Introduction to Xamarin Development

Course ID #: MBL-105

Hours: 35

Course Content

Course Description:

Xamarin offers a compelling option for building cross-platform mobile applications. This Introduction to Xamarin Development training course teaches attendees how to design and build well-architected mobile applications that follow modern design principles and patterns. This class can be taught using Visual Studio (Windows), Xamarin Studio (macOS), or Visual Studio for Mac (macOS).

At Course Completion:

After competing this course, student will be able to:

- Understand the pros and cons of different cross-platform mobile development options
- Learn about the architecture of Xamarin-based applications
- Gain experience with different code sharing techniques including dependency injection
- Build applications that employ a native iOS and Android user interface
- Build an application with a cross-platform user interface using Xamarin.Forms
- Learn how to deploy a mobile application privately and publicly to the various app stores

Target Student:

Programmers

Prerequisites:

Should have significant previous experience with the C# programming language and familiarity with object-oriented programming concepts such as inheritance and interfaces.

Topics:

Mobile Development Options

- Mobile Landscape
- Native iOS Development
- Native Android Development
- Universal Windows Platform (UWP) Development
- Cross-Platform Development

Xamarin Development Platform

- History
- Components
- Xamarin on iOS
- Xamarin on Android
- Xamarin on Windows
- Sharing Code
- Xamarin.Forms

Getting Started

- Xamarin Development on a Mac
- Xamarin Android Development on Windows
- Xamarin iOS Development on Windows

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Creating an Application Solution

- Xamarin.Forms vs. Native UIs
- Shared Projects Portable Class Libraries (PCLs)
- .NET Standard
- Approaches to Code Sharing
- Dependency Injection

Xamarin.Android

- Android SDKs and API Levels
- Android Emulators
- Running on a Physical Device
- Android Application Architecture
- Layouts and XML
- User Interface Components
- Adapter Views
- Event Handling
- Input Controls
- Dialogs
- Notifications and Toasts
- Platform-Specific Features
- Localization

Xamarin.iOS

- iOS SDKs and Devices
- iOS Simulator
- Using the Xamarin Mac Agent
- Running on a Physical Device
- iOS Application Architecture
- Storyboards and XIB Files
- User Interface Components
- Controllers, Delegates, and Data Sources
- Outlets and Actions
- Background Execution
- Local and Push Notifications
- Platform-Specific Features
- Localization

Building Shared Application Components

- MVC and MVVM
- Threading and Asynchronous Operations
- Data Persistance
- Networking
- Consuming a Web Service
- Using Platform-Specific Features

Xamarin.Forms

- Architecture of Xamarin.Forms
- When Xamarin.Forms is the Right Choice
- Introduction to XAML
- Renderers
- Pages, Layouts, Views, and Cells
- Data Binding
- Platform-Specific User Interfaces
- Embedding Native Views
- Localization
- Optimizing Performance

Testing

- Unit Testing
- UI Testing
- Xamarin Test Cloud

Deployment

- Ad Hoc Deployment
- Google Play and Amazon App Store
- Apple App Store
- App Analytics
- Crash Logs