

# Xamarin Cross Platform Application Development

Develop native applications for multiple mobile and desktop platforms including but not limited to iOS, Android, and UWP with the Xamarin framework and Xamarin.Forms Key Features Understand .NET Core and its cross-platform development philosophy Build Android, iOS, and Windows mobile applications with C#, .NET Core, and Azure Cloud Services Bring Artificial Intelligence capabilities into your mobile applications with Azure AI Book Description .NET Core is the general umbrella term used for Microsoft's cross-platform toolset. Xamarin used for developing mobile applications, is one of the app model implementations for .NET Core infrastructure. In this book, you will learn how to design, architect, and develop highly attractive, maintainable, efficient, and robust mobile applications for multiple platforms, including iOS, Android, and UWP, with the toolset provided by Microsoft using Xamarin, .NET Core, and Azure Cloud Services. This book will take you through various phases of application development with Xamarin, from environment setup, design, and architecture to publishing, using real-world scenarios. Throughout the book, you will learn how to develop mobile apps using Xamarin,

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Xamarin.Forms and .NET Standard; implement a webbased backend composed of microservices with .NET Core using various Azure services including but not limited to Azure App Services, Azure Active Directory, Notification Hub, Logic Apps, and Azure Functions, Cognitive Services; create data stores using popular database technologies such as Cosmos DB, SQL and Realm. Towards the end, the book will help developers to set up an efficient and maintainable development pipeline to manage the application life cycle using Visual Studio App Center and Visual Studio Services. What you will learn

- Implement native applications for multiple mobile and desktop platforms
- Understand and use various Azure Services with .NET Core
- Make use of architectural patterns designed for mobile and web applications
- Understand the basic Cosmos DB concepts
- Understand how different app models can be used to create an app service
- Explore the Xamarin and Xamarin.Forms UI suite with .NET Core for building mobile applications

Who this book is for This book is for mobile developers who wish to develop cross-platform mobile applications. Programming experience with C# is required. Some knowledge and understanding of core elements and cross-platform application development with .NET is required.

Tailor your apps to appeal to a global market.

Microsoft MVP Chris Miller steps you through the

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process of enabling multiple language support, while using a single shared set of language resources using the .NET Framework. You will learn to adapt a simple mobile application for the Android, iOS, and Windows platforms, and handle the localization and internationalization on each platform. You will test the application for localization support and to avoid common pitfalls. Using Xamarin Forms and Visual Studio, the app will be implemented for Android, iOS, and Windows 10 UWP, and 99% of the code will be shared across the platforms. What You Will Learn: What localization and internationalization are and why they matter Support multiple languages on each platform Handle cultural differences such as dates and currencies Use tools such as Microsoft's Multilingual App Toolkit to manage language resources Create a localized, cross-platform app with Android Studio, Xcode, Xamarin, and Visual Studio tools Get help translating the text from the application Who This Book Is For: Mobile app developers currently writing native apps for Windows Phone, Android, and iOS Leverage the power of Xamarin to create stunning cross-platform and native apps About This Book Helps you get a clear practical understanding of creating professional-grade apps with Xamarin Covers Xamarin.Forms, Xamarin Android, and Xamarin iOS If you want to transform yourself from an amateur mobile developer into a professional app

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developer across multiple platforms, then this is the ideal book for you Who This Book Is For If you are a mobile developer looking to create interesting and fully featured apps for different platforms, then this book is the ideal solution for you. A basic knowledge of Xamarin and C# programming is assumed What You Will Learn Discover eight different ways to create your own Xamarin applications Improve app performance by using SQLite for data-intensive applications Set up a simple web service to feed JSON data into mobile applications Store files locally with Xamarin.Forms using dependency services Use Xamarin extension libraries to create effective applications with less coding In Detail Do you want to create powerful, efficient, and independent apps from scratch that will leverage the Xamarin framework and code with C#? Well, look no further; you've come to the right place! This is a learn-as-you-build practical guide to building eight full-fledged applications using Xamarin.Forms, Xamarin Android, and Xamarin iOS. Each chapter includes a project, takes you through the process of building applications (such as a gallery Application, a text-to-speech service app, a GPS locator app, and a stock market app), and will show you how to deploy the application's source code to a Google Cloud Source Repository. Other practical projects include a chat and a media-editing app, as well as other examples fit to adorn any developer's utility belt. In the course

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of building applications, this book will teach you how to design and prototype professional-grade applications implementing performance and security considerations. Style and approach A project-based approach that will solve all your needs when it comes to creating native Android, iOS, and cross-platform apps efficiently and effectively.

Xamarin Cross-platform Application Development - Second Edition Packt Publishing Ltd

Discover how to streamline the creation of mobile applications for Android and iOS with Xamarin. For C# developers, this book is the most practical way yet to start mastering cross-platform development. In Detail Developing a mobile application for just one platform is becoming a thing of the past. Companies expect their apps to be supported on both iOS and Android, whilst leveraging the best native features of both. Xamarin's tools help solve this requirement by giving developers a single toolset to target both platforms "Xamarin Cross-platform Application Development" is a step-by-step guide for building professional applications for iOS and Android. The book walks you through building a chat application, complete with a backend web service and native features such as GPS location, camera, and push notifications. This book begins with iOS and Android application fundamentals, then moves on to sharing code, and eventually digs deeper into native functionality. By the end of the book, readers will

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have successfully built a cross-platform application ready for submitting to app stores. You will gain an in-depth knowledge about the concepts of building cross platform applications. "Xamarin Cross-platform Application Development" also covers native iOS and Android APIs, unit testing, building a real web service with Windows Azure, push notifications, interacting with the camera and GPS, leveraging Java and Objective-C libraries, and finally app store submission. Towards the end of the book you will feel confident in developing your own Xamarin applications. "Xamarin Cross-platform Application Development" will teach you everything you need to know to develop an end-to-end, cross-platform solution with Xamarin. What You Will Learn

- Familiarize yourself with Apple's MVC design pattern
- Understand the Android activity lifecycle
- Share C# code across platforms
- Implement a web service with Azure Mobile Services
- Deploy and debug your application on mobile devices
- Call native Objective-C or Java libraries from C#
- Use Xamarin.Mobile for camera, contacts, and location
- Submit your app to the Apple App Store and Google Play

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have the files e-mailed directly to you.

Leverage Xamarin.Forms to build iOS and Android apps using a single, cross-platform approach. This book is the XAML companion to the C# guide Xamarin Mobile Application Development. You'll begin with an overview of Xamarin.Forms, then move on to an in-depth XAML (eXtensible Application Markup Language) primer covering syntax, namespaces, markup extensions, constructors, and the XAML standard. XAML gives us both the power of decoupled UI development and the direct use of Xamarin.Forms elements. This book explores the core of the Xamarin.Forms mobile app UI: using layouts and FlexLayouts to position controls and views to design and build screens, formatting your UI using resource dictionaries, styles, themes and CSS, then coding user interactions with behaviors, commands, and triggers. You'll see how to use XAML to build sophisticated, robust cross-platform mobile apps and help your user get around your app using Xamarin.Forms navigation patterns. Building Xamarin.Forms Mobile Apps Using XAML explains how to bind UI to data models using data binding and using the MVVM pattern, and how to customize UI elements for each platform using industry-standard menus, effects, custom renderers, and native view declaration. What You Will Learn Creat world-class mobile apps for iOS and Android using C# and XAML Build a UI

