

SignalR Realtime Application Cookbook

The power of ASP.NET MVC 5 stems from the underlying ASP.NET platform. To make your ASP.NET MVC applications the best they can be, you need to fully understand the platform features and know how they can be used to build effective and elegant MVC framework applications. The ASP.NET platform provides ASP.NET MVC applications with a rich suite of services including vital every-day features like extensible request handling, state management, and user authentication. Understanding how these features work is the difference between creating an average web application and the best-in-class. MVC applications that are architected with a thorough knowledge of the underlying platforms are faster to write, faster to run, and more readily adaptable to change. In *Pro ASP.NET MVC 5 Platform*, best-selling author Adam Freeman explains how to get the most from the entire ASP.NET platform, beginning with a nuts-and-bolts description of the patterns and tools you need through to the most advanced features. He goes in-depth at every stage to give you the practical knowledge that you need to apply these concepts to your own code.

This book contains illustrated code examples to help you create real-time, asynchronous, and bi-directional client-server applications. Each recipe will concentrate on one specific aspect of application development with SignalR showing you how that aspect can be used proficiently. Different levels of developers will find this book useful. Beginners will be able to learn all the fundamental concepts of SignalR, quickly becoming productive in a difficult arena. Experienced programmers will find in this book a handy and useful collection of ready-made solutions to common use cases, which they will be able to enhance as needed. Developers can also use the book as a quick reference to the most important SignalR features. No previous practical experience either with SignalR or with real-time communication in general is required.

A comprehensive guide for beginners to learn the key concepts, real-world applications, and latest features of C# 10 and .NET 6 with hands-on exercises using Visual Studio 2022 and Visual Studio Code Key Features Explore the newest additions to C# 10, the .NET 6 class library, and Entity Framework Core 6 Create professional websites and services with ASP.NET Core 6 and Blazor Build cross-platform apps for Windows, macOS, Linux, iOS, and Android Book Description This latest edition is extensively revised to accommodate all the latest features that come with C# 10 and .NET 6. You will learn object-oriented programming, writing, testing, and debugging functions, implementing interfaces, and inheriting classes. The book covers the .NET APIs for performing tasks like managing and querying data, monitoring and improving performance, and working with the filesystem, async streams, serialization, and encryption. It provides examples of cross-platform apps you can build and deploy, such as websites and services using ASP.NET Core. The best application for learning the C# language constructs and many of the .NET libraries does not distract with unnecessary application code. Hence, the C# and .NET topics covered in Chapters 1 to 12 feature console applications. In Chapters 13 to 17, having mastered the basics, you will build practical applications and services using ASP.NET Core, the Model-View-Controller (MVC) pattern, and Blazor. There are also two new online chapters on using .NET MAUI to build cross-platform apps and building services using a variety of technologies, including Web API, OData, gRPC, GraphQL, SignalR, and Azure Functions. What you will learn Build rich web experiences using Blazor, Razor Pages, the Model-View-Controller (MVC) pattern, and other features of ASP.NET Core Build your own types with object-oriented programming Write, test, and debug functions Query and manipulate data using LINQ Integrate and update databases in your apps using Entity Framework Core, Microsoft SQL Server, and SQLite Build and consume powerful services using the latest technologies, including gRPC and GraphQL Build cross-platform apps using .NET MAUI and XAML Who this book is for This book is for beginners to C# and .NET 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# 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 benefit from this book.

ASP.NET SignalR is the new solution to real-time communication between servers and clients in .NET. Use it to push new data to a web page or mobile device as soon as it becomes available, whether it's a notification, live chat, up-to-the-minute financial data, or a range of other exciting applications. Innovations like Google live search and live Facebook and Twitter updates are pushing users' expectations of the real-time web. With *Pro ASP.NET SignalR*, you can join this revolution and learn skills that will be valuable for years to come. *Pro ASP.NET SignalR* starts with an introduction to the real-time web. Learn about the technologies underlying the SignalR library, such as WebSockets and long-polling, and how SignalR elegantly flips between them depending on the capabilities of the client. Next, meet the concepts of hubs and persistent connections and how to use them to build the components of an ASP.NET SignalR application. Find out how to extend, test, debug, configure, scale, and host your applications, and how to target a range of clients, including Windows and iOS. The book rounds off with two case studies—a stock market price updater, and a collaborative drawing application—so you can get to grips with SignalR in a realistic scenario, using a broad range of the concepts covered in earlier chapters. As real-time updates to web and mobile apps become the norm, *Pro ASP.NET SignalR* will be your in-depth, one-stop companion to this new and exciting technology.

