iOS 8 Application Development for iPhone and iPad Using Swift

(5 Days)

Class Overview

This iOS Development using Swift training class teaches attendees how to build iOS 8 native applications for iPhone and iPad using Apple's Cocoa Touch framework and the Swift programming language.

Class Goals

- Understand iOS application architecture.
- Learn about the use of Apple's development tools including Xcode 6.
- Gain experience using the Swift programming language.
- Use storyboards to design several app UIs.
- Explore techniques for custom drawing and animation.
- Persist data on the device using Core Data and SQLite.
- Communicate with web services from an iOS app.
- Use best practices to build an that targets multiple device types and iOS versions.

Class Prerequisites

Experience in the following areas is required:

- Knowledge of the Swift programming language.

Class Outline

Introduction
- Anatomy of an iOS Device
- iOS Architecture and Available SDKs
- Version Compatibility
- Apple Developer Programs

New APIs and Service in iOS 8

Touch ID
- PhotoKit
- HealthKit
- HomeKit

Xcode 6

Tour of the IDE
- Templates, Projects, and Workspaces
- Creating a New Project
- LLVM and LLDB
- Debug Gauges
- Asset Management
- XCTest Testing Framework
- Continuous Integration and Bots
- Automatic Configuration

Swift for Experienced Programmers

Statements, Constants, and Variables
- Data Types
- Collection Types
- Functions and Closures
- Classes and Structures
- Automatic Reference Counting (ARC)
- Optionals
- Protocols
- Generics
- Interoperability with Objective-C

Application Patterns and Architecture

Model View Controller (MVC)
- IBOutlets and IBActions
- Subclassing and Delegation

Views and Windows
The View Hierarchy
- Containers
- Controls
- Text and Web Views
- Navigation View and Tab Bars
- Alert Views and Action Sheets
- Controlling Rotation Behavior
- View Autosizing
- Autolayout

Storyboards
Adding Scenes
- Segues
- Transitions
- Using in a Tab Bar Application

Table Views
Static and Dynamic Table Views
- Delegates and DataSources
- Table View Styles
- Custom Cells

Navigation Based Applications
Adding the Root View Controller
- Creating the Navigation Controller
- Controlling the Stack Navigation Programmatically

UIPickerView and UIDatePicker
Designing the UI
- Coding for the Data Picker
- Hiding the Keyboard
- Memory Management

Directories and Files
NSFileManager, NSFileHandle, and NSData
- Problems Solved by ADO.NET Entity Framework
- Pathnames in Swift
- Working with Directories
- Working with Files
- Reading and Writing from a File
- iCloud
- Key-Value Data
- Archiving

CloudKit
Authentication
- Private and Public Databases
- Structured and Asset Storage

Working with Data
SQLite Integration
- Using SQLite Directly
- Overview of Core Data
- Managed Objects
- Persistent Store Coordinator
- Entity Descriptions
- Retrieving and Modifying Data

Multitouch, Taps, and Gestures
The Responder Chain
- Touch Notification Methods
- Enabling Multitouch on the View
- Gesture Motions
- Gesture Recognizers

Drawing
- Core Graphics and Quartz 2D
- Lines, Paths, andShapes

Animation
Core Animation Blocks
- Animation Curves
- Transformations
- SpriteKit
- SceneKit
- Metal

Multitasking
Application States
- Background Execution
- Background App Refresh
- State Restoration

Notifications
Local Notifications
- Push Notifications

Core Location Framework
Location Accuracy
- Obtaining Location Information
- Calculating Distances
- MapKit Framework and MKMapView

Concurrency
Grand Central Dispatch (GCD)
- Serial and Concurrent Queues
- Main Dispatch Queue
- Completion Blocks
- Operation Queues

Networking
Reachability
- Synchronous Downloads
- Asynchronous Downloads
- Handling Timeouts
- Sending HTTP GET and POST Requests
- Parsing JSON
- Parsing XML
- AirDrop

Targeting Multiple Devices
iPhone vs. iPad
- Universal Apps
- Multiple SDK Support
- Detecting Device Capabilities
- Supporting Multiple iOS Versions

Handoff
Interactions
- App Framework Support
- Implementing Handoff
- Continuation Streams
- Best Practices

App Extensions
Extension Types
- Creating an Extension
- Common Scenarios

Localization
Resources
- Language and Region
- NSLocale
- Text
- Dates
- Numbers

Running on a Physical Device
Development Certificates
- Assigning Devices
- Creating an App ID
- Provisioning Profiles
- Running

Performance and Power Optimization
Measuring Performance
- Instruments
- Responsiveness
- Memory Usage, Spikes, and Leaks
- Networking and Power

Deployment
Icons and Launch Images
- Distribution Certificates
- Distribution Provisioning Profiles
- Archiving an Application
- App Store Distribution
- AdHoc and Enterprise Distribution
- iTunes Connect