

Api Architecture The Big Picture For Building Apis Volume 2 Api University Series

With the immense cost savings and scalability the cloud provides, the rationale for building cloud native applications is no longer in question. The real issue is how. With this practical guide, developers will learn about the most commonly used design patterns for building cloud native applications using APIs, data, events, and streams in both greenfield and brownfield development. You'll learn how to incrementally design, develop, and deploy large and effective cloud native applications that you can manage and maintain at scale with minimal cost, time, and effort. Authors Kasun Indrasiri and Sriskandarajah Suhothayan highlight use cases that effectively demonstrate the challenges you might encounter at each step. Learn the fundamentals of cloud native applications Explore key cloud native communication, connectivity, and composition patterns Learn decentralized data management techniques Use event-driven architecture to build distributed and scalable cloud native applications Explore the most commonly used patterns for API management and consumption Examine some of the tools and technologies you'll need for building cloud native systems

PHP Master is tailor-made for the PHP developer who's serious about taking their server-side applications to the next level and who wants to really keep ahead of the game by adhering to best practice, employing the most effective object-oriented programming techniques, wrapping projects in layers of security and ensuring their code is doing its job perfectly. Create professional, dynamic applications according to an object-oriented programming blueprint Learn advanced performance evaluation techniques for maximum site efficiency Brush up on the best testing methods to refine your code and keep your applications watertight Protect your site against attacks and vulnerabilities with the latest security systems Plug in to some serious functionality with PHP's APIs and libraries

“We finally have the definitive treatise on PyTorch! It covers the basics and abstractions in great detail. I hope this book becomes your extended reference document.” —Soumith Chintala, co-creator of PyTorch Key Features Written by PyTorch’s creator and key contributors Develop deep learning models in a familiar Pythonic way Use PyTorch to build an image classifier for cancer detection Diagnose problems with your neural network and improve training with data augmentation Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Every other day we hear about new ways to put deep learning to good use: improved medical imaging, accurate credit card fraud detection, long range weather forecasting, and more. PyTorch puts these superpowers in your hands. Instantly familiar to anyone who knows Python data tools like NumPy and Scikit-learn, PyTorch simplifies deep learning without sacrificing advanced features. It’s great for building quick models, and it scales smoothly from laptop to enterprise. Deep Learning with PyTorch teaches you to create deep learning and neural network

systems with PyTorch. This practical book gets you to work right away building a tumor image classifier from scratch. After covering the basics, you'll learn best practices for the entire deep learning pipeline, tackling advanced projects as your PyTorch skills become more sophisticated. All code samples are easy to explore in downloadable Jupyter notebooks.

What You Will Learn

- Understanding deep learning data structures such as tensors and neural networks
- Best practices for the PyTorch Tensor API, loading data in Python, and visualizing results
- Implementing modules and loss functions
- Utilizing pretrained models from PyTorch Hub
- Methods for training networks with limited inputs
- Sifting through unreliable results to diagnose and fix problems in your neural network
- Improve your results with augmented data, better model architecture, and fine tuning

This Book Is Written For Python programmers with an interest in machine learning. No experience with PyTorch or other deep learning frameworks is required.

About The Authors Eli Stevens has worked in Silicon Valley for the past 15 years as a software engineer, and the past 7 years as Chief Technical Officer of a startup making medical device software. Luca Antiga is co-founder and CEO of an AI engineering company located in Bergamo, Italy, and a regular contributor to PyTorch. Thomas Viehmann is a Machine Learning and PyTorch speciality trainer and consultant based in Munich, Germany and a PyTorch core developer.

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Innovate at scale through well-architected API-led products that drive personalized, predictive, and adaptive customer experiences

Key Features

- Strategize your IT investments by modeling enterprise solutions with an API-centric approach
- Build robust and reliable API platforms to boost business agility and omnichannel delivery
- Create digital value chains through the productization of your APIs

Book Description API-centric architectures are foundational to delivering omnichannel experiences for an enterprise. With this book, developers will learn techniques to design loosely coupled, cloud-based, business-tier interfaces that can be consumed by a variety of client applications. Using real-world examples and case studies, the book helps you get to grips with the cloudbased design and implementation of reliable and resilient API-centric solutions. Starting with the evolution of enterprise applications, you'll learn how API-based integration architectures drive digital transformation. You'll then learn about the important principles and practices that apply to cloud-

based API architectures and advance to exploring the different architecture styles and their implementation in Azure. This book is written from a practitioner's point of view, so you'll discover ideas and practices that have worked successfully in various customer scenarios. By the end of this book, you'll be able to architect, design, deploy, and monetize your API solutions in the Azure cloud while implementing best practices and industry standards. What you will learn Explore the benefits of API-led architecture in an enterprise Build highly reliable and resilient, cloud-based, API-centric solutions Plan technical initiatives based on Well-Architected Framework principles Get to grips with the productization and management of your API assets for value creation Design high-scale enterprise integration platforms on the Azure cloud Study the important principles and practices that apply to cloud-based API architectures Who this book is for This book is for solution architects, developers, engineers, DevOps professionals, and IT decision-makers who are responsible for designing and developing large distributed systems. Familiarity with enterprise solution architectures and cloud-based design will help you to comprehend the concepts covered in the book easily.

