Advanced iOS

Syllabus

Big Nerd Ranch

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Course Overview

This course is all about levelling up iOS developers. Students will learn new frameworks and APIs that can help them make better decisions when designing and architecting their app code. They will also learn useful troubleshooting and debugging skills and deal with real-world app stability and performance concerns.

Who Should Take This Course

- iOS developers using Swift with at least 6 months experience are ideally suited for this course.

- Experience working with view controllers, table views, collection views, and web services is strongly recommended.

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Performance Tuning

- Design a well-abstracted, multithreaded API.
- Find and fix CPU hot spots using the Instruments tool.
- Create custom Operation subclasses for doing clean asynchronous work.
- Compare and contrast the OperationQueue and Grand Central Dispatch multithreading APIs.
- Ensure thread safety with semaphore-based locking when necessary.

Debugging

- Find memory leaks, abandoned memory, and other problems using Instruments and the Memory Graph Debugger.
- Track down hard-to-find bugs with the LLDB and custom breakpoints.
- Troubleshoot layout problems with the View Hierarchy Debugger.

Customizing UIKit

- Bend collection views to your will with custom collection view layouts.
- Model and process document data with UIDocument and JavaScriptCore.
- Drive custom interactive view controller transition animations.
- Authenticate to OAuth2 services and store credentials in the keychain.
- Use app extensions for sharing behavior with other apps.

Drawing & Graphics

- Draw custom views and image data using Core Graphics and UIKit drawing routines.
- Explore how animation layers are used to build stand-out graphical effects.
- Add Interface Builder support for your custom views.
- Process raw camera data and find faces and barcodes in video with AVFoundation
- Filter and process photos with Core Image.

Interoperability

- Work effectively with Objective-C and Swift in the same project.
- Understand what does, and does not, cross the Swift/Objective-C bridge.
- Work with Swift's direct memory types for interacting with legacy C/Objective-C APIs.

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