

**TRAINING TRAINS**

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IT Services and IT Consultancy \ Internship-Inplant Training \ Software Training Institute

உங்கள் கடை மற்றும் வியாபாரத்திற்கு ஏற்ற **Website & Andriod App** மற்றும் **Software** மிகச்சிறந்த முறையில் செய்து கொடுக்கப்படும்.

Expertise : **AI, Machine Learning & Data Science \ Cybersecurity & Ethical Hacking**
IoT, Blockchain & Cloud Computing \ Full Stack Web & Mobile Development
Digital Marketing & SEO

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iOS Developer – 100+ Lab Exercises (Basic, Intermediate, Advanced)

□ Basic Level (30+ Exercises)

Objective: Master Xcode environment, Swift fundamentals, and basic UI design.

Environment Setup & Swift Basics

- Install Xcode and set up simulator.
- Create your first “Hello World” iOS app.
- Understand Swift syntax: variables, constants, data types.
- Control flow: loops, conditionals, switch cases.
- Functions, closures, and basic OOP in Swift.

Storyboard & UI Components

- Design UI using Storyboard: labels, buttons, text fields.
- Auto Layout basics and constraints.
- Add images and manage assets.
- Handle user input with UITextField and UITextView.
- Connect UI elements to code via IBOutlet and IBAction.

View Controllers & Navigation

- Manage View Controllers lifecycle.
- Navigation Controller and push/pop views.
- Modal presentation and dismissal.
- Passing data between view controllers.
- Implement tab bar controller.

□ Intermediate Level (40+ Exercises)

Objective: Build interactive apps with persistence, networking, and custom UI.



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Table View & Collection View

- Create simple Table Views with static data.
- Use dynamic Table Views with custom cells.
- Implement Collection Views with grid layouts.
- Add swipe actions and reordering cells.
- Optimize scrolling performance.

Data Persistence

- Save data using UserDefaults.
- Use Core Data for complex data storage.
- Read/write files to device storage.
- Implement Codable for JSON encoding/decoding.
- Sync data with iCloud Key-Value storage.

Networking & APIs

- Fetch and parse JSON data using URLSession.
- Use Alamofire for advanced networking.
- Display remote images with SDWebImage.
- Handle async calls with Combine or async/await.
- Implement pull-to-refresh with UIRefreshControl.

Multimedia & Sensors

- Play audio and video files using AVFoundation.
- Capture photos/videos with UIImagePickerController.
- Access device location with CoreLocation.
- Use accelerometer and gyroscope data.
- Implement local notifications.

□ Advanced Level (40+ Exercises)

Objective: Master modern iOS development techniques and app deployment.

SwiftUI Development

- Build views using SwiftUI declarative syntax.



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- Implement data flow with @State, @Binding, @ObservedObject.
- Create custom components and animations.
- Manage navigation and transitions in SwiftUI.
- Integrate SwiftUI with UIKit components.

Advanced iOS Features

- Implement push notifications with APNs.
- Add biometric authentication (Face ID/Touch ID).
- Use Combine framework for reactive programming.
- Integrate MapKit and custom map annotations.
- Implement in-app purchases and subscriptions.

App Architecture & Testing

- Apply MVVM architecture pattern.
- Unit testing with XCTest.
- UI testing with XCUITest.
- Use Instruments for performance profiling.
- Automate builds with Fastlane.

App Store Deployment & Security

- Code signing and provisioning profiles.
- Create App Store Connect listing.
- Implement app analytics and crash reporting.
- Secure sensitive data with Keychain Services.
- Obfuscate code and manage privacy compliance.

Capstone Projects

- Build a weather app with location-based forecasts.
- Develop a notes app with Core Data sync.
- Create a chat app using Firebase backend.
- Design a fitness tracker with HealthKit integration.
- Develop an e-commerce app prototype.

❑ Optional Tools & Technologies

- Swift, SwiftUI, UIKit, Combine



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- Xcode, Instruments, CocoaPods, Fastlane
- Firebase, Alamofire, Core Data, MapKit