

Mobile App Development Training Content

1. Android App Development (Java/Kotlin)

Module 1: Introduction to Android

- Overview of Android and its architecture
- Setting up the development environment (Android Studio)
- Understanding Android versions and compatibility
- Creating your first Android project

Module 2: Core Android Components

- Activities and lifecycle
- Intents (Explicit and Implicit)
- Fragments and lifecycle
- Layouts and Views
- Event handling

Module 3: Advanced UI/UX Design

- Material Design principles
- RecyclerView, CardView, and Adapters
- Navigation drawer, Tab layout, and Bottom navigation
- Custom Views and animations
- Responsive UI for multiple screen sizes

Module 4: Data Management

- Shared Preferences
- SQLite Database integration
- Firebase Realtime Database and Firestore
- REST APIs and JSON parsing

Module 5: Advanced Topics

- Notifications (Push and local)
- Location-based services (Google Maps integration)
- Camera and media handling
- Publish the app on Google Play Store

2. iOS App Development (Swift)

Module 1: Introduction to iOS

- Overview of iOS and Apple ecosystem
- Setting up Xcode and the iOS simulator
- Swift basics and best practices

Module 2: User Interface Development

- Storyboards and Interface Builder
- Auto Layout and Constraints
- UIKit and SwiftUI components

Module 3: Core Data and APIs

- Data persistence with Core Data
- Networking with URLSession
- Parsing JSON APIs

Module 4: Advanced Features

- Push notifications with Firebase
- App extensions (Widgets, Siri integration)
- Submitting apps to the App Store

3. Cross-Platform App Development

Module 1: Introduction to React Native

- Overview of React Native
- Setting up the development environment
- JSX and Components in React Native

Module 2: State Management

- React Hooks and Context API
- Redux for state management

Module 3: UI and Navigation

- Styling with CSS-in-JS
- React Native Navigation and Stack Navigator
- Creating reusable components

Module 4: API and Backend Integration

- Axios and API calls
- Integration with Firebase

Module 5: Advanced Topics

- Native modules in React Native
- Debugging and testing apps
- Publishing to Google Play Store and Apple App Store

4. Flutter App Development

Module 1: Introduction to Flutter

- Overview of Flutter and Dart
- Setting up Flutter SDK and IDE

Module 2: Flutter Basics

- Widgets and layout system
- State management with Provider/Bloc

Module 3: Data and Backend

- Handling local data (SQLite, Shared Preferences)
- Firebase integration (Firestore, Authentication)

Module 4: Advanced Topics

- Animations and custom designs
- App localization
- Deploying apps on Android and iOS

5. Capstone Projects

- E-commerce app
- Social media app
- Food delivery app
- Chat application
- Custom project based on student choice



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