Got RESTful APIs? Great. API consumers love them. But today, such RESTful APIs are not enough for the evolving expectations of API consumers. Their apps need to be responsive, event-based and react to changes in near real-time. This results in a new set of requirements for the APIs, which power the apps. APIs now need to provide concepts such as events, notifications, triggers, and subscriptions. These concepts are not natively supported by the REST architectural style. In this book we show how to engineer RESTful APIs that support events with a webhook infrastructure. What are the alternatives to webhooks? We study several approaches for realizing events, such as Polling, Long Polling, Webhooks, HTTP Streaming, Server-Sent Events, WebSockets, WebSub and GraphQL Subscriptions. All of these approaches have their advantages and disadvantages. Can webhooks communicate in real-time? We study the non-functional requirements of a webhooks infrastructure, in areas such as security, reliability and developer experience. How do well-known API providers design webhooks? We examine the webhook infrastructure provided by GitHub, BitBucket, Stripe, Slack, and Intercom. With the best practices, case studies, and design templates provided in this book, we want to help you extend your API portfolio with a modern webhook infrastructure. So you can offer both APIs and events that developers love to use.

"Creating channels with application programming interfaces"--Cover.

A hilarious, irreverent book about doing your own thing Meet Iggy Peck—creative, independent, and not afraid to express himself! In the spirit of David Shannon's No, David and Rosemary Wells's Noisy Nora, Iggy Peck will delight readers looking for irreverent, inspired fun. Iggy has one passion: building. His parents are proud of his fabulous creations, though they're sometimes surprised by his materials—who could forget the tower he built of dirty diapers? When his

second-grade teacher declares her dislike of architecture, Iggy faces a challenge. He loves building too much to give it up! With Andrea Beaty's irresistible rhyming text and David Roberts's puckish illustrations, this book will charm creative kids everywhere, and amuse their sometimes bewildered parents. Also from the powerhouse author-illustrator team of Iggy Peck, Architect, is Rosie Revere, Engineer, a charming, witty picture book about believing in yourself and pursuing your passion. Ada Twist, Scientist, the companion picture book featuring the next kid from Iggy Peck's class, is available in September 2016.

This book is a design handbook and provides skills to successfully design, implement, and optimize business processes on top of SOA. Starting with business process modeling, it shows design principles to architect sound process architectures. It presents best practices for modeling business processes using BPMN, together with design principles for services and composite applications. It provides detailed coverage of how to prepare business processes for execution. An in-depth explanation of human interactions is given and also principles and best practices for using rules. Moving on, Adaptive Case Management principles are explained, along with the reach of business processes to mobile devices and ensuring multichannel interactions. Business activity monitoring, event-driven architectures, complex event processing in relation to business processes, and enabling integration with events and IoT devices are explained. The design principles and best practices are demonstrated in a practical way on a rental car use case.

The Definitive Guide to Java Platform, Enterprise Edition 7 Java EE 7: The Big Picture uniquely explores the entire Java EE 7 platform in an all-encompassing style while examining each tier of the platform in enough detail so that you can select the right technologies for specific project needs. In this authoritative guide, Java expert Danny Coward walks you through the code, applications, and frameworks that power the platform. Take full advantage of the robust capabilities of Java EE 7, increase your productivity, and meet enterprise demands with help from this Oracle Press resource. Explore the features of the Java servlet model and Java servlet API Create dynamic web content with JavaServer Pages and JavaServer Faces Build websites for nonbrowser clients with JAX-RS Push data to web clients using Java WebSockets Secure web applications Work with web component APIs Maximize enterprise beans for multithreading, asynchronous processes, transactions, and more Access relational databases with the Java Database Connectivity APIs and the Java Persistence API Understand the packaging and deployment mechanisms of Java EE applications Work with Java EE Contexts and Dependency Injection Secure enterprise beans in a Java EE application Enable parallel processing with Java EE concurrency APIs

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.

