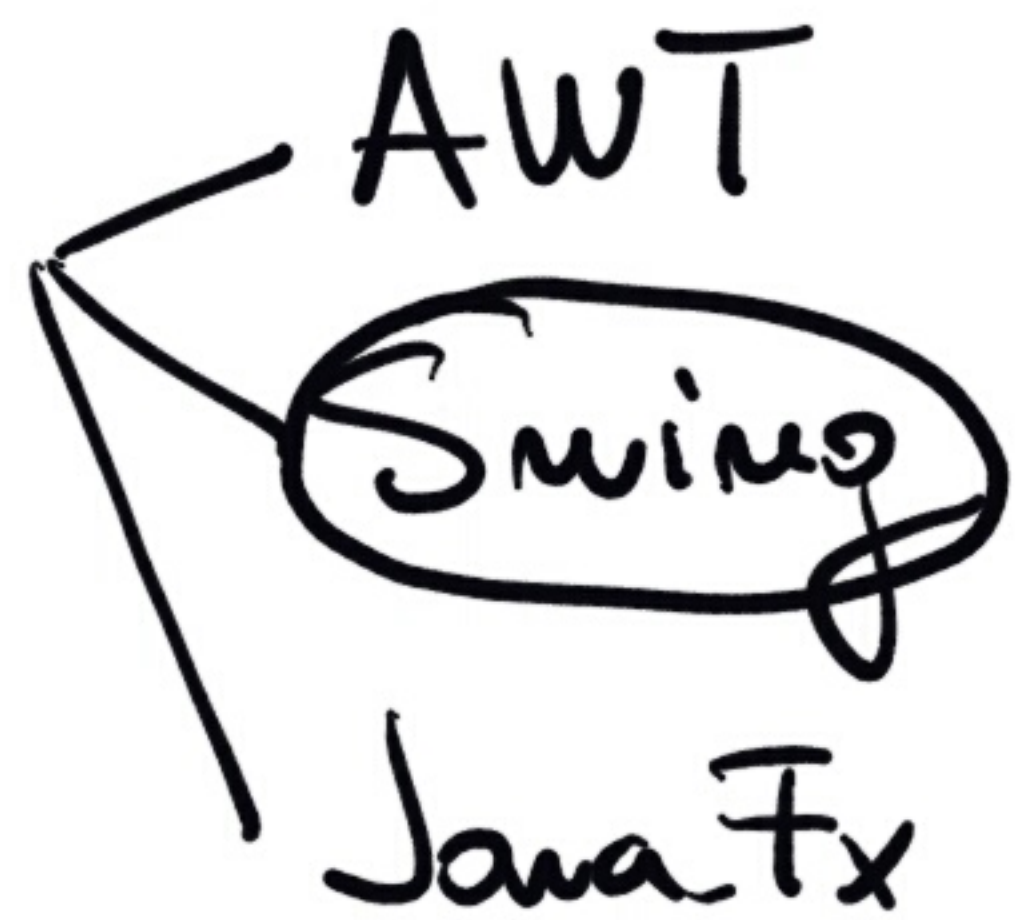
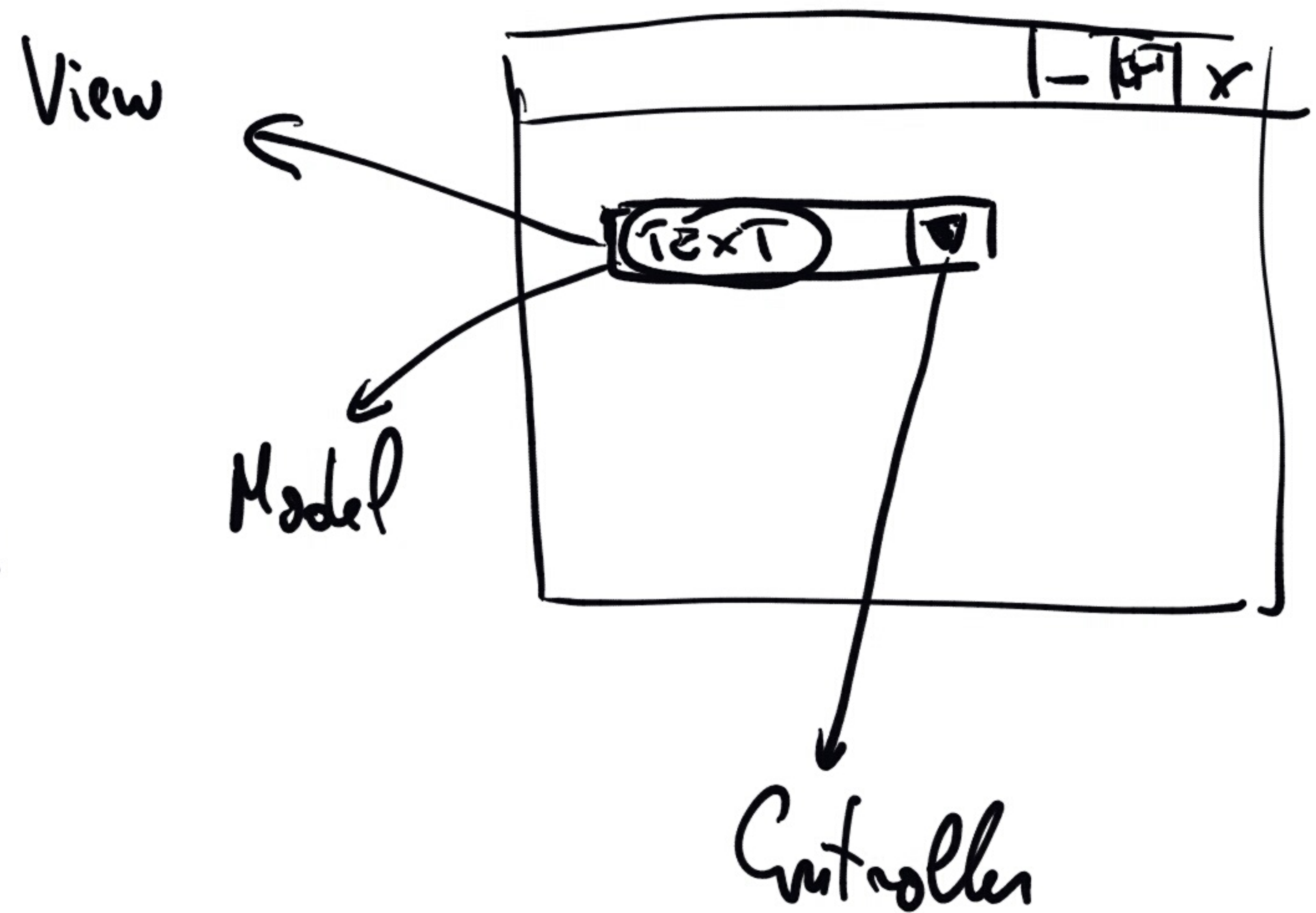


