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Integrate proven performance and scalability techniques throughout the .NET application life cycle--and gain an edge in building better-performing products. This guide presents a robust framework organized by task and role, helping developers, architects, testers, and administrators prioritize and implement the best options at the appropriate time. It offers focused, end-to-end guidance--including processes for modeling performance and techniques for measuring, testing, and fine-tuning your applications. You'll also get tips direct from Microsoft development teams for improving the performance and scalability of managed code; Microsoft ASP.NET, ADO.NET, and SQL Server; Web services; .NET Remoting; XML; and more. The book features a "How To" section that details the steps for a number of specific performance-related tasks, such as adding performance counters and using the common language runtime (CLR) profiler. PATTERNS & PRACTICES guides are reviewed and approved by Microsoft engineering teams, consultants, partners, and customers--delivering accurate, real-world information that's been technically validated and tested.

Become a professional .NET developer by learning expert techniques for building enterprise-grade applications Key FeaturesExplore the advanced features of C# and .NET 5 to enhance your code and productivityFollow clear and easy instructions for building an end-to-end enterprise applicationLearn how to build scalable web applications and host them on the cloudBook Description .NET Core is one of the most popular programming platforms in the world for an increasingly large community of developers thanks to its excellent cross-platform support. This book will show you how to confidently use the features of .NET 5 with C# 9 to build robust enterprise applications. Throughout the book, you'll work on creating an enterprise app and ad-

ding a key component to the app with each chapter, before finally getting it ready for testing and deployment. You'll learn concepts relating to advanced data structures, the Entity Framework Core, parallel programming, and dependency injection. As you progress, you'll cover various authentication and authorization schemes provided by .NET Core to make your apps and APIs secure. Next, you'll build web apps using ASP.NET Core 5 and deploy them on the cloud while working with various cloud components using Azure. The book then shows you how to use the latest Microsoft Visual Studio 2019 and C# 9 to simplify developer tasks, and also explores tips and tricks in Visual Studio 2019 to improve your productivity. Later, you'll discover various testing techniques such as unit testing and performance testing as well as different methods to deploy enterprise apps. By the end of this book, you'll be able to create enterprise apps using the powerful features of .NET 5 and deploy them on the cloud. What you will learnDesign enterprise apps by making the most of the latest features of .NET 5Discover different layers of an app, such as the data layer, API layer, and web layerExplore end-to-end architecture, implement an enterprise web app using .NET and C# 9, and deploy the app on AzureFocus on the core concepts of web application development such as dependency injection, caching, logging, configuration, and authentication, and implement them in .NET 5Integrate the new .NET 5 health and performance check APIs with your appUnderstand how .NET 5 works and contribute to the .NET 5 platformWho this book is for If you are a developer, architect, or senior programmer who wants to leverage the features of .NET 5 and the C# language, as well as grasp essential techniques to build your skills, then this C# .NET 5 book is for you. Beginner to intermediate-level knowledge of the .NET framework and C# program-

ming is required to understand the concepts covered in this book more effectively.

A practical guide to building and upgrading new and legacy applications on cloud-native platforms using architectural best practices with .NET 5, C# 9, microservices, and ML.NET Key FeaturesGet up to speed with .NET 5's new improvements and featuresDiscover how to improve existing code design and enhance software maintainabilityExplore explanations and techniques for making programs easier to understand and changeBook Description .NET 5 is the unification of all .NET technologies in a single framework that can run on all platforms and provide a consistent experience to developers, regardless of the device, operating system (OS), or cloud platform they choose. By updating to .NET 5, you can build software that can quickly adapt to the rapidly changing demands of modern consumers and stay up to date on the latest technology trends in .NET. This book provides a comprehensive overview of all the technologies that will form the future landscape of .NET using practical examples based on real-world scenarios, along with best practices to help you migrate from legacy platforms. You'll start by learning about Microsoft's vision and rationale for the unification of the platforms. Then, you'll cover all the new language enhancements in C# 9. As you advance, you'll find out how you can align yourself with modern technology trends, focusing on everything from microservices to orchestrated containerized deployments. Finally, you'll learn how to effectively integrate machine learning in .NET code. By the end of this .NET book, you'll have gained a thorough understanding of the .NET 5 platform, together with a readiness to adapt to future .NET release cycles, and you'll be able to make architectural decisions about porting legacy systems and code bases to a newer platform. What

