Introduction to Java

Objectives

- In this session, you will learn to:
    - Explore UI components
   - Manage layouts

Introduction to Java

Exploring UI Components

- In a Character User Interface (CUI) application, a user needs to remember all the commands to work with the application.

- The user enters the commands by using the keyboard, and the application displays the result of the commands.

- A notification is displayed to the user if the user enters a wrong command. On the other hand, the GUI provides a graphical way of interacting with the application.

- The user provides an input most of the time by using a mouse and sometimes by using a keyboard.

- The introduction of GUI made the application easier to learn and use.

- In addition, it improved the navigation and appearance of the application, which increased the productivity of the user.

Identifying UI Components

- Java defines components according to the class hierarchy given in the following figure.

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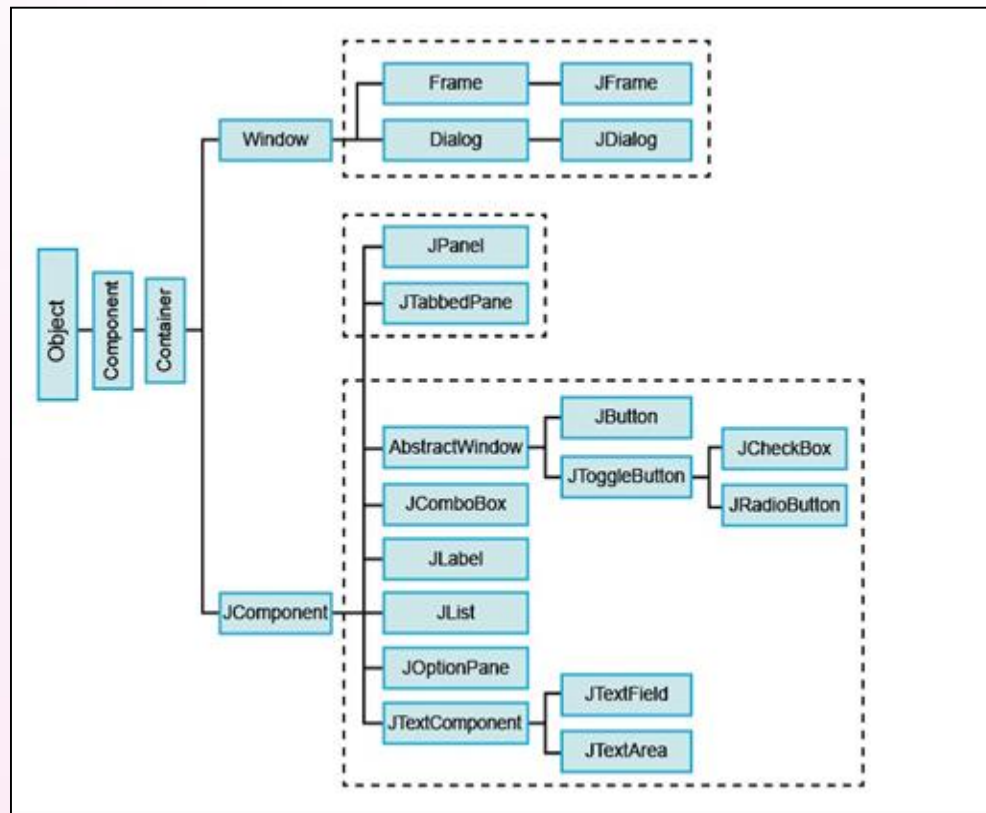
Identifying UI Components (Contd.)