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decoupled from C# code and XAML Design UI layouts such as FrameLayout, controls, lists, and navigation patterns Style your app using resource dictionaries, styles, themes, and CSS Customize controls to have platform-specific features using effects, custom renderers, and native views Who This Book Is For XAML and C# developers, architects, and technical managers as well as many Android and iOS developers

Build powerful cross-platform desktop applications with web technologies such as Node, NW.JS, Electron, and React About This Book Build different cross-platform HTML5 desktop applications right from planning, designing, and deployment to enhancement, testing, and delivery Forget the pain of cross-platform compatibility and build efficient apps that can be easily deployed on different platforms. Build simple to advanced HTML5 desktop apps, by integrating them with other popular frameworks and libraries such as Electron, Node.JS, Nw.js, React, Redux, and TypeScript Who This Book Is For This book has been written for developers interested in creating desktop applications with HTML5. The first part requires essential web-master skills (HTML, CSS, and JavaScript). The second demands minimal experience with React. And finally for the third it would be helpful to have a basic knowledge of React, Redux, and TypeScript. What You Will Learn Plan, design, and develop different

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cross-platform desktop apps Application architecture with React and local state Application architecture with React and Redux store Code design with TypeScript interfaces and specialized types CSS and component libraries such as Photonkit, Material UI, and React MDL HTML5 APIs such as desktop notifications, WebSockets, WebRTC, and others Desktop environment integration APIs of NW.js and Electron Package and distribute for NW.JS and Electron In Detail Building and maintaining cross-platform desktop applications with native languages isn't a trivial task. Since it's hard to simulate on a foreign platform, packaging and distribution can be quite platform-specific and testing cross-platform apps is pretty complicated. In such scenarios, web technologies such as HTML5 and JavaScript can be your lifesaver. HTML5 desktop applications can be distributed across different platforms (Window, MacOS, and Linux) without any modifications to the code. The book starts with a walk-through on building a simple file explorer from scratch powered by NW.JS. So you will practice the most exciting features of bleeding edge CSS and JavaScript. In addition you will learn to use the desktop environment integration API, source code protection, packaging, and auto-updating with NW.JS. As the second application you will build a chat-system example implemented with Electron and React. While developing the chat app, you will get

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Photonkit. Next, you will create a screen capturer with NW.JS, React, and Redux. Finally, you will examine an RSS-reader built with TypeScript, React, Redux, and Electron. Generic UI components will be reused from the React MDL library. By the end of the book, you will have built four desktop apps. You will have covered everything from planning, designing, and development to the enhancement, testing, and delivery of these apps. Style and approach Filled with real world examples, this book teaches you to build cross-platform desktop apps right from scratch using a step-by-step approach.

A comprehensive guide for beginners to learn the key concepts, real-world applications, and latest features of C# 9 and .NET 5 with hands-on exercises using VS Code Key Features Explore the newest additions to C# 9, the .NET 5 class library, Entity Framework Core and Blazor Strengthen your command of ASP.NET Core 5.0 and create professional websites and services Build cross-platform apps for Windows, macOS, Linux, iOS, and Android Book Description In C# 9 and .NET 5 – Modern Cross-Platform Development, Fifth Edition, expert teacher Mark J. Price gives you everything you need to start programming C# applications. This latest edition uses the popular Visual Studio Code editor to work across all major operating systems. It is fully updated and expanded with a new chapter on the Microsoft Blazor framework. The book's first part

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teaches the fundamentals of C#, including object-oriented programming and new C# 9 features such as top-level programs, target-typed new object instantiation, and immutable types using the record keyword. Part 2 covers the .NET APIs, for performing tasks like managing and querying data, monitoring and improving performance, and working with the file system, async streams, serialization, and encryption. Part 3 provides examples of cross-platform apps you can build and deploy, such as websites and services using ASP.NET Core or mobile apps using Xamarin.Forms. By the end of the book, you will have acquired the understanding and skills you need to use C# 9 and .NET 5 to create websites, services, and mobile apps. What you will learn

- Build your own types with object-oriented programming
- Query and manipulate data using LINQ
- Build websites and services using ASP.NET Core 5
- Create intelligent apps using machine learning
- Use Entity Framework Core and work with relational databases
- Discover Windows app development using the Universal Windows Platform and XAML
- Build rich web experiences using the Blazor framework
- Build mobile applications for iOS and Android using Xamarin.Forms

Who this book is for  
This book is best for C# and .NET beginners, or programmers who have worked with C# in the past but feel left behind by the changes in the past few years. This book doesn't expect you to have any C#

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or .NET experience; however, you should have a general understanding of programming. Students and professionals with a science, technology, engineering, or mathematics (STEM) background can certainly benefit from this book.

Create iOS and Android apps with Flutter using just one codebase. App development on multiple platforms has historically been difficult and complex. This book breaks down complex concepts and tasks into easily digestible segments with examples, pictures, and hands-on labs with starters and solutions. In doing so, you'll develop a basic understanding of the Dart programming language; the entire Flutter development toolchain; the differences between stateful and stateless widgets; and a working knowledge of the architecture of apps. All the most important parts of app development with Flutter are covered in this book. Work with themes and styles. Develop custom widgets. Teach your app to respond to gestures like taps, swipes, and pinches. Design, create and control the layout of your app. Create tools to handle form data entry from users. And ultimately create killer multiscreen apps with navigation, menus, and tabs. Flutter is Google's new framework for creating mobile apps that run on iOS and Android phones both. You had to be a super-developer to write apps for iOS or Android alone. But writing for both? Forget about it! You had to be familiar with Swift, Java/Kotlin, Xcode, Eclipse, and a bunch of other technologies simultaneously. Beginning App Development with Flutter simplifies the entire process. What You'll Learn

- Get the most out of great Flutter widgets
- Create custom widgets, both stateless and stateful
- Exercise expert control over your Flutter layouts
- Make your app respond to gestures like swiping, pinching and tapping
- Initiate async Ajax calls to RESTful APIs — including Google Firebase!

Who This Book Is

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For Developers who have coded in Java, C#, C++, or any similar language. It brings app development within the reach of younger developers, so STEM groups are likely to pick up the technology. Managers, product owners, and business analysts need to understand Flutter's capabilities.

Create powerful cross-platform applications using C# 6, .NET Core 1.0, ASP.NET Core 1.0, and Visual Studio 2015 About This Book Build modern, cross-platform applications with .NET Core 1.0 Get up-to-speed with C#, and up-to-date with all the latest features of C# 6 Start creating professional web applications with ASP.NET Core 1.0 Who This Book Is For Are you struggling to get started with C#? Or maybe you're interested in the potential of the new cross-platform features that .NET Core can offer? If so, C# 6 and .NET Core 1.0 is the book for you. While you don't need to know any of the latest features of C# or .NET to get started, it would be beneficial if you have some programming experience. What You Will Learn Build cross-platform applications using C# 6 and .NET Core 1.0 Explore ASP.NET Core 1.0 and learn how to create professional web applications Improve your application's performance using multitasking Use Entity Framework Core 1.0 and learn how to build Code-First databases Master object-oriented programming with C# to increase code reuse and efficiency Familiarize yourself with cross-device app development using the Universal Windows Platform and XAML Query and manipulate data using LINQ Protect your data by using encryption and hashing In Detail With the release of .NET Core 1.0, you can now create applications for Mac OS X and Linux, as well as Windows, using the development tools you know and love. C# 6 and .NET Core 1.0 has been divided into three high-impact sections to help start putting these new features to work. First, we'll run you through the basics of C#, as well as object-orient programming, before taking a quick tour through the

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latest features of C# 6 such as string interpolation for easier variable value output, exception filtering, and how to perform static class imports. We'll also cover both the full-feature, mature .NET Framework and the new, cross-platform .NET Core. After quickly taking you through C# and how .NET works, we'll dive into the internals of the .NET class libraries, covering topics such as performance, monitoring, debugging, internationalization, serialization, and encryption. We'll look at Entity Framework Core 1.0 and how to develop Code-First entity data models, as well as how to use LINQ to query and manipulate that data. The final section will demonstrate the major types of applications that you can build and deploy cross-device and cross-platform. In this section, we'll cover Universal Windows Platform (UWP) apps, web applications, and web services. Lastly, we'll help you build a complete application that can be hosted on all of today's most popular platforms, including Linux and Docker. By the end of the book, you'll be armed with all the knowledge you need to build modern, cross-platform applications using C# and .NET Core. Style and approach This book takes a step-by-step approach and is filled with exciting projects and fascinating theory. It uses three high-impact sections to equip you with all the tools you'll need to build modern, cross-platform applications using C# and .NET Core.

