

# GUI - Java



**Programación III**

**UNA** UNIVERSIDAD  
NACIONAL  
COSTA RICA

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<https://github.com/mikeguzman/EIF206-Progra-III.git>

**Git examples repository**

# Working with Swing

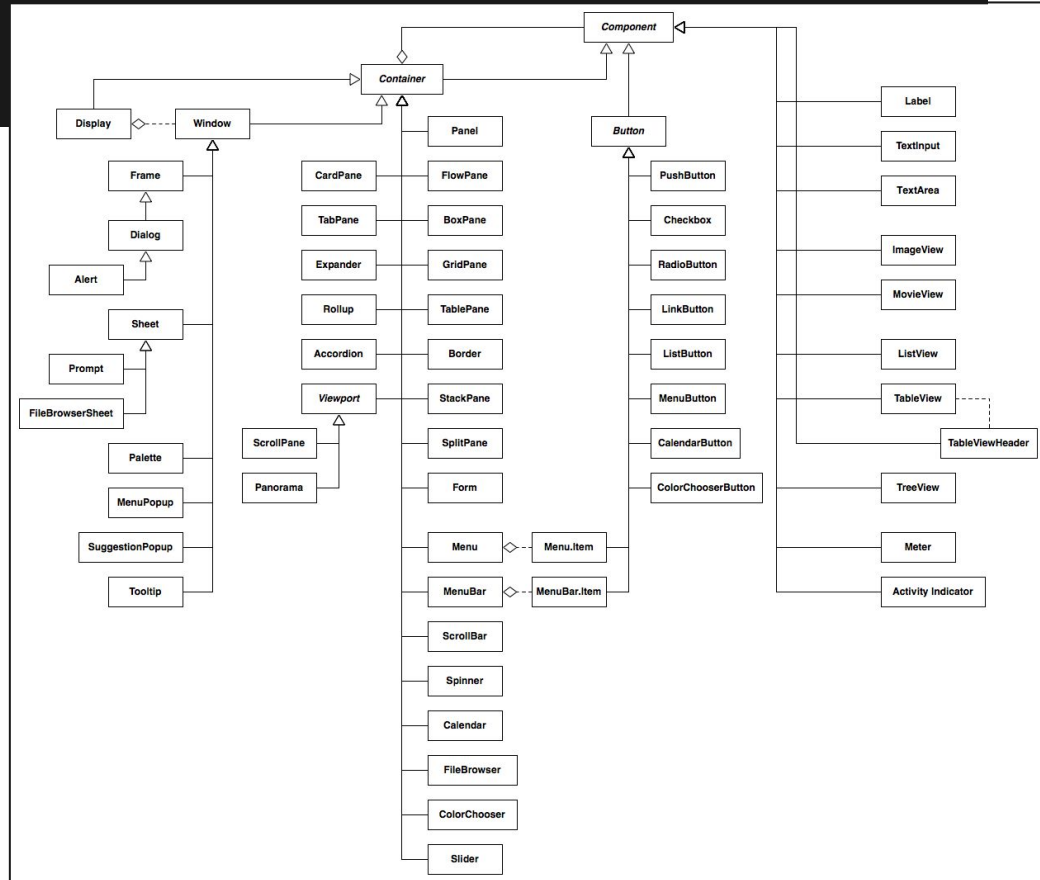
- The Java Class Library includes a set of packages called Swing that enable Java programs to offer a sophisticated GUI and collect user input with the mouse, keyboard, and other input devices

# Some swing widgets

- Frames: Windows that can include a title bar; menu bar; and Maximize, Minimize, and Close buttons
- Image Containers: Interface elements that can hold other components
- Image Buttons: Clickable regions with text or graphics indicating their purpose
- Image Labels: Text or graphics that provide information
- Image Text fields and text areas: Windows that accept keyboard input and allow text to be edited
- Image Drop-down lists: Groups of related items that can be selected from drop-down menus or scrolling windows
- Image Check boxes and radio buttons: Small squares or circles that can be selected or deselected
- Image icons: Graphics that can be added to buttons, labels, and other components
- Image Scrolling panes: Panels that hold components too big for a user interface

# List of widgets

[Link to Oracle  
Java  
Swing  
Components](#)



# Swing Examples

1. Simple Frame
2. Button Frame **(with test)**
3. Icon Frame
4. Authenticator **(with test)**
5. Format Frame
6. Format Frame Dropdown

# Basic Interface Layout

- A layout manager determines how components will be arranged when they are added to a container
  - BorderLayout, BoxLayout, CardLayout, FlowLayout, **and** GridLayout

# Frame Examples

1. Alphabet
2. Border
3. Bunch



# Responding to User Input

## EVENT LISTENERS

- If a class wants to respond to a user event in Java, it must implement the interface that deals with the events
- Interfaces that handle user events are called event listeners
- Each listener handles a specific kind of event

# Basic Events [1]

- **ActionListener:** Action events, which are generated when a user performs an action on a component, such as clicking a button
- **Image AdjustmentListener:** Adjustment events, which are generated when a component is adjusted, such as when a scrollbar is moved
- **Image FocusListener:** Keyboard focus events, which are generated when a component such as a text field gains or loses the focus
- **Image ItemListener:** Item events, which are generated when an item such as a check box is changed
- **Image KeyListener:** Keyboard events, which occur when a user enters text using the keyboard

# Basic Events [2]

- **Image MouseListener:** Mouse events, which are generated by mouse clicks, a mouse entering a component's area, and a mouse leaving a component's area
- **Image MouseMotionListener:** Mouse movement events, which track all movement by a mouse over a component
- **Image WindowListener:** Window events, which are generated when a window is maximized, minimized, moved, or closed
- **Full list in Oracle:** [Link API Events](#)

# Events Examples

1. Click Event (**with test**)
2. Focus Example (**with test**)
3. Format Chooser
4. Key Checker