

**Introduction to JavaFX Programming**

**Course Number:** JFX-424  
**Duration:** 4 days

**Overview**

Accelebrate's Introduction to JavaFX Programming training course teaches attendees how to create desktop applications and rich web applications with high-performance, hardware-accelerated graphics. Participants learn how to use JavaFX to build attractive interfaces that incorporate graphics and animation, as well as multithreading for a more responsive user experience.

**Prerequisites**

All attendees must have basic Java programming knowledge.

**Materials**

All JavaFX training students receive comprehensive courseware.

**Software Needed on Each Student PC**

* Recent version of macOS, Windows, or Linux
* Related lab files that Accelebrate provides
* JDK 8 or later required; JDK 11 or later preferred
* Java IDE installed (IntelliJ IDEA, Eclipse, or NetBeans)

**Objectives**

* Understand the structure of a JavaFX program
* Use CSS to style JavaFX programs
* Use FXML with JavaFX
* Create shapes in JavaFX applications
* Apply drop shadow and reflection effects
* Use JavaFX layout components
* Use properties
* Create listeners
* Use simple binding and bidirectional binding
* Use factory methods and the Fluent API for binding
* Apply custom binding
* Design graphical user interfaces (GUIs)
* Create event handlers
* Apply UI Controls
* Create Menus and Toolbars
* Use graphics and animation
* Use sequential and parallel transitions
* Work with background tasks and threads

**Outline**

* Introduction
  + Why JavaFX?
  + JavaFX Architecture
  + JavaFX Scene Graph
  + Root, Branch, Leaf Nodes
  + Stage and Scenes
  + JavaFX Program Structure
  + JavaFX Program Example
  + Using FXML
* Shapes and Effects
  + Colors, Text ,Fonts
  + CSS Styling
  + Lines
  + Circles, Rectangles
  + Paths
  + Linear Gradients
  + Radial Gradients
  + Creating Effects
  + DropShadow
  + InnerShadow
  + Reflection
  + Chaining Effects
* Layout Components
  + Layout Panes
  + Region and Pane
  + HBox, VBox
  + FlowPane, TilePane
  + GridPane, StackPane
  + BorderPane, AnchorPane
* Properties and Bindings
  + JavaFX Properties
  + Property Listeners
  + Unidirectional Binding
  + Bidirectional Binding
  + Factory Method Binding
  + Fluent API Binding
  + Custom Binding
* Basic UI Controls
  + Event Handlers
  + Label, Button
  + RadioButton, ToggleButton
  + ComboBox, CheckBox, ChoiceBox
  + ScrollBar and Slider
  + TextField, PasswordField
  + ProgressBar, ProgressIndicator
  + TextArea
* Composite UI Controls
  + Menu
  + MenuBar
  + MenuItem
  + ContextMenu, Tooltip
  + ColorPicker, DatePicker
  + ListView, TableView
  + TreeView, TreeTableView
  + TabPane
  + Accordion
* Graphics and Animation
  + Animation Hierarchy
  + Animation, Transition
  + FadeTransition
  + FillTransition
  + StrokeTransition
  + ScaleTransition
  + TranslateTransition
  + RotateTransition
  + PathTransition
  + PauseTransition
  + SequentialTransition
  + ParallelTransition
* Background Tasks and Threads
  + JavaFX Thread Model
  + JavaFX Background Tasks
  + Observable Properties and Thread Safety
  + Monitoring Background Tasks
  + Safe UI Updates
  + UI updates from Background Tasks
* Conclusion