

iOS Application Development – Intermediate to Advanced

iOS-102

Duration: 5 days; Instructor-led

Time: 9:00 AM – 5:00 PM

ABOUT THIS COURSE

This is an intermediate to advanced course meant as a follow-on course to Application Development - Introduction.

During this course, you will create a reasonably complex iOS program. In the process, it covers the Swift language, storyboards, tab bar controllers, navigation controllers, collection views and view controllers, table views and view controllers, map views and view controllers, passing data between view controllers, reading data from property list and JSON files, custom UI controls, camera and photo library, and core data.

After that you will explore new features of iOS 14 which are Mac Catalyst, SwiftUI, Widgets and App Clips. You'll also learn about how to publish your app to the App Store.

AUDIENCE

This program is targeted for experienced developers with no programming experience in iOS Development

METHODOLOGY

This program will be conducted with interactive lectures, PowerPoint presentations, online discussions, and practical exercises.

COURSE OBJECTIVES

Upon completion of this program, participants should be able to:

- Create a reasonably complex iOS application that displays data using Collection Views, Table Views and Map Views.
- Write apps that reads, and parses property lists and JSON data.
- Write apps that use Core Data to store information such as restaurant reviews and photos.
- Write apps that use the latest iOS 14 features which are Mac Catalyst, SwiftUI, Widgets and App Clips.
- Learn how to publish apps to the App Store.

COURSE OUTLINE

Module 1: Getting familiar with Xcode

- Downloading and installing Xcode from the App Store
- Understanding the Xcode User Interface
- Running the app in the Simulator
- Using an iOS device for development

Module 2: Simple values and types

- Data Types
- Constants and variables
- Type inference and type safety
- Operators
- The print () instruction

Module 3: Conditionals and optionals

- if and switch statements
- Optionals and optional binding

Module 4: Range operators and Loops

- Range operators
- Loops

Module 5: Collection Types

- Arrays
- Dictionaries
- Sets

Module 6: Functions

- Functions
- Closures

Module 7: Classes, Structures and enumerations

- Classes
- Structures
- Enumerations

Module 8: Protocols, Extensions and Error Handling

- Protocols

- Extensions
- Error Handling

Module 9: Setting Up the User Interface

- Useful terms
- Touring the Let's Eat App
- Creating a new Xcode Project
- Setting up a Tab Bar Controller Scene and Launch Screen

Module 10: Building Your User Interface

- Adding a collection view to the Explore screen
- Connecting outlets in storyboard to the view controller
- Configuring data source methods for the collection view
- Adding a section header to the collection view
- Configuring collection view cell and section header size
- Presenting a view modally

Module 11: Finishing Up Your User Interface

- Adding a Table View to the Locations Screen
- Implementing the Restaurant List Screen
- Implementing the Restaurant Detail screen
- Implementing the Review Form screen
- Implementing the Map Screen

Module 12: Modifying and Configuring Cells

- Modifying the Explore screen section header
- Modifying the exploreCell collection view cell
- Modifying the restaurantCell collection view cell
- Configuring the locationCell collection view cell

Module 13: Getting Started with MVC and Collection Views

- Understanding the MVC design pattern
- Exploring controllers and classes

Module 14: Getting Data into Collection Views

- Understanding model objects
- Displaying data in a collection view

Module 15: Getting Started with Table Views

- Understanding table views
- Creating LocationViewController
- Adding location data for the table view
- Creating LocationDataManager
- Cleaning up the user interface

Module 16: Getting Started with MapKit

- Understanding and creating annotations
- Adding annotations to a map view
- Going from the Map screen to the Restaurant Detail screen

- Organizing your code

Module 17: Getting Started with JSON Files

- Getting data from JSON files
- Using data from JSON files in your app

Module 18: Displaying Data in a Static Table View

- Setting up outlets for RestaurantDetailViewController
- Displaying data in the static table view
- Passing data from RestaurantListViewController to RestaurantDetailViewController

Module 19: Getting Started with Custom UIControls

- Creating a custom UIControl object
- Displaying stars in your custom UIControl object
- Adding support for touch events
- Implementing an unwind method for the Cancel button
- Creating ReviewFormViewController

Module 20: Getting Started with Cameras and Photo Libraries

- Understanding filters
- Creating a scrolling list of filters
- Getting permission to use the camera or photo library

Module 21: Understanding Core Data

- Introducing Core Data
- Implementing Core Data components for your app
- Understanding how saving and loading works
- Updating ReviewFormViewController to save reviews
- Updating PhotoFilterViewController to save photos
- Displaying saved reviews and photos in the Restaurant Detail screen
- Calculating a restaurant's overall rating

Module 22: Getting Started with Apple Silicon Macs

- Cleaning up the design
- Updating the app to work on iPad
- Updating the app to work on macOS

Module 23: Getting Started with SwiftUI

- Creating a SwiftUI Project
- Creating the Restaurant List screen
- Adding model objects and configuring navigation
- Using UIKit and SwiftUI views together
- Creating the Restaurant Detail screen

Module 24: Getting Started with Widgets

- Introducing widgets
- Adding a widget target to your app
- Providing timeline entries to your widget

- Customising your widget's view
- Adding your widget to the Home screen

Module 25: Getting Started with App Clips

- Introducing app clips
- Adding an app clip to your project
- Configuring your app clip
- Passing restaurant data to the Restaurant Detail screen

Module 26: Testing and Submitting Your App to the App Store

- Getting an Apple Developer account
- Generating a certificate signing request
- Creating development and distribution certificates
- Registering an App ID
- Registering your devices
- Creating provisioning profiles
- Creating icons for your app
- Creating screenshots for your app
- Creating an App Store listing
- Creating an archive build
- Completing the information in App Store Connect
- Testing your app