# GUI - Graphical User Interface



MVC → Model - View - Controller

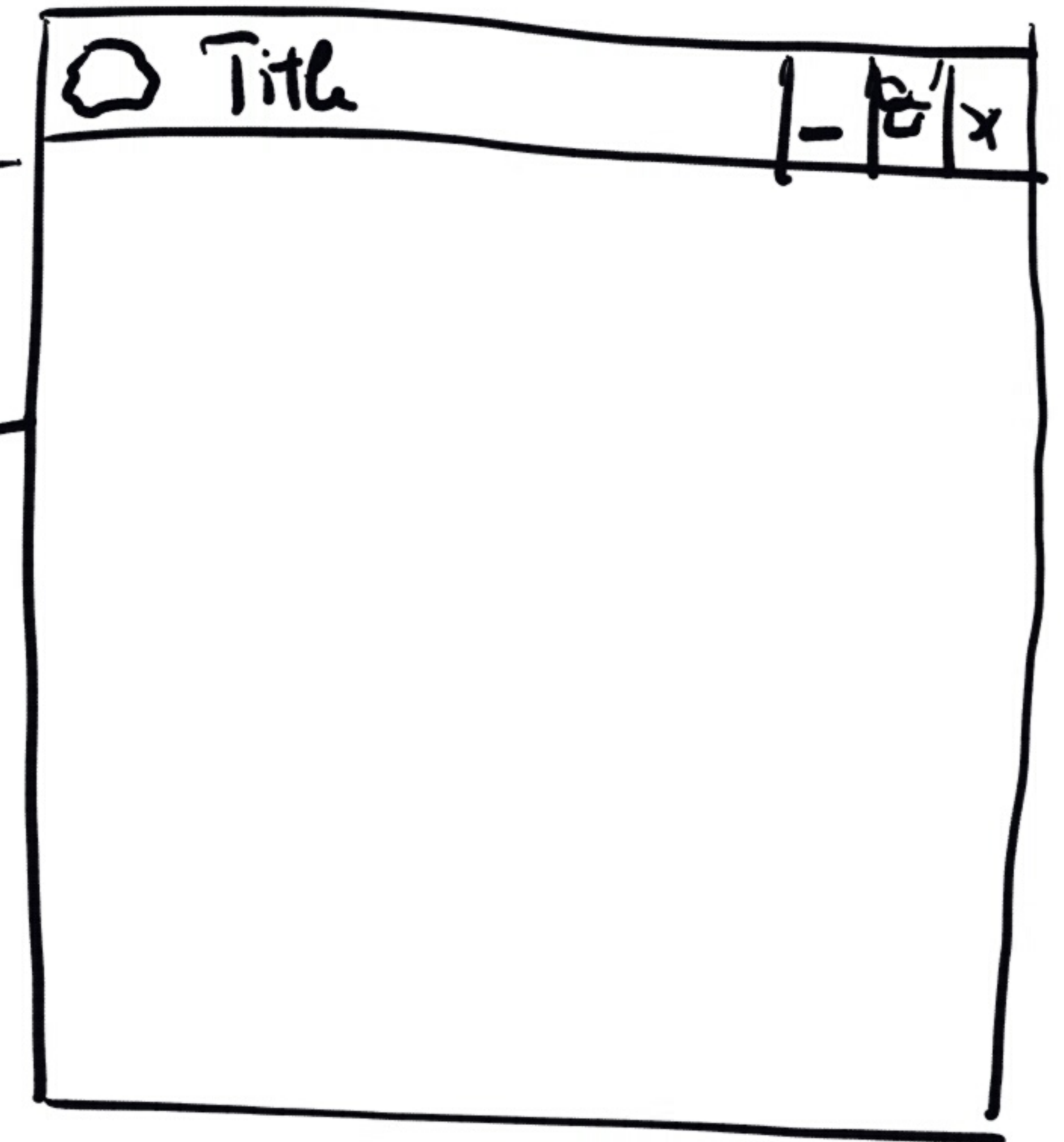


# View

(AWT) `java.awt.Frame` ←

(Swing) `javax.swing.JFrame` ←

```
JFrame frame = new JFrame();  
frame.setTitle("My App");  
frame.setSize(300, 300);  
frame.setVisible(true);
```