you will learnExplore the key performance improvement areas when migrating to modern architecturesUnderstand app design and development using .NET 5Discover how to shift from legacy to modern application design using microservices and cloud-native architectureExplore common migration pitfalls and make the right decisions in situations where multiple options are availableUnderstand the process of deploying .NET 5 code on serverless and containerized hosts, along with its benefitsFind out what ML.NET has to offer and build .NET apps that use machine learning servicesWho this book is for This book is for experienced developers as well as software architects who are looking to gain knowledge of the new features and capabilities of .NET 5, along with guidance on modern architectural patterns. If you're a developer who has previously worked on .NET, WPF, ASP.NET, Entity Framework, or other popular .NET libraries, this book will help you understand the migration process for their modern counterparts. Although experience with .NET Core is not required, working knowledge of the C# language and .NET framework is assumed.

Your text simplified as the essential facts to prepare you for your exams. Over 2,000 highly probable test items.

Provides information on designing and building effective enterprise solutions, covering such topics as UML, the business layer, the service layer, and the data access layer.

Fully updated for ASP.NET MVC 3. Delve into the features, principles, and pillars of the ASP.NET MVC framework—deftly guided by web development luminary Dino Esposito. ASP.NET MVC forces developers to think in terms of distinct components—Model, View, Controller—that make it easier to manage application complexity, while allowing strict control over the markup. Plunge into the framework's internal mechanics and gain perspectives on how to use this programming model versus Web Forms, and begin building your own MVC-based applications quickly.

Tapadiya takes a straightforward, hands-on approach to explain everything readers need to know from development to deployment and maintenance for this platform—all from a developer's perspective. Using C# as the primary language, and with plenty of code examples throughout, this book is an excellent way to learn.

Delve inside the Windows Runtime - and learn best ways to design and build Windows Store apps. Guided by Jeffrey Richter, a recognized expert in Windows and .NET programming, along with principal Windows consultant Maarten van de

Bospoort, you'll master essential concepts. And you'll gain practical insights and tips for how to architect, design, optimize, and debug your apps. With this book, you will: Learn how to consume Windows Runtime APIs from C# Understand the principles of architecting Windows Store apps See how to build, deploy, and secure app packages Understand how apps are activated and the process model controlling their execution Study the rich features available when working with files and folders Explore how to transfer, compress, and encrypt data via streams Design apps that give the illusion of running using live tiles, background transfers, and background tasks Share data between apps using the clipboard and the Share charm Get advice for monetizing your apps through the Windows Store About This Book Requires working knowledge of Microsoft .NET Framework, C#, and the Visual Studio IDE Targeted to programmers building Windows Store apps Some chapters also useful to those building desktop apps Technologies Covered Windows 8.1 Microsoft Visual Studio 2013

Ready to learn Windows 8 programming? Start Here! Learn the fundamentals of Windows 8 programming—and begin creating apps for desktops, laptops, tablets, and other devices. If you have previous experience with HTML5 and JavaScript—simply start here! This book introduces must-know concepts and getting-started techniques through easy-to-follow explanations, examples, and exercises. Here's where you start learning Windows 8 app development Build on your knowledge of HTML5, CSS, and JavaScript Create photo and media galleries with built-in HTML widgets Interact with the system through live tiles, contracts, and view state detection Store and access data on the local device and via the Internet Access webcam, GPS, and other sensors embedded in the device Create your first programs and publish them to the Windows Store

"Domain-Driven Design" incorporates numerous examples in Java-case studies taken from actual projects that illustrate the application of domain-driven design to real-world software development.

A guide to ASP.NET 2.0 covers such topics as Master Web pages, managing user profiles, data access, applications, security, and configuration.