This book is your path to getting started with Xamarin Forms. It covers a lot of hot mobile features such as augmented reality (AR) and machine learning (ML) as well as more basic topics, giving you tips and advice on what development environment to strive for.

Summary Xamarin in Action teaches you to build cross-platform mobile apps using Xamarin and C#. You'll explore all the layers of a Xamarin app, from design to deployment. By the end, you'll be able to build a quality, production-ready Xamarin app on iOS and Android from scratch with a high

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level of code reuse. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Rewriting the same app for iOS and Android is tedious, error-prone, and expensive. Microsoft's Xamarin drastically reduces dev time by reusing most application code--typically 70% or more. The core of your iOS and Android app is shared; you write platform-specific code only for the UI layer. And because Xamarin uses C#, your apps benefit from everything this modern language and the .NET ecosystem have to offer. About the Book Xamarin in Action teaches you to build cross-platform mobile apps using Xamarin and C#. You'll explore all the layers of a Xamarin app, from design to deployment. Xamarin expert Jim Bennett teaches you design practices that maximize code reuse and isolate device-specific code, making it a snap to incorporate the unique features of each OS. What's Inside Understanding MVVM to maximize code reuse and testability Creating cross-platform model and UI logic layers Building device-specific UIs Unit and automated UI testing Preparing apps for publication with user tracking and crash analytics About the Reader Readers should have some experience with C#. Mobile development experience is helpful, but not assumed. About the Author Jim Bennett is a Xamarin MYP, Microsoft MVP, and Senior Cloud Developer Advocate at Microsoft, specializing in Xamarin mobile apps. He's a frequent speaker at events all around the world, including Xamarin user groups and Xamarin and Microsoft conferences. He regularly blogs about Xamarin development at <https://jimbo Bennett.io>. Table of Contents PART 1 - GETTING STARTED WITH XAMARIN Introducing native cross-platform applications with Xamarin Hello MVVM--creating a simple cross-platform app using MVVM MVVM--the model-view-view model design pattern Hello again, MVVM--understanding and enhancing our simple

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MVVM app What are we (a)waiting for? An introduction to multithreading for Xamarin apps PART 2 - BUILDING APPS Designing MVVM cross-platform apps Building cross-platform models Building cross-platform view models Building simple Android views Building more advanced Android views Building simple iOS views Building more advanced iOS views PART 3 - FROM WORKING CODE TO THE STORE Running mobile apps on physical devices Testing mobile apps using Xamarin UITest Using App Center to build, test, and monitor apps Deploying apps to beta testers and the stores Discover how to create cross platform apps for Android, iOS and UWP using Azure services and C# with Xamarin Forms. This book illustrates how to utilize Azure cloud storage for serving up Azure SQL DB data through Azure App Services. The book starts by setting up Xamarin and introducing Xamarin Forms and then covers the Azure Portal from a developer's perspective and goes on to demonstrate how to build an Azure Service using Quickstart. You'll also see how to add Azure support to Xamarin Forms application. You'll review in detail how to build a Xamarin Form with Azure Client and modify an existing app to become a Xamarin Forms Client for Azure with offline synchronization. You then move on to third-party controls that speed up development. By the end of the book, you will be able to use Azure and Xamarin together and master how to use Azure Mobile Quickstarts, Azure SQL plumbing, database synchronization and Xamarin Forms. What You'll Learn Create a Xamarin Forms App and understand the Structure of a Xamarin Forms App. Navigate pages and use platform specific coding. Use images, ListView and the Azure Mobile App Quickstart to build a Service and Xamarin Forms app Modify an existing app to use Azure Client Libraries, understand offline storage with SQLite and incorporate offline synchronization Who This Book Is For Software developers new to Xamarin and/or

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Azure and for the developers who are familiar with both the technologies to use in mobile apps.

Xamarin.Forms Projects is a project-based guide that enables you to build effective mobile applications from the ground up using seven real-world examples. Starting with simpler projects to help you get up and running with the framework, the book explores all the components of Xamarin.Forms and takes you through to building complex projects ...

Master the skills required to steer cross-platform applications from drawing board to app store(s) using Xamarin About This Book Develop your Xamarin development skills with this comprehensive guide on various patterns and features so you can create elegant and high-quality applications Create adaptive user interfaces on separate platforms without compromising the user experience and platform identity Implement application lifecycle management concepts to manage and finalize cross-platform projects and efficiently collaborate with others Who This Book Is For This book is ideal for those who want to take their entry-level Xamarin mobile development skills to the next level to become the go-to person within their organization. To fully understand the patterns and concepts described, you should possess a reasonable level of knowledge about the core elements of Xamarin and cross-platform application development with it. What You Will Learn Configure your environment for cross-platform projects with Xamarin Gain memory management skills to avoid memory leaks and premature code cycles while decreasing the memory print of your applications Employ asynchronous and parallel patterns to execute non-interactive and non-blocking processes Create and use SQLite databases for offline scenarios Integrate network resources with cross-platform applications Design and implement eye-catching and reusable UI components without compromising nativity in mobile applications Manage the application lifecycle

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of cross-platform development projects Distribute Xamarin applications through public or private channels In Detail The main goal of this book is to equip you with the required know-how to successfully analyze, develop, and manage Xamarin cross-platform projects using the most efficient, robust, and scalable implementation patterns. This book starts with general topics such as memory management, asynchronous programming, local storage, and networking, and later moves onto platform-specific features. During this transition, you will learn about key tools to leverage the patterns described, as well as advanced implementation strategies and features. The book also presents User Interface design and implementation concepts on Android and iOS platforms from a Xamarin and cross-platform perspective, with the goal to create a consistent but native UI experience. Finally, we show you the toolset for application lifecycle management to help you prepare the development pipeline to manage and see cross-platform projects through to public or private release. Style and approach This is a comprehensive guide on various Xamarin features and patterns. Each topic is explained and demonstrated with code samples, which are revised in each section in an iterative manner and analyzed with available diagnostic tools to demonstrate the benefits of different patterns.

With the fragmented landscape of mobile device platforms, tools for creating cross-platform apps have sprung up as varied and numerous as apps themselves. Most of these tools create their own APIs and translate them into the mobile platform APIs, which works fine for some. And then there's Xamarin.Forms, which creates mappings from its C# classes and controls directly to the native platform APIs and controls. With Xamarin.Forms Succinctly by Derek Jensen, you will learn how to use Xamarin.Forms to build a common code base that can be deployed to iOS, Android, and Windows

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Phone devices, coming as close as possible as to the mythical "write once, run everywhere." You'll also learn how to build UIs with some of the 40 controls included in Xamarin.Forms, and even how to access native APIs that aren't exposed by Xamarin.Forms.

