Java GUI Programming AWT/SWING - GUI

INTRODUCTION TO AWT/SWING GUI PROGRAMMING

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GUI Programming

(1) GUI, Graphics, Audio, Video, Network, Database and other multimedia stuffs

(2) Deployment: Desktop Application, Applet, WebStart, Web server

The early hype about applets has passed, and they haven't provided as many solutions as server-based programs or applications. Distributed software is probably done better with Java WebStart than applets. Almost all examples in these notes are applications, which can be used with WebStart. It's also easy to modify most of them into applets. (Competition from Javascript!)

(3) Technology: AWT, SWT, Swing, JavaFX.

AWT/Swing

1. Widely used. More examples.
2. Full GUI Capability but not compatible with newer web technology (HTML5, CSS3)
3. Still portable to JavaFX.
4. Supports Discontinued by Oracle, but still robust in many application fields.

GUI terminology

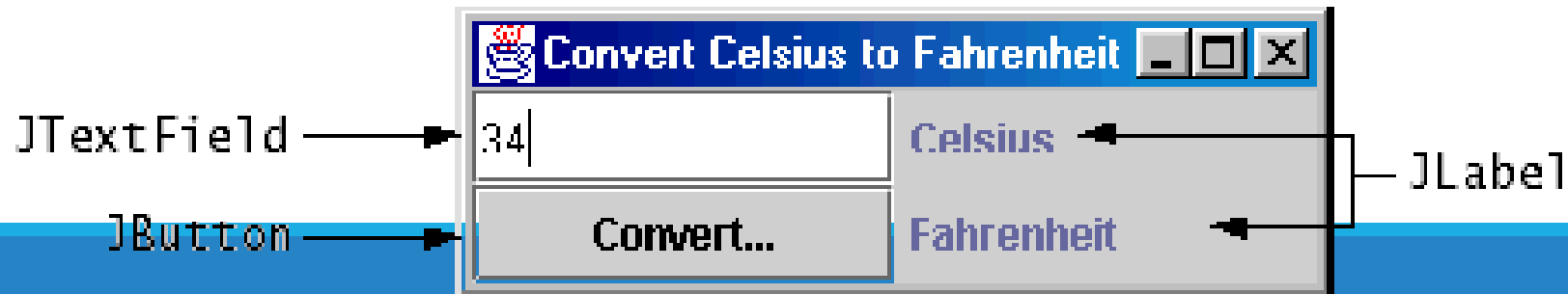*window*: A first-class citizen of the graphical desktop