"The guide is intended to serve as a practical and convenient overview of, and reference to, the general principles of architecture and design on the Microsoft platform and the .NET Framework".

A Comprehensive Process for Defining Software Architectures That Work A good software architecture is the foundation of any

successful software system. Effective architecting requires a clear understanding of organizational roles, artifacts, activities performed, and the optimal sequence for performing those activities. With The Process of Software Architecting, Peter Eeles and Peter Cripps provide guidance on these challenges by covering all aspects of architecting a software system, introducing best-practice techniques that apply in every environment, whether based on Java EE, Microsoft .NET, or other technologies. Eeles and Cripps first illuminate concepts related to software architecture, including architecture documentation and reusable assets. Next, they present an accessible, task-focused guided tour through a typical project, focusing on the architect's role, with common issues illuminated and addressed throughout. Finally, they conclude with a set of best practices that can be applied to today's most complex systems. You will come away from this book understanding The role of the architect in a typical software development project How to document a software architecture to satisfy the needs of different stakeholders The applicability of reusable assets in the process of architecting The role of the architect with respect to requirements definition The derivation of an architecture based on a set of requirements The relevance of architecting in creating complex systems The Process of Software Architecting will be an indispensable resource for every working and aspiring software architect—and for every project manager and other software professional who needs to understand how architecture influences their work.

Rethink the way you plan, design, and build Web applications—with expert guidance from Web development luminary Dino Esposito. Whether giving legacy sites a much-needed tune-up—or architecting rich Internet applications from the ground up—you'll learn pragmatic approaches to AJAX development that you can employ today. Discover how to: Delve into the mechanics and design goals of partial rendering—such as improving page-refresh speed Use AJAX-enabled server controls to bring desktop-like functionality to Web solutions Apply design patterns to common Web development issues, including client-side data binding Manipulate JavaScript more easily using the jQuery and Microsoft AJAX libraries Examine the interoperability and security models in Microsoft Silverlight Weigh the tradeoffs when architecting Web applications for richness (Silverlight) vs. reach (AJAX)—and deliver the right solution for your audience

Summary .NET Core in Action shows .NET developers how to build professional soft-

ware applications with .NET Core. Learn how to convert existing .NET code to work on multiple platforms or how to start new projects with knowledge of the tools and capabilities of .NET Core. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology .NET Core is an open source framework that lets you write and run .NET applications on Linux and Mac, without giving up on Windows. Built for everything from lightweight web apps to industrial-strength distributed systems, it's perfect for deploying .NET servers to any cloud platform, including AWS and GCP. About the Book .NET Core in Action introduces you to cross-platform development with .NET Core. This hands-on guide concentrates on new Core features as you walk through familiar tasks like testing, logging, data access, and networking. As you go, you'll explore modern architectures like microservices and cloud data storage, along with practical matters like performance profiling, localization, and signing assemblies. What's Inside Choosing the right tools Testing, profiling, and debugging Interacting with web services Converting existing projects to .NET Core Creating and using NuGet packages About the Reader All examples are in C#. About the Author Dustin Metzgar is a seasoned developer and architect involved in numerous .NET Core projects. Dustin works for Microsoft. Table of Contents Why .NET Core? Building your first .NET Core applications How to build with .NET Core Unit testing with xUnit Working with relational databases Simplify data access with object-relational mappers Creating a microservice Debugging Performance and profiling Building world-ready applications Multiple frameworks and runtimes Preparing for release appendix A - Frameworks and runtimes appendix B - xUnit command-line options appendix C - What's in the .NET Standard Library? appendix D - NuGet cache locations

Make the right architectural decisions up front—and improve the quality and reliability of your results. Led by two enterprise programming experts, you'll learn how to apply the patterns and techniques that help control project complexity—and make systems easier to build, support, and upgrade—right from the start. Get pragmatic architectural guidance on how to: Build testability, maintainability, and security into your system early in the design Expose business logic through a service-oriented interface Choose the best pattern for organizing business logic and behavior Review and apply the patterns for separating the UI and presentation logic Delve deep into the patterns and practices for the da-

ta access layer Tackle the impedance mismatch between objects and data Minimize development effort and avoid over-engineering—and deliver more robust results Get code samples on the Web.