## Look-And-Feel

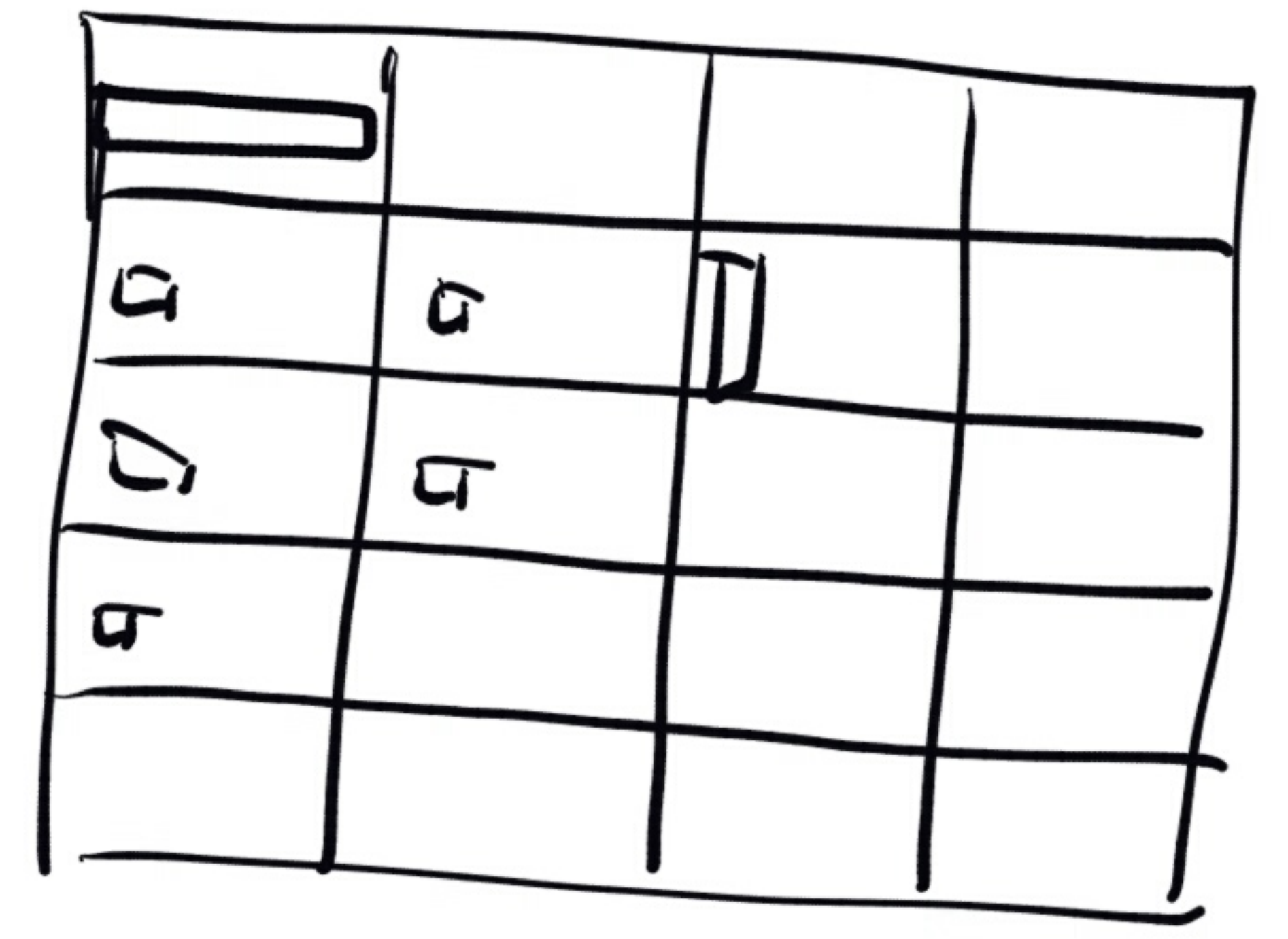