A one-semester college course in software engineering focusing on cloud computing, software as a service (SaaS), and Agile development using Extreme Programming (XP). This book is neither a step-by-step tutorial nor a reference book. Instead, our goal is to bring a diverse set of software engineering topics together into a single narrative, help readers understand the most important ideas through concrete examples and a learn-by-doing approach, and teach readers enough about each topic to get them started in the field. Courseware for doing the work in the book is available as a virtual machine image that can be downloaded or deployed in the cloud. A free MOOC (massively open online course) at saas-class.org follows the book's content and adds programming assignments and quizzes. See <http://saasbook.info> for details.

"Every developer working with the Web needs to read this book." -- David Heinemeier Hansson, creator of the Rails framework "RESTful Web Services finally provides a practical roadmap for constructing services that embrace the Web, instead of trying to route around it." -- Adam Trachtenberg, PHP author and EBay Web Services Evangelist You've built web sites that can be used by humans. But can you also build web sites that are usable by machines? That's where the future lies, and that's what RESTful Web Services shows you how to do. The World Wide Web is the most popular distributed application in history, and Web services and mashups have turned it into a powerful distributed computing platform. But today's web service technologies have lost sight of the simplicity that made the Web successful. They don't

work like the Web, and they're missing out on its advantages. This book puts the "Web" back into web services. It shows how you can connect to the programmable web with the technologies you already use every day. The key is REST, the architectural style that drives the Web. This book: Emphasizes the power of basic Web technologies -- the HTTP application protocol, the URI naming standard, and the XML markup language Introduces the Resource-Oriented Architecture (ROA), a common-sense set of rules for designing RESTful web services Shows how a RESTful design is simpler, more versatile, and more scalable than a design based on Remote Procedure Calls (RPC) Includes real-world examples of RESTful web services, like Amazon's Simple Storage Service and the Atom Publishing Protocol Discusses web service clients for popular programming languages Shows how to implement RESTful services in three popular frameworks -- Ruby on Rails, Restlet (for Java), and Django (for Python) Focuses on practical issues: how to design and implement RESTful web services and clients This is the first book that applies the REST design philosophy to real web services. It sets down the best practices you need to make your design a success, and the techniques you need to turn your design into working code. You can harness the power of the Web for programmable applications: you just have to work with the Web instead of against it. This book shows you how.

A strategy and implementation guide for building, deploying, and managing APIs Key Features Comprehensive, end-to-end guide to business-driven enterprise APIs Distills years of experience with API and microservice strategies Provides detailed guidance on implementing API-led architectures in any business Book Description APIs are the cornerstone of modern, agile enterprise systems. They enable access to enterprise services from a wide variety of devices, act as a platform for innovation, and open completely new revenue streams. Enterprise API Management shows how to define the right architecture, implement the right patterns, and define the right organization model for business-driven APIs. Drawing on his experience of developing API and microservice strategies for some of the world's largest companies, Luis Weir explains how APIs deliver value across an enterprise. The book explores the architectural decisions, implementation patterns, and management practices for successful enterprise APIs, as well as providing clear, actionable advice on choosing and executing the right API strategy in your enterprise. With a relentless focus on creating business value, Luis Weir reveals an effective method for planning, building, and running business products and services with APIs. What you will learn Create API strategies to deliver business value Monetize APIs, promoting them through public marketplaces and directories Develop API-led architectures, applying best practice architecture patterns Choose between REST, GraphQL, and gRPC-style API architectures Manage APIs and microservices through the complete life cycle Deploy APIs and business products, as well as Target Operating Models Lead product-based organizations to embrace DevOps and focus on delivering business capabilities Who this book is for Architects, developers, and technology executives who

want to deliver successful API strategies that bring business value.

One of the biggest challenges for organizations that have adopted microservice architecture is the lack of architectural, operational, and organizational standardization. After splitting a monolithic application or building a microservice ecosystem from scratch, many engineers are left wondering what's next. In this practical book, author Susan Fowler presents a set of microservice standards in depth, drawing from her experience standardizing over a thousand microservices at Uber. You'll learn how to design microservices that are stable, reliable, scalable, fault tolerant, performant, monitored, documented, and prepared for any catastrophe. Explore production-readiness standards, including:

- Stability and Reliability: develop, deploy, introduce, and deprecate microservices; protect against dependency failures
- Scalability and Performance: learn essential components for achieving greater microservice efficiency
- Fault Tolerance and Catastrophe Preparedness: ensure availability by actively pushing microservices to fail in real time
- Monitoring: learn how to monitor, log, and display key metrics; establish alerting and on-call procedures
- Documentation and Understanding: mitigate tradeoffs that come with microservice adoption, including organizational sprawl and technical debt

REST architecture (style) is a pivot of distributed systems, simplify data integration amongst modern and legacy applications leverages through the RESTful paradigm. This book is fully loaded with many RESTful API patterns, samples, hands-on implementations and also discuss the capabilities of many REST API frameworks for Java, Scala, Python and Go

