

1. GUI Programming :: AWT and Swing

The Java Class Library contains many classes for writing programs with a graphical user interface (GUI). In early versions of the Library, GUI programming was accomplished using classes that were mainly located in the *java.awt* package (Abstract Window Toolkit). AWT was designed to facilitate platform-independent (operating system-independent) GUI programming. A programmer would use *java.awt* packages to create GUI components (windows, buttons, labels, etc) but the components would be rendered using the underlying operating system GUI library. Hence, on Windows a GUI button would look like a Windows button and on Mac OS, the button would look like a Mac OS button.

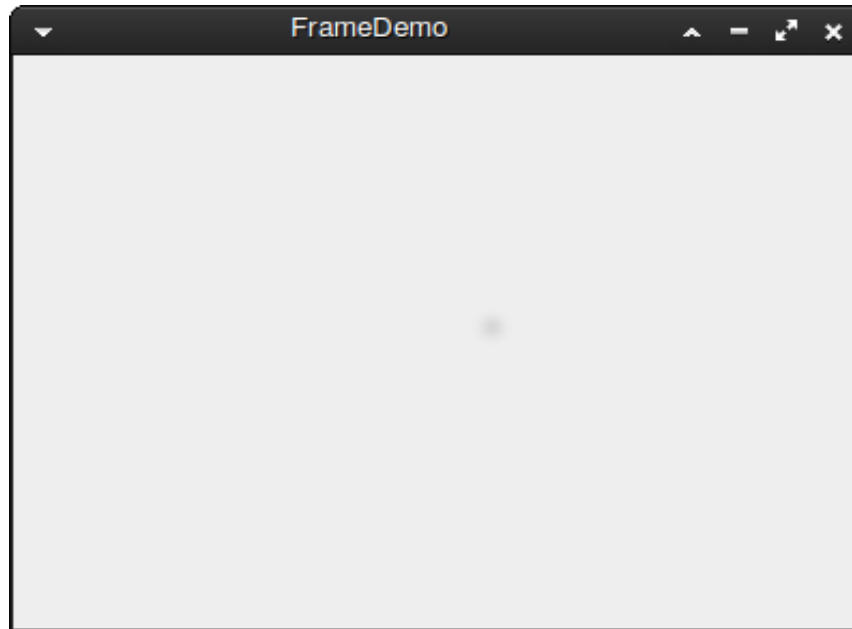
A later version of the Library provided a new package *javax.swing* and associated classes that were still platform-independent, but would render the GUI components themselves. The result would be a GUI program that looks the same on all platforms.

Even though Swing has largely superseded AWT, Swing still makes use of certain classes and methods in AWT so learning to program Java GUI's requires learning a little of both packages. However, we will focus mainly on Swing.

1. GUI Programming :: The *JFrame* Class

A *JFrame* (or simply, frame) is a top-level window and contains GUI components. A frame has a border, a title bar, and buttons for minimizing, maximizing, and closing the frame.

```
// FrameDemo.java
import javax.swing.JFrame;
public class Frame {
    public static void main(String[] args) { new Frame().run(); }
    public void run() {
        // Pass false to setDefaultCloseOperation() to use the native look and feel.
        JFrame.setDefaultLookAndFeelDecorated(false);
        JFrame frame = new JFrame("Frame Demo");
        frame.setSize(400, 300);
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setVisible(true);
    }
}
```



1. GUI Programming :: The *JFrame* Class

To change the **look and feel** to the platform-independent look and feel, we call the static method *JFrame.setDefaultLookAndFeelDecorated(true)* **before** the *JFrame* object is created:

```
JFrame.setDefaultLookAndFeelDecorated(true);  
JFrame frame = new JFrame("Frame Demo");
```