- The most commonly used containers and components are:
    - Jframe
    - Jdialog
    - Jpanel
    - JTabbedPane
    - JMenuBar
    - Jmenu
    - JMenuItem
    - Jlabel
    - JTextField
    - JTextArea
    - JCheckBox
    - JRadioButton
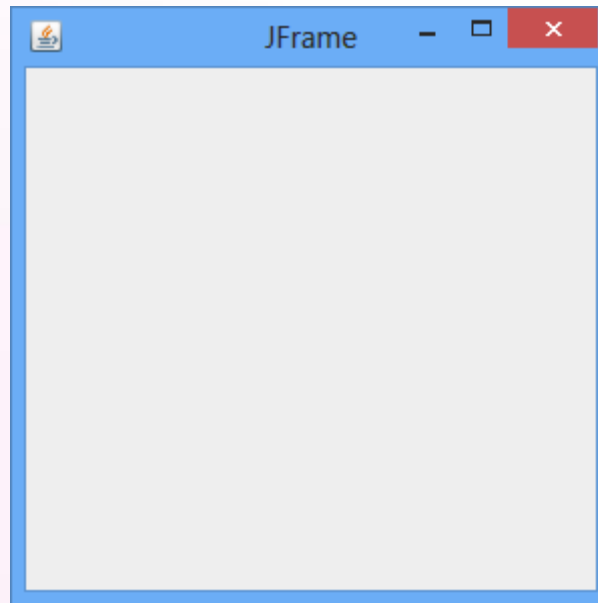   - JList

Identifying UI Components (Contd.)

- `JComboBox`
- `Jbutton`
- `JOptionPane`

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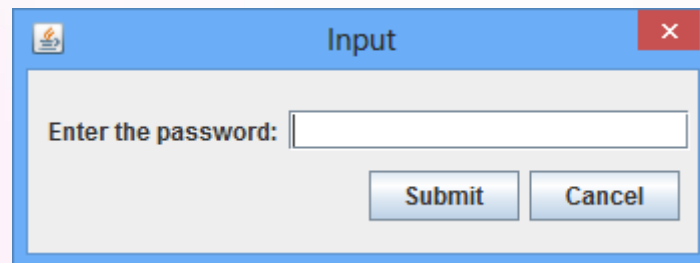
Identifying UI Components (Contd.)

- `Jframe`:
    - It works as a window that is used to place other components of an application.
    - It contains the title, border, and minimize, maximize, and close buttons.
    - The following figure shows the `JFrame` window.

Identifying UI Components (Contd.)

- `Jdialog`:
    - It works as a dialog box that is used to display information to the user or to prompt the user for a response.
    - It enables you to create the modal and modeless dialog boxes.
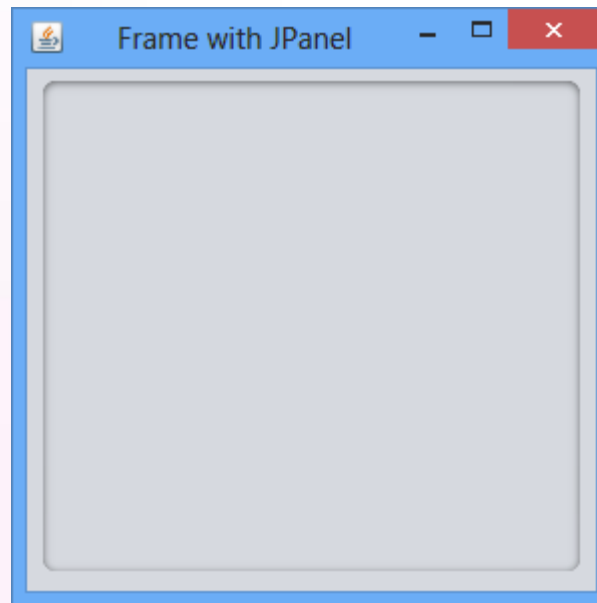   - The following figure shows the Input window created using the `JDialog` class.
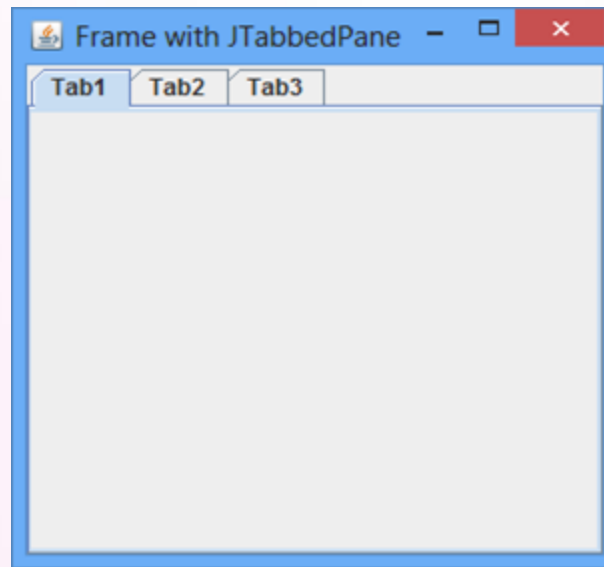
Identifying UI Components (Contd.)