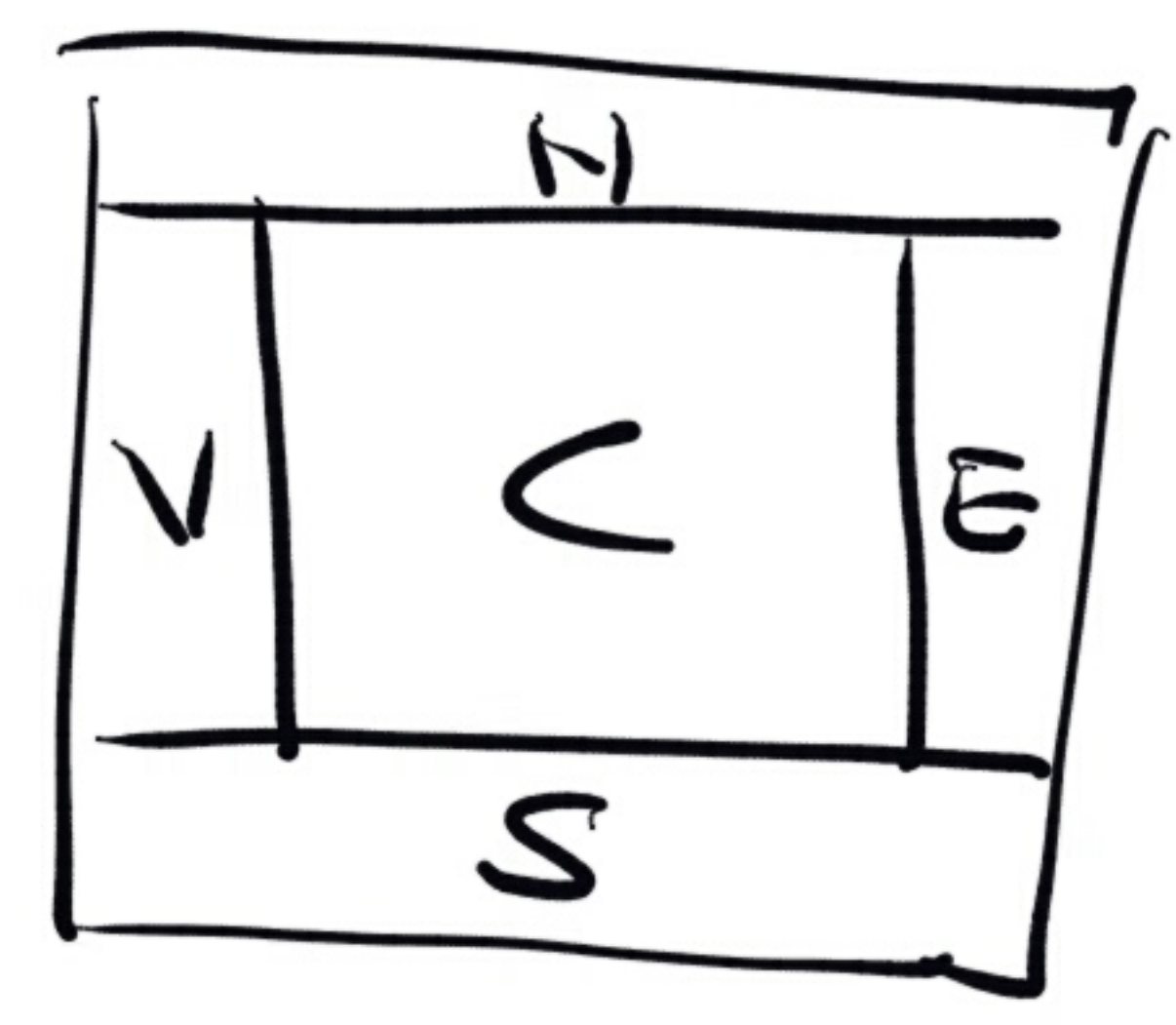
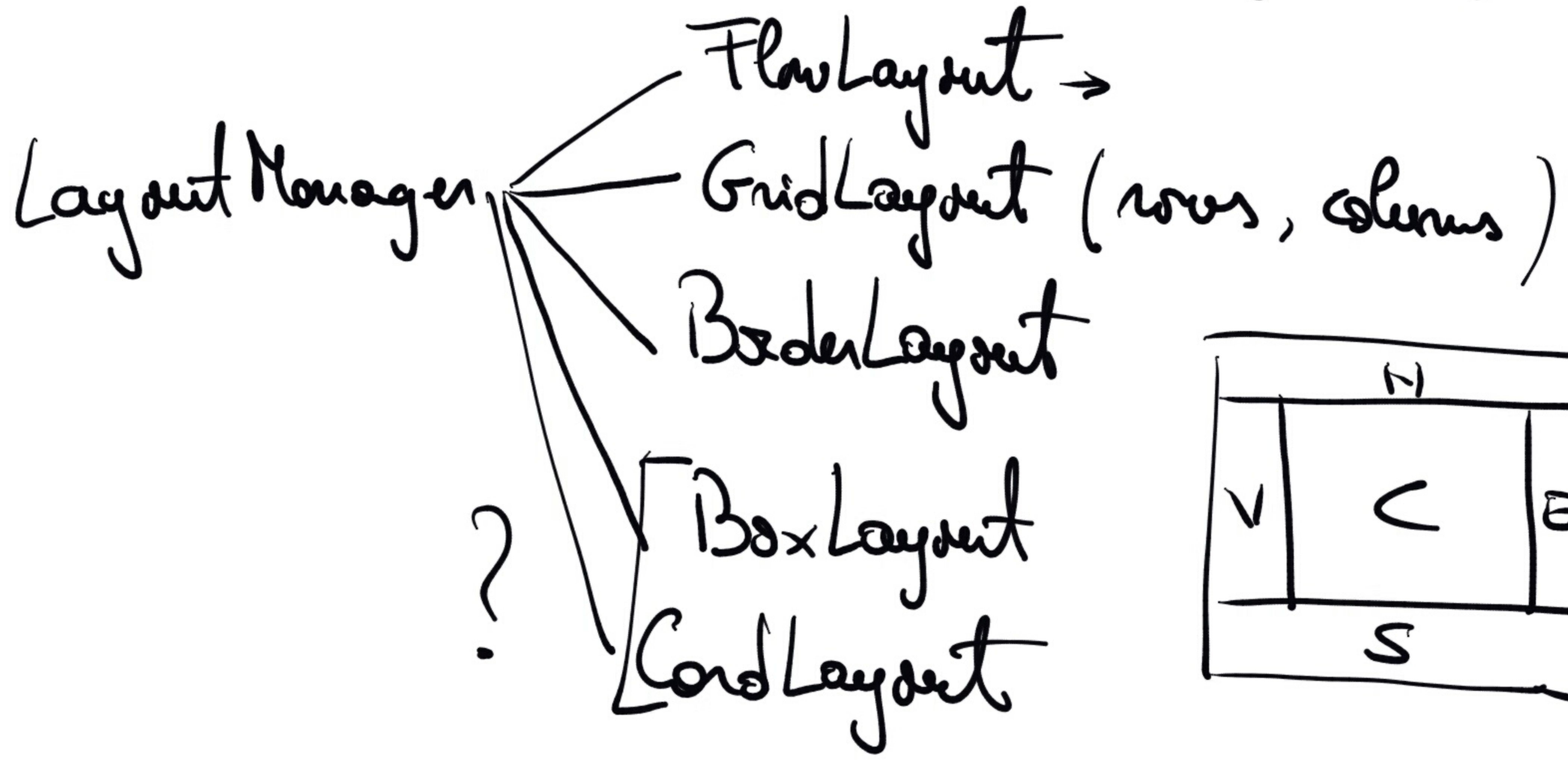
