iOS Programming Using Objective C

iPhone® and iPad® App Development

Students Will Learn:

- Installation and Configuration of iOS Development Tools
- Objective-C Language Syntax
- MVC Architecture in Practice
- The ARC System (Introduced in iOS 5)
- Usage of the Most Common Views and View Controllers
- Storyboard Development for Multiple Platforms
- Use of the NeXTStep Objects

- Data Persistence Using CoreData and iCloud
- How to Use the Camera, GPS, Microphone and Accelerometer
- Creation of Icons for Both Regular and Retina Displays
- Threaded Programming Support
- Web Services Support
- How to Develop Interfaces for Multiple Platforms and Resolutions
- Basic Graphics and Game Development

Course Description: Participants in this hands-on course will learn about and gain practice developing iOS applications for the full line of Apple mobile devices. As part of the course participants will create an example application which will demonstrate a majority of the iOS features as well as take advantage of a number of hardware systems and features.

Attendees will learn all the basics needed for iOS development, from installation of the Xcode editor to the Apple approval process. The Objective-C language is presented and used in hands on exercises to learn how it interacts with the hardware systems.

The exercises develop a business-oriented app from the ground up, which eventually incorporates all the major systems and concepts needed for most iOS apps. In addition the course introduces some important game development concepts.

Course Prerequisites: Prior programming experience in an object-oriented language such as Java, C# or C++.

iOS Programming Using Objective C Course Overview:

iOS Releases

- Versions of iOS and Supported Devices
- Apple Approval Process

Xcode IDE Installation and Use

- Installing and Updating Xcode
- Code Development and Tracking
- Debugging Utilities
- Application Navigation Tools

MVC Architecture

- Model-View-Controller Development Paradigm
- Application Design Process

Objective-C

- Fundamental Syntax
- Object Oriented Programming Support
- Using Dynamic Binding
- Using ARC
- Writing Code for Hardware Interaction

Internal Hardware System Support

- Using Device Cameras for Photos
- Using Device Microphone for Sound Files
- Playback of Sound Files and System Sounds
- Saving GPS Data
- Recognizing Accelerometer Motion
- Detect Multi-Touch Gestures

System Event Handling

- Recognizing Apps Moving to Background
- Detecting and Solving Low Memory Events
- Handling Custom Events and Exceptions

Multithreading Support

- Creating Threads
- Using Threads for Asynchronous Processing

Web Service Support

- Creating an App that Uses a Web Service
- Using Third-Party Systems
    - ASIHTTPRequest
    - wsdl2objc

Views and View Controllers

- Using Generic Views and View Controllers
- Using Specific Purpose Views
  - Text View
  - Web View
  - Map View
  - Table and Table Cell View

NeXTStep Object Support

- Using the NeXTStep Data Types
  - NSDate, NSPoint, NSSize, NSString
- Using the NeXTStep Collection Objects
  - NSSet and NSMutableSet
  - NSArray and NSMutableArray
  - NSDictionary and NSMutableDictionary

Data Persistence

- File Manipulation
- SQLight Support
- CoreData Usage
- Apple iCloud Storage

Multi-Platform Development

- Creating Apps that Work on iPhone and iPad
- Creating User Interfaces for Multiple Screen Resolutions
- Detecting and Using Hardware at Runtime

Games and Graphics Support

- Creating a Simple Game Using Coco Graphics
- 2D and 3D Graphics Support