Develop Windows 10 applications faster and more efficiently using the Universal Windows Platform. You will use Xamarin to create apps for macOS, iOS, and Android devices. Building Apps for the Universal Windows Platform is a complete guide covering PCs, tablets, phones, and other devices such as HoloLens. You will use Windows 10 to develop apps for desktop, mobile, holographic, wearable, and IoT devices. You will reuse code to easily create cross-platform apps. What You Will Learn Design and develop apps using Visual Studio and Blend Create Cortana-enabled apps for a hands-free experience Build IoT apps and apps for wearables such as the Microsoft HoloLens Monitor apps post-publication to gain insights from actionable data using Windows Store Analytics and Azure Who This Book Is For Professional developers working independently or in a team on Windows 10 applications, and students coming into the world of software development

Xamarin Mobile Application Development is a hands-on Xamarin.Forms primer and a cross-platform reference for building native Android, iOS, and Windows Phone apps using C# and .NET. This book explains how to use Xamarin.Forms, Xamarin.Android, and Xamarin.iOS to build business apps for your customers and consumer apps for Google Play and the iTunes App Store. Learn

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how to leverage Xamarin.Forms for cross-platform development using the most common UI pages, layouts, views, controls, and design patterns. Combine these with platform-specific UI to craft a visually stunning and highly interactive mobile user experience. Use Xamarin.Forms to data bind your UI to both data models and to view models for a Model-View-ViewModel (MVVM) implementation. Use this book to answer the important question: Is Xamarin.Forms right for my project? Platform-specific UI is a key concept in cross-platform development, and Xamarin.Android and Xamarin.iOS are the foundation of the Xamarin platform. Xamarin Mobile Application Development will cover how to build an Android app using Xamarin.Android and an iOS app using Xamarin.iOS while sharing a core code library. SQLite is the database-of-choice for many Xamarin developers. This book will explain local data access techniques using SQLite.NET and ADO.NET. Build a mobile data access layer (DAL) using SQLite and weigh your options for web services and enterprise cloud data solutions. This book will show how organize your Xamarin code into a professional-grade application architecture. Explore solution-building techniques from starter-to-enterprise to help you decouple your functional layers, manage your platform-specific code, and share your cross-platform classes for code reuse, testability, and maintainability. Also included are 250+ screenshots on iOS, Android, and Windows Phone and 200+ C# code examples with downloadable C# and XAML versions available from Apress.com. This comprehensive recipe and reference book addresses one of the most important

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and vexing problems in the software industry today: How do we effectively design and develop cross-platform mobile applications?

Answer the question "Can we build this for ALL the devices?" with a resounding YES. Learn how to build apps using seven different platforms: Mobile Web, iOS, Android, Windows, RubyMotion, React Native, and Xamarin. Find out which cross-platform solution makes the most sense for your needs, whether you're new to mobile or an experienced developer expanding your options. Start covering all of the mobile world today. Understanding the idioms, patterns, and quirks of the modern mobile platforms gives you the power to choose how you develop. Over seven weeks you'll build seven different mobile apps using seven different tools. You'll start out with Mobile Web; develop native apps on iOS, Android, and Windows; and finish by building apps for multiple operating systems using the native cross-platform solutions RubyMotion, React Native, and Xamarin. For each platform, you'll build simple, but non-trivial, apps that consume JSON data, run on multiple screen sizes, or store local data. You'll see how to test, how to build views, and how to structure code. You'll find out how much code it's possible to share, how much of the underlying platform you still need to know, and ultimately, you'll get a firm understanding of how to build apps on whichever devices your users prefer. This book gives you enough first-hand experience to weigh the trade-offs when building mobile apps. You'll compare writing apps on one platform versus another and understand the benefits and hidden costs of cross-

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platform tools. You'll get pragmatic, hands-on experience writing apps in a multi-platform world. What You Need: You'll need a computer and some experience programming. When we cover iOS, you'll need a Mac, and when we cover Windows Phone you'll need a computer with Windows on it. It's helpful if you have access to an iPhone, Android phone, and Windows Phone to run the examples on the devices where mobile apps are ultimately deployed, but the simulators or emulator versions of those phones work great.

Modern Cross-Platform Development About This Book Build modern, cross-platform applications with .NET Core Get up to speed with C#, and up to date with all the latest features of C# 7 Start creating professional web applications with ASP.NET Core Who This Book Is For This book is targeted towards readers who have some prior programming experience or have a science, technology, engineering, or mathematics (STEM) background, and want to gain a solid foundation with C# and to be introduced to the types of applications they could build and will work cross-platform on Windows, Linux, and macOS. What You Will Learn Build cross-platform applications using C# 7 and .NET Core Explore ASP.NET Core and learn how to create professional web applications Improve your application's performance using multitasking Use Entity Framework Core and find out how to build code-first databases Master object-oriented programming with C# to increase code reuse and efficiency Familiarize yourself with cross-device app development using the Universal Windows Platform and XAML Query and manipulate data using LINQ Protect

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your data by using encryption and hashing In Detail If you want to build powerful cross-platform applications with C# 7 and .NET Core, then this book is for you. First, we'll run you through the basics of C#, as well as object-oriented programming, before taking a quick tour through the latest features of C# 7 such as tuples, pattern matching, out variables, and so on. After quickly taking you through C# and how .NET works, we'll dive into the .NET Standard 1.6 class libraries, covering topics such as performance, monitoring, debugging, serialization and encryption. The final section will demonstrate the major types of application that you can build and deploy cross-device and cross-platform. In this section, we'll cover Universal Windows Platform (UWP) apps, web applications, mobile apps, and web services. Lastly, we'll look at how you can package and deploy your applications so that they can be hosted on all of today's most popular platforms, including Linux and Docker. By the end of the book, you'll be armed with all the knowledge you need to build modern, cross-platform applications using C# and .NET Core. Style and approach This book takes a step-by-step approach and is filled with exciting projects and fascinating theory. It uses three high-impact sections to equip you with all the tools you'll need to build modern, cross-platform applications using C# and .NET Core.

.NET 5 is a unified framework from Microsoft's cross-platform toolset that includes ASP.NET Core and Xamarin for mobile development. With this book, you'll understand .NET 5 and how to develop mobile apps with Xamarin. You'll explore Microsoft Azure cloud services,

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advanced app features, and how to manage and maintain your mobile apps effectively.

Summary Xamarin in Action teaches you to build cross-platform mobile apps using Xamarin and C#. You'll explore all the layers of a Xamarin app, from design to deployment. By the end, you'll be able to build a quality, production-ready Xamarin app on iOS and Android from scratch with a high level of code reuse. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Rewriting the same app for iOS and Android is tedious, error-prone, and expensive. Microsoft's Xamarin drastically reduces dev time by reusing most application code—typically 70% or more. The core of your iOS and Android app is shared; you write platform-specific code only for the UI layer. And because Xamarin uses C#, your apps benefit from everything this modern language and the .NET ecosystem have to offer. About the Book Xamarin in Action teaches you to build cross-platform mobile apps using Xamarin and C#. You'll explore all the layers of a Xamarin app, from design to deployment. Xamarin expert Jim Bennett teaches you design practices that maximize code reuse and isolate device-specific code, making it a snap to incorporate the unique features of each OS. What's Inside

- Understanding MVVM to maximize code reuse and testability
- Creating cross-platform model and UI logic layers
- Building device-specific UIs
- Unit and automated UI testing
- Preparing apps for publication with user tracking and crash analytics

About the Reader Readers should have some experience with C#. Mobile

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development experience is helpful, but not assumed.