In just 24 sessions of one hour or less, you will be up and running with AngularJS in your Microsoft .NET environment. Using a straightforward, step-by-step approach, each lesson builds on your .NET skills and knowledge, helping you quickly learn the essentials of AngularJS, and use it to streamline any web development project. Step-by-step instructions carefully walk you through the most common questions, issues, and tasks. Q&A sections, quizzes, and exercises help you build and test your knowledge. By The Way notes present interesting pieces of information. Try it Yourself sidebars offer advice or teach an easier way to do something. Watch Out! cautions advise you about potential problems and help you steer clear of disaster. Dennis Sheppard is a Front-End Architect at NextTier Education in Chicago, IL. He has delivered enterprise solutions for the private equity, insurance, healthcare, education, and distribution industries. Christopher Miller is an Architect at West Monroe Partners. He has built solutions for the higher education, private equity, and renewable energy industries. AJ Liptak, is a Senior Consultant at West Monroe Partners specializing in modern web application development. He has delivered transformative solutions for the telecom, healthcare, finance, and distribution industries. Learn how to... Build AngularJS web apps from scratch, or integrate with existing .NET code Organize, reuse, and test JavaScript web application code far more effectively Discover key JavaScript design patterns that support AngularJS (and their similarities to C#) Use AngularJS modules, controllers, views, data-binding, and event handling Implement AngularJS services efficiently Work with directives, custom directives, and dependency injection Set up AngularJS routing Apply best practices for organizing AngularJS applications Master sophisticated AngularJS techniques, including filters, advanced patterns, and communication between controllers Deploy AngularJS code to the Microsoft Azure cloud

Unit-test and debug your single page applications Integrate AngularJS with .NET Web Forms and .NET MVC Build REST APIs in .NET and consume their services in AngularJS Combine AngularJS with .NET SignalR to build real-time web apps Extend AngularJS development with bower, gulp, and webstorm Preview the future of AngularJS: Version 2.0 and beyond If you are a .NET developer who wants to develop end-to-end RESTful applications in the cloud, then this book is for you. A working knowledge of C# will help you get the most out of this book.

Design, develop, build, and deliver an end-to-end serverless architecture by leveraging Azure services, frameworks, and tools. This book offers a holistic approach, guiding you through the design and development of a Twitter Bot application, while leveraging Azure Functions. Integrating Serverless Architecture begins with an overview of serverless computing and getting started with Azure Functions. Here, you will create a Twitter bot function which scans Twitter for the latest tweets and makes use of dependency injection. Further, you will learn about Azure Cosmos DB where you will cover its change feed mechanism and the repository pattern. You will create a Cosmos DB trigger-based tweet notifier function, which will broadcast the latest tweets to connected clients. You will explore the basics of Azure Service Bus and create a tweet scheduler function, which will prioritize different keywords for the Twitter bot function. Along the way, you will debug, deliver, and test the functions in the Azure environment. This book shows you how to secure your Azure Function secrets with the help of Azure Key Vault. To further your understanding of the technology, you will learn logging and exception handling in Azure Functions. Later in the book, you will build a Twitter bot web application by using ASP.NET Core and Materialize CSS, which will interact with several HTTP-based Azure Functions. The Twitter bot web application allows users to log in through the Twitter Identity Provider, subscribe to different keywords/hashtags, and browse the latest tweets based on subscriptions. You will get started with SignalR Service and integrate it with Azure Functions and web applications. Towards the end you will go through app service authentication on Azure Functions and discover how to configure continuous integration and delivery to Azure Functions. After reading this book, you will be able to understand the steps involved in design, development, and delivery of a workflow using Azure Functions. What You Will Learn Design and develop a Twitter bot application using Azure Functions with Azure Web App Service as the front end Leverage Azure Cosmos DB as data storage and trigger notifications using its change feed mechanism Store and retrieve secrets from Azure Key Vault Integrate Azure Functions with Azure SignalR Service to broadcast real-time messages Secure Azure Functions by enabling Twitter identity authentication using built-in App Service authentication Build a continuous integration and continuous delivery pipeline for Azure Functions using Visual Studio Team Services (VSTS) Who This Book Is For Developers, software engineers, and architects who design and manage infrastructures and build applications by leveraging Microsoft cloud services.

