Course Outline: NTAP101 - iOS App Development Using Swift and UIKit

Course Overview

This course provides participants with comprehensive training to design, develop, and deploy iOS applications using Swift programming language and UIKit framework. It covers the fundamentals of Swift, UIKit's graphical user interface components, app lifecycle management, and integration with iOS features and APIs. The course prepares learners to create native, intuitive, and responsive mobile apps for the Apple ecosystem, addressing real-world app development scenarios.

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:

- Demonstrate proficiency in Swift programming concepts and syntax essential for iOS development.
- Design and implement user interfaces using UIKit components and Storyboards or programmatically.
- Manage app navigation, views, and user interactions effectively within the UIKit framework.
- Integrate local data storage, networking, and multimedia features into iOS apps.
- Apply debugging, testing, and performance optimization techniques for iOS apps.

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 Swift**
    - 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 Swift and UIKIt**
    - Introduction to Interface Builder and basic UI controls
    - Page navigation using Segue's
    - Effective UI design for a positive user experience using graphics
    - Responsive layouts across devices using AutoLayout
- **Module 3: Data Management and Integration**
    - Introduction to TableViews
    - Persisting data using Core Data and UserDefaults
- **Module 4: Advanced SwiftUI Features**
    - iPadOS
    - Mixing Languages (UIKit & SwiftUI)