

Xamarin Native Application Development

Course Duration: 40 Hours

Course code: XNAD

1. Course Overview

This course provides participants with hands-on experience in developing mobile applications using Xamarin.Native (Xamarin.iOS and Xamarin.Android). Unlike Xamarin.Forms, Xamarin.Native allows developers to build apps with native UI and performance while sharing business logic across platforms using C#.

2. What you'll learn?

- Understand Xamarin architecture and development workflow.
- Develop native Android and iOS apps using Xamarin.
- Build custom UIs with Xamarin.iOS and Xamarin.Android.
- Integrate device APIs (GPS, Camera, Sensors, Contacts).
- Manage data using SQLite, REST APIs, and cloud integration.
- Debug, test, and optimize Xamarin apps.
- Deploy apps to Google Play Store and Apple App Store.

3. Target Audience

- .NET/C# developers transitioning to mobile development.
- Mobile developers who want to use a cross-platform native approach.
- IT professionals and students aiming for mobile application development careers.
- Teams building enterprise-grade mobile applications.

4. Pre-Requisites

- Basic knowledge of C# and .NET framework.
- Familiarity with object-oriented programming (OOP).
- Understanding of mobile application concepts (preferred).

- Access to Visual Studio with Xamarin workload.

5. Course content

1. Xamarin.Android Architecture

- Need of Xamarin.Android
- About Mono
- Mono and Dalvik
- Android Binding Design
- Development Environment

2. Creating a Sample App

- Installing Xamarin.Android
- Creating the App
- Running and Debugging the App
- Creating and Customizing Emulators
- Debugging with an Android Device

3. User Interface Design

- Action Bar
- Autocomplete
- Calendar
- Date Picker
- Time Picker
- Form Elements
- Spinner
- Navigation Bar
- Pop-Up Menus
- Texture View
- List View and Adapters
- Grid View

- Web View
- Grid Layout
- Linear Layout
- Relative Layout
- Table Layout
- Tabbed Layout

4. Fragments

- Creating a Fragment
- Managing Fragments
- Specialized Fragment Class
- Providing Backward Compatibility

5. Data Storage Mechanism

- Creating Entity Class
- Creating Storage Services
- Implementing Storage Services

6. Location and Map Integration

- Location Services
- Navigating to Maps

7. Camera API Integration

- Required Permissions and Features
- Extending Data Service
- Capturing an Image
- Displaying Existing Images

8. Deploy App

- App Distribution Options

- Disable Debug
- Published Signed APK

9. User Interface with iOS

- Basic Text Input
- Buttons
- Images
- Slider
- Switch
- Segmented Controls
- Auto Sizing and Auto Rotation
- Closing Keypad

10. Creating iOS Application using Code

- Creating Window
- Adding a Controller
- Creating View Controller
- Adding Text Fields
- Adding Buttons
- Handling Rotation

11. Working with Table View

- Table Parts and Functionality
- Populating a Table with Data
- Customizing a Table's Appearance

12. Introduction to Maps

- Adding a Map
- Map Style
- Zooming

- User Location

13. Publishing App on App Store

- Steps for Publishing an iOS App