This book provides all the tools you need to develop ultra-modern multiple-page applications (MPAs) using ASP.NET Core Razor Pages, Angular elements, WebPack, RxJS, and mini-SPAs (Single-Page Applications). It will be useful for web programmers, business developers, and students of all skill levels who are interested in web-application developments. This book teaches you how to build a modern web site/application using a hybrid approach – the simplest being host one or more mini-SPAs within a larger multiple-page web application. It shows how to split a web application into functional parts, and convert each functional part into its own SPA. These mini-SPAs together form a complete multiple-page application. For each mini SPA, we use a simple JavaScript routing system to organize the states of the application and switch between different views by watching changes on the URL. The technical stack for backend consists of operating system, web server, database, and programming logic. This book chooses ASP.NET Core Razor Pages and SQL Server as the backend framework. A Razor page consists of a Razor view and a code behind file. Each Razor page is self-contained with its own view and code organized together, resulting in a simpler app, which makes coding page-focused scenarios easier and more productive. The front-end components enable the user's interaction with the web application. In this book, we choose TypeScript, npm, WebPack, RxJS, and Angular as our front-end technical stack. TypeScript is a modern JavaScript development language that provides optional static type checking, classes, and interfaces. It also offers advanced Intellisense, auto-completion, navigation, and refactoring, which makes code easier to read and understand. WebPack is a bundler and it comes in handy when you need to pack multiple assets together into a dependency graph. There is a rising tendency to use WebPack because it can fulfil nearly all tasks that you would perform through a task runner. RxJS is a library for reactive programming using observables, which make it easier to compose asynchronous or callback-based code. This book will explain how to use all of these technologies together to create a modern web application. Angular is a popular front-end JavaScript framework. Even though it is used for SPA development, we can still take advantage of this framework in building modern multiple-page web applications, i.e., we can use Angular in a non-SPA way via Angular elements. Angular elements are Angular components packaged as custom elements, a web standard for defining new HTML elements in a framework-agnostic way. This book shows how to embed Angular elements into our modern MPA project without having to migrate an entire application to Angular. This book also includes the other selected topics, including how to use Microsoft ML.NET to solve machine learning problems, such as classification, regression, and clustering; how to create various charts and graphics using ECharts; how to use SignalR to add real-time features to your web apps; how to use dependency injection, and how to create custom tag helpers and Razor Class Libraries in Razor Pages.

This book is about algebraic and differential methods, as well as fractional calculus, applied to diagnose and reject faults in nonlinear systems, which are of integer or fractional order. This represents an extension of a very important and widely studied problem in control theory, namely fault diagnosis and rejection (using differential algebraic approaches), to systems presenting fractional dynamics, i.e. systems whose dynamics are represented by derivatives and integrals of non-integer order. The authors offer a thorough overview devoted to fault diagnosis and fault-tolerant control applied to fractional-order and integer-order dynamical systems, and they introduce new methodologies for control and observation described by fractional and integer models, together with successful simulations and real-time applications. The basic concepts and tools of mathematics required to understand the methodologies proposed are all clearly introduced and explained. Consequently, the book is useful as supplementary reading in courses of applied mathematics and nonlinear control theory. This book is meant for engineers, mathematicians, physicists and, in general, to researchers and postgraduate students in diverse areas who have a minimum knowledge of calculus. It also contains advanced topics for researchers and professionals interested in the area of states and faults estimation.

A step-by-step tutorial to get acquainted with the ASP.NET MVC4 Framework and its features in order to discover how to develop web applications using them. This book is targeted at people who are familiar with C# development on the .NET platform and are interested in web development with the ASP.NET development framework. No prior web or mobile development experience is required

This book is designed for software developers, primarily those with knowledge of C#, .NET, and JavaScript. Good knowledge and understanding of SignalR is assumed to allow efficient programming of core elements and applications in SignalR.

ASP.NET Core 5 for Beginners is a practical guide for developers for building dynamic and powerful web applications with the ASP.NET Core framework and C#. From basic ASP terminologies to creating a single-page application, and from testing and maintaining the app to deploying it on the cloud, this book covers everything you need to get started.

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 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.

The professional's guide to C# 7, with expert guidance on the newest features Professional C# 7 and .NET Core 2.0 provides experienced programmers with the information they need to work effectively with the world's leading programming language. The latest C# update added many new features that help you get more done in less time, and this book is your ideal guide for getting up to speed quickly. C# 7 focuses on data consumption, code simplification, and performance, with new support for local functions, tuple types, record types, pattern matching, non-nullable reference types, immutable types, and better support for variables. Improvements to Visual Studio will bring significant changes to the way C# developers interact with the space, bringing .NET to non-Microsoft platforms and incorporating tools from other platforms like Docker, Gulp, and NPM. Guided by a leading .NET expert and steeped in real-world practicality, this guide is designed to get you up to date and back to work. With Microsoft speeding up its release cadence while offering more significant improvement with each update, it has never been more important to get a handle on new tools and features quickly. This book is designed to do just that, and more—everything you need to know about C# is right here, in the single-volume resource on every developer's shelf. Tour the many new and enhanced features packed into C# 7 and .NET Core 2.0 Learn how the latest Visual Studio update makes developers' jobs easier Streamline your workflow with a new focus on code simplification and performance enhancement Delve into improvements made for localization, networking, diagnostics, deployments, and more Whether you're entirely new to C# or just transitioning to C# 7, having a solid grasp of the latest features allows you to exploit the language's full functionality to create robust, high-quality apps. Professional C# 7 and .NET Core 2.0 is the one-stop guide to everything you need to know.

