Introduction to Java

Objectives

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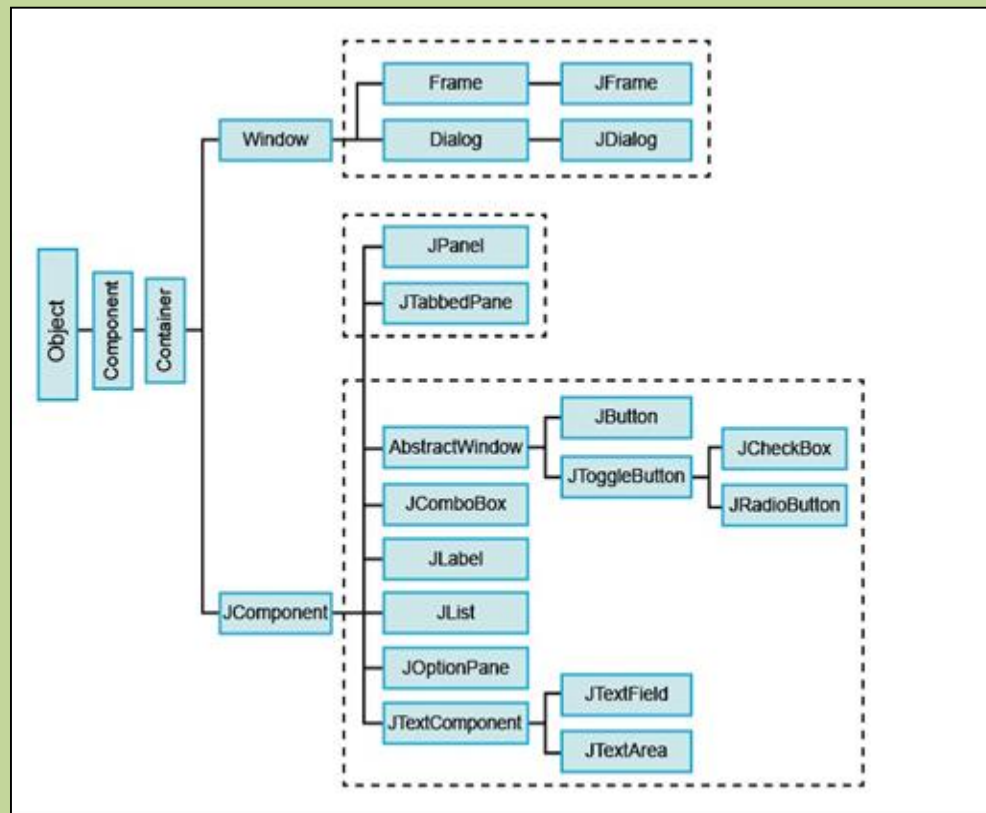
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Exploring UI Components

- 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.

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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`

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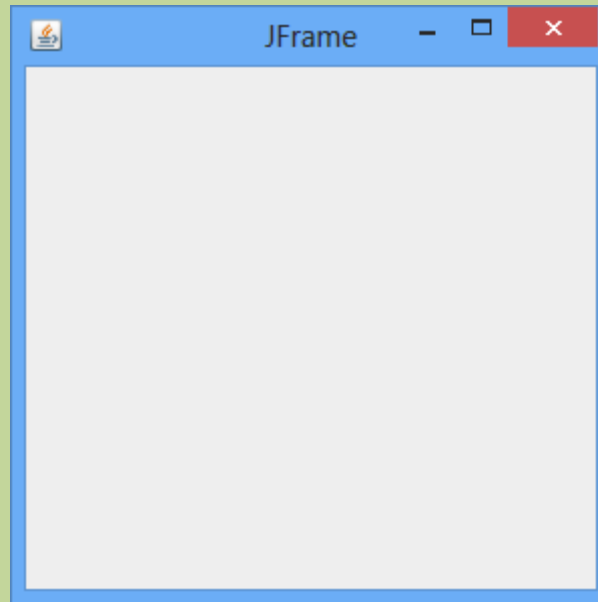## Identifying UI Components (Contd.)

