JRadioButtonMenuItem("Baked Potato");  
    bp.setMnemonic(KeyEvent.VK_P);  
    ...  
}
```



see: [examples.swing.misc.MenuBarExample_2](#)

Swing's JToolBar

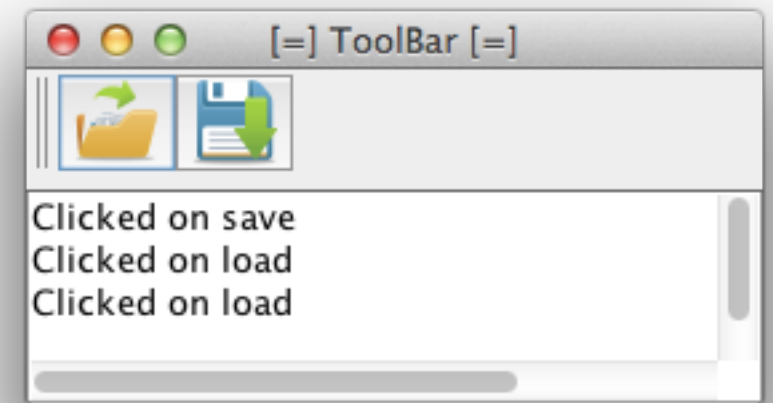
```
public JPanel createContentPane() {  
    JPanel totalGUI = new JPanel(new BorderLayout(5, 5));  
    JTextArea = new JTextArea(5, 30);  
    ...  
  
    JToolBar toolBar = new JToolBar("Still draggable");  
    totalGUI.add(toolBar, BorderLayout.PAGE_START);  
  
    JButton load = new JButton();  
    load.setActionCommand("load");  
    load.setToolTipText("Load a file");  
    load.addActionListener(this);  
    load.setIcon( createImageIcon("open.png") );  
    toolBar.add(load);  
  
    JButton save = new JButton();  
    save.setActionCommand("save");  
    save.setToolTipText("Save a file");  
    save.addActionListener(this);  
    save.setIcon( createImageIcon("save.png") );  
    toolBar.add(save);  
  