Get up to speed with using C# 8 and .NET Core 3.0 features to build real-world .NET Core applications Key Features Learn the core concepts of web applications, serverless computing, and microservices Create an ASP.NET Core MVC application using controllers, routing, middleware and authentication Build modern applications using cutting-edge services from Microsoft Azure Book Description .NET Core is a general-purpose, modular, cross-platform, and opensource implementation of .NET. The latest release of .NET Core 3 comes with improved performance and security features, along with support for desktop applications. .NET Core 3 is not only useful for new developers looking to start learning the framework, but also for legacy developers interested in migrating their apps. Updated with the latest features and enhancements, this updated second edition is a step-by-step, project-based guide. The book starts with a brief introduction to the key features of C# 8 and .NET Core 3. You'll learn to work with relational data using Entity Framework Core 3, before understanding how to use ASP.NET Core. As you progress, you'll discover how you can use .NET Core to create cross-platform applications. Later, the book will show you how to upgrade your old WinForms apps to .NET Core 3. The concluding chapters will then help you use SignalR effectively to add real-time functionality to your applications, before demonstrating how to implement MongoDB in your apps. Finally, you'll delve into serverless computing and how to build microservices using Docker and Kubernetes. By the end of this book, you'll be proficient in developing applications using .NET Core 3. What you will learn Understand how to incorporate the Entity Framework Core 3 to build ASP.NET Core MVC applications Create a real-time chat application using Azure's SignalR service Gain hands-on experience of working with Cosmos DB Develop an Azure Function and interface it with an Azure Logic App Explore user authentication with Identity Server and OAuth2 Understand how to use Azure Cognitive Services to add advanced functionalities with minimal code Get to grips with running a .NET Core application with Kubernetes Who this book is for This book is for developers and programmers of all levels who want to build real-world projects and explore the new features of .NET Core 3. Developers working on legacy desktop software who are looking to migrate to .NET Core 3 will also find this book useful. Basic knowledge of .NET Core and C# is assumed.

Visual Studio 2017 updates for this book are now available. Follow the Download Source Code link for this book on the Apress website. Now in its 6th edition, the best selling book on MVC is now updated for ASP.NET Core MVC. It contains detailed explanations of the new Core MVC functionality which enables developers to produce leaner, cloud optimized and mobile-ready applications for the .NET platform. This book puts ASP.NET Core MVC into context and dives deep into the tools and techniques required to build modern, cloud optimized extensible web applications. All the new MVC features are described in detail and the author explains how best to apply them to both new and existing projects. The ASP.NET Core MVC Framework is the latest evolution of Microsoft's ASP.NET web platform, built on a completely new foundation. It represents a fundamental change to how Microsoft constructs and deploys web frameworks and is free of the legacy of earlier technologies such as Web Forms. ASP.NET Core MVC provides a "host agnostic" framework and a high-productivity programming model that promotes cleaner code architecture, test-driven development, and powerful extensibility. Best-selling author Adam Freeman has thoroughly revised this market-leading book and explains how to get the most from ASP.NET Core MVC. He starts with the nuts-and-bolts and shows you everything through to advanced features, going in-depth to give you the knowledge you need. This book follows the same format and style as the popular previous editions but brings everything up to date for the new ASP.NET Core MVC release. It presents a fully worked case study of a functioning ASP.NET MVC application that readers can use as a template for their own projects. What You Will Learn: Gain a solid architectural understanding of ASP.NET Core MVC Explore the entire ASP.NET MVC Framework as a cohesive whole See how MVC and test-driven development work in action Learn what's new in ASP.NET Core MVC and how best to apply these new features to your own work See how to create RESTful web services and Single Page Applications Build on your existing knowledge of previous MVC releases to get up and running with the new programming model quickly and effectively Who This Book Is For: This book is for web developers with a basic knowledge of ASP.NET and C# who want to incorporate the latest improvements and functionality in the new ASP.NET Core MVC Framework.

Hit the ground running with this book to quickly learn the fundamentals of HTML form processing, user authentication, and database CRUD (Create, Read, Update, and Delete) operations using the ASP.NET Core family of technologies. You will utilize cutting-edge and popular technology options from both the server side and client side to help you achieve your web application goals as quickly as possible. Developers who want to learn ASP.NET Core and complementary

