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## 10.8: Graphics User Interfaces and Applets

### Graphic User Interfaces

Java applications are not limited to text. With Java's extensive graphics APIs, they can have graphic user interfaces (GUIs). While GUIs make applications easier to use, they appear and function differently across platforms. The Abstract Window Toolkit (AWT) package gives Java applications a common, multi-platform GUI. Its goal is to make its components appear uniformly across all platforms. This uniformity, however, comes at the cost of restricted access to the more sophisticated elements or unique features of each platform.

To remedy that restriction, Java 1.2 introduced the Java Foundation Classes (JFC) Project Swing APIs, better known as Swing. Swing adds several new features and more platform independence. Unlike AWT, which uses peer or native components, Swing is a set of lightweight graphic components. It is built on top of AWT and is written in pure Java.

The JComponent class is the building block of all components in Swing. You can create your own components by extending this class.

### Applets

One of Java's earliest demonstrations was as interactive web pages using applets. Applets allow blocks of Java code downloaded over the Web and then run embedded on a web page. Applets have a few methods that let Web browsers communicate with them and, in a limited way, allow them to communicate with the browser.

With just a few lines of modification, you can convert your Java Swing Application to run as an applet.