Design scalable and high-performance enterprise applications using the latest features of C# 9 and .NET 5 Key Features Gain fundamental and comprehensive software architecture knowledge and the skillset to create fully modular apps Design high-performance software systems using the latest features of .NET 5 and C# 9 Solve scalability problems in web apps using enterprise architecture patterns Book Description Software architecture is the practice of implementing structures and systems that streamline the software development process and improve the quality of an app. This fully revised and expanded second edition, featuring the latest features of .NET 5 and C# 9, enables you to acquire the key skills, knowledge, and best practices required to become an effective software architect. This second edition features additional explanation of the principles of Software architecture, including new chapters on Azure Service Fabric, Kubernetes, and Blazor. It also includes more discussion on security, microservices, and DevOps, including GitHub deployments for the software development cycle. You will begin by understanding how to transform user requirements into architectural needs and exploring the differences between functional and non-functional requirements. Next, you will explore how to carefully choose a cloud solution for your infrastructure, along with the factors that will help you manage your app in a cloud-based environment. Finally, you will discover software design patterns and various software approaches that will allow you to solve common problems faced during development. By the end of this book, you will be able to build and deliver highly scalable enterprise-ready apps that meet your organization's business requirements. What you will learn Use different techniques to overcome real-world architectural challenges and solve design consideration issues Apply architectural approaches such as layered architecture, service-oriented architecture (SOA), and microservices Leverage tools such as containers, Docker, Kubernetes, and Blazor to manage microservices effectively Get up to speed with Azure tools and features for delivering global solutions Program and maintain Azure Functions using C# 9 and its latest features Understand when it is best to use test-driven development (TDD) as an approach for software development Write automated functional test cases Get the best

of DevOps principles to enable CI/CD environments Who this book is for This book is for engineers and senior software developers aspiring to become architects or looking to build enterprise applications with the .NET Stack. Basic familiarity with C# and .NET is required to get the most out of this book.

Practical Software Architecture Solutions from the Legendary Robert C. Martin ("Uncle Bob") By applying universal rules of software architecture, you can dramatically improve developer productivity throughout the life of any software system. Now, building upon the success of his best-selling books Clean Code and The Clean Coder, legendary software craftsman Robert C. Martin ("Uncle Bob") reveals those rules and helps you apply them. Martin's Clean Architecture doesn't merely present options. Drawing on over a half-century of experience in software environments of every imaginable type, Martin tells you what choices to make and why they are critical to your success. As you've come to expect from Uncle Bob, this book is packed with direct, no-nonsense solutions for the real challenges you'll face—the ones that will make or break your projects. Learn what software architects need to achieve—and core disciplines and practices for achieving it Master essential software design principles for addressing function, component separation, and data management See how programming paradigms impose discipline by restricting what developers can do Understand what's critically important and what's merely a "detail" Implement optimal, high-level structures for web, database, thick-client, console, and embedded applications Define appropriate boundaries and layers, and organize components and services See why designs and architectures go wrong, and how to prevent (or fix) these failures Clean Architecture is essential reading for every current or aspiring software architect, systems analyst, system designer, and software manager—and for every programmer who must execute someone else's designs. Register your product for convenient access to downloads, updates, and/or corrections as they become available.

Prepare for Microsoft Exam 70-534—and help demonstrate your real-world mastery of Microsoft Azure solution design and architecture. Designed for experienced IT pros ready to advance their status, Exam Ref focuses on the critical-thinking and decision-making acumen needed for success at the Microsoft Specialist level. Focus on the expertise measured by these objectives: Describe Microsoft Azure infrastructure and networking Help secure resources Design an application storage and data ac-

cess strategy Design an advanced application Design websites Design a management, monitoring, and business continuity strategy This Microsoft Exam Ref: Organizes its coverage by exam objectives Features strategic, what-if scenarios to challenge you Assumes you have experience designing Microsoft Azure cloud or hybrid solutions and supporting application life cycle management

Celebrate Thanksgiving with Annie and Snowball in this Level 2 Ready-to-Read story from the Theodor Seuss Geisel Award-winning creators of Henry and Mudge! Annie loves fall and she especially loves Thanksgiving. There is a big table at Annie's house, and she wants lots of people around it for a yummy dinner. But Annie lives with just her dad and her bunny, Snowball. She doesn't have a big family of her own. Who can she invite to share Thanksgiving?