About the Author Jim Bennett is a Xamarin MYP, Microsoft MVP, and Senior Cloud Developer Advocate at Microsoft, specializing in Xamarin mobile apps. He's a frequent speaker at events all around the world,

including Xamarin user groups and Xamarin and Microsoft conferences. He regularly blogs about Xamarin development at <https://jimbo Bennett.io>.

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What are we (a)waiting for? An introduction to multithreading for Xamarin apps

PART 2 - BUILDING APPS Designing MVVM cross-platform apps Building cross-platform models Building cross-platform view models Building simple Android views Building more advanced Android views Building simple iOS views Building more advanced iOS views

PART 3 - FROM WORKING CODE TO THE STORE Running mobile apps on physical devices Testing mobile apps using Xamarin UITest Using App Center to build, test, and monitor apps Deploying apps to beta testers and the stores

If you are an experienced iOS and Android developer and have a desire to learn about the Xamarin platform, then you will find this tutorial to be the most efficient, interesting, and relevant path. You will find this guide to be especially useful if you wish to become proficient in creating apps using the Xamarin platform, as Xamarin

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Essentials teaches you the fundamentals of iOS and Android development.

Learn the bare essentials needed to begin developing cross-platform, mobile apps using Xamarin.Forms. Apps can be easily deployed to Google Play or to the Apple App Store. You will gain insight on architecture and how to arrange your app's design, where to begin developing, what pitfalls exist, and how to avoid them. Also covered are expected new features in Xamarin.Forms 3.0, so you may be prepared ahead of time for what the next release brings. Xamarin.Forms Essentials provides a brief history of Xamarin as a company, including how their product has become one of the most-used, cross-platform technologies for enterprise applications and app development across the world. Examples in the book are built around a real-life example that is an actual app in Google Play and in the Apple App Store, and has thousands of downloads between iOS and Android. You will learn how an application is set up from scratch, and you will benefit from the author's hard-won experience and tips in addressing various development challenges.

What You'll Learn

- Create cross-platform user interfaces from one code base for both iOS and Android
- See how a commercial application is built and then deployed for sale in the app stores
- Integrate your Xamarin.Forms applications with third-party, RESTful APIs
- Arrange application architecture to avoid pitfalls and optimize your design
- Get a heads-up on new features released as part of Xamarin.Forms 3.0
- Choose appropriately between Xamarin.Forms and traditional Xamarin, depending upon your application needs and its goals

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Who This Book Is For Mobile app developers who are producing software for multiple platforms, including Google Android and Apple iOS. Readers should be familiar with Visual Studio either on Mac OS X or Windows, and have a working knowledge of C#. Presents strategies to designing platform agnostic mobile apps connected to cloud based services that can handle heavy loads of modern computing Provides development patterns for platform agnostic app development and technologies Includes recommended standards and structures for easy adoption Covers portable and modular back-end architectures to support service agility and rapid development

Learn to build a simple data-driven mobile game application using the power of Xamarin.Forms, ASP.NET, the Web API, and SignalR with this short book. In it you will build a cross-platform mobile application that targets both iOS and Android, connect your app with your database using Entity Framework, and implement real-time syncing functionality using SignalR. Understanding Game Application Development starts by giving you an overview of the development tools, an installation guide, and a list of prerequisites. You will learn how to manage application flow, create your workspace, and set up your database. Next, you will see how to access data for handling CRUD operations and define the necessary API endpoints. Further, you will build a mobile application with Xamarin.Forms, both in iOS and in Android. You will also understand the deployment and testing process as well as how to build a real-time leader board using ASP.NET MVC and

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SignalR. Finally, you will understand how to publish your source code on GitHub from Visual Studio 2017. What You Will Learn Understand the basic concept and fundamentals of the technologies used for building the applications Set up your development environment Create a SQL database from scratch Implement a data access layer Define REST service endpoints using the Web API Deploy, test, and debug iOS and Android applications Push your source code to GitHub Who This Book Is For .NET developers who want to jump on mobile application development with Xamarin and learn with practical examples.

Discover how to extend and build upon the components of the Xamarin.Forms toolkit to develop an effective, robust mobile app architecture. Starting with an app built with the basics of the Xamarin.Forms toolkit, you'll go step by step through several advanced topics to create a solution architecture rich with the benefits of good design patterns and best practices. You'll start by introducing a core separation between the app's user interface and its business logic by applying the MVVM pattern and data-binding. Then you focus on building out a layer of plugin-like services that handle platform-specific utilities such as navigation and geo-location, and on how to loosely use these services in the app with inversion of control and dependency injection. Next you connect the app to a live web-based API and set up offline synchronization. Then, you delve into testing the app logic through unit tests. Finally, you set up Visual Studio App Center for monitoring usage and bugs to gain a proactive edge on app quality.

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Build stunning, maintainable, cross-platform mobile application user interfaces with the power of Xamarin. About This Book- Create, configure, and customize stunning platform-specific features as well as cross-platform UIs with the power of Xamarin.Forms.- Maximize the testability, flexibility, and overall quality of your Xamarin apps.- Get the most out of Xamarin.Forms and create your own reusable templates with C# scripting in Xamarin. Who This Book Is For If you are a mobile developer with basic knowledge of Xamarin and C# coding, then this book is for you. What You Will Learn- Develop stunning native cross-platform apps using the Xamarin.Forms framework- Work with the different UI layouts to create customized layouts using the C# programming language and tweak it for a given platform- Customize the user interface using DataTemplates and CustomRenderers and the Platform Effects API to change the appearance of control elements- Build hybrid apps using the Razor Template Engine and create Razor Models that communicate with a SQLite database- Use location based features within your app to display the user's current location- Work with the Xamarin.Forms Map control to display Pin placeholders based on the stored latitude and longitude coordinates- Understand and use the MVVM pattern architecture to navigate between each of your ViewModels and implement Data Binding to display and update information- Work with the Microsoft Azure Platform to incorporate API Data Access using Microsoft Azure App Services and the RESTful API- Incorporate third-party features within your app using the Facebook

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SDK and the Open Graph API- Perform unit testing and profile your Xamarin.Forms applications- Deploy your apps to the Google Play Store and Apple App Store  
Detail Xamarin is the most powerful cross-platform mobile development framework. If you are interested in creating stunning user interfaces for the iOS and Android mobile platforms using the power of Xamarin and Xamarin.Forms, then this is your ticket. This book will provide you the practical skills required to develop real-world Xamarin applications. You will learn how to implement UI structures and layouts, create customized elements, and write C# scripts to customize layouts. You will create UI layouts from scratch so that you can tweak and customize a given UI layout to suit your needs by using Data Templates. Moving on, you will use third-party libraries - such as the Razor template engine that allows you to create your own HTML5 templates within the Xamarin environment - to build a book library Hybrid solution that uses the SQLite.Net library to store, update, retrieve, and delete information within a SQLite local database. You'll also implement key data-binding techniques that will make your user interfaces dynamic, and create personalized animations and visual effects within your user interfaces using Custom Renderers and the PlatformEffects API to customize and change the appearance of control elements. At the end of this book, you will test your application UI for robust and consistent behavior and then explore techniques to deploy to different platforms. Style and approach This easy to follow guide will walk you through building a real world Xamarin.Forms mobile app from start to finish. Each

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chapter builds upon the app using a step-by-step methodology that applies new advanced functionalities, design patterns, and best practices.