    ...  
}  
  
public void actionPerformed(ActionEvent e) {  
    JTextArea.append("Clicked on " + e.getActionCommand() + "\n");  
}  
}
```



see: [examples.swing.misc.ToolBarExample](#)

Swing's JToolBar

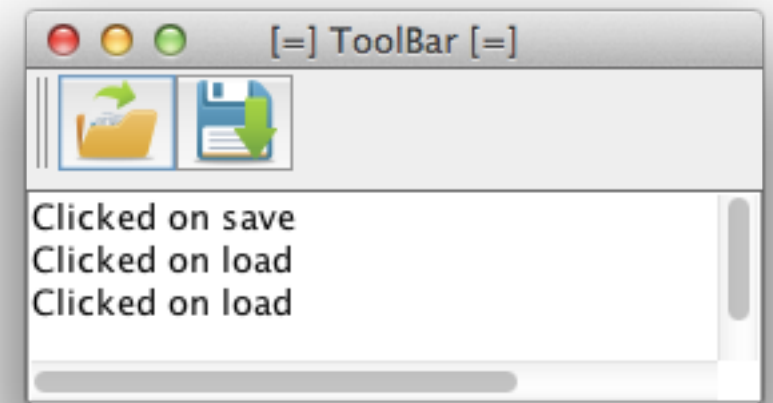
```
public JPanel createContentPane() {  
    JPanel totalGUI = new JPanel(new BorderLayout(5, 5));  
    textArea = new JTextArea(5, 30);  
    ...  
    JToolBar toolBar = new JToolBar("Still draggable");  
    totalGUI.add(toolBar, BorderLayout.PAGE_START);  
    JButton load = new JButton();  
    load.setActionCommand("load");  
    load.setToolTipText("Load a file");  
    load.addActionListener(this);  
    load.setIcon( createImageIcon("open.png") );  
    toolBar.add(load);  
    JButton save = new JButton();  
    save.setActionCommand("save");  
    save.setToolTipText("Save a file");  
    save.addActionListener(this);  
    save.setIcon( createImageIcon("save.png") );  
    toolBar.add(save);  
    ...  
}  
public void actionPerformed(ActionEvent e) {  
    textArea.append("Clicked on " + e.getActionCommand() + "\n");  
}
```



see: [examples.swing.misc.ToolBarExample](#)

Swing's JToolBar

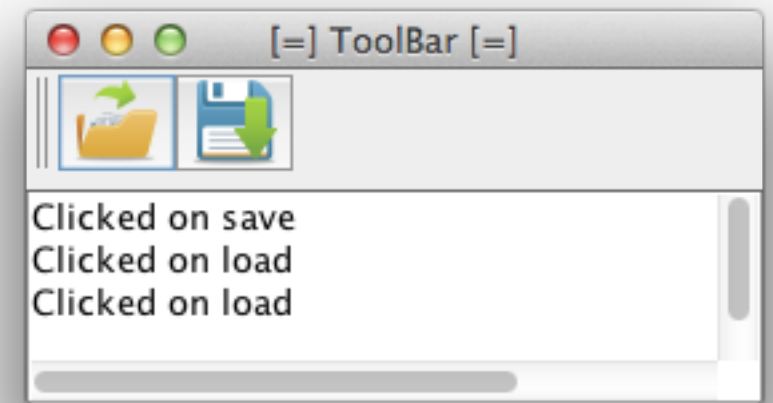
```
public JPanel createContentPane() {  
    JPanel totalGUI = new JPanel(new BorderLayout(5, 5));  
    JTextArea = new JTextArea(5, 30);  
    ...  
    JToolBar toolBar = new JToolBar("Still draggable");  
    totalGUI.add(toolBar, BorderLayout.PAGE_START);  
    JButton load = new JButton();  
    load.setActionCommand("load");  
    load.setToolTipText("Load a file");  
    load.addActionListener(this);  
    load.setIcon( createImageIcon("open.png") );  
    toolBar.add(load);  
    JButton save = new JButton();  
    save.setActionCommand("save");  
    save.setToolTipText("Save a file");  
    save.addActionListener(this);  
    save.setIcon( createImageIcon("save.png") );  
    toolBar.add(save);  
    ...  
}  
public void actionPerformed(ActionEvent e) {  
    JTextArea.append("Clicked on " + e.getActionCommand() + "\n");  
}
```



see: [examples.swing.misc.ToolBarExample](#)

Swing's JToolBar

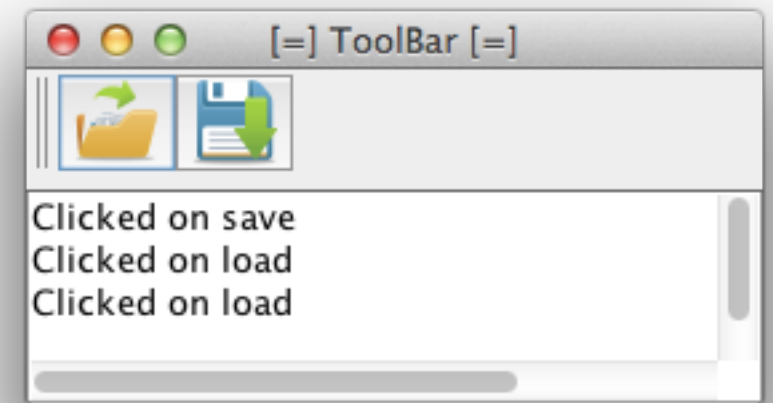
```
public JPanel createContentPane() {  
    JPanel totalGUI = new JPanel(new BorderLayout(5, 5));  
    textArea = new JTextArea(5, 30);  
    ...  
  
