




# Java Vs. JavaFX

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## 1. Definition and Purpose

Java: A high level or an object-oriented programming language utilized to create applications on high platform such as desktop, web, mobile and server side applications.

- JavaFX: An interface framework of Java that enables applications to develop rich and interactive desktop interfaces including visual components such as buttons, sliders, charts and other animation.

## 2. Core Functionality

Feature	Java	JavaFX
Purpose	General logic and backend	GUI and frontend
Output	Console-based or server-side	Window-based with visual components
UI Support	Limited (via Swing or AWT)	Advanced (modern UI with CSS, FXML)
Media & Animation	Not built-in	Built-in support for video, audio, transitions

### 3. GUI Capabilities

- Java has been using older libraries such as AWT and Swing in basic GUI operations.

JavaFX JavaFX is a replacement of Swing based on a more modern, flexible system:

- Uses Scene Graph for layout
- Supports CSS styling
- Supports FXML as a declarative UI design.
- It has an embedded controls such as charts, tables and web views.

### 4. Integration and Usage

JavaFX is not an independent language, and is a collection of Java classes and libraries.

- JavaFX is a programming language written within Java projects.

JavaFX The JavaFX applications have a Stage and Scene as a starting point, as opposed to a main() in Java.