Learn the fundamentals, practical applications, and latest features of C# 8.0 and .NET Core 3.0 from expert teacher Mark J. Price. Key Features Build modern, cross-platform applications with .NET Core 3.0 Get up to speed with C#, and up to date with all the latest features of C# 8.0 Start creating professional web applications with ASP.NET Core 3.0 Book Description In C# 8.0 and .NET Core 3.0 – Modern Cross-Platform Development, Fourth Edition, expert teacher Mark J. Price gives you everything you need to start programming C# applications. This latest edition uses the popular Visual Studio Code editor to work across all major operating systems. It is fully updated and expanded with new chapters on Content Management Systems (CMS) and machine learning with ML.NET. The book covers all the topics you need. Part 1 teaches the fundamentals of C#, including object-oriented programming, and new C# 8.0 features such as nullable reference types, simplified switch pattern matching, and default interface methods. Part 2 covers the .NET Standard APIs, such as managing and querying data, monitoring and improving performance, working with the filesystem, async streams, serialization, and encryption. Part 3 provides examples of cross-platform applications you can build and deploy, such as web apps using ASP.NET Core or mobile apps using Xamarin.Forms. The book introduces three technologies for building Windows desktop applications including Windows Forms, Windows

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Presentation Foundation (WPF), and Universal Windows Platform (UWP) apps, as well as web applications, web services, and mobile apps. What you will learn Build cross-platform applications for Windows, macOS, Linux, iOS, and Android Explore application development with C# 8.0 and .NET Core 3.0 Explore ASP.NET Core 3.0 and create professional web applications Learn object-oriented programming and C# multitasking Query and manipulate data using LINQ Use Entity Framework Core and work with relational databases Discover Windows app development using the Universal Windows Platform and XAML Build mobile applications for iOS and Android using Xamarin.Forms Who this book is for Readers with some prior programming experience or with a science, technology, engineering, or mathematics (STEM) background, who want to gain a solid foundation with C# 8.0 and .NET Core 3.0.

Develop apps for the iPhone, iPad, and Apple wearables using Visual Studio for the Mac. Learn how to set up your development environment and emulators, and how to create adaptive user interfaces for various platforms. Expert Dawid Borycki guides you through the fundamentals of programming for Apple platforms (Model View Controller, Test Driven Development), navigation patterns, gesture handling, accessing user's location, and reading and consuming data from web services. After reading this book, you will be able to build native apps that look and feel like other apps built into iOS, watchOS, and tvOS, and have the skills that are in high demand in today's market. If you are already programming C# apps for web or desktop, you will learn

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how to extend your skill set to Apple mobile, wearable, and smart TV platforms. What You'll Learn Build and implement native apps for Apple platforms Create adaptive, universal views and handle navigation between them Access user's location and handle touch input Consume data from web services Minimize app development time with C# Who This Book Is For Developers who are interested in mobile and device development, as well as experienced non-Apple developers who want to switch or extend their skill set to programming for Apple platforms

Master the skills required to develop cross-platform applications from drawing board to app store(s) using Xamarin About This Book Learn to deliver high-performance native apps that leverage platform specific acceleration, compiled for native performance Learn development techniques that will allow you to use and create custom layouts for cross-platform UI Gain the knowledge needed to become more efficient in testing, deploying, and monitoring your applications Implement application life cycle management concepts to manage cross-platform projects Who This Book Is For Mobile application developers wanting to develop skills required to steer cross-platform applications using Xamarin. What You Will Learn Share C# code across platforms and call native Objective-C or Java libraries from C# Submit your app to the Apple App Store and Google Play Use the out-of-the-box services to support third-party libraries Find out how to get feedback while your application is used by your users Create shared data access using a local SQLite database and a REST service Test and monitor

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your applications Gain memory management skills to avoid memory leaks and premature code cycles while decreasing the memory print of your applications Integrate network resources with cross-platform applications Design and implement eye-catching and reusable UI components without compromising on nativity in mobile applications In Detail Developing a mobile application for just one platform is becoming a thing of the past. Companies expect their apps to be supported on iOS, Android and Windows Phone, while leveraging the best native features on all three platforms. Xamarin's tools help ease this problem by giving developers a single toolset to target all three platforms. The main goal of this course is to equip you with knowledge to successfully analyze, develop, and manage Xamarin cross-platform projects using the most efficient, robust, and scalable implementation patterns. Module 1 is a step-by-step guide to building real-world applications for iOS and Android. The module walks you through building a chat application, complete with a backend web service and native features such as GPS location, camera, and push notifications. Additionally, you'll learn how to use external libraries with Xamarin and Xamarin.Forms. Module 2 provide you recipes on how to create an architecture that will be maintainable, extendable, use Xamarin.Forms plugins to boost productivity. We start with a simp...

Learn to build cross-platform mobile apps using the latest features in Xamarin.Forms 4 with the help of a series of projects including apps for real-time chatting, AR games, location-tracking, weather, photo galleries,

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and much more Key Features Develop mobile apps, AR games, and chatbots of varying complexity with the help of real-world examples Explore the important features of Xamarin.Forms 4 such as Shell, CollectionView, and CarouselView Get to grips with advanced concepts such as AR and VR and machine learning for mobile development Book Description Xamarin.Forms is a lightweight cross-platform development toolkit for building apps with a rich user interface. Improved and updated to cover the latest features of Xamarin.Forms, this second edition covers CollectionView and Shell, along with interesting concepts such as augmented reality (AR) and machine learning. Starting with an introduction to Xamarin and how it works, this book shares tips for choosing the type of development environment you should strive for when planning cross-platform mobile apps. You'll build your first Xamarin.Forms app and learn how to use Shell to implement the app architecture. The book gradually increases the level of complexity of the projects, guiding you through creating apps ranging from a location tracker and weather map to an AR game and face recognition. As you advance, the book will take you through modern mobile development frameworks such as SQLite, .NET Core Mono, ARKit, and ARCore. You'll be able to customize your apps for both Android and iOS platforms to achieve native-like performance and speed. The book is filled with engaging examples, so you can grasp essential concepts by writing code instead of reading through endless theory. By the end of this book, you'll be ready to develop your own native apps with

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Xamarin.Forms and its associated technologies, such as .NET Core, Visual Studio 2019, and C#. What you will learn Set up Xamarin.Forms to build native apps with code-sharing capabilities Understand the core aspects of developing a mobile app, such as its layout, UX, and rendering Use custom renderers to gain platform-specific access Discover how to create custom layouts for your apps with Xamarin.Forms Shell Use Azure SignalR to implement serverless services in your Xamarin apps Create an augmented reality (AR) game for Android and iOS using ARCore and ARKit, respectively Build and train machine learning models using CoreML, TensorFlow, and Azure Cognitive Services Who this book is for This book is for C# and .NET developers who want to learn Xamarin.Forms and get started with native Xamarin mobile application development from the ground up. Working knowledge of Visual Studio will help you to get the most out of this book.