    JToolBar toolBar = new JToolBar("Still draggable");  
    totalGUI.add(toolBar, BorderLayout.PAGE_START);  
  
    JButton load = new JButton();  
    load.setActionCommand("load");  
    load.setToolTipText("Load a file");  
    load.addActionListener(this);  
    load.setIcon( createImageIcon("open.png") );  
    toolBar.add(load);  
  
    JButton save = new JButton();  
    save.setActionCommand("save");  
    save.setToolTipText("Save a file");  
    save.addActionListener(this);  
    save.setIcon( createImageIcon("save.png") );  
    toolBar.add(save);  
  
    ...  
}  
  
public void actionPerformed(ActionEvent e) {  
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```



see: [examples.swing.misc.ToolBarExample](#)

Swing's JToolBar

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setActionCommand is useful when we use the same handler for several swing components. You can use it anywhere (menus, button, etc.) not only in tools bars.

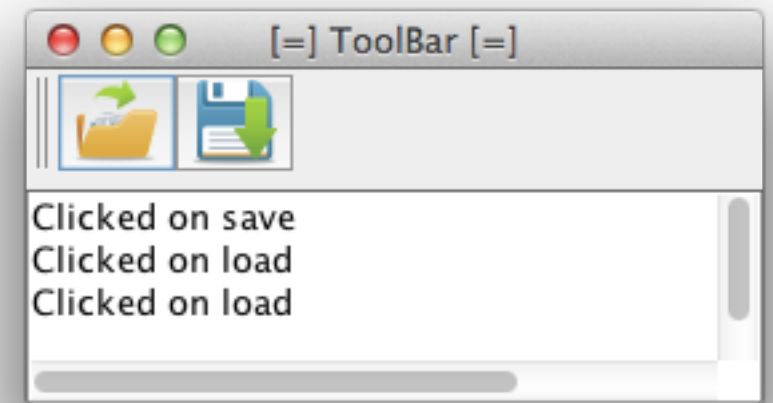
see: [examples.swing.misc.ToolBarExample](#)

Swing's JToolBar

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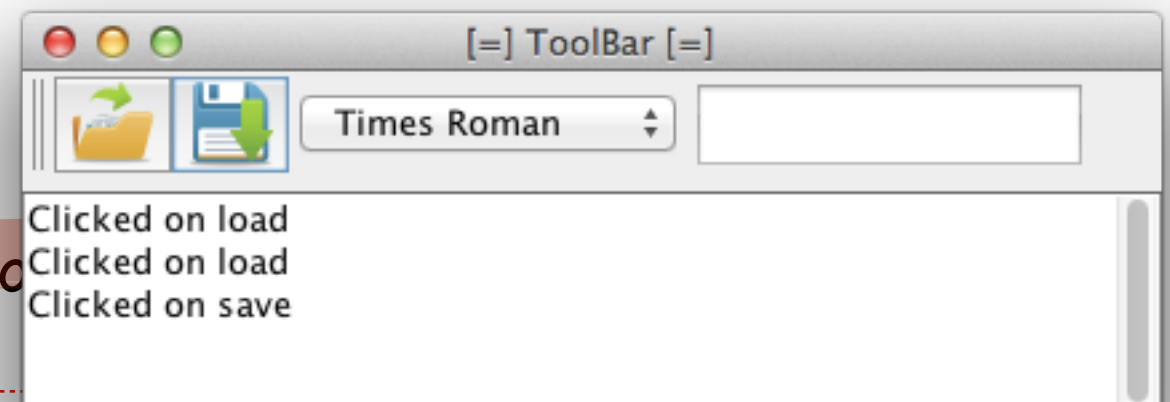
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    textArea.append("Clicked on "+e.getActionCommand());  
}
```

see: [examples.swing.misc.ToolBarExample](#)



setActionCommand is useful when we use the same handler for several swing components. You can use it anywhere (menus, button, etc.) not only in tools bars.

We can add (almost) anything to a JToolBar



A Text Editor Example