Learn how web applications can be built efficiently using ASP.NET Core 2.0 and related frameworks About This Book Get to grips with the new features and APIs introduced in ASP.NET Core 2.0 Leverage the MVC framework and Entity Framework Core 2 to build efficient applications Learn to deploy your web applications in new environments such as the cloud and Docker Who This Book Is For This book is for developers who would like to build modern web applications with ASP.NET Core 2.0. No prior knowledge of ASP.NET or .NET Core is required. However, basic programming knowledge is assumed. Additionally, previous Visual Studio experience will be helpful but is not required, since detailed instructions will guide through the samples of the book. This book can also help people, who work in infrastructure engineering and operations, to monitor and diagnose problems during the runtime of ASP.NET Core 2.0 web applications. What You Will Learn Set up your development environment using Visual Studio 2017 and Visual Studio Code Create a fully automated continuous delivery pipeline using Visual Studio Team Services Get to know the basic and advanced concepts of ASP.NET Core 2.0 with detailed examples Build an MVC web application and use Entity Framework Core 2 to access data Add Web APIs to your web applications using RPC, REST, and HATEOAS Authenticate and authorize users with built-in ASP.NET Core 2.0 features Use Azure, Amazon Web Services, and Docker to deploy and monitor your applications In Detail The ability to develop web applications that are highly efficient but also easy to maintain has become imperative to many businesses. ASP.NET Core 2.0 is an open source framework from Microsoft, which makes it easy to build cross-platform web applications that are modern and dynamic. This book will take you through all of the essential concepts in ASP.NET Core 2.0, so you can learn how to build powerful web applications. The book starts with a brief introduction to the ASP.NET Core framework and the improvements made in the latest release, ASP.NET Core 2.0. You will then build, test, and debug your first web application very quickly. Once you understand the basic structure of ASP.NET Core 2.0 web applications, you'll dive deeper into more complex concepts and scenarios. Moving on, we'll explain how to take advantage of widely used frameworks such as Model View Controller and Entity Framework Core 2 and you'll learn how to secure your applications. Finally, we'll show you how to deploy and monitor your applications using Azure, AWS, and Docker. After reading the book, you'll be able to develop efficient and robust web applications in ASP.NET Core 2.0 that have high levels of customer satisfaction and adoption. Style and approach Start an exciting journey to building high performance web applications using ASP.NET Core 2.0 and MVC

The all-new approach for experienced ASP.NET professionals! ASP.NET is Microsoft's technology for building dynamically generated web pages from database content. Originally introduced in 2002, ASP.NET has undergone many changes in multiple versions and iterations as developers have gained a decade of experience with this popular technology. With that decade of experience, this edition of the book presents a fresh, new overhauled approach. A new focus on how to build ASP.NET sites and applications relying on field-tested reliable methods Integration of "One ASP.NET" philosophy treating ASP.NET Web Forms and ASP.NET MVC as equal tools each with their proper time and place Coverage of hot new ASP.NET 4.5 additions such as the Web API, Websockets and HTML5 & CSS3 use in layout but only to the extent that the tools themselves are practical and useful for working ASP.NET developers Professional ASP.NET 4.5 in C# and VB is an essential tool for programmers who need to be productive and build reliably performing sites with the latest ASP.NET Framework and Visual Studio.

Mastering client development is essential to truly mastering the MVC Framework. The benefits of using the MVC pattern on the server-side are now well understood and have become hugely popular. However to fully reap the advantages of MVC you must also understand what is happening on the client-side. Modern client browsers are extremely feature rich and capable of doing a great deal of processing and communication work for your application. If used correctly, they will streamline your data and application workflows, making your code appear both faster and more responsive to your users. By using client-side processing you reduce the load on your servers and save both bandwidth and CPU costs. In this book best-selling .NET author, Adam Freeman, shows you how to craft the HTML, JavaScript and CSS elements of your application to make the client-side of your MVC applications as slick and responsive as the server-side code they compliment. You'll learn how to use JavaScript to maintain your application's user experience independently of the server, how SignalR can provide real-time updates and how the Azure Cloud provides push-notifications to any client device. Put together these techniques will speed your development times, create a rich and responsive interface and seamlessly integrate your client-side code with the MVC pattern you're employing on the server. Starting with the nuts-and-bolts you'll be shown everything you need to know from first-principals through to advanced features. Pro ASP.NET MVC Client Development goes in-depth to give you the knowledge you need. Each topic is covered clearly and concisely and is packed with the details you need to be truly effective.

A fast-paced guide to develop, test, and deliver real-time communication in your .Net applications using SignalR About This Book- Build and test real-time apps in .Net using the new features of SignalR- Explore the fundamentals and the new methods and functions in the latest version of SignalR along with developing a complete application from scratch- A progressive, hands-on guide to gain an understanding of the SignalR framework Who This Book Is For If you are a .Net developer with good understanding of the .Net platform then this is an ideal book for you to learn how to build real-time apps using the SignalR framework. What You Will Learn- Explore the basic knowledge and understanding of SignalR- Get to know how to connect client to the server- Connecting a client with a server and setting a hub- Creating group connections together- Understand how to have state in the client to have specific operations- Securing SignalR connections- How to scale SignalR across multiple servers- Building a client for WPF- Building a client using Xamarin targeting Windows, iPhone and Android- Get to grips with monitoring the traffic in SignalR using Fiddler for Windows and Charles for OSX- Setting up code to host SignalR using OWIN In Detail With technology trends, demands on software have changed with more and more skilled users. Over the past few years, with services such as Facebook, Twitter and push notifications on smartphones, users are now getting used to being up to date with everything that happens all the time. With SignalR, the applications stay connected and will generate notifications when something happens either from the system or by other users thus giving new opportunities to enter into this new, exciting world of real-time application development. This is a step-by-step guide that follows a practical approach helping you as a developer getting to get started with SignalR by learning its fundamentals. It will help you through building real-time applications using the new methods and functions