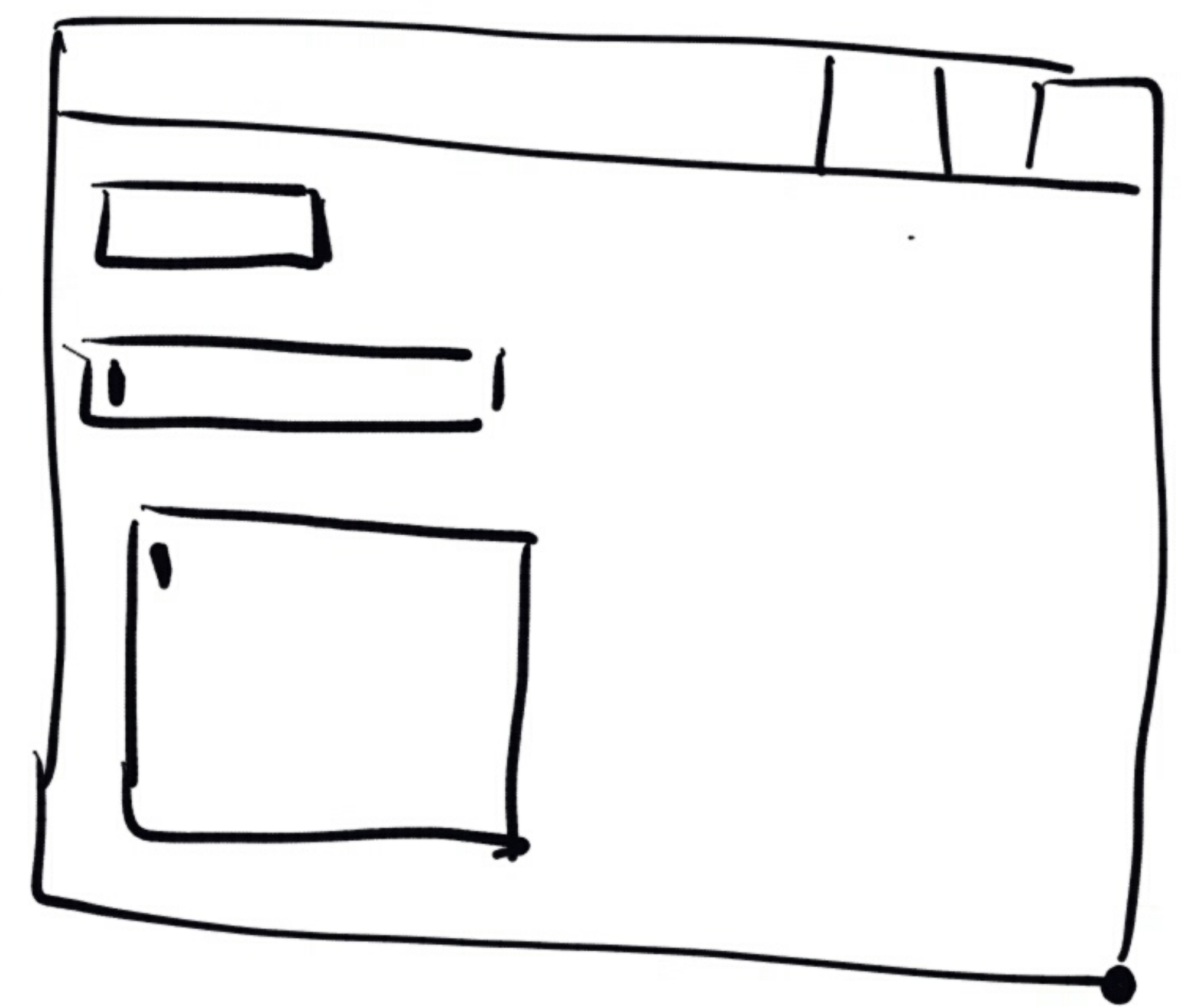
Nimbus → cross Platform