- `JPanel`:
  - It is an intermediate component that is used to organize or to group other components within a window.
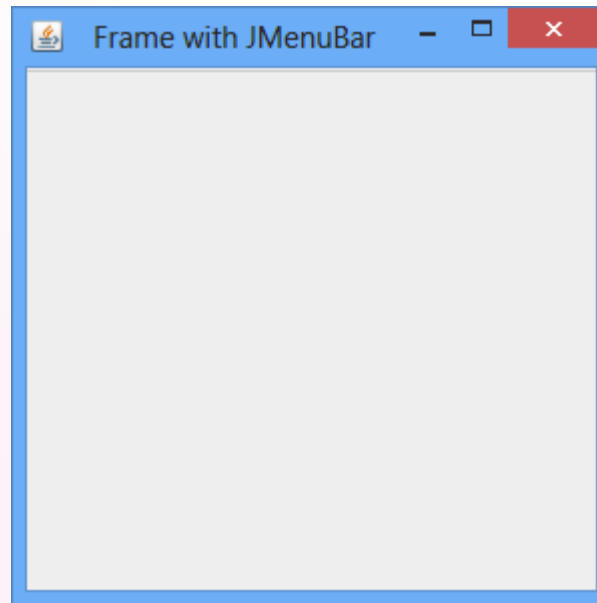 - The following figure shows `JPanel` within the frame.

Identifying UI Components (Contd.)

- `JTabbedPane`:
    - It is used to create multiple tabbed panes.
    - These panes can hold other components.
    - You can switch between these panes by clicking the respective tab.
    - The following figure shows `JTabbedPane` within the frame.

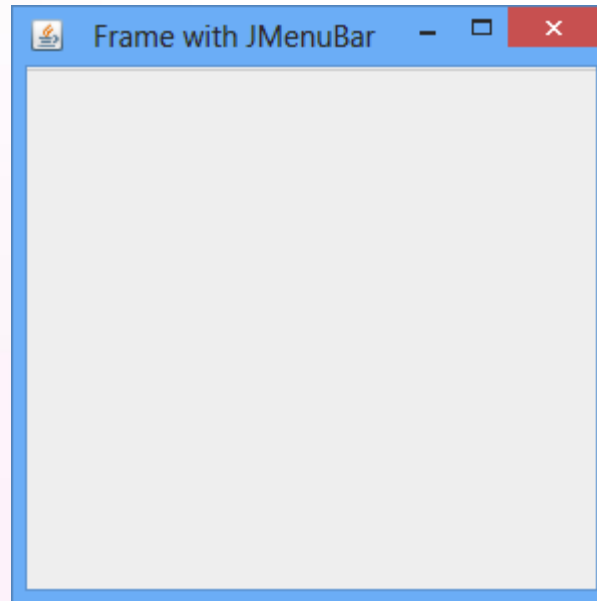## Identifying UI Components (Contd.)

- `JMenuBar`:
    - It is used to display a menu bar on the frame.
    - The following figure shows the `JMenuBar` within the frame.

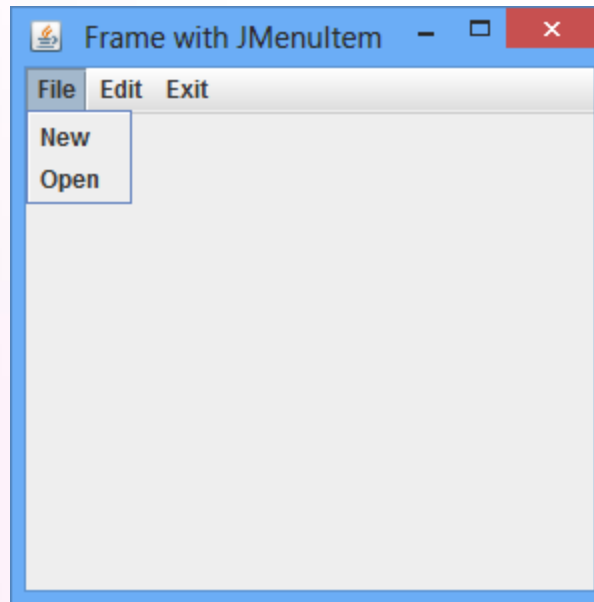# Introduction to Java

Identifying UI Components (Contd.)