Architect and design highly scalable, robust, clean and highly performant applications in .NET Core About This Book Incorporate architectural soft-skills such as DevOps and Agile methodologies to enhance program-level objectives Gain knowledge of architectural approaches on the likes of SOA architecture and microservices to provide traceability and rationale for architectural decisions Explore a variety of practical use cases and code examples to implement the tools and techniques described in the book Who This Book Is For This book is for experienced .NET developers who are aspiring to become architects of enterprise-grade applications, as well as software architects who would like to leverage .NET to create effective blueprints of applications. What You Will Learn Grasp the important aspects and best practices of application lifecycle management Leverage the popular ALM tools, application insights, and their usage to monitor performance, testability, and optimization tools in an enterprise Explore various authentication models such as social media-based authentication, 2FA and OpenID Connect, learn authorization techniques Explore Azure with various solution approaches for Microservices and Serverless architecture along with Docker containers Gain knowledge about the recent market trends and practices and how they can be achieved with .NET Core and Microsoft tools and technologies In Detail If you want to design and develop enterprise applications using .NET Core as the development framework and learn about industry-wide best practices and guidelines, then this book is for you. The book starts with a brief introduction to enterprise architecture, which will help you to understand what enter-

prise architecture is and what the key components are. It will then teach you about the types of patterns and the principles of software development, and explain the various aspects of distributed computing to keep your applications effective and scalable. These chapters act as a catalyst to start the practical implementation, and design and develop applications using different architectural approaches, such as layered architecture, service oriented architecture, microservices and cloud-specific solutions. Gradually, you will learn about the different approaches and models of the Security framework and explore various authentication models and authorization techniques, such as social media-based authentication and safe storage using app secrets. By the end of the book, you will get to know the concepts and usage of the emerging fields, such as DevOps, BigData, architectural practices, and Artificial Intelligence. Style and approach Filled with examples and use cases, this guide takes a no-nonsense approach to show you the best tools and techniques required to become a successful software architect.

Data is at the center of many challenges in system design today. Difficult issues need to be figured out, such as scalability, consistency, reliability, efficiency, and maintainability. In addition, we have an overwhelming variety of tools, including relational databases, NoSQL datastores, stream or batch processors, and message brokers. What are the right choices for your application? How do you make sense of all these buzzwords? In this practical and comprehensive guide, author Martin Kleppmann helps you navigate this diverse landscape by examining the pros and cons of various technologies for processing and storing data. Software keeps changing, but the fundamental principles remain the same. With this book, software engineers and architects will learn how to apply those ideas in practice, and how to make full use of data in modern applications. Peer under the hood of the systems you already use, and learn how to use and operate them more effectively Make informed decisions by identifying the strengths and weaknesses of different tools Navigate the trade-offs around consistency, scalability, fault tolerance, and complexity Understand the distributed systems research upon which modern databases are built Peek behind the scenes of major online services, and learn from their architectures

Build your expertise as you move beyond the basics--and delve into the core topics of programming with ASP.NET 2.0. Useful to both experienced developers and those developing new skills, this ultimate refer-

ence is packed with expert guidance, hands-on programming instruction, and practical examples to help you advance your mastery of developing applications for the Web. Discover how to: Author rich, visually consistent pages and manage layout with themes and Master pages Create personalized pages that persist user preferences Retrieve, modify, and manage data with Microsoft ADO.NET Configure the HTTP pipeline to serve ASP.NET 2.0 pages Control program flow by tracing and handling exceptions Design caching layers and learn state management techniques to optimize application performance Manage users with membership control, registration, and authentication capabilities Build real-world data access layers using common design patterns Use custom collections with data source controls Learn the internals of grid controls PLUS--Get code samples on the Web

