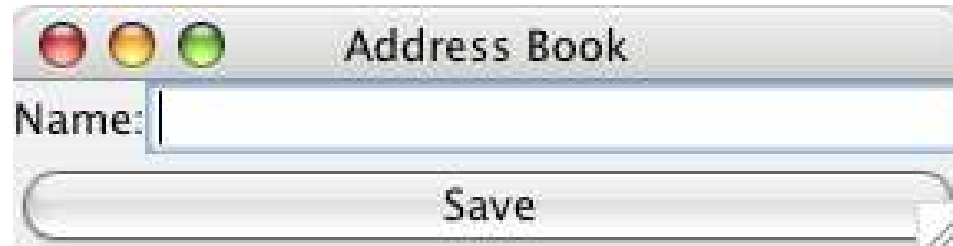


Swing Crash Course



Agenda:

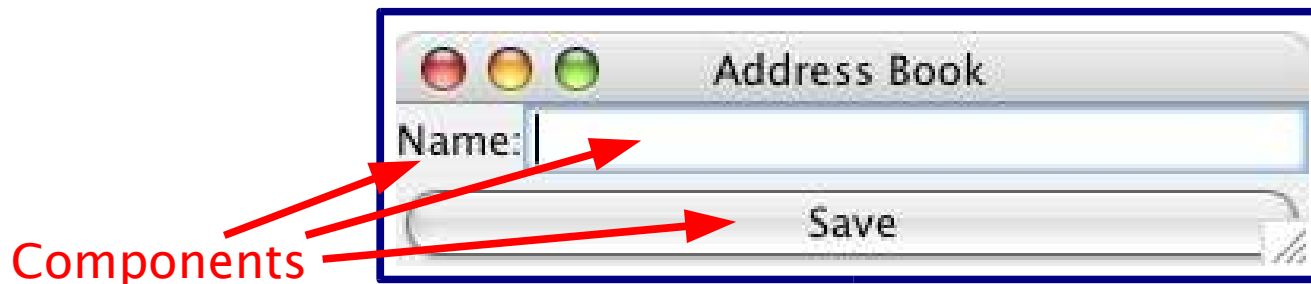
- About Swing
- GUI Building Blocks
- Laying out Components
- Reacting to User Actions

About Swing

- Swing is the **standard GUI toolkit** in the Java Standard Library (classes in the `javax.swing`)
- Built on top of **AWT**, an older toolkit (classes in `java.awt`)
- **The Swing Tutorial:**
<http://java.sun.com/docs/books/tutorial/uiswing/>
- **Java API Documentation:**
<http://java.sun.com/j2se/1.4.2/docs/api/>

GUI Building Blocks

- A GUI is constructed from individual **Components**, e.g. text, buttons, input fields.
- **Containers** are Components which may contain other Components, e.g. a window.

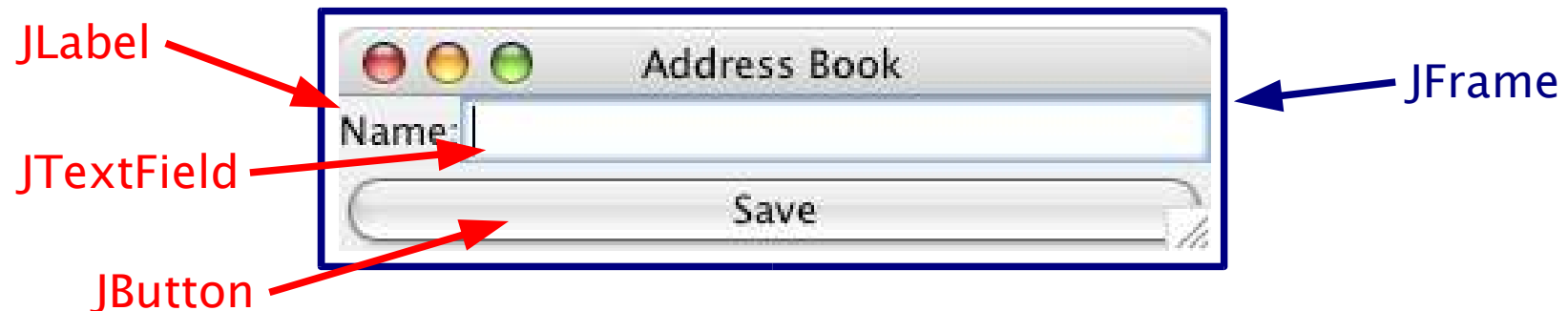


The GUI window is a Container.

- An application of the **Composite Pattern**

Swing Components

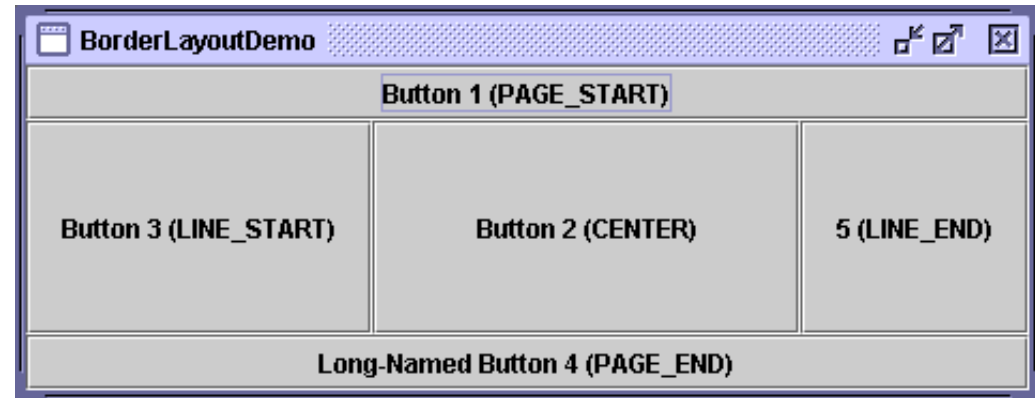
- Important Containers: **JFrame** (a window), **JPanel** (a generic Container)
- Some Components: **JLabel**, **JButton**, **TextField**



- A Visual Index to the Swing Components:
<http://java.sun.com/docs/books/tutorial/uiswing/components/components.html>

Laying out Components

- A **Layout Manager** determines the size and position of Components within a Container.
- E.g. **BorderLayout**:



```
JPanel panel = new JPanel();  
panel.setLayout(new BorderLayout());  
panel.add(new JButton(), BorderLayout.CENTER);
```

- A Visual Guide to Layout Managers:
<http://java.sun.com/docs/books/tutorial/uiswing/layout/visual.html>

Reacting to User Actions

- Actions of the user (e.g., clicking, entering text) generate **Events**.
- When Events happen, **Listeners** are executed.
- Listeners can be attached to Components.

```
saveButton.addActionListener(new ActionListener() {  
    public void actionPerformed(ActionEvent ev) {  
        Contact contact = new Contact(...);  
        addressbook.add(contact);  
    }  
});
```