Quickly learn how to get the most out of the Visual Studio for Mac integrated development environment (IDE). Microsoft has invested heavily to deliver their very best development tools and platforms to other operating systems. Visual Studio for Mac is a powerful developer tool that reinforces Microsoft's "mobile-first", "cloud-first", and "any developer, any platform, any device" strategy. With the author's guided expertise and extensive code samples, you will understand how to leverage the most useful tools in Visual Studio for Mac, the code editor, and the powerful debugger. You also will appreciate the author's guidance on collaborating with other team members using integrated tooling for the Git source control engine. Whether you are a Mac developer interested in cross-platform development or a Windows

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developer using a Mac, Beginning Visual Studio for Mac will quickly get you up to speed! What You'll Learn Prepare, configure, and debug in the Mac development environment Create cross-platform mobile apps for Android, iOS, and Windows with Xamarin and C# in Visual Studio for Mac Build cross-platform Web applications with .NET Core using Visual Studio for Mac Customize your productive and collaborative development environment Who This Book Is For Software developers using a Mac computer who want to build mobile or web applications that run on multiple operating systems Master the skills required to develop cross-platform applications from drawing board to app store(s) using Xamarin About This Book Learn to deliver high-performance native apps that leverage platform specific acceleration, compiled for native performance Learn development techniques that will allow you to use and create custom layouts for cross-platform UI Gain the knowledge needed to become more efficient in testing, deploying, and monitoring your applications Implement application life cycle management concepts to manage cross-platform projects Who This Book Is For Mobile application developers wanting to develop skills required to steer cross-platform applications using Xamarin. What You Will Learn Share C# code across platforms and call native Objective-C or Java libraries from C# Submit your app to the Apple App Store and Google Play Use the out-of-the-box services to support third-party libraries Find out how to get feedback while your application is used by your users Create shared data access using a local SQLite database and a REST service Test and monitor your applications Gain memory management skills to avoid memory leaks and premature code cycles while decreasing the memory print of your applications Integrate network resources with cross-platform applications Design and implement eye-catching and reusable UI components without

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compromising on nativity in mobile applications In Detail Developing a mobile application for just one platform is becoming a thing of the past. Companies expect their apps to be supported on iOS, Android and Windows Phone, while leveraging the best native features on all three platforms. Xamarin's tools help ease this problem by giving developers a single toolset to target all three platforms. The main goal of this course is to equip you with knowledge to successfully analyze, develop, and manage Xamarin cross-platform projects using the most efficient, robust, and scalable implementation patterns. Module 1 is a step-by-step guide to building real-world applications for iOS and Android. The module walks you through building a chat application, complete with a backend web service and native features such as GPS location, camera, and push notifications. Additionally, you'll learn how to use external libraries with Xamarin and Xamarin.Forms. Module 2 provide you recipes on how to create an architecture that will be maintainable, extendable, use Xamarin.Forms plugins to boost productivity. We start with a simple creation of a Xamarin.Forms solution, customize the style and behavior of views for each platform. Further on, we demonstrate the power of architecting a cross-platform solution. Next, you will utilize and access hardware features that vary from platform to platform with cross-platform techniques. You will master the steps of getting the app ready and publishing it in the app store. The last module starts with general topics such as memory management, asynchronous programming, local storage, networking, and platform-specific features. You will learn about key tools to leverage the pattern and advanced implementation strategies. Finally, we show you the toolset for application lifecycle management to help you prepare the development pipeline to manage and see cross-platform projects through to public or private release. After the completion of this

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course, you will learn a path that will get you up and running with developing cross-platform mobile applications and help you become the go-to person when it comes to Xamarin. Style and approach This course will serve as comprehensive guide for developing cross-platform applications with Xamarin with a unique approach that will engage you like never before as you create real-world cross-platform apps on your own. Create a fully operating application and deploy it to major mobile platforms using Xamarin.

**FormsAbout This Book**

- Create standard user interfaces on Windows Mobile, Android, and iOS and then make those interfaces look good with ease
- Design a full-blown application in very little time with just about the entire code being shared
- Learn how to access platform-specific features and still have the same core code with this handy guide

**Who This Book Is For** This book is intended for mobile software developers who are fed up with having three different code sets for the same application. If you want to put your code on all mobile platforms with minimum fuss, and just want to develop but haven't got the time to be digging too far into a particular platform, this is the book for you. Basic knowledge of C# is assumed.

**What You Will Learn**

- Create a responsive UI, modified to suit the target platform
- Understand the basics of designing an application, and the considerations needed for target platforms
- Construct a complete app using a single codebase
- Develop attractive user interfaces
- Bind information to the code behind to generate a reactive application
- Design an effective portable class library (PCL)
- Include a Windows Mobile application within your standard Xamarin.Forms application
- Extend your applications using the Xamarin.Forms Labs library

**In Detail** Xamarin is an IDE used for the development of native iOS, Android, and Windows, and cross-platform mobile applications in C#. For the mobile developer, that means learning three different languages to create the same

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application. Even if you use the Xamarin toolchain, you still need to work with three different user interface construction sets. Xamarin is essentially a container in which developers can write any application in C# and use the Xamarin compiler to package and deploy on Android, iOS, or Windows platforms. To top this, Xamarin.Forms plays the role of a single codebase for mobile applications. This book will show you, with fully-coded examples, how to use both the Xamarin toolchain and the Xamarin.Forms library to code once for the three platforms. It goes from the concept and design of a mobile messenger application to its execution. You will be introduced to Messenger—the messaging app—which includes key features such as push notifications, UI, maps, databases, and web services. Next, you will learn to plan the UI using Xamarin.Forms for cross-mobile platform development, and move on to creating custom buttons, extending the UI, and connecting to social sites such as Facebook and Twitter. You will also learn about the limitations of PCL libraries and how they make coding easier. This will be followed by the creation of a SQLite database and a database manager, and the SQLite database's reflection within the database manager. You will then be taken through the use of hardware features with ample coverage of iOS, Android, and Windows Mobile. Finally, the book will conclude by introducing common strategies that allow you to create applications that “just work” without having to reinvent the wheel each time. Style and approach A fun and informal approach to creating a mobile application using the most up-to-date cross-platform approach. Each coding chapter includes fully working code examples available for download from the Packt Publishing website.

Develop powerful cross-platform applications with Xamarin  
About This Book Write native cross-platform applications with  
Xamarin Design user interfaces that can be shared across

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Android, iOS, and Windows Phone using Xamarin.Forms  
Practical cross-platform development strategies Who This Book Is For If you are a developer with experience in C# and are just getting into mobile development, this is the book for you. This book will give you a head start with cross-platform development and will be the most useful to developers who have experience with desktop applications or the web. What You Will Learn Apple's MVC design pattern The Android activity lifecycle Share C# code across platforms and call native Objective-C or Java libraries from C# Create a real web service back end in Windows Azure using SQL Azure as database storage Set up third-party libraries such as NuGet and Objective Sharpie in many different ways, and port a desktop .NET library to Xamarin Use Xamarin.Mobile for camera, contacts, and location In Detail Xamarin is a leading cross-platform application development tool used by top companies such as Coca-Cola, Honeywell, and Alaska Airlines to build apps. Version 4 features significant updates to the platform including the release of Xamarin.Forms 2.0 and improvements have been made to the iOS and Android designers. Xamarin was acquired by Microsoft so it is now a part of the Visual Studio family. This book will show you how to build applications for iOS, Android, and Windows. You will be walked through the process of creating an application that comes complete with a back-end web service and native features such as GPS location, camera, push notifications, and other core features. Additionally, you'll learn how to use external libraries with Xamarin and Xamarin.Forms to create user interfaces. This book also provides instructions for Visual Studio and Windows. This edition has been updated with new screenshots and detailed steps to provide you with a holistic overview of the new features in Xamarin 4. Style and approach This book offers a tutorial style approach to teach you the skills required to develop end-to-end cross-platform

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solutions with Xamarin.