in the SignalR framework. Starting from getting persistent connections with the server, you will learn the basics of connecting a client to the server and how the messaging works. This will be followed by setting up a hub on the server and consuming it from a JavaScript client. Next you will be taught how you can group connections together to send messages. We will then go on to know how you can have state in the client to handle specific operations like connecting or disconnecting. Then, moving on you will learn how to secure your SignalR connections using OWIN and scaling SignalR across multiple servers. Next you will learn building a client for WPF and building a client using Xamarin that targets Windows Phone, iPhone and Android. Lastly, you will learn how to monitor the traffic in SignalR using Fiddler, Charles and hosting SignalR using OWIN.Style and approach This is an example-oriented and comprehensive guide to learning the fundamentals of SignalR to build real-time applications. It will help you build real-time applications on the .Net platform in a step-by-step manner along with giving teaching techniques to deal with possible performance bottlenecks and other key topics.

The most comprehensive book on Microsoft's ASP.NET 4.5 platform, ASP.NET 4.5 Unleashed covers all facets of ASP.NET development and has been fully updated for Visual Studio 2013. It offers both an outstanding tutorial on core features and a "deep dive" for long-term reference. Former Microsoft ASP.NET program manager Stephen Walther and leading enterprise developer Nate Dudek begin by introducing ASP.NET Framework's essential controls, and show how to create common site-wide layouts and styles. Next, they cover all aspects of accessing, presenting, organizing, and editing data. You'll find thorough and practical sections on providing effective site navigation, securing sites and applications, and much more. This edition's extensive new coverage includes: Building ASP.NET Web API applications Building ASP.NET applications for mobile devices Making the most of new asynchronous programming techniques Building real-time multi-user applications with SignalR Protecting sites from hacks and attacks Using strongly-typed data controls and model binding Leveraging JavaScript frameworks and modern techniques to build world-class AJAX solutions Following the same approach that has made previous editions of this book a best-seller, Walther and Dudek present hundreds of realistic, up-to-date, downloadable code examples that reflect their unsurpassed experience with the entire ASP.NET platform.

Gain sharp insights into your data and solve real-world data science problems with R—from data munging to modeling and visualization About This Book Handle your data with precision and care for optimal business intelligence Restructure and transform your data to inform decision-making Packed with practical advice and tips to help you get to grips with data mining Who This Book Is For If you are a data scientist or R developer who wants to explore and optimize your use of R's advanced features and tools, this is the book for you. A basic knowledge of R is required, along with an understanding of database logic. What You Will Learn Connect to and load data from R's range of powerful databases Successfully fetch and parse structured and unstructured data Transform and restructure your data with efficient R packages Define and build complex statistical models with glm Develop and train machine learning algorithms Visualize social networks and graph data Deploy supervised and unsupervised classification algorithms Discover how to visualize spatial data with R In Detail R is an essential language for sharp and successful data analysis. Its numerous features and ease of use make it a powerful way of mining, managing, and interpreting large sets of data. In a world where understanding big data has become key, by mastering R you will be able to deal with your data effectively and efficiently. This book will give you the guidance you need to build and develop your knowledge and expertise. Bridging the gap between theory and practice, this book will help you to understand and use data for a competitive advantage. Beginning with taking you through essential data mining and management tasks such as munging, fetching, cleaning, and restructuring, the book then explores different model designs and the core components of effective analysis. You will then discover how to optimize your use of machine learning algorithms for classification and recommendation systems beside the traditional and more recent statistical methods. Style and approach Covering the essential tasks and skills within data science, Mastering Data Analysis provides you with solutions to the challenges of data science. Each section gives you a theoretical overview before demonstrating how to put the theory to work with real-world use cases and hands-on examples.

If you are a developer interested in building systems for Microsoft Azure, with an understanding of efficient cloud-based application development, then this is the book for you.

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, 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 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.