- `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.
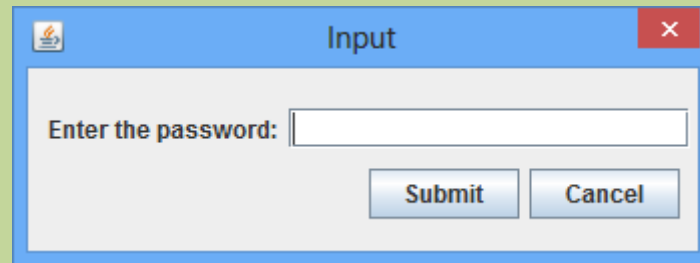   - The following figure shows the `JFrame` window.

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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.
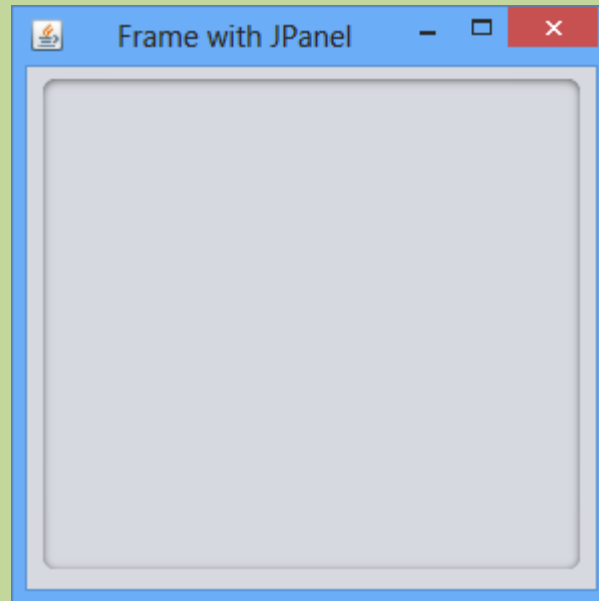   - The following figure shows the Input window created using the `JDialog` class.

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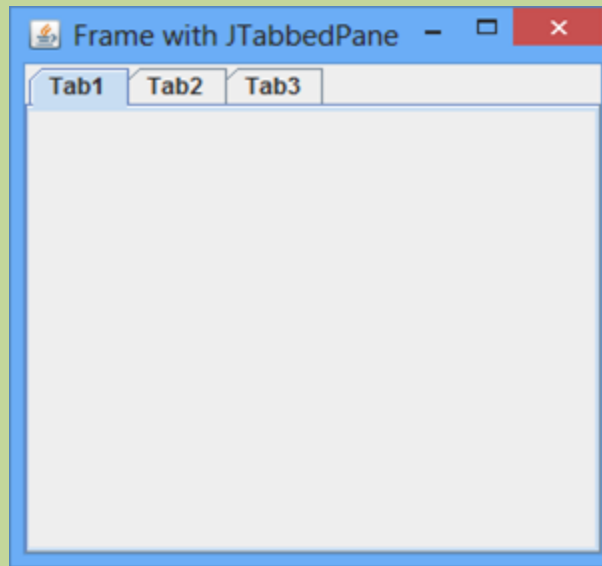## Identifying UI Components (Contd.)

- `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.

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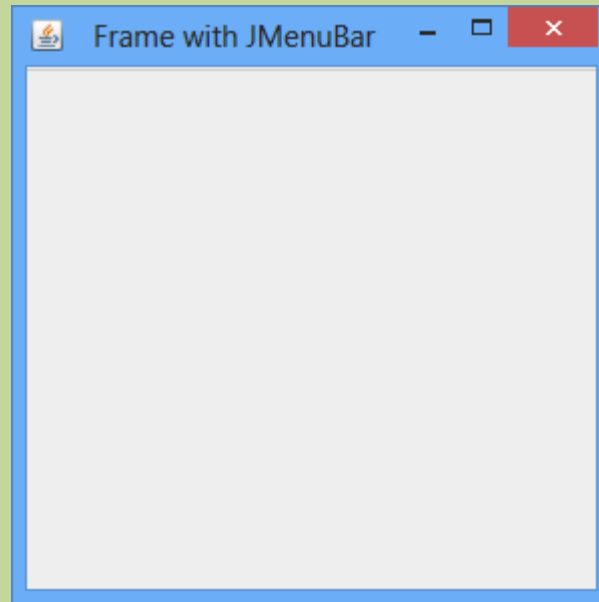
Identifying UI Components (Contd.)

■ `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.

