INFOSOFT IT SOLUTIONS

Training | Projects | Placements

APPLE SWIFT PROGRAMMING

Introduction to Swift Programming

- Overview of Swift language history and evolution
- Comparing Swift with Objective-C and other programming languages
- Setting up Swift development environment (Xcode, Swift Playgrounds)

Swift Basics

- Syntax and basic structure of Swift programs
- Variables, constants, and data types in Swift
- Optionals and handling nil values

Control Flow and Functions

- Conditional statements (if, switch) and loops (for, while)
- Functions in Swift (parameter passing, return types, closures)
- Error handling with try-catch and optional chaining
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Swift Collections and Data Structures

- Arrays, dictionaries, sets, and tuples in Swift
- Working with collection APIs (map, filter, reduce)
- Using generics for flexible and reusable code

Object-Oriented Programming in Swift

- Classes, structures, and enumerations
- Properties (stored and computed properties)
- Methods and type methods (static methods)

Swift Advanced Features

- Protocols and protocol-oriented programming
- Extensions and adding functionality to existing types
- Generics and associated types

Swift Memory Management

- Automatic Reference Counting (ARC)
- Managing memory cycles with weak and unowned references
- Using value types for managing memory efficiently

Working with Swift UI

- Introduction to SwiftUI for building user interfaces
- Creating views and combining components
- Handling user input and navigation in SwiftUI apps

Swift Networking and Data Persistence

- Making network requests with URLSession
- Parsing JSON data with Codable
- Implementing data persistence with Core Data or Realm

Testing and Debugging in Swift

- Writing unit tests and UI tests with XCTest
- Debugging techniques and tools in Xcode
- Performance profiling and optimization tips