

.NET MAUI



e-Learning Course

ZETLAN TECHNOLOGIES

Help Desk: +91 8680961847

www.zetlantech.com



Module 1: Introduction to .NET MAUI

- What is .NET MAUI?
- Differences between Xamarin and .NET MAUI
- Setting up the development environment
 - Installing .NET SDK
 - Installing Visual Studio with MAUI support
 - Setting up emulators and real devices
- Understanding cross-platform app development

Module 2: .NET MAUI Project Structure

- Understanding project files and directories
- Shared Code vs. Platform-Specific Code
- Handling Dependencies & NuGet Packages
- Working with .NET MAUI Essentials

Module 3: Building UI with XAML and C#

- Introduction to XAML in .NET MAUI
- XAML vs. C# Code UI
- Layouts in .NET MAUI
 - StackLayout, Grid, FlexLayout, AbsoluteLayout
- Common UI Controls
 - Labels, Buttons, Entries, Editors, Pickers
 - Lists, Collections, and Tab Views
 - Images and Media Elements
- Styling and Theming
 - Styles, Resources, and Themes
- Dark Mode & Platform-Specific Customizations

Module 4: Data Binding and MVVM Architecture

- Understanding MVVM (Model-View-ViewModel)
- Implementing Data Binding
- Using Commands and Behaviors
- Dependency Injection in .NET MAUI

Module 5: Navigation and Routing

- Shell Navigation
- Flyout and Tabbed Navigation
- Passing Data Between Pages
- Modal and Popup Navigation

Module 6: Working with Local Data

- Using Preferences for Simple Data Storage
- SQLite Database in .NET MAUI
- Working with Entity Framework Core
- File System Access

Module 7: Consuming APIs and Working with Data

- Making HTTP Requests using HttpClient
- Handling JSON Data with Newtonsoft.Json
- Implementing Authentication & Authorization (OAuth, JWT)
- Caching API Data

Module 8: Platform-Specific Features

- Accessing Device Sensors (Camera, GPS, Accelerometer)
- Working with Native APIs using Dependency Services
- Notifications & Background Services

Module 9: Performance Optimization & Debugging

- Debugging MAUI Apps
- Profiling and Performance Tuning
- Handling Errors and Exceptions
- Reducing App Size

Module 10: Publishing and Deployment

- Preparing the App for Release
- Generating APK, AAB (Android)
- Packaging for iOS (App Store)
- Publishing on Windows & macOS
- Continuous Integration & Deployment (CI/CD)

Bonus Topics (Advanced Concepts)

- Custom Renderers & Handlers
- Using MAUI with Blazor Hybrid Apps
- Integrating Third-Party Libraries
- Unit Testing in .NET MAUI