A fast-paced guide to develop, test, and deliver real-time communication in your .Net applications using SignalR About This Book Build and test real-time apps in .Net using the new features of SignalR Explore the fundamentals and the new methods and

functions in the latest version of SignalR along with developing a complete application from scratch A progressive, hands-on guide to gain an understanding of the SignalR framework Who This Book Is For If you are a .Net developer with good understanding of the .Net platform then this is an ideal book for you to learn how to build real-time apps using the SignalR framework. What You Will Learn Explore the basic knowledge and understanding of SignalR Get to know how to connect client to the server Connecting a client with a server and setting a hub Creating group connections together Understand how to have state in the client to have specific operations Securing SignalR connections How to scale SignalR across multiple servers Building a client for WPF Building a client using Xamarin targeting Windows, iPhone and Android Get to grips with monitoring the traffic in SignalR using Fiddler for Windows and Charles for OSX Setting up code to host SignalR using OWIN In Detail With technology trends, demands on software have changed with more and more skilled users. Over the past few years, with services such as Facebook, Twitter and push notifications on smartphones, users are now getting used to being up to date with everything that happens all the time. With SignalR, the applications stay connected and will generate notifications when something happens either from the system or by other users thus giving new opportunities to enter into this new, exciting world of real-time application development. This is a step-by-step guide that follows a practical approach helping you as a developer getting to get started with SignalR by learning its fundamentals. It will help you through building real-time applications using the new methods and functions in the SignalR framework. Starting from getting persistent connections with the server, you will learn the basics of connecting a client to the server and how the messaging works. This will be followed by setting up a hub on the server and consuming it from a JavaScript client. Next you will be taught how you can group connections together to send messages. We will then go on to know how you can have state in the client to handle specific operations like connecting or disconnecting. Then, moving on you will learn how to secure your SignalR connections using OWIN and scaling SignalR across multiple servers. Next you will learn building a client for WPF and building a client using Xamarin that targets Windows Phone, iPhone and Android. Lastly, you will learn how to monitor the traffic in SignalR using Fiddler, Charles and hosting SignalR using OWIN. Style and approach This is an example- oriented and comprehensive guide to learning the fundamentals of SignalR to build real-time applications. It will help you build real-time applications on the .Net platform in a step-by-step manner along with giving teaching techniques to deal with possible performance bottlenecks and other key topics.

Realtime Web Apps: With HTML5 WebSocket, PHP, and jQuery is a guide for beginner- to intermediate-level web developers looking to take the next leap forward in website and app development: realtime. With Realtime Web Apps, you'll be able to quickly get up to speed on what HTML5 WebSocket does, how it is going to affect the future of the web as we know it, and—thanks to Pusher's simple API—start developing your first realtime app today. Using a practical approach rather than focusing on dry theory, Realtime Web Apps will guide you through building your first app using HTML5, CSS3, jQuery, and Pusher. After your initial introduction to the technologies used in the book, you'll immediately jump into the process of creating a realtime Q&A app that will work on desktop browsers as well as mobile phones (including iOS and Android). In addition to learning realtime development strategies, you'll also learn progressive development strategies including responsive CSS3 layouts, AJAX development with jQuery, and more. The future of the web is realtime. Grab your hoverboard. Introduces you to the revolutionary capabilities of the HTML5 WebSocket API Gets you started with WebSocket immediately using the super-simple Pusher API Walks you through the development of a real-life realtime web app Gets you working with responsive layouts, jQuery, and AJAX development

Real World Windows 8 Development is a developer's handbook - an essential guide to building complete, end-user ready Windows 8 applications on the XAML and C# programming stack from start to finish. Starting with Windows 8 basics and walking through practical aspects of building your Windows 8 application, you'll find step-by-step instructions and practical advice that will leave you with a modern, elegant app written to the highest of standards. Author Samidip Basu, an early adopter of Windows 8 app development techniques, breaks down the design, development, and polish of a real-world business application, adding handy tips and tricks around controls, user interface design, storage, navigation, contracts, and more. Give your Windows 8 application development efforts a kick-start with Real World Windows 8 Development. What you'll learn Discover the pertinent points of the technology stack in Windows 8 from a developer's perspective. Familiarize yourself with best practices around usage of controls, user experience paradigms, navigation, storage, service integration, contracts, and more. Incrementally make your Windows 8 application feature-rich and an integrated well-behaved citizen in the operating system. Learn from crisp, standalone discussion of topics in each chapter Who this book is for Real World Windows 8 Development is by a developer, for developers. The book is for .NET developers wanting to utilize their existing skills in XAML and C# towards building a Windows 8 application. On the fence about how your C# and .NET skills apply in the new WinRT world? Have a dream application idea that you slowly want to build up? This book is for you. Table of Contents Part I - Knowing the Ecosystem: Introduction to Windows 8 Part I - Knowing the Ecosystem: Modern UI Design Part II - Getting Started: The Platform & Developer Tools Part II - Getting Started: The Right Controls Part II - Getting Started: The Look & Feel Part II - Getting Started: Content Structuring & Navigation Part III - Into the Groove: Orientation & Visual States Part III - Into the Groove: Handling Data Part III - Into the Groove: Application Lifecycle Management Part III - Into the Groove: Contracts Part IV - The Bling: Media & Sensors Part IV - The Bling: Tiles, Badges, and Toasts Part V - Above & Beyond: Cloud Augmentation Part V - Above & Beyond: Live Service Integration Part V - Above & Beyond: Real-World Techniques Part V - Above & Beyond: Deployment