- `JMenu`:
    - It is used to add the menus on the menu bar.
    - The following figure shows `JMenu` on the menu bar.
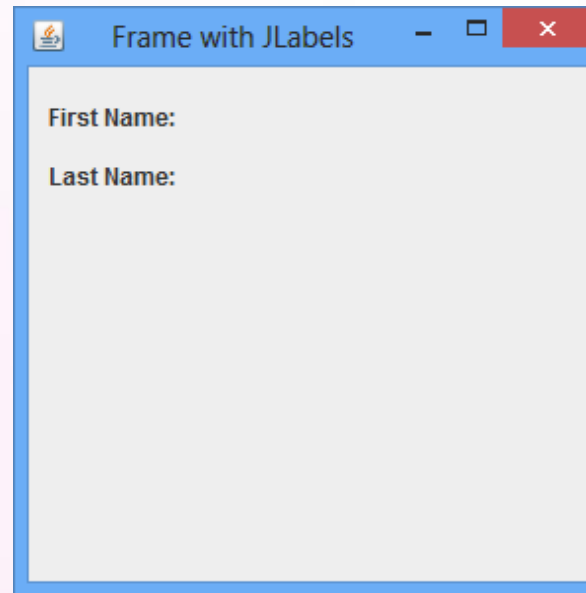
Identifying UI Components (Contd.)

- `JMenuItem`:
  - It is used to add the menu items on menu.
  - The following figure shows `JMenuItem` of the menu.
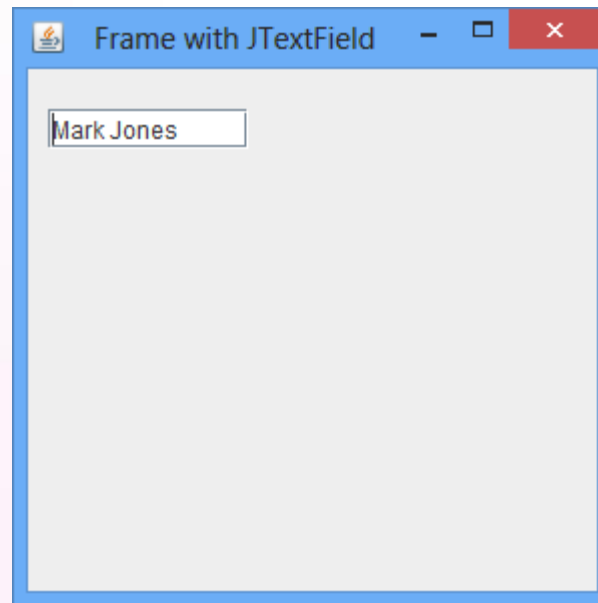
Identifying UI Components (Contd.)

- `JLabel`:
    - It is used to display a text or an image.
    - By default, a label that displays the text is left aligned and a label that displays the image is horizontally centered.
    - The following figure shows `JLabel` within the frame.
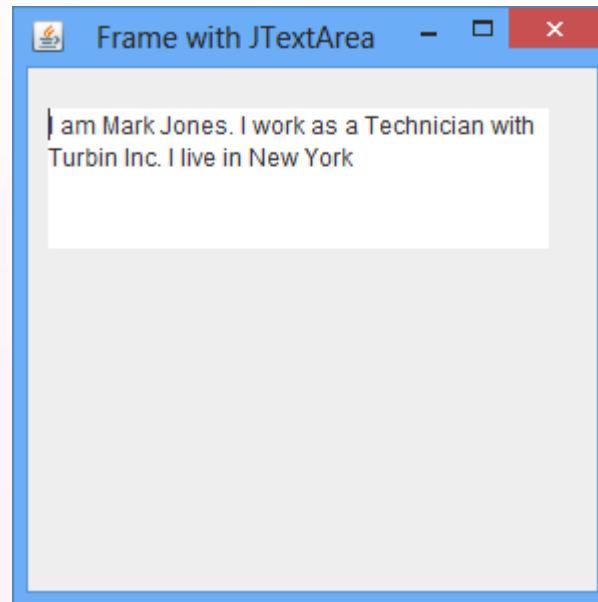
Identifying UI Components (Contd.)