The expert guide to creating production machine learning solutions with ML.NET! ML.NET brings the power of machine learning to all .NET developers— and Programming ML.NET helps you apply it in real production solutions. Modeled on Dino Esposito's best-selling Programming ASP.NET, this book takes the same scenario-based approach Microsoft's team used to build ML.NET itself. After a foundational overview of ML.NET's libraries, the authors illuminate mini-frameworks ("ML Tasks") for regression, classification, ranking, anomaly detection, and more. For each ML Task, they offer insights for overcoming common real-world challenges. Finally, going far beyond shallow learning, the authors thoroughly introduce ML.NET neural networking. They present a complete example application demonstrating advanced Microsoft Azure cognitive services and a handmade custom Keras network— showing how to leverage popular Python tools within .NET. 14-time Microsoft MVP Dino Esposito and son Francesco Esposito show how to: Build smarter machine learning solutions that are closer to your user's needs See how ML.NET instantiates the classic ML pipeline, and simplifies common scenarios such as sentiment analysis, fraud detection, and price prediction Implement data processing and training, and "productionize" machine learning-based software solutions Move from basic prediction to more complex tasks, including categorization, anomaly detection, recommendations, and image classification Perform both binary and multiclass classification Use clustering and unsupervised learning to organize data into homogeneous groups Spot outliers to detect suspicious behavior, fraud, failing equipment, or other issues Make the most of ML.NET's powerful,

flexible forecasting capabilities Implement the related functions of ranking, recommendation, and collaborative filtering Quickly build image classification solutions with ML.NET transfer learning Move to deep learning when standard algorithms and shallow learning aren't enough “Buy” neural networking via the Azure Cognitive Services API, or explore building your own with Keras and TensorFlow

A software architect's digest of core practices, pragmatically applied Designing effective architecture is your best strategy for managing project complexity—and improving your results. But the principles and practices of software architecting—what the authors call the “science of hard decisions”—have been evolving for cloud, mobile, and other shifts. Now fully revised and updated, this book shares the knowledge and real-world perspectives that enable you to design for success—and deliver more successful solutions. In this fully updated Second Edition, you will: Learn how only a deep understanding of domain can lead to appropriate architecture Examine domain-driven design in both theory and implementation Shift your approach to code first, model later—including multilayer architecture Capture the benefits of prioritizing software maintainability See how readability, testability, and extensibility lead to code quality Take a user experience (UX) first approach, rather than designing for data Review patterns for organizing business logic Use event sourcing and CQRS together to model complex business domains more effectively Delve inside the persistence layer, including patterns and implementation.

Straight talking advice on how to design and build enterprise applications for the cloud using Microsoft Azure with this book and eBook.

Provides information on planning, designing, and building Web applications with ASP.NET and AJAX.

Without established design patterns to guide them, developers have had to build distributed systems from scratch, and most of these systems are very unique indeed. Today, the increasing use of containers has paved the way for core distributed system patterns and reusable containerized components. This practical guide presents a collection of repeatable, generic patterns to help make the development of reliable distributed systems far more approachable and efficient. Author Brendan Burns—Director of Engineering at Microsoft Azure—demonstrates how you can adapt existing software design patterns for designing and building reliable distributed applications. Systems engineers and appli-

cation developers will learn how these long-established patterns provide a common language and framework for dramatically increasing the quality of your system. Understand how patterns and reusable components enable the rapid development of reliable distributed systems Use the side-car, adapter, and ambassador patterns to split your application into a group of containers on a single machine Explore loosely coupled multi-node distributed patterns for replication, scaling, and communication between the components Learn distributed system patterns for large-scale batch data processing covering work-queues, event-based processing, and coordinated workflows

The book consists of a set of business scenarios and corresponding solution critiques. Each "use case" chapter is made up of a problem description, assessment of implementation options, and the selection of the ideal solution candidate. We then construct the solution using the chosen Microsoft technology. This book is for architects, developers, and managers who need to improve their knowledge of the Microsoft application platform. This book will appeal to anyone who wants to get up to speed on selecting the most appropriate platform for a particular problem. Consultants and executive leadership will also find significant value in this book. A good understanding of the general Windows platform and development technologies would be helpful.