Create, train, and evaluate various machine learning models such as regression, classification, and clustering using ML.NET, Entity Framework, and ASP.NET Core Key Features Get well-versed with the ML.NET framework and its components and APIs using practical examples Learn how to build, train, and evaluate popular machine learning algorithms with ML.NET offerings Extend your existing machine learning models by integrating with TensorFlow and other libraries Book Description Machine learning (ML) is widely used in many industries such as science, healthcare, and research and its popularity is only growing. In March 2018, Microsoft introduced ML.NET to help .NET enthusiasts in working with ML. With this book, you'll explore how to build ML.NET applications with the various ML models available using C# code. The book starts by giving you an overview of ML and the types of ML algorithms used, along with covering what ML.NET is and why you need it to build ML apps. You'll then explore the ML.NET framework, its components, and APIs. The book will serve as a practical guide to helping you build smart apps using the ML.NET library. You'll gradually become well versed in how to implement ML algorithms such as regression, classification, and clustering with real-world examples and datasets. Each chapter will cover the practical implementation, showing you how to implement ML within .NET applications. You'll also learn to integrate TensorFlow in ML.NET applications. Later you'll discover how to store the regression model housing price prediction to the database and display the real-time predicted results from the

database on your web application using ASP.NET Core Blazor and SignalR. By the end of this book, you'll have learned how to confidently perform basic to advanced-level machine learning tasks in ML.NET. What you will learn Understand the framework, components, and APIs of ML.NET using C# Develop regression models using ML.NET for employee attrition and file classification Evaluate classification models for sentiment prediction of restaurant reviews Work with clustering models for file type classifications Use anomaly detection to find anomalies in both network traffic and login history Work with ASP.NET Core Blazor to create an ML.NET enabled web application Integrate pre-trained TensorFlow and ONNX models in a WPF ML.NET application for image classification and object detection Who this book is for If you are a .NET developer who wants to implement machine learning models using ML.NET, then this book is for you. This book will also be beneficial for data scientists and machine learning developers who are looking for effective tools to implement various machine learning algorithms. A basic understanding of C# or .NET is mandatory to grasp the concepts covered in this book effectively.

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SignalR Real-time Application CookbookPackt Publishing Ltd

Get definitive guidance on SignalR, a new library for ASP.NET developers that simplifies the process of adding real-time web functionality to your applications. Real-time web functionality enables server-side code to push content to connected clients instantly as it becomes available. With this book, Microsoft .NET developers familiar with HTML and JavaScript will gain the skills to add real-time and async communication features for web, desktop, and mobile phone applications. Topics include: Introduction to async development; HTTP and real-time communications; SignalR technology fundamentals; persistent connections and hubs; multiplatform real-time applications; advanced topics Learn how SignalR uses Websockets when supported by the browser and the server and falls back to other techniques and technologies when it is not Use the simple ASP.NET API in SignalR for creating server-to-client remote procedure calls (RPC) that call JavaScript functions in client browsers from server-side .NET code. Exploit the API for connection management (e.g. connect and disconnect events), grouping connections, and authorization.

If you are a .NET developer who is looking for a simpler way to build services, this is the book for you. It will show you how to write fast, maintainable APIs that are a pleasure to use and maintain starting from the database to the client and everything in-between. Design, develop, and deploy a real-world web application by leveraging modern open source technologies. This book shows you how to use ASP.NET Core to build cross-platform web applications along with SignalR to enrich the application by enabling real-time communication between server and clients. You will use Docker to containerize your application, integrate with GitHub to package the application, and provide continuous deployment to Azure's IaaS platform. Along the way, Real-Time Web Application Development covers topics including designing a Materialize CSS theme, using a test-driven development approach with xUnit.net, and securing your application with the OAuth 2.0 protocol. To further your understanding of the technology, you will learn logging and exception handling; navigation using view components; and how to work with forms and validations. The rich code samples from this book can be used to retrofit or upgrade existing ASP.NET Core applications. What You Will Learn Design and develop a real-world web application Implement security and data storage with OAuth2 and Azure Table Storage Orchestrate real-time notifications through SignalR Use GitHub and Travis CI for continuous integration of code Master Docker containerization and continuous deployment with Docker Cloud to Azure Linux virtual machines Who This Book Is For Developers and software engineers interested in learning an end-to-end approach to application development using Microsoft technologies.

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