New edition of the bestselling guide to building an effective mobile app architecture with Xamarin.Forms 4 that maximizes the overall quality of apps. Key Features Updated for Xamarin.Forms 4 Packed with real-world scenarios and solutions to help you build professional grade mobile apps with Xamarin.Forms Includes design patterns and best practice techniques that every mobile developer should know Book Description Discover how to extend and build upon the components of the most recent version of Xamarin.Forms to develop an effective, robust mobile app architecture. This new edition features Xamarin.Forms 4 updates, including CollectionView and RefreshView, new coverage of client-side validation, and updates on how to implement user authentication. Mastering Xamarin.Forms, Third Edition is one of the few Xamarin books structured around the development of a simple app from start to finish, beginning with a basic Xamarin.Forms app and going step by step through several advanced topics to create a solution architecture rich with the benefits of good design patterns and best practices. This book introduces a core separation between the app's user interface and the app's business logic by applying the MVVM pattern and data binding, and then focuses on building a layer of plugin-like services that handle platform-specific utilities such as navigation and geo-location, as well as how to loosely use these services in the app with inversion of control and dependency injection. You'll connect the app to a live web-based API and set up offline synchronization before testing the app logic through unit testing. Finally, you will learn how to add monitoring to your Xamarin.Forms projects to track crashes and analytics and gain a proactive edge on quality. What you will learn Find out how, when, and why to use architecture patterns and best practices with Xamarin.Forms Implement the Model-View-ViewModel

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(MVVM) pattern and data binding in Xamarin.Forms mobile apps Incorporate client-side validation in Xamarin.Forms mobile apps Extend the Xamarin.Forms navigation API with a custom ViewModel-centric navigation service Leverage the inversion of control and dependency injection patterns in Xamarin.Forms mobile apps Work with online and offline data in Xamarin.Forms mobile apps Use platform-specific APIs to build rich custom user interfaces in Xamarin.Forms mobile apps Explore how to monitor mobile app quality using Visual Studio App Center Who this book is for This book is intended for .NET developers who are familiar with Xamarin mobile application development and the open source Xamarin.Forms toolkit. If you have already started working with Xamarin.Forms and want to take your app to the next level, making it more maintainable, testable and flexible, then this book is for you.

A recipe-based practical guide to get you up and running with Xamarin cross-platform development About This Book- Gain the skills and expertise to create, test, and deploy native mobile applications in the three major mobile app stores that share up to 95% of the same code- Learn development techniques that will allow you to use and create custom layouts for each platform, cross-platform UI- Gain the knowledge needed to become more efficient in testing, deploying, and monitoring your applications, helping you through all stages of the software development life cycle Who This Book Is For This book is for mobile developers. You must have some basic experience of C# programming, but no previous experience with Xamarin is required. If you are just starting with C# and want to use Xamarin to develop cross-platform apps effectively and efficiently, then this book is the right choice for you. What You Will Learn- Create and customize your cross-platform UI- Understand and explore cross-platform patterns and practices- Use the out-of-the-box

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services to support third-party libraries- Find out how to get feedback while your application is used by your users- Bind collections to ListView and customize its appearance with custom cells- Create shared data access using a local SQLite database and a REST service- Test and monitor your applications

**In Detail**You can create native mobile applications using the Xamarin Forms platform for the three major platforms iOS, Android, and Windows Phone. The advantage of this is sharing as much code as you can, such as the UI, business logic, data models, SQLite data access, HTTP data access, and file storage across the three major platforms. This book provide recipes on how to create an architecture that will be maintainable, extendable, use Xamarin Forms plugins to boost productivity, customize your views per platforms, and use platform-specific implementations at runtime. We start with a simple creation of a Xamarin Forms solution with the three major platforms. We will then jump to XAML recipes and you will learn how to create a tabbed application page, and customize the style and behavior of views for each platform. Moving on, you will acquire more advanced knowledge and techniques while implementing views and pages for each platform and also calling native UI screens such as the native camera page. Further on, we demonstrate the power of architecting a cross-platform solution and how to share code between platforms, create abstractions, and inject platform-specific implementations. Next, you will utilize and access hardware features that vary from platform to platform with cross-platform techniques. We'll then show you the power of databinding offered by Xamarin Forms and how you can create bindable models and use them in XAML. You will learn how to handle user interactions with the device and take actions in particular events. With all the work done and your application ready, you will master the steps of getting the app ready and publishing it in the app store. Style and

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approach This book will serve as a quick reference with a unique recipe-based approach that will engage you like never before as you create real-world cross-platform apps on your own.

Xamarin Building Your First Mobile App with C# .NET and Xamarin, Xamarin for beginners The entire world is now surrounded by billions and trillions of mobile Tech which is inevitable. The major share of the development of mobile apps is taken by the Google's Android, Apple's iOS, and Microsoft's Windows. Every new learner or newbie in Mobile Development Domain finds himself in the dilemma of choosing the platform to start with. They are actually looking for a platform to execute or implement the test apps on something different from what it is intended for. Xamarin is one of the solutions to it which actually is meant for cross-platform mobile app development where you can build Android, iOS, and Windows native application using a single codebase. This single platform is C#. The apps developed using Xamarin performs almost similar to the native Platform applications. Working of Xamarin Xamarin has entirely converted the Android and iOS SDK to C# to make it more familiar to the developers. One can easily use the same codebase for both the platforms without the hassle of remembering the syntax of different languages all the time. Besides, the User Interface(UI) remains almost same. It has to be separately built for both the platforms and then has to be bound by the common codebase. There are actually two ways for building the User Interface. First one is using the original native methods to build the UI. Another one incorporates the use of Xamarin.Forms. These forms can be used to build UI for different platforms all at once and have almost 100% code sharing if these are chosen over Native UI Technology. After doing all the UI work comes the most challenging phase which is connecting the UI to the

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codebase. This connection can again be implemented using two code sharing approaches which are: 1. Shared Project 2. Portable Class

Libraries (PCL) Xamarin.Forms Xamarin provides developers two ways to build a mobile app. Either by using Xamarin.iOS and Xamarin.Android (main approach) or by using Xamarin.Forms which is a framework for simple apps and prototypes. Xamarin.Forms, the Visual Studio Library facilitates for rapid prototyping or building apps with few platform-specific functionalities. This makes Xamarin.Forms, the best fit, for apps considering code sharing more significant than custom UI. The developer need not design for each platform individually. With Xamarin.Forms, a single interface would be shared across platforms. Apps with some parts of the UI created using Xamarin.Forms and rest using native UI Toolkit can also be built using this approach. What Is Xamarin.Forms? Xamarin.Forms is a cross-platform natively backed UI toolkit abstraction that allows developers to easily create user interfaces that can be shared across Android, iOS, Windows, and Windows Phone. Performance Xamarin apps are fully native so in xamarin you can enjoy fully native performance with shared code. Xamarin.iOS and Xamarin.Android (Separate UI) For Xamarin.iOS and Xamarin.Android, you have shared code base in C#. This business logic is shared across platforms and UI is separate for all platforms. This is separate UI approach. Xamarin.iOS and Xamarin.Android give you 100% API coverage with benefits of .NET APIs. Anything you can do in Android or in iOS, you can do with Xamarin using C#. Windows Windows already supports C# for development. So, it is also built in C# with native APIs. Xamarin.Forms Xamarin.forms allow you more code sharing that you can also share application UI in all platforms. Included in Xamarin.Forms UI building blocks like pages, layouts, and controls XAML-defined UI Data

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bindingNavigationAnimation APIDependency  
ServiceMessaging CenterAdvantages of  
Xamarin.FormsNative appsShared Business LogicShared  
UIOne Xamarin development team require to develop apps  
for multiple platformsLess development time  
If you are a developer with experience in C# and are just  
getting into mobile development, this is the book for you. If  
you have experience with desktop applications or the Web,  
this book will give you a head start on cross-platform  
development.

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