The practice of enterprise application development has benefited from the emergence of many new enabling technologies. Multi-tiered object-oriented platforms, such as Java and .NET, have become commonplace. These new tools and technologies are capable of building powerful applications, but they are not easily implemented. Common failures in enterprise applications often occur because their developers do not understand the architectural lessons that experienced object developers have learned. Patterns of Enterprise Application Architecture is written in direct response to the stiff challenges that face enterprise application developers. The author, noted object-oriented designer Martin Fowler, noticed that despite changes in technology—from Smalltalk to CORBA to Java to .NET—the same basic design ideas can be adapted and applied to solve common problems. With the help of an expert group of contributors, Martin distills over forty recurring solutions into patterns. The result is an indispensable handbook of solutions that are applicable to any enterprise application platform. This book is actually two books in one. The first

section is a short tutorial on developing enterprise applications, which you can read from start to finish to understand the scope of the book's lessons. The next section, the bulk of the book, is a detailed reference to the patterns themselves. Each pattern provides usage and implementation information, as well as detailed code examples in Java or C#. The entire book is also richly illustrated with UML diagrams to further explain the concepts. Armed with this book, you will have the knowledge necessary to make important architectural decisions about building an enterprise application and the proven patterns for use when building them. The topics covered include · Dividing an enterprise application into layers · The major approaches to organizing business logic · An in-depth treatment of mapping between objects and relational databases · Using Model-View-Controller to organize a Web presentation · Handling concurrency for data that spans multiple transactions · Designing distributed object interfaces

Design patterns are time-tested solutions to recurring problems, letting the designer build programs on solutions that have already proved effective Provides developers with more than a dozen ASP.NET examples showing standard design patterns and how using them helps build a richer understanding of ASP.NET architecture, as well as better ASP.NET applications Builds a solid understanding of ASP.NET architecture that can be used over and over again in many projects Covers ASP.NET code to implement many standard patterns including Model-View-Controller (MVC), ETL, Master--Master Snapshot, Master-Slave-Snapshot, Façade, Singleton, Factory, Single Access Point, Roles, Limited View, observer, page controller, common communication patterns, and more

Get expert architectural and design-level guidance for building distributed solutions with the Microsoft® .NET Framework—learning how to synthesize your knowledge of application development, servers, and infrastructure and business requirements.

Your guide to planning and executing a complete mobile web strategy Revisit your approach to the mobile web—and deliver effective solutions that reach customers and clients on a variety of mobile devices. In this practical guide, web development luminary Dino Esposito shows you how to develop a solid mobile strategy for the enterprise, starting with an effective mobile website. You'll receive essential architectural and implementation guidance, as well as mobile-specific design patterns for building cross-platform and native applications. Discover how to: Architect a website acces-

sible from many different mobile devices
 Implement design patterns specific to mobile app development
 Examine tools that enable you to write one codebase for many platforms
 Use technologies for building Windows Phone, iPhone, and Android apps
 Develop cross-platform app features, such as localization and offline behavior
 Learn about the responsibilities of a .NET solution architect and explore solution architecture principles, DevOps solutions, and design techniques and standards with hands-on examples of design patterns
 Key Features
 Find out what are the essential personality traits and responsibilities of a solution architect
 Become well-versed with architecture principles and modern design patterns with hands-on examples
 Design modern web solutions and make the most of Azure DevOps to automate your development life cycle
Book Description
 Understanding solution architecture is a must to build and integrate robust systems to meet your client's needs. This makes it crucial for a professional .NET software engineer to learn the key skills of a .NET solution architect to create a unique digital journey and build solutions for a wide range of industries, from strategy and design to implementation. With this handbook, developers working with the .NET technology will be able to put their knowledge to work. The book takes a hands-on approach to help you become an effective solution architect. You'll start by learning the principles of the software development life cycle (SDLC), the roles and responsibilities of a .NET solution architect, and what makes a great .NET solution architect. As you make progress through the chapters, you'll understand the principles of solution architecture and how to design a solution, and explore designing layers and microservices. You'll complete your learning journey by uncovering modern design patterns and techniques for designing and building digital solutions. By the end of this book, you'll have learned how to architect your modern web solutions with ASP.NET Core and Microsoft Azure and be ready to auto-

