



KD-40538

Build Native Cross-Platform
Mobile Applications with a
Shared UI for iOS, Android, and
UWP in C# .NET with Xamarin.
Forms

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Av. Revolución No. 374 Col. San Pedro de los Pinos, C.P. 03800, México, CDMX. Tel.: 55 52 78 55 60





About this course.

This course teaches C# .NET developers how to build cross-platform mobile applications with a shared UI for iOS, Android, and UWP using Xamarin. Topics include entry-level mobile development, leveraging platform-specific features, and storing and displaying data. Students will also learn advanced topics such as using effects and renderers.

Length.

3 Days.

Audience profile.

This course teaches C# .NET developers how to build cross-platform mobile applications with a shared UI for iOS, Android, and UWP using Xamarin. This course is intended for developers with at least basic C# knowledge with 6-12 months of .NET experience.

Hardware/Software:

- iOS development requires a Mac running the latest OS, with XCode and Visual Studio installed.
- Windows development requires a Windows 10 PC with Visual Studio 2017 and the Mobile development with .NET workload installed.
- Android development requires either a Mac or PC with Visual Studio installed (see requirements above).
- An iOS and an Android device are highly recommended.

Prerequisites.

Before attending this course, students must have:

- Basic knowledge of C# and six months of experience developing using .NET.

At course completion.

After completing this course, students will be able to:

- Create cross-platform mobile applications that run on iOS, Android, and UWP using the Xamarin tools for Visual Studio.
- Access REST services, store data locally in a SQLite database and visual data using a shared XAML UI definition.

Exam.

None.

Course outline.

Module 1: Getting Started with Xamarin (XAM101).

By the end of this module, you will be able to choose the Xamarin approach that is right for you. You will also set up your development machine and run an app on Windows, the iOS simulator, and an Android emulator.

- Define the state of mobile technology today.
- Discuss mobile app trends.
- Identify approaches to development.
- Discover the Xamarin Approach.
- Set up your development environment.

Labs: Building Cross-Platform Applications with Xamarin.

- Demonstration - Cross-Platform Applications with Xamarin.
- Demonstration – View a Xamarin.Forms Project.
- Setup Validation – Validate your development environment is ready.

Module 2: Introduction to Xamarin.Forms (XAM120).

During this module, you will create a new Xamarin.Forms application and define your shared UI in code. You will also see how to access platform-specific features such as the phone dialer that do not have a shared-programming model integrated into Xamarin.Forms.

- Create a single screen cross-platform application.
- Cross-Platform Applications with Xamarin.
- Arrange the UI using Layouts.
- Use platform-specific features in shared code.

Labs: Using Xamarin.Forms to build a single screen cross-platform application.

- Create your first Xamarin.Forms application (Group Exercise).
- Create Xamarin.Forms Phoneword.
- Add support for dialing the phone.

Module 3: XAML in Xamarin.Forms (XAM130).

This module shows you how to define your UI in XAML. You will create pages and add controls, all in markup. You will also see how to access UI elements from code so you can subscribe to UI events and update UI properties as your data changes.

- Examine XAML Syntax.
- Add behavior to XAML-based pages.
- Explore XAML capabilities.

Labs: Create a XAML-based calculator app with behavior and tailor the UI to each platform.

- Create a XAML-based version of a calculator.
- Add behavior to the app.
- Clean up the XAML code and tailor the UI to the platform.

Module 4: Layout in Xamarin.Forms (XAM135).

This module contains in-depth coverage of StackLayout and Grid, the two most popular layout containers in Xamarin.Forms. You will also learn how to add support for scrolling when your UI is too large for the available screen area.

- Specify the size of a view.
- Arrange views with StackLayout.
- Apply Attached Properties.
- Arrange views with Grid.
- Scroll a layout with ScrollView.

Labs: Build user interfaces using stack and grid layouts.

- Use StackLayout to build a UI.
- Use a Grid Layout to build a UI.



Module 5: Consuming REST-based Web Services (XAM150).

In this module, you will learn some common strategies for dealing with the unique challenges that mobile devices face when communicating over the network.

- Obtain the device's network capabilities.
- Introduce REST.
- Consume REST services with Xamarin.
- Integrate with platform-specific network features.

Labs: Use, consume, and communicate with REST services.

- Determine the network connectivity.
- Communicate with a Book Service.
- Demonstration: Leverage the native platform network stack.

Module 6: SQLite and Mobile Data (XAM160).

During this module, you will learn how to identify the proper location for your database file and how to insert, update, retrieve, and delete data efficiently using asynchronous I/O calls.

- Choose a data storage strategy.
- Store data locally with SQLite.
- Use SQLite asynchronously.

Labs: Utilize SQLite to store and access data.

- Determine your database file path.
- Add SQLite.Net to your projects.
- Access a SQLite database with SQLite.Net.
- Access a SQLite database using asynchronous methods.

Module 7: Data Binding in Xamarin.Forms (XAM270).

Use Data Binding in Xamarin.Forms to connect your application's data to your UI.

- Use data binding to decouple code-behind from UI.
- Use value converters to bind incompatible types.

Labs: Use Data Binding in Xamarin.Forms.

- Group Exercise: Use Data Binding in a Xamarin.Forms Application.
- Keep the UI and data in sync using Bindings.
- Use Value Converters.

Module 8: Using ListView in Xamarin.Forms (XAM280).

Use the Xamarin.Forms ListView control to display scrolling lists of interactive data.

- Display a collection with ListView.
- Add and remove items dynamically.
- Customize ListView rows.



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Revision: A

Labs: Use ListView in Xamarin.Forms.

- Display a list of items with a ListView.
- Select a row.
- Work with mutable lists.
- Add Pull to Refresh support.

Module 9: Using Effects in Xamarin.Forms (XAM330).

This module teaches you how to use Effects to access and customize the native peer controls. This gives you the same power to modify the appearance of your UI as a native developer.

- Customize control appearance.
- Apply effects to controls.
- Create an effect.

Labs: Implement Effects in Xamarin.Forms.

- Use platform-specific themes.
- Add and use an existing effect.
- Create a RoutingEffect.
- Create a custom Effect.
- Add an attached property.

clientes@ked.com.mx

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