Principles of Web API Design is a comprehensive, start-to-finish guide to the processes required for effective API design. Unlike other books, it covers the entire lifecycle. Leading API and microservices consultant James Higginbotham shows how API developers can successfully integrate processes that occur before, during, and after API design, to scale API development far beyond single individuals or small teams. Higginbotham addresses REST in depth while also fully covering RPC and graph-based API design, as well as messaging, streaming, and event-based async APIs. Coverage includes:

- The art of API design, and an overview of the API design process
- Crafting job stories, conducting EventStorming sessions, and modeling API capabilities
- Designing APIs that can easily evolve
- Implementing APIs, and moving to microservices
- Improving API quality through effective testing, documentation, and protection mechanisms
- Establishing and maturing your API program: leveraging program and data management techniques that scale

Want to build APIs like Facebook? Since Facebook's framework for building APIs, GraphQL, has become publicly available, this ambition seems to be within reach for many companies. And that is great. But first, let's learn what GraphQL really is and - maybe even more importantly - let's figure out how to apply GraphQL to build APIs that

consumers love. Do you like to learn hands-on? In this book, we take a hands-on approach to learning GraphQL. We first explore the concepts of the two GraphQL languages using examples. Then we start writing some code for our first GraphQL API. We develop this API step by step, from creating a schema and resolving queries, over mocking data and connecting data sources all the way to developing mutations and setting up event subscriptions. Are your API consumers important to you? This book shows you how to apply a consumer-oriented design process for GraphQL APIs, so you can deliver what your consumers really want: an API that solves their problems and offers a great developer experience. Do you want to enable the API consumers so they can build great apps? This book explains the GraphQL query language, which allows the API consumers to retrieve data, write data and get notified when data changes. More importantly, you let them decide, which data they really need from the API. Do you want to make your API easy and intuitive to use? This book shows you how to use the GraphQL schema language to define a type system for your API, which serves as a reference documentation and helps your API consumers write queries that are syntactically correct. Do you want to profit from what has worked for others? This book provides a collection of best practices for GraphQL that have worked for other companies, e.g. regarding pagination, authentication and caching. REST vs. GraphQL: Which one is better? GraphQL and REST are competing philosophies for building APIs. It is not in the scope of this book to compare or discuss the two approaches. The focus of this book is on a hands-on approach for learning GraphQL.

Understand the key challenges and solutions around building microservices in the enterprise application environment. This book provides a comprehensive understanding of microservices architectural principles and how to use microservices in real-world scenarios. Architectural challenges using microservices with service integration and API management are presented and you learn how to eliminate the use of centralized integration products such as the enterprise service bus (ESB) through the use of composite/integration microservices. Concepts in the book are supported with use cases, and emphasis is put on the reality that most of you are implementing in a “brownfield” environment in which you must implement microservices alongside legacy applications with minimal disruption to your business.

Microservices for the Enterprise covers state-of-the-art techniques around microservices messaging, service development and description, service discovery, governance, and data management technologies and guides you through the microservices design process. Also included is the importance of organizing services as core versus atomic, composite versus integration, and API versus edge, and how such organization helps to eliminate the use of a central ESB and expose services through an API gateway. What You'll Learn Design and develop microservices architectures with confidence Put into practice the most modern techniques around messaging technologies Apply the Service Mesh pattern to overcome inter-service communication challenges Apply battle-tested microservices security patterns to

address real-world scenarios Handle API management, decentralized data management, and observability Who This Book Is For Developers and DevOps engineers responsible for implementing applications around a microservices architecture, and architects and analysts who are designing such systems

This practical hands-on guide to using the JMX APIs was written by a software developer for other developers as a complete treatment of the JMX architecture.

If you create, manage, operate, or configure systems running in the cloud, you're a cloud engineer--even if you work as a system administrator, software developer, data scientist, or site reliability engineer. With this book, professionals from around the world provide valuable insight into today's cloud engineering role. These concise articles explore the entire cloud computing experience, including fundamentals, architecture, and migration. You'll delve into security and compliance, operations and reliability, and software development. And examine networking, organizational culture, and more. You're sure to find 1, 2, or 97 things that inspire you to dig deeper and expand your own career. "Three Keys to Making the Right Multicloud Decisions," Brendan O'Leary "Serverless Bad Practices," Manases Jesus Galindo Bello "Failing a Cloud Migration," Lee Atchison "Treat Your Cloud Environment as If It Were On Premises," Iyana Garry "What Is Toil, and Why Are SREs Obsessed with It?", Zachary Nickens "Lean QA: The QA Evolving in the DevOps World," Theresa Neate "How Economies of Scale Work in the Cloud," Jon Moore "The Cloud Is Not About the Cloud," Ken Corless "Data Gravity: The Importance of Data Management in the