- `JTextField`:
    - It is used to insert or edit a single line of text.
    - The following figure shows `JTextField` within the frame.
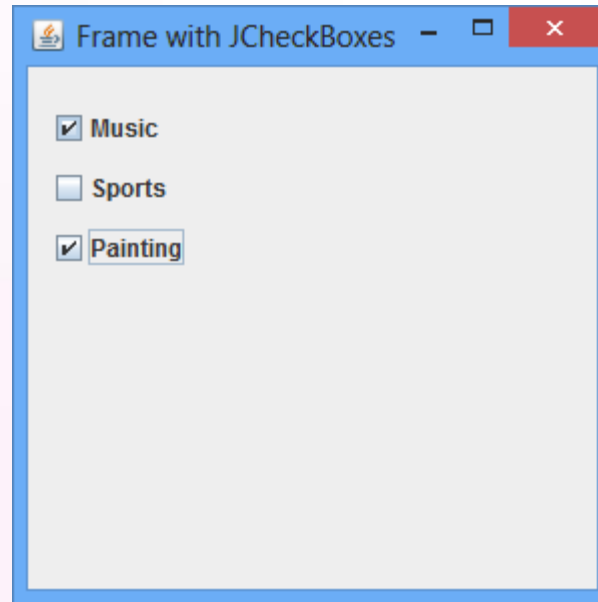
Identifying UI Components (Contd.)

- `JTextArea`:
  - It is used to insert or edit multiple lines of text.
  - The following figure shows `JTextArea` within the frame.

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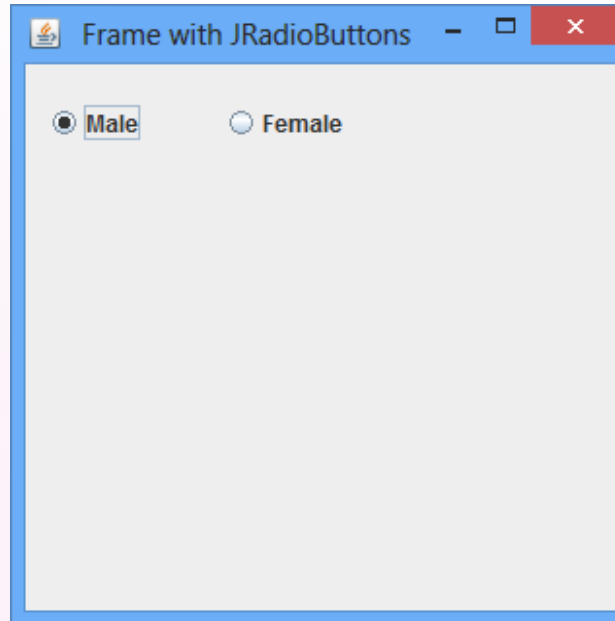## Identifying UI Components (Contd.)

- `JCheckBox`:
    - It is used to display the state of something by selecting or deselecting the check box.
    - The following figure shows `JCheckBox` within the frame.

Identifying UI Components (Contd.)