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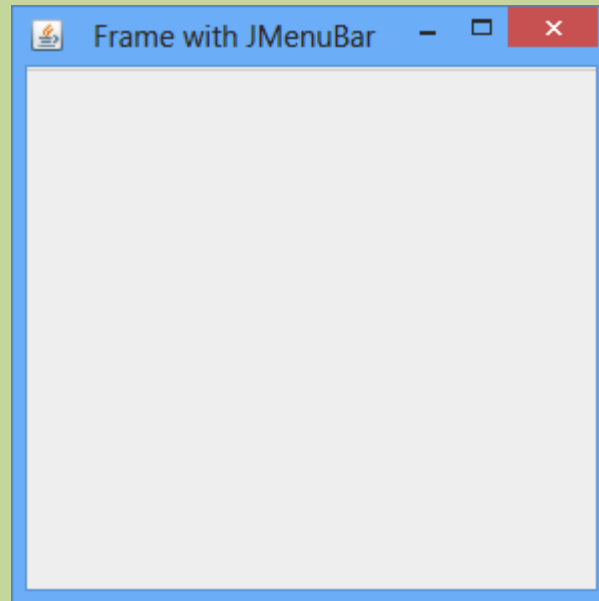
Identifying UI Components (Contd.)

■ JMenuBar:

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

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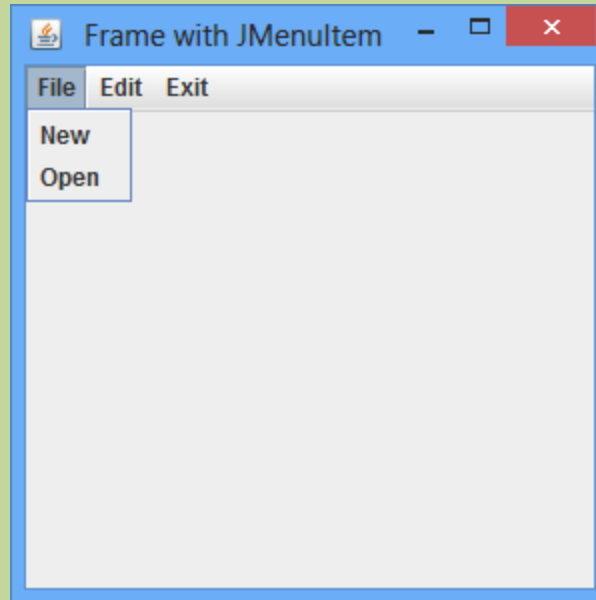
Identifying UI Components (Contd.)

- `JMenu`:
    - It is used to add the menus on the menu bar.
    - The following figure shows `JMenu` on the menu bar.

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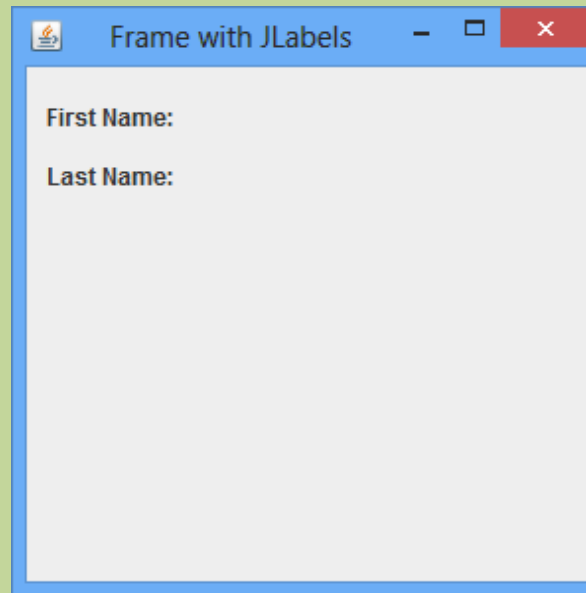
Identifying UI Components (Contd.)

- `JMenuItem`:
    - It is used to add the menu items on menu.
    - The following figure shows `JMenuItem` of the menu.

