

# ADVANCED GUIS

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# Layouts

- ❑ Old Layouts:
  - Flow, Border, Grid
- ❑ New Layouts:
  - Box – puts components in a single row or column
  - Card – implements an area that contains different components at different times
  - GridBag – extended grid layout, except components may span partial or multiple cells. (sophisticated and very flexible)
  - Group – groups components together in sequential or parallel arrangement
  - Spring – each component's position is defined by the surrounding components (Very low-level)
- ❑ For More Info:  
<http://download.oracle.com/javase/tutorial/uiswing/layout/visual.html#box>



# Focus Subsystem

- ▣ Input Validation
  - Restrict user's input by only allowing reasonable inputs (ex. Numeric input)
  - Input Verifier – is consulted whenever the component is about to lose focus.
  - extend InputVerifier, create instance of subclass and set the instance as the input verifier for one or more components.
- ▣ Tab-order of components
  - LayoutFocusTraversalPolicy – automatically sets tab-order
  - setFocusCycleRoot() – manually sets tab-order
- ▣ Key Binding
  - Only the focused component is affected by key presses

# Action (interface)

- ▣ Reduces code and centralizes event handling when multiple components perform the same function
  - Ex. menuItem and Button perform same function
- ▣ To create an Action object:
  - Write subclass of AbstractAction, implement actionPerformed method
  - Attach action to component as a parameter of the constructor or using setAction method

# Key Bindings

- ▣ Allows a user to perform an action using keystrokes instead of using the mouse.
  - Ex. A user to can press Enter on a button instead of clicking the mouse to perform the same action.
- ▣ InputMap: binds key strokes to action names
- ▣ ActionMap: links Actions to action names
  - ▣ `component.getInputMap().put(KeyStroke.getKeyStroke("key"), "doSomething");`
  - ▣ `component.getActionMap().put("doSomething", anAction);`

# Extra Sections Not Covered in Capsule

- ▣ Integration with the Desktop Class
- ▣ Translucent and Shaped Windows
- ▣ Swing Timers
- ▣ Support Assistive Technologies
- ▣ Modality in Dialogs
- ▣ Print Tables
- ▣ Print Text
- ▣ Splash Screen
- ▣ System Tray
- ▣ For More Info:

<http://download.oracle.com/javase/tutorial/uiswing/misc/index.html>

# DEMO TIME!!!

- ▣ Are you excited?