- Also called a *top-level container*
- Examples: *frame*, dialog box, applet

component: A GUI *widget* that resides in a window

- Called *controls* in many other languages
- Examples: button, text box, label

container: A component that hosts (holds) components

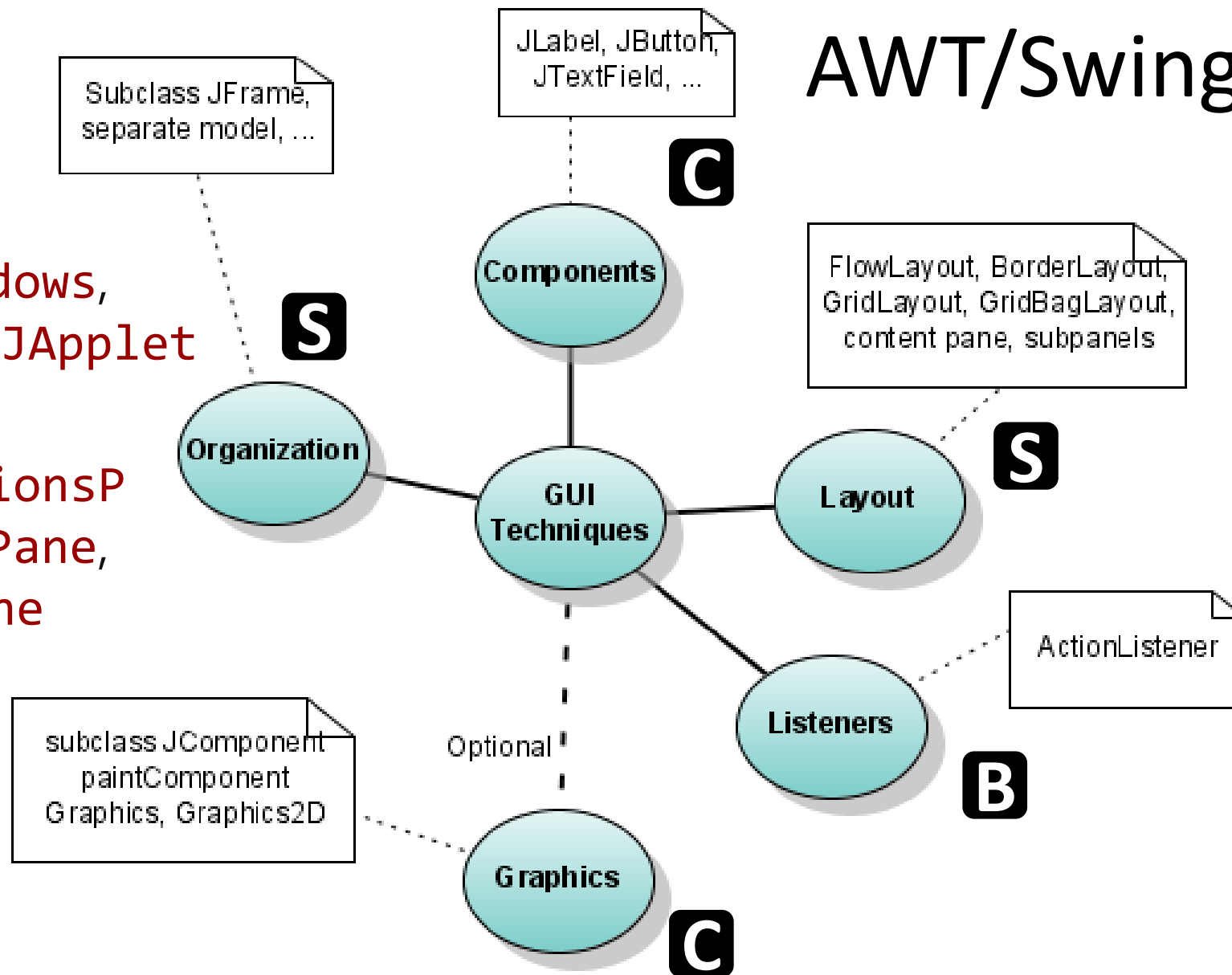- Examples: frame, applet, *panel*, box

AWT/Swing

Top Level:
JFrame, JWindows, JDialog, and JApplet
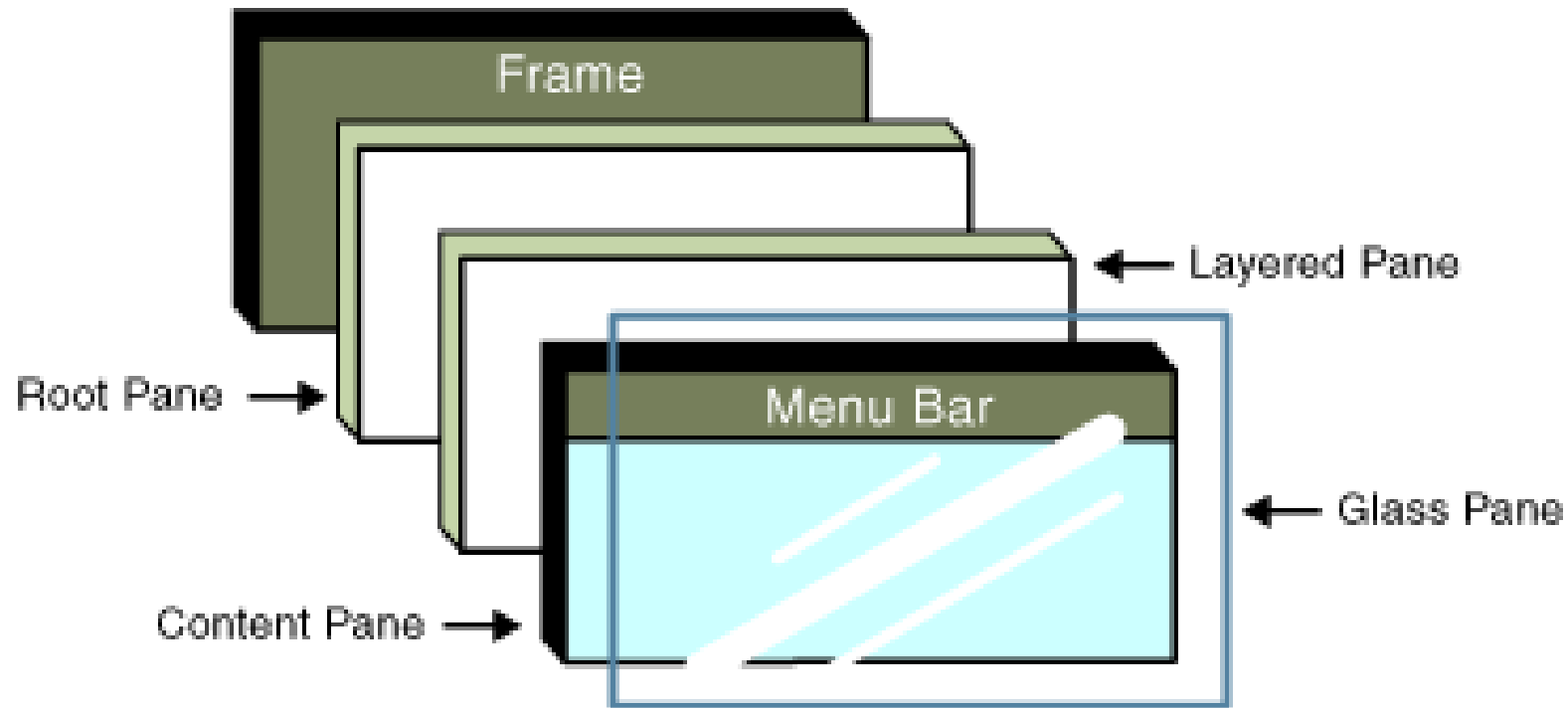
Containers:
JPanel, JOptionsPane, JScrollPane, andJSplitPane

Structural Organization

Frame

Layered Pane

Root Pane

Menu Bar

Glass Pane

Content Pane

From Sun Microsystems(tm) Website

ActionListener interface

- An ActionListener object is one that implements the ActionListener interface and its single method, actionPerformed

- The actionPerformed method requires an ActionEvent parameter; such a parameter is supplied by a user action, such as a mouse click

Demo Program
SparringScore.java

Go BlueJ!!!

Frame 3:

Event Source

Press Me

Mnemonic('P')   **ActionListener**

Event Target

answer (JLabel)

JOptionPane   **actionPerformed**

""

setText   Event Handler