Gtk+

(AWT)  
Component  
Container

(SWING)  
JComponent  
——

Containers  
↓  
LayoutManager





## Components (no swing containers) →


- → `javax.swing.JButton`
- → `javax.swing.JToggleButton`
- → `javax.swing.JRadioButton`
- → `javax.swing.JCheckBox`

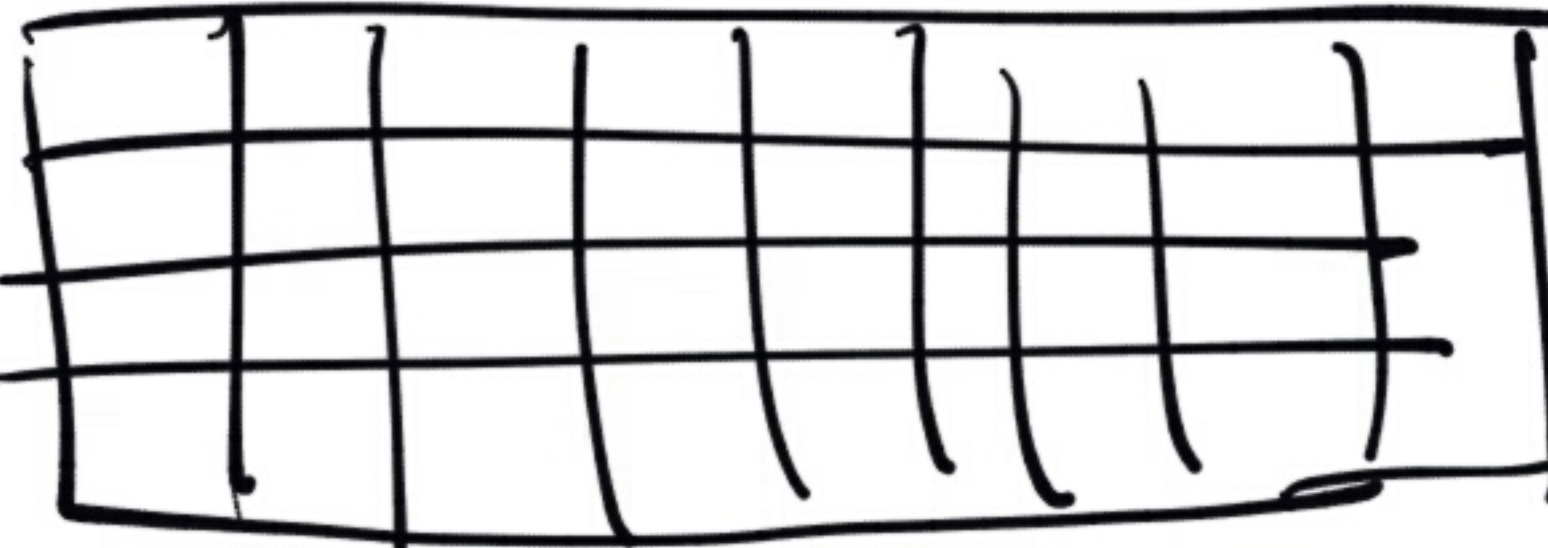
`javax.swing.JButtonGroup`

- → `javax.swing.JComboBox`
- → `javax.swing.JTextField`
- → `javax.swing.JPasswordField`

-  → javax.swing.JTextArea

-  → javax.swing.JEditorPane

-  → javax.swing.JList

-  → javax.swing.JTable

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- javax.swing.JSpinner

Blk:

