Building Components using Swing and JavaFX

Prativa Nyaupane

Recap

1. Introduction to AWT and Swing:
   a. Concept
   b. Applets
   c. Swing Class Hierarcy
   d. Components/Containers
2. Layout Management

Today's Objectives

- GUI Controls
- Menu Elements and Tooltips
- Dialogs and Frames

Swing Class Hierarchy

- Java defines the class hierarchy for all the Swing Components.
- Swing components are prefixed with the letter 'J'
- Key classes include JFrame, JPanel, JButton, JTextField..
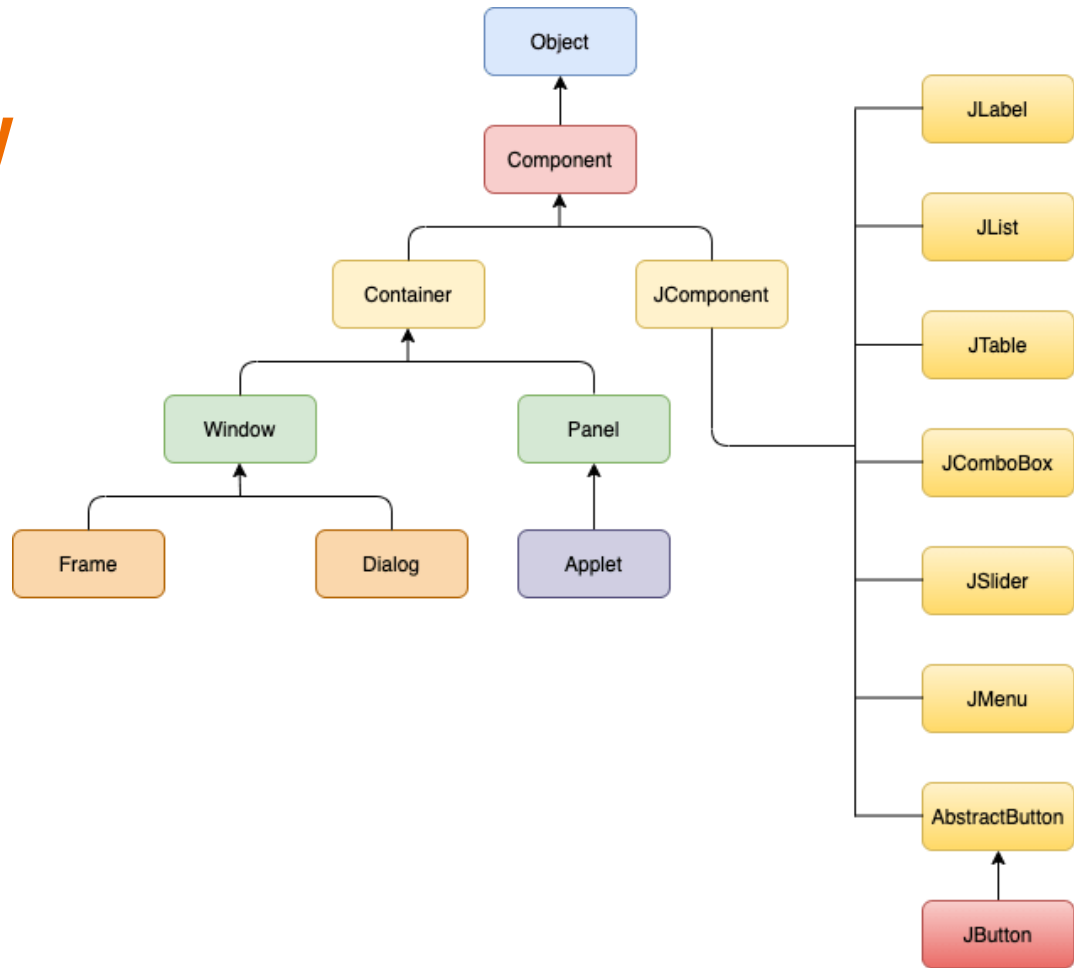
GUI Controls

- GUI Controls are also known as UI controls/components/visual elements.

- These controls are often displayed within windows or dialog boxes.

- Windows are rectangular area on the the screen than can contain components.

- They are interactive elements that users can interact with.

- These controls are building blocks of a GUI application.

- They allow users to input data, make selections and trigger actions.

- GUI controls are essential for creating interactive and user-friendly applications.

GUI Controls Contd…

- Buttons: Triggers actions when clicked.

- Text Fields: Allow users to input text.

- Checkboxes: Enable users to make binary choices.

- Radio Buttons: Provide options for exclusive selection.

- Combo Boxes: Present a list of options for selection.

- Sliders: Adjust values within a specified range.

- List Boxes: Display a list of items for selection.

Menu Elements

- Menus are a common UI pattern that organizes commands and options.
- Menus provide a structured way to organize functionality, make it easily accessible to users.
- Menu elements include:
  - Menu Bar: A horizontal bar containing menus.
  - Menu: A list of commands or options.
  - Menu Item: An individual option within a menu.
  - Submenu: A nested menu within another menu.

Tooltips

- Tooltips are small informational pop-ups that appear when users hover over a UI element.
- They provide brief descriptions or additional information about the associated element.

Dialogs

- Dialogs are separate windows that prompt users for input, display information or request confirmation
- Common types include:
    - Message Dialogs: Display messages to the user.
    - Input Dialogs: Prompt users for input.
    - File Choosers: Allow users to select files or directories.
    - Option Dialogs: Present a set of predefined options.
- Dialogs are user for communication between the application and the user.
- They provide a way to gather input, convey messages , or obtain user confirmation.