Module 14

GUI-Based Applications

Objectives

- Describe how to construct a menu bar, menu, and menu items in a Java GUI

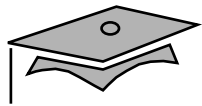- Understand how to change the color and font of a component

Relevance

- You now know how to set up a Java GUI for both graphic output and interactive user input. However, only a few of the components from which GUIs can be built have been described. What other components would be useful in a GUI?

- How can you create a menu for your GUI frame?

How to Create a Menu

1. Create a `JMenuBar` object, and set it into a menu container, such as a `JFrame`.

2. Create one or more `JMenu` objects, and add them to the menu bar object.

3. Create one or more `JMenuItem` objects, and add them to the menu object.
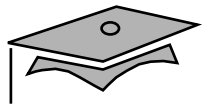
Creating a JMenuBar

```
1    f = new JFrame("MenuBar");
2    mb = new JMenuBar();
3    f.setJMenuBar(mb);
```
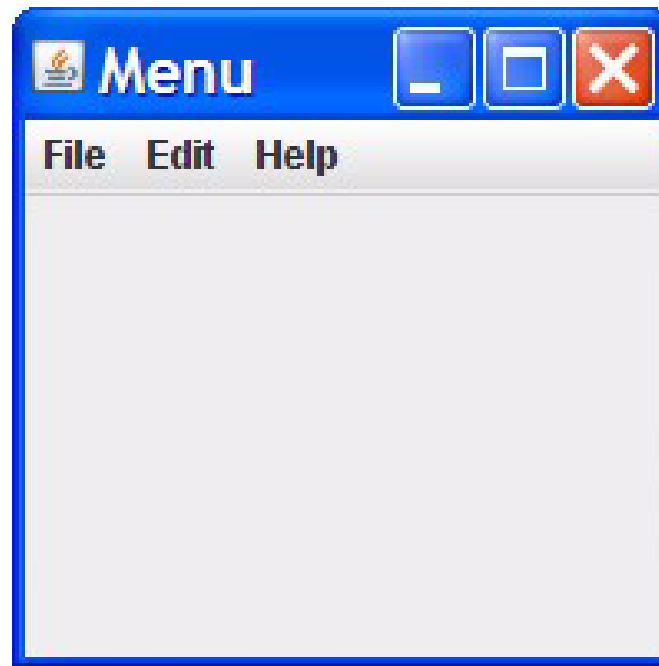
Creating a `JMenu`

```
13  f = new JFrame("Menu");
14  mb = new JMenuBar();
15  m1 = new JMenu("File");
16  m2 = new JMenu("Edit");
17  m3 = new JMenu("Help");
18  mb.add(m1);
19  mb.add(m2);
20  mb.add(m3);
21  f.setJMenuBar(mb);
```
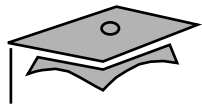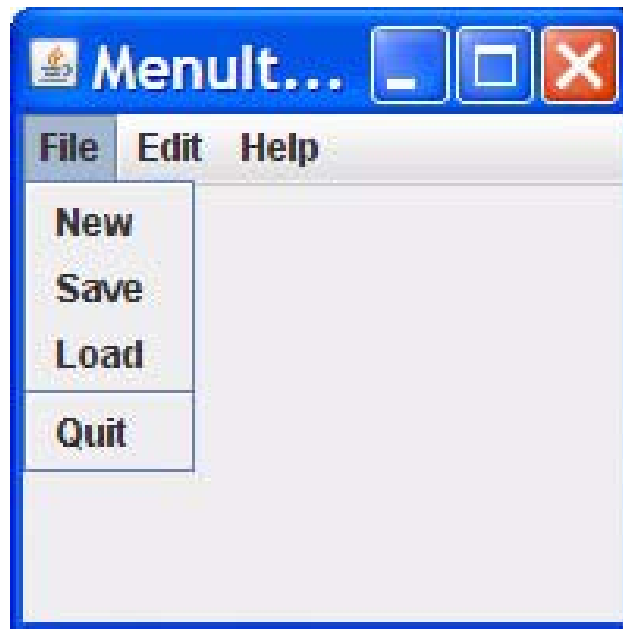
Creating a JMenu

Creating a `JMenuItem`

```
28  mi1 = new JMenuItem("New");
29  mi2 = new JMenuItem("Save");
30  mi3 = new JMenuItem("Load");
31  mi4 = new JMenuItem("Quit");
32  mi1.addActionListener(this);
33  mi2.addActionListener(this);
34  mi3.addActionListener(this);
35  mi4.addActionListener(this);
36  m1.add(mi1);
37  m1.add(mi2);
38  m1.add(mi3);
39  m1.addSeparator();
40  m1.add(mi4);
```
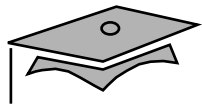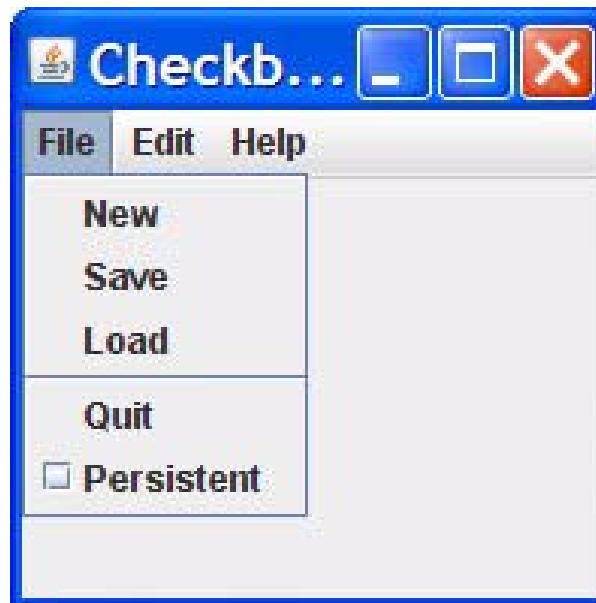
Creating a `JMenuItem`

Creating a `JCheckBoxMenuItem`

```
19  f = new JFrame("CheckboxMenuItem");
20  mb = new JMenuBar();
21  m1 = new JMenu("File");
22  m2 = new JMenu("Edit");
23  m3 = new JMenu("Help");
24  mb.add(m1);
25  mb.add(m2);
26  mb.add(m3);
27  f.setJMenuBar(mb);
..........
43  mi5 = new JCheckBoxMenuItem("Persistent");
44  mi5.addItemListener(this);
45  m1.add(mi5);
```

Creating a `JCheckBoxMenuItem`

Controlling Visual Aspects

Commands to control visual aspects of the GUI include:

- Colors:

```
setForeground()
setBackground()
```

- Example:

```
Color purple = new Color(255, 0, 255);
JButton b = new JButton("Purple");
b.setBackground(purple);
```