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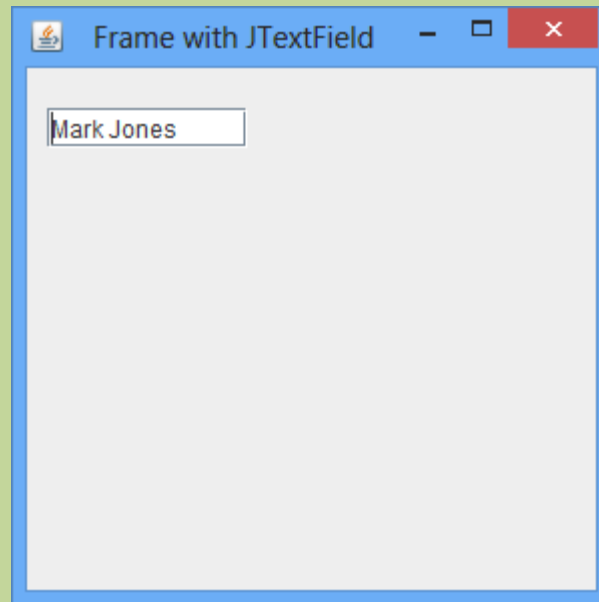
Identifying UI Components (Contd.)

- `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.

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Identifying UI Components (Contd.)

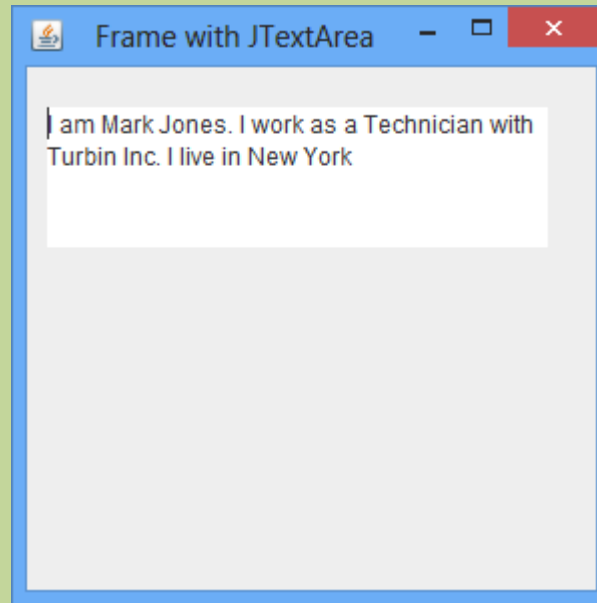- `JTextField`:
    - It is used to insert or edit a single line of text.
    - The following figure shows `JTextField` within the frame.

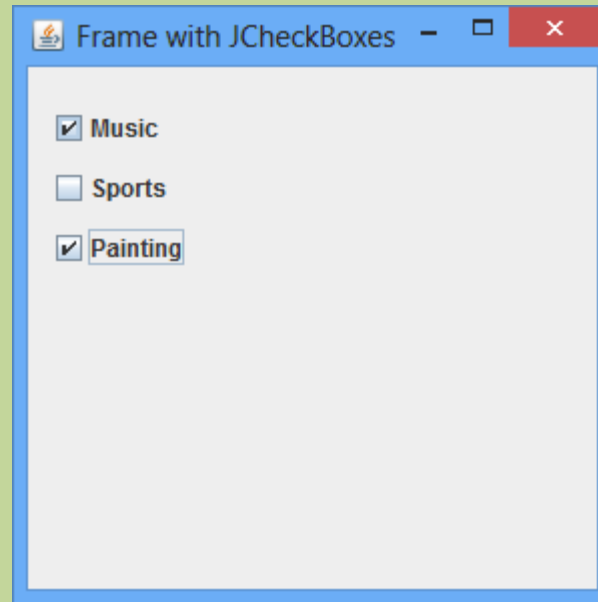# Introduction to Java

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.
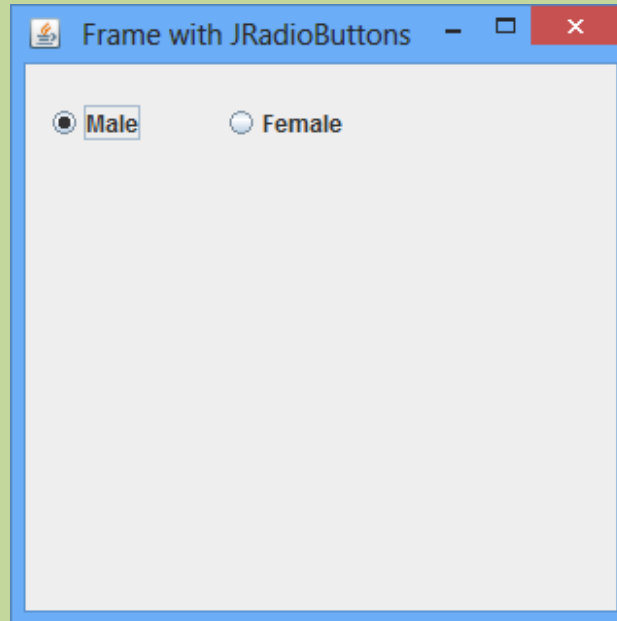 - The following figure shows `JCheckBox` within the frame.