mate your development life cycle with Azure DevOps. What you will learn
 Understand the role and core responsibilities of a .NET solution architect
 Study popular UML (Unified Modeling Language) diagrams for solution architecture
 Work with modern design patterns with the help of hands-on examples
 Become familiar with microservices and designing layers
 Discover how to design modern web solutions
 Automate your development life cycle with Azure DevOps
 Who this book is for
 This book is for intermediate and advanced .NET developers and software engineers who want to advance their careers and expand their knowledge of solution architecture and design principles. Beginner or intermediate-level solution architects looking for tips and tricks to build large-scale .NET solutions will find this book useful.

XML is everywhere in the Microsoft .NET Framework, from Remoting to Web services and from data access to configuration. Learn about the extensive XML core classes in .NET and find out how to program against its parser in this in-depth guide--written by a popular programming author and consultant on cutting-edge technologies such as Microsoft ASP.NET and Microsoft ADO.NET. You'll find authoritative explanations of technologies such as schemas, transformations, and XPath, plus extensive discussion of data access issues such as synchronization and serialization, the DiffGram format, and the XML extensions in Microsoft SQL Server 2000. Along the way, you'll learn exactly how to get the best performance out of XML in the .NET world. You'll also get answers to common questions such as, "When should I use XML Web services instead of Remoting?"
 Topics covered include:
 XML CORE CLASSES IN THE .NET FRAMEWORK
 The .NET XML parsing model
 XML readers and writers
 Validating readers and writers
 XML Schema
 XML DATA MANIPULATION
 The XML DOM in .NET
 XPath
 XSLT
 XML AND DATA ACCESS
 XML extensions in SQL Server 2000
 DataSet serialization
 The DiffGram format
 APPLICATION INTEROPERABILITY
 The XML Serializer
 .NET Remoting
 XML

Web services
 XML data islands
 Configuration files

The complete, pragmatic guide to building high-value solutions with ASP.NET Core
 Programming ASP.NET Core is the definitive guide to practical web-based application development with Microsoft's new ASP.NET Core framework. Microsoft MVP Dino Esposito introduces proven techniques and well-crafted example code for solving real problems with ASP.NET Core. Step by step, he guides you through using all key ASP.NET Core technologies, including MVC for HTML generation, .NET Core, EF Core, ASP.NET Identity, dependency injection, and much more. Esposito thoroughly covers ASP.NET Core's cross-platform capabilities and what's changed from older ASP.NET versions, but he doesn't stop there: he offers a complete learning path for every developer who wants to build production solutions, including mobile-specific solutions. Microsoft MVP Dino Esposito shows how to:

- Create new projects and understand their structure
- Set up and use the familiar MVC application model in ASP.NET Core
- Write controller class code to govern all stages of request processing
- Serve HTML from controllers, or directly via Razor Pages
- Master the Razor language for quickly defining the layout of HTML views
- Manage cross-cutting concerns such as global configuration data, error and exception handling, controller class design, and dependency injection
- Secure applications with user authentication and ASP.NET Core's policy-based user authorization API
- Design for efficient data access, and choose the right option for reading and writing data
- Build ASP.NET Core Web APIs that return JSON, XML, or other data
- Use data binding to programmatically update visual components with fresh information
- Build device-friendly web views for iOS and Android
- Explore the radically new ASP.NET Core runtime environment and Dependency Injection (DI) infrastructure

Build robust, scalable ASP.NET applications quickly and easily.