

# **JavaGUIProgramming**

## **Part 1**

Chapter 12 and 22

P. Deitel , H. Deitel - Java How To Program, 10th Edition

## **Graphical user interface (GUI)**

- Presents a user-friendly mechanism for interacting with an application
- Often contains title bar, menu bar containing menus, buttons and combo boxes
- Built from GUI components

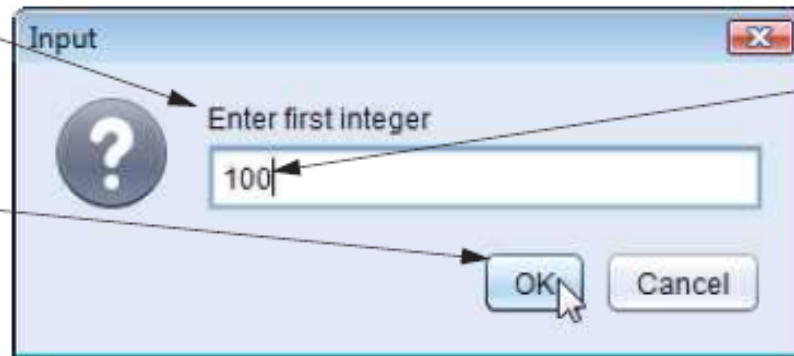
# Look and Feel

- ☛ Providing different applications with **consistent, intuitive user-interface components** (fonts, colors, images, buttons,...) gives users a sense of familiarity with a new application, so that they can learn it more quickly and use it more productively.
- ☛ How does look and feel of my App can change?
- ☛ What is alternate look and feel components?
- ☛ Sample Code ...

# JOptionPane





Prompt to the user

When the user clicks **OK**, `showInputDialog` returns to the program the 100 typed by the user as a **String**; the program must convert the **String** to an **int**



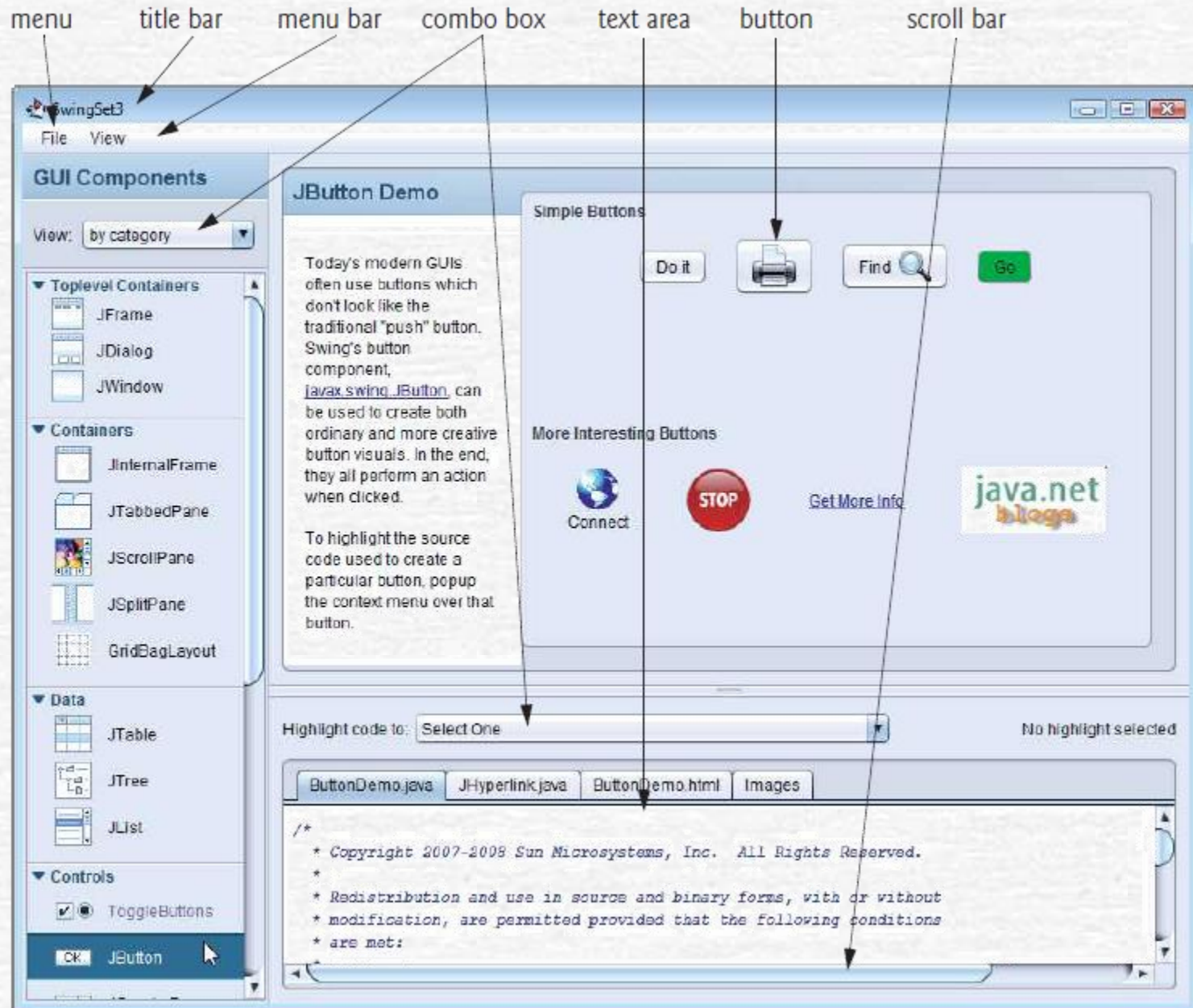
Text field in which the user types a value