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Identifying UI Components (Contd.)

■ `JRadioButton`:

- ■ It is used to accept only one value from the predefined set of options.
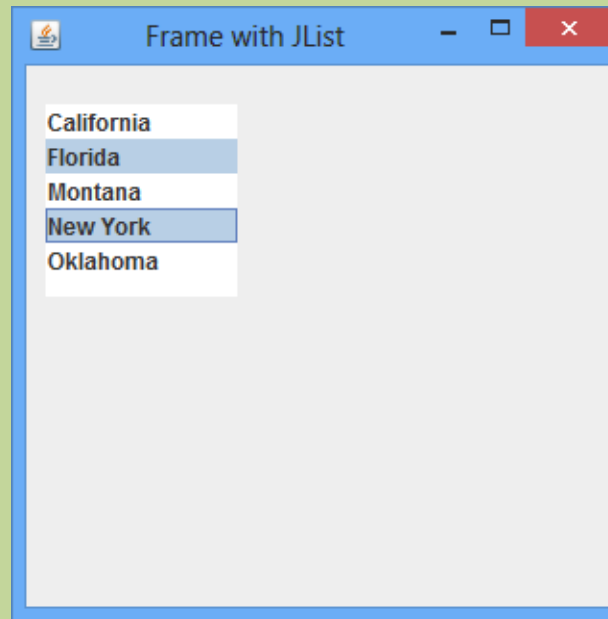- ■ The following figure shows `JRadioButton` within the frame.

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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.

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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.
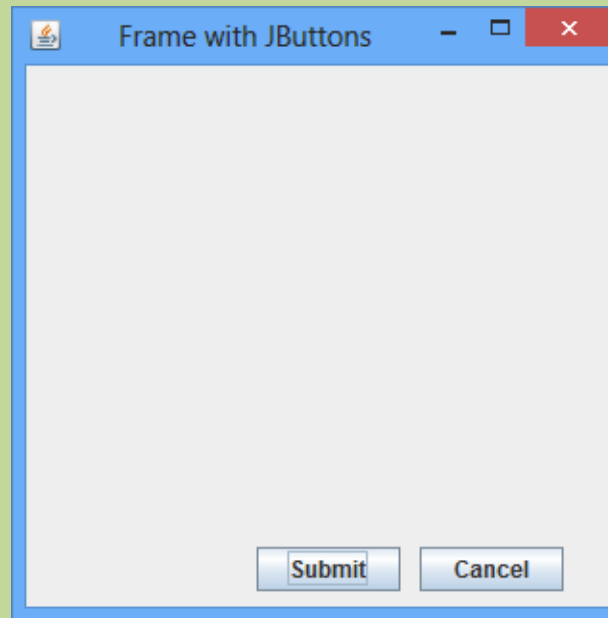   - The following figure shows `JComboBox` within the frame.
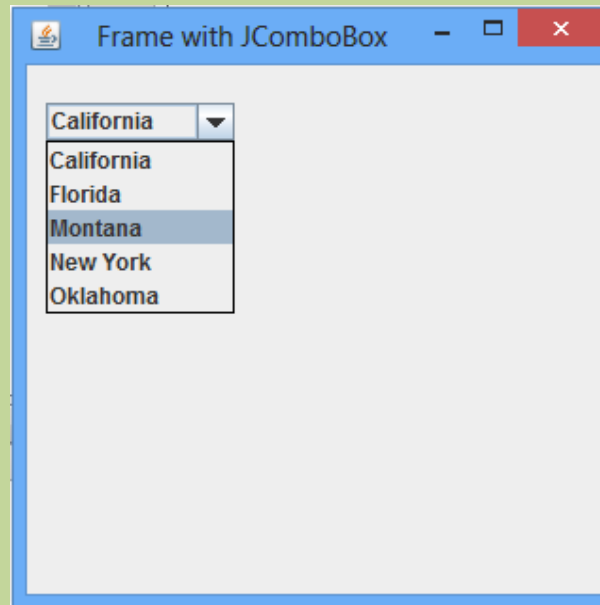
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Identifying UI Components (Contd.)

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

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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.