Course Syllabus
IOS Applications development

Course objective: Building iOS 7 Applications class teaches attendees how to build iOS 7 native applications for iPhone and iPad using Objective-C and Apple's Cocoa Touch framework

Course Length:
60 training hours

Instructor: Dr. Muhannad AlJabi

Methodology:
Lectures, class exercises and app development, class discussion, reading assignments and quizzes.

Course Outline:

- Introduction
  - iPhone and iPad Device Anatomy
  - iOS Architecture and SDK Frameworks
  - iOS and SDK Version Compatibility
  - Apple iOS Developer Program
- Xcode 5
  - 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
- Objective-C for Experienced Programmers
  - Classes, Objects, and Methods
  - Declared Properties
  - Memory Management
  - Automatic Reference Counting (ARC)
  - Categories and Extensions
  - Formal and Informal Protocols
  - Blocks
- 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 Objective-C
    - Working with Directories
    - Working with Files
    - Reading and Writing from a File
    - iCloud
    - Key-Value Data
    - Archiving
- 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
- Multitasking
    - Application States
    - Background Execution
    - Background App Refresh in iOS 7
    - 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 iOS 6 and iOS 7
- Localization
    - Resources
    - Language and Region
    - NSLocale
    - Text
    - Dates
    - Numbers
- Performance and Power Optimization
    - Measuring Performance
    - Instruments
    - Responsiveness
    - Memory Usage, Spikes, and Leaks
    - Networking and Power