# JOptionPane

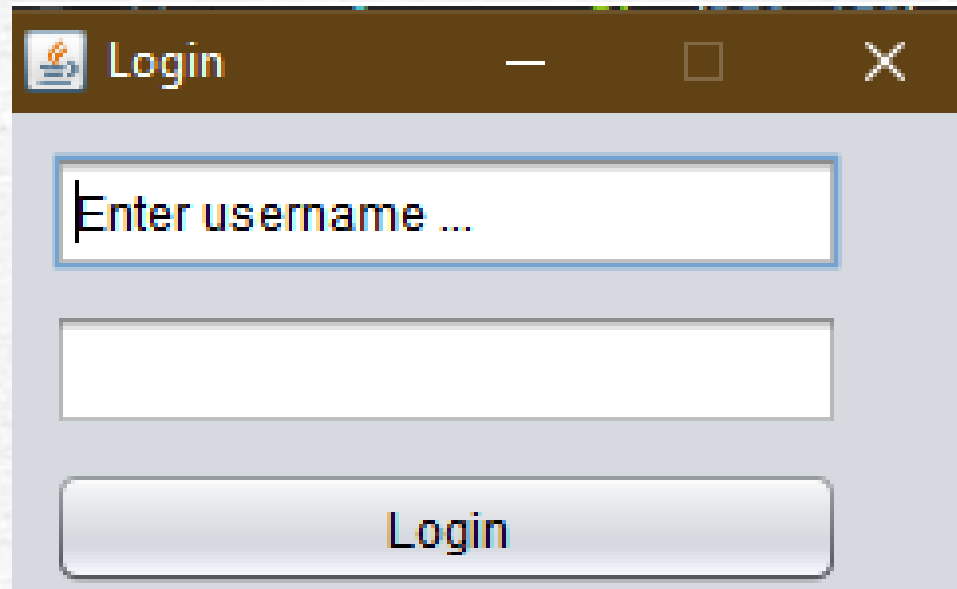
Message dialog type	Icon	Description
ERROR_MESSAGE		Indicates an error.
INFORMATION_MESSAGE		Indicates an informational message.
WARNING_MESSAGE		Warns of a potential problem.
QUESTION_MESSAGE		Poses a question. This dialog normally requires a response, such as clicking a <b>Yes</b> or a <b>No</b> button.
PLAIN_MESSAGE	no icon	A dialog that contains a message, but no icon.