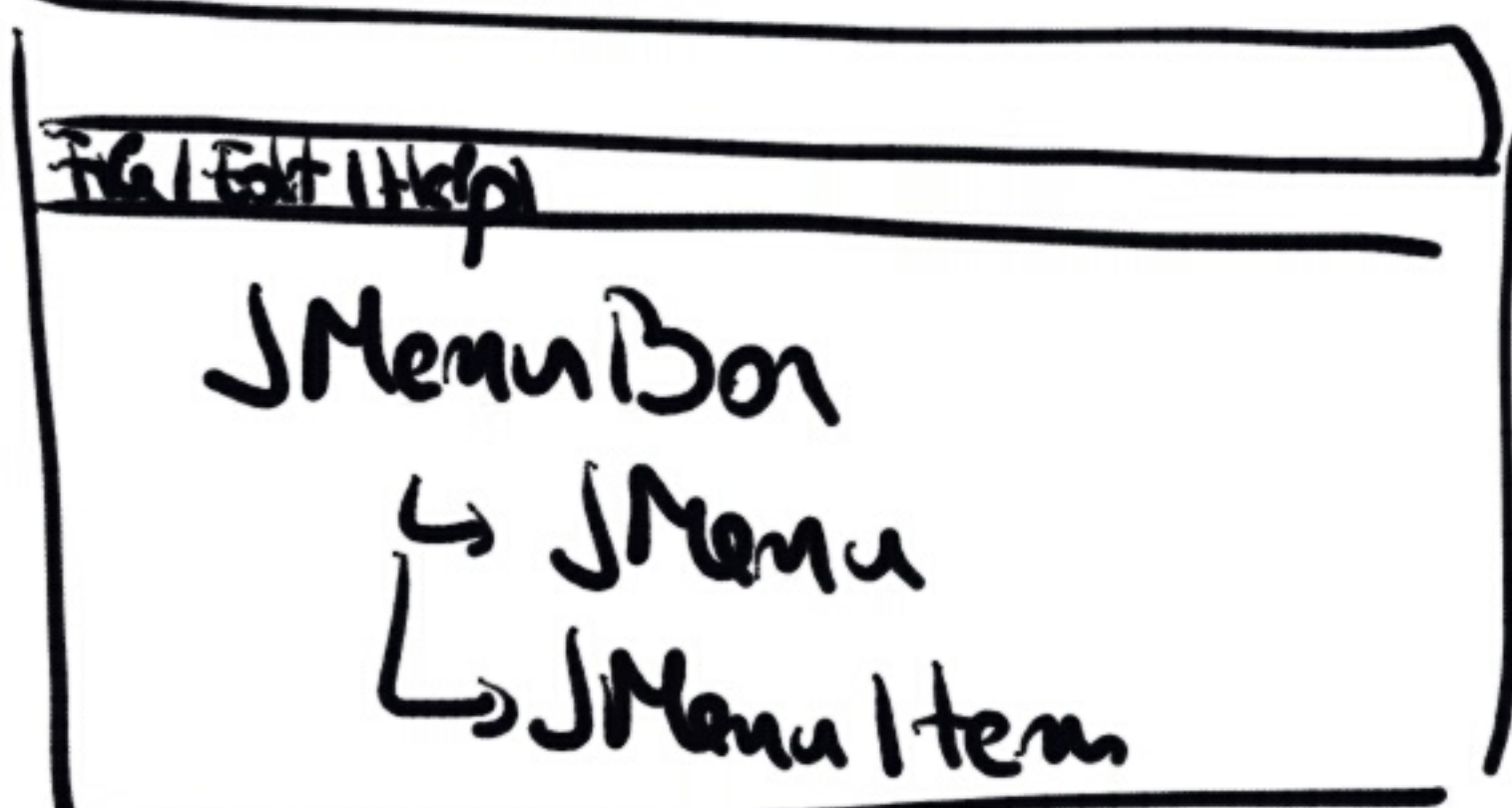
- javax.swing.JLabel



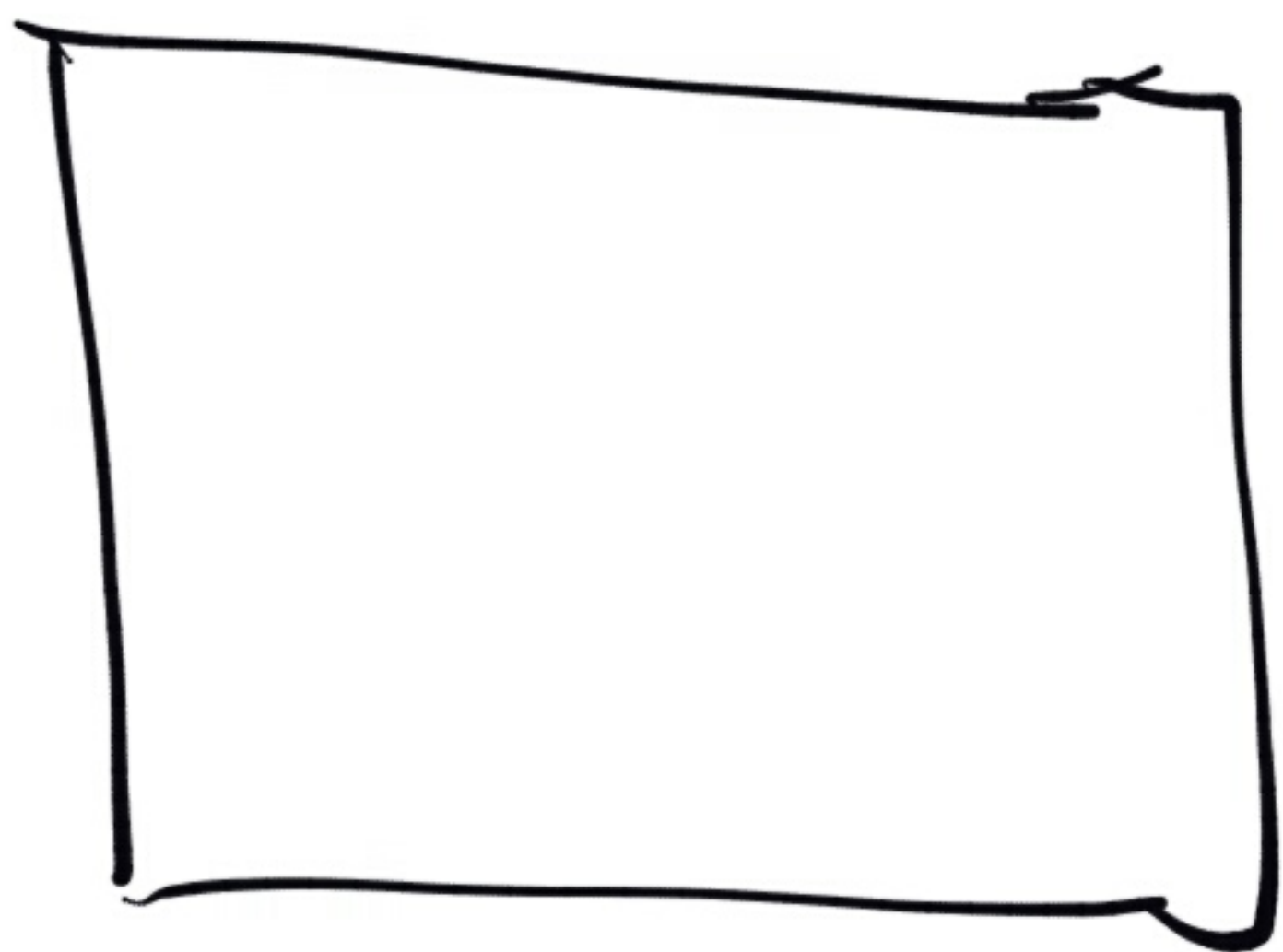
- javax.swing.JProgressBar



- javax.swing.JSlider



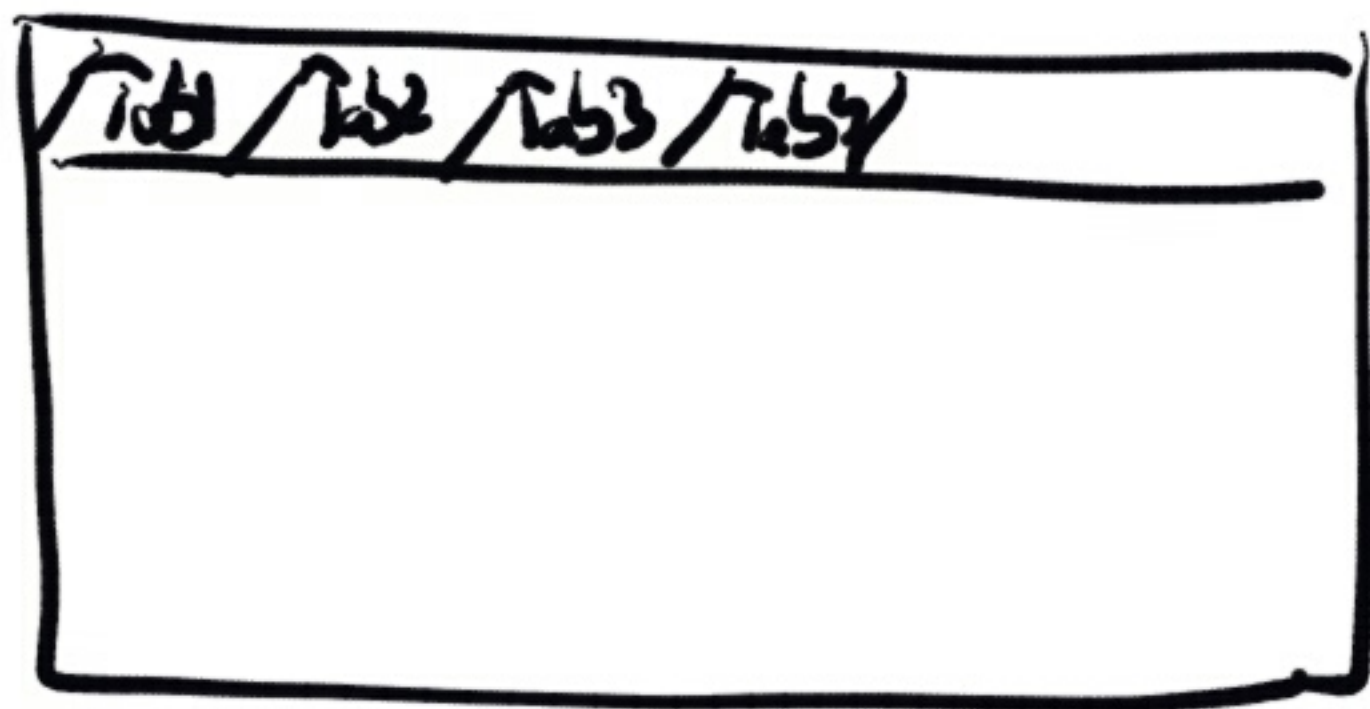
# Containers



→ javax.swing.JPanel



→ javax.swing.JScrollPane



→ javax.swing.JTabbedPane