M Ammar

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History of GUI in Java

Java is the most prominent choice of developer when it comes to cross platform application. Java GUI libraries are the big part of Java success. Where we just must create one set of GUI layout and that will work across all the platform. In the lifetime of Java language development, Oracle/Sun introduced 3 different GUI libraries: AWT, Swing, and JavaFx.

AWT, or Abstract Window Toolkit, was the earliest and original graphic user-interface toolkit. It was the part of the standard API of java to provide GUI. Sun Microsystem also integrated the AWT toolkit in early Java ME profiles (an embedded system platform based on JAVA language). The first released of AWT was in 1995. AWT provides a thin layer of abstraction on top of native OS user-interface. Let say, we create a simple button using AWT and run the same code on iOS’s machine and Window’s Machine. The look and feel of that button will be different because AWT call the native user-interface library of OS and use the graphic element from the OS user-interface library. Many programmers enjoy this feature, as this make the application looks more native to the OS rather than something which does not align with the GUI of OS. This was the initial effort of Sun Microsystem to create a set of cross-platform GUI classes.

After the success of AWT, the Sun Microsystems introduces Swing in year of 1997 with the help of Netscape Communications Corporation. The earlier name of the library was Internet Foundation Classes (IFC) which originally created by Netscape Corp. Later Sun Microsystem adopted the Netscape library and called it Java Foundation Classes which later renamed as Swing. The reason to create Swing or IFC is to provide a more polish and easy to use sets of GUI elements than the previous toolkit, AWT. Swing GUI elements are not implemented by platform-specific code, unlike its predecessor AWT. The component of Swing was written completely in Java which makes them platform independent. It has been a part of Java Standard Edition since the release of 1.2 Java. Swing allow the developer to have a control on GUI elements pixel-by-pixel, rather than handing off to OS.

In May of 2007, Sun Microsystem introduces JavaFx in their Worldwide Java Developer conference. The initiative of the project is to provide a better and more flexible GUI toolkit than Swing. The start of JavaFx project is from JavaFx Script under Chris Oliver leadership. Chris and his team at Sun Microsystem were trying to separate the logic component and the GUI components of an application. Later JavaFx Script called as FXML.The beauty of FXML and JavaFx prebuild GUI elements is that a developer can edit the look and feel of these elements using CSS code. Almost all the CSS design property are implementable on JavaFx elements. In last several years, Oracle implemented many different features in JavaFx library. Orcale also announced in 2012 that JavaFx will generate Shaders for Direct3D and OpenGL in near future.

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