# Widgets



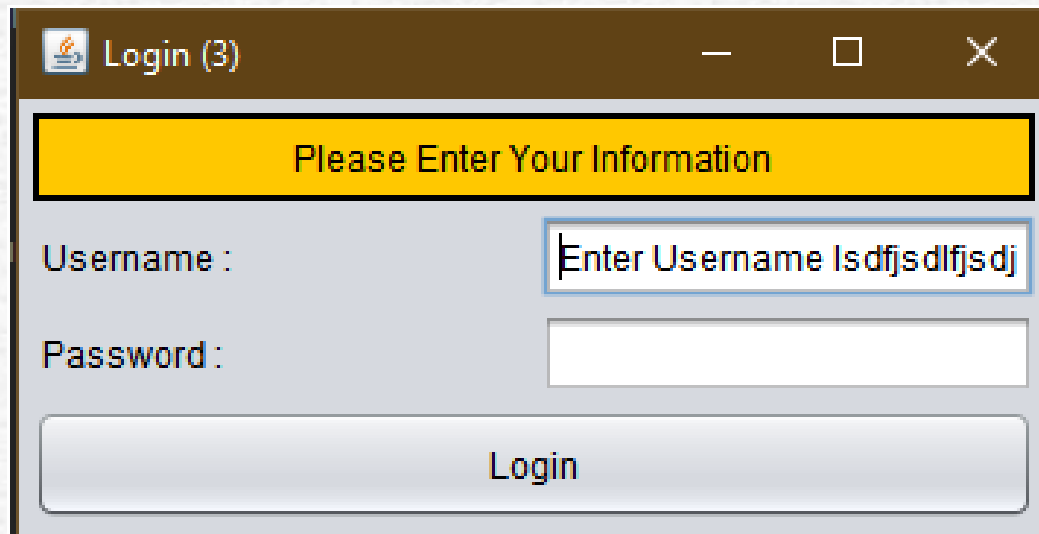
# LoginFrame-First Attempt



The image shows a Java Swing window titled "Login". The window has a dark brown title bar with a small icon on the left and standard window controls (minimize, maximize, close) on the right. The main content area is light gray and contains three components: a text input field with the placeholder text "Enter username ...", an empty password input field, and a "Login" button. The button is a light gray rectangle with rounded corners and a slight gradient.

Login

# LoginFrame-MultiLayout



Login (3)

Please Enter Your Information

Username :

Password :

Login



# Layout Managers

## Layout managers

- Provided to arrange GUI components in a container
- Provide basic layout capabilities
- Implement the interface `LayoutManager`

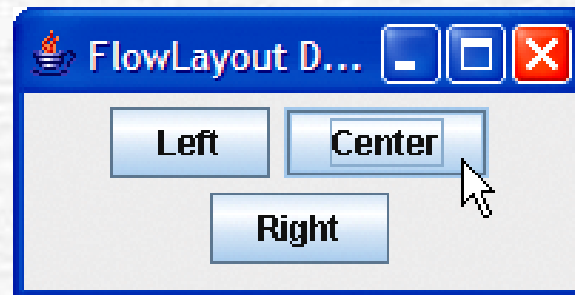
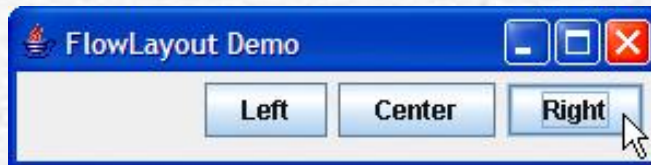
Layout manager	Description
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<b>FlowLayout</b>	Default for <code>javax.swing.JPanel</code> . Places components sequentially (left to right) in the order they were added. It is also possible to specify the order of the components by using the <code>Container</code> method <code>add</code> , which takes a <code>Component</code> and an integer index position as arguments.
<b>BorderLayout</b>	Default for <code>JFrames</code> (and other windows). Arranges the components into five areas: <code>NORTH</code> , <code>SOUTH</code> , <code>EAST</code> , <code>WEST</code> and <code>CENTER</code> .
<b>GridLayout</b>	Arranges the components into rows and columns.

# FlowLayout

## FlowLayout

- Simplest layout manager
- Components are placed left to right in the order they are added
- Components can be left aligned, centered or right aligned