- `JRadioButton`:
  - It is used to accept only one value from the predefined set of options.
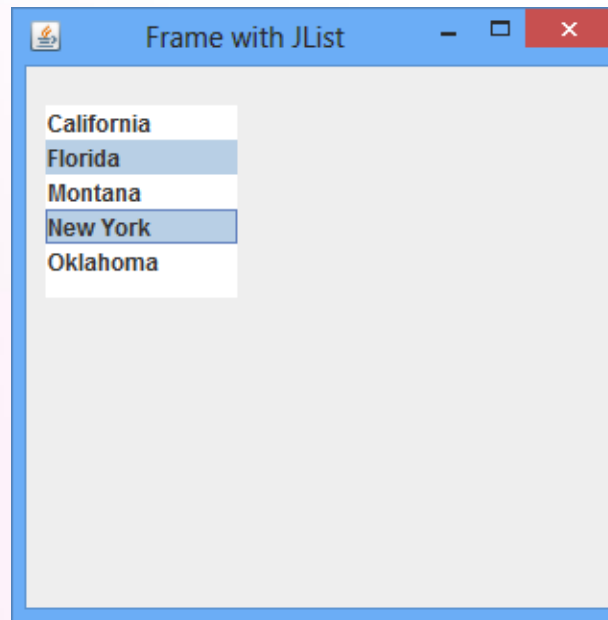 - The following figure shows `JRadioButton` within the frame.
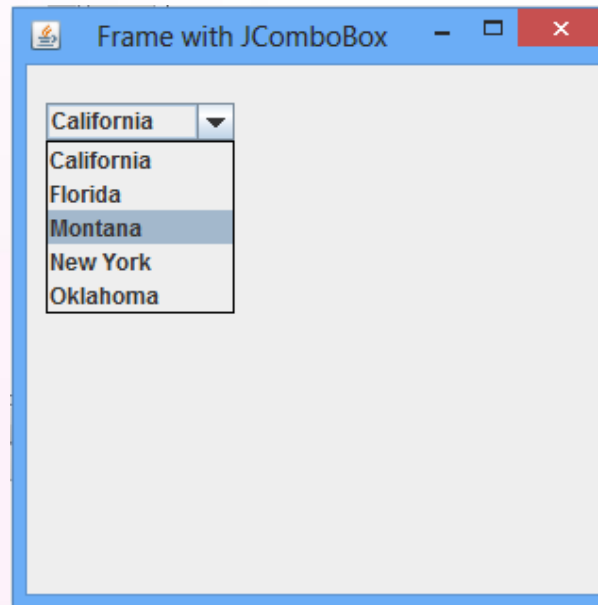
Identifying UI Components (Contd.)

■ `JList`:

- It is used to provide a list of items that enables a user to select one or more items from the list.
- The following figure shows `JList` within the frame.
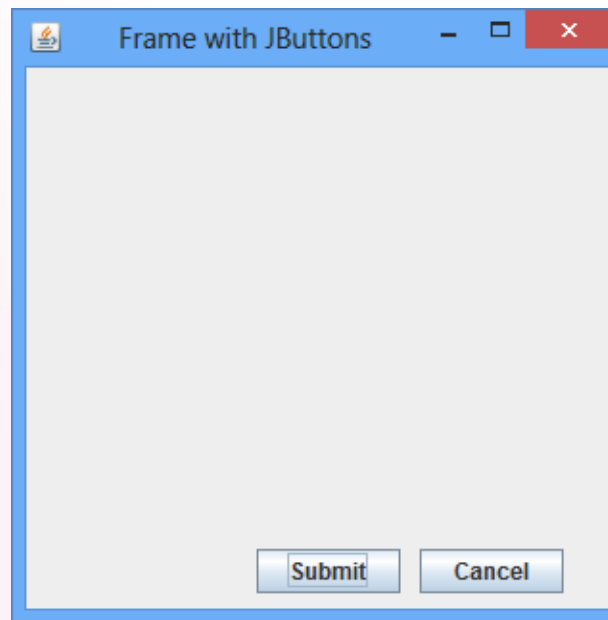
Identifying UI Components (Contd.)

- `JComboBox`:
    - It is used to display a combination of a text field and a drop-down list.
    - It enables you to type or select a value from the list.
    - The following figure shows `JComboBox` within the frame.

Identifying UI Components (Contd.)

- `JButton`:
  - It is used to provide the clickable functionality that enables you to initiate a command.
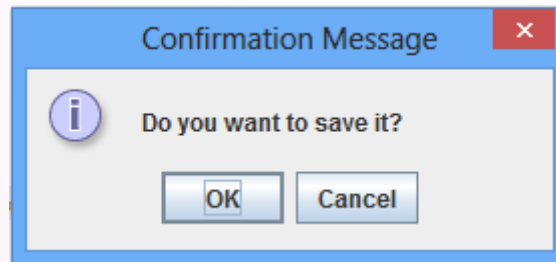 - The following figure shows `JButton` within the frame.

Identifying UI Components (Contd.)

- `JOptionPane`:
    - It is used to display the dialog boxes that prompt users for a value or giving information.
    - The following figure shows the Confirmation Message dialog box created using the `JOptionPane` class.