

GUI Using Swing

Sources

Oracle.com

Summary

Swing is the primary GUI creating library that is located natively in Java. It took the place of AWT due to the fact that Swing is much more user-friendly and runs natively on every operating system unlike AWT.

Every GUI is created on a JFrame. A JFrame is the window itself. It contains the title bar of the window, and also contains the minimize, maximize, and exit buttons.

A JFrame can be manipulated many different ways. Many unique things can be added to a JFrame using the `JFrame.add(thisObject)` function.

The JFrame constructor class can take either nothing, a string, which will be the window title, a GraphicsConfiguration, or both.

Ex.

To create a window with “Your Name” as the title:

```
JFrame frame = new JFrame("Your Name");
```

JFrame’s are nice on their own, but without some sort of layout, everything that is added to the JFrame will just get added on top of the previous object. The most popular layout is probably the FlowLayout, which adds the object as close to the top of the JFrame as it can without covering another object.

Certain things that can be added include (but are not limited to):

JLabel – a label (usually instructions for the user)

JTextField – an input box for text

JButton – a button that can be pressed by the user

And many others.

JButtons are very useful when it comes to creating a GUI. In order to use a button, or receive any input from the user, the programmer must use an ActionListener. ActionListeners wait, or “listen” for the input from the user.

Example Code:

```
import javax.swing.*;

public class HelloWorldSwing {
    private static void createAndShowGUI() {
        //Create and set up the window.
        JFrame frame = new JFrame("HelloWorldSwing");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);

        //Add the ubiquitous "Hello World" label.
        JLabel label = new JLabel("Hello World");
        frame.getContentPane().add(label);

        //Display the window.
        frame.pack();
        frame.setVisible(true);
    }

    public static void main(String[] args) {
        //Schedule a job for the event-dispatching thread:
        //creating and showing this application's GUI.
        javax.swing.SwingUtilities.invokeLater(new Runnable() {
            public void run() {
                createAndShowGUI();
            }
        });
    }
}
```