# BorderLayout

## BorderLayout

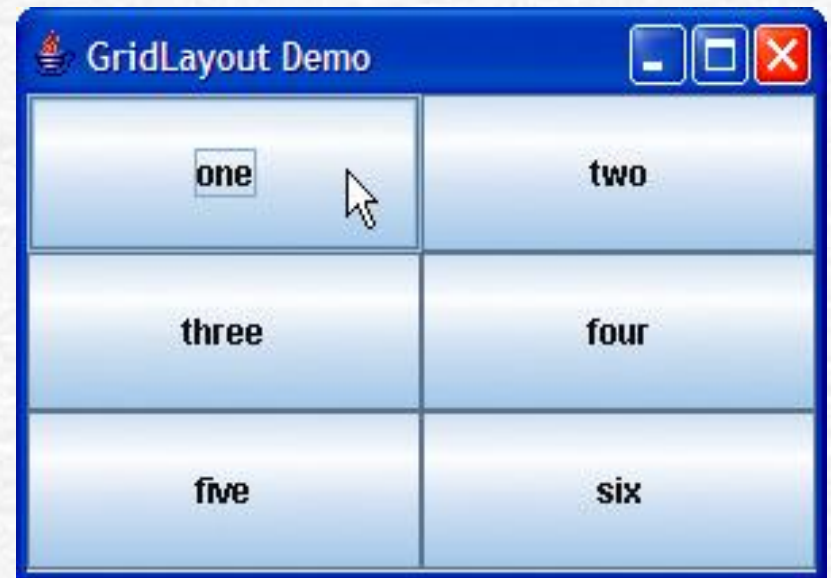
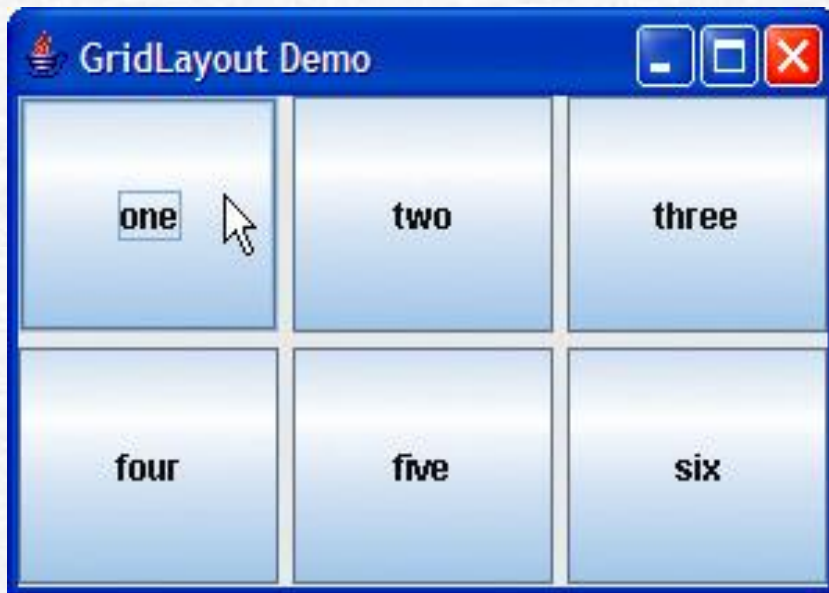
- Arranges components into five regions – north, south, east, west and center
- Provides horizontal gap spacing and vertical gap spacing



# GridLayout

## GridLayout

- Divides container into a grid
- Every component has the same width and height





# Using Panels to Manage More Complex Layouts

- Complex GUIs often require multiple panels to arrange their components properly

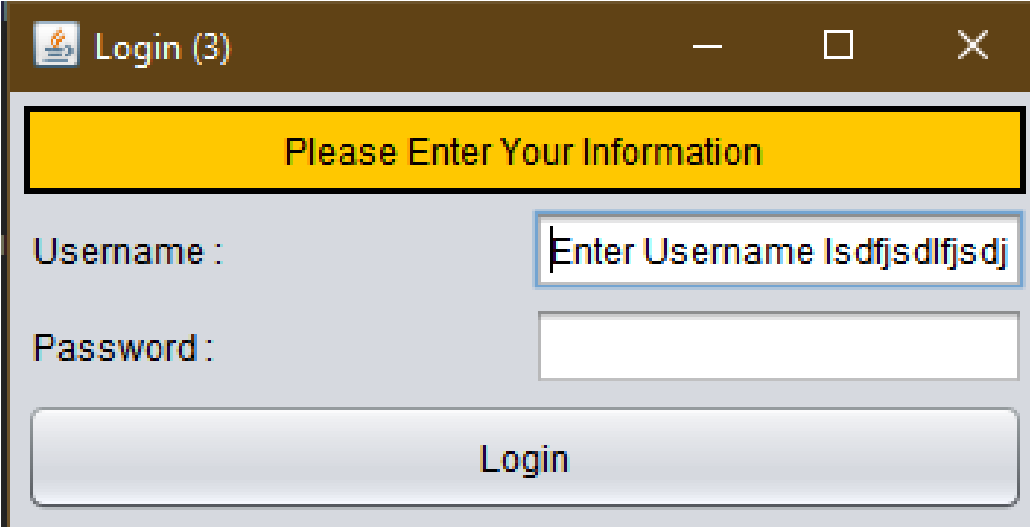




# Other Layouts

- ✓ **BorderLayout.**
- ✓ **BoxLayout.**
- ✓ **CardLayout.**
- ✓ **FlowLayout.**
- ✓ **GridBagLayout.**
- ✓ **GridLayout.**
- ✓ **GroupLayout.**
- ✓ **SpringLayout.**

# LoginFrame-Setting an action for pressing the button



The image shows a Java Swing window titled "Login (3)". The window has a dark brown title bar with standard minimize, maximize, and close buttons. Below the title bar is a yellow header bar with the text "Please Enter Your Information". The main content area has a light gray background and contains two labels: "Username :" and "Password :". The "Username :" label is followed by a text field containing the placeholder text "Enter Username lsdjfsdlfjsdj". The "Password :" label is followed by an empty password field. At the bottom of the window is a large, light gray button labeled "Login".