Course Outline: NTAP201 - iOS App Development Using SwiftUI

Course Overview

This comprehensive course empowers participants to design, build, and deploy modern iOS applications using Swift and SwiftUI. Learners gain practical experience in Swift programming, user interface creation with SwiftUI's declarative syntax, data management, and integration of essential APIs. The course emphasizes building scalable, industry-ready apps for the competitive App Store landscape, catering to both beginner and seasoned developers.

While a Mac would be needed to complete this course or at the very least a Mac remote desktop service, no devices such as iPhone or iPad are required as the course can be completed using XCode's built-in simulators.

Learning Outcomes

Participants completing this course will be able to:

- Master the **fundamentals of Swift programming** for iOS app development using XCode.
- Build **visually appealing, responsive user interfaces** using SwiftUI.
- Efficiently manage app data and integrate real-world APIs.
- Apply best practices in app architecture, debugging, and optimization.

Prerequisites

Participants completing this course should be able to code in another programming language such as C#, Java or C++. Python at minimum. Participants should have some basic knowledge of computing environments such as Windows with macOS being preferred.

Key Features

- **Hands-on learning** with guided projects and real exercises.
- Up-to-date curriculum on Swift and SwiftUI features.
- Expert-led instruction by experienced professionals.
- Flexible delivery: online and onsite options available.

- Scalable learning for both entry-level and advanced developers.

Course Modules

- **Module 1: Introduction to iOS and SwiftUI**
    - Overview of iOS platform and app ecosystem
    - Xcode environment fundamentals
    - Swift syntax and data types
    - Control flow and functions
    - Optionals, closures, and error handling
- **Module 2: Building User Interfaces with SwiftUI**
    - Introduction to declarative UI and SwiftUI concepts
    - Views, modifiers, and UI state management
    - Designing forms, lists, stacks, navigation, and tab views
    - Responsive layouts across devices
- **Module 3: Data Management and Integration**
    - Handling data with @State, @Binding, and ObservableObject
    - Persisting data using Core Data and UserDefaults
- **Module 4: Navigation Using MapKit**
    - MapKit
- **Module 5: Advanced SwiftUI Features**
    - iPadOS
    - Mixing Languages (UIKit & SwiftUI)

Agenda

Time	Day 1	Day 2	Day 3	Day 4
8:00am	Networking & Coffee	Networking & Coffee	Networking & Coffee	Networking & Coffee
9:00am	M1: Introduction to iOS, macOS and XCode App1: Hello World	M4: Data Display Using Lists App4: List App 1	M7: MapKit App7: Map Navigation App	M9: Mixing Languages App9: UIKit App With SwiftUI
10:15am	*Coffee Break*	*Coffee Break*	*Coffee Break*	*Coffee Break*
10:30am	M2: ContentViews App2: Calculator	M5: Advanced Lists App5: List App 2	Applied Exercise 3: Restaurant Locator App	Course Review
11:45am	*Networking & Lunch*	*Networking & Lunch*	*Networking & Lunch*	*Networking & Lunch*
1:00pm	M3: NavigationViews App3: Multi-page App	Applied Exercise 2: Music Management App	M8: iPadOS App8: Drawing App	Applied Exam
2:15pm	*Coffee Break*	*Coffee Break*	*Coffee Break*	*Coffee Break*
2:30pm	Applied Exercise 1: Pizza Delivery App	M6: CoreData App6: Data Management App	Applied Exercise 4: Coffee Ordering App	Applied Exam
3:45pm	*Recap*	*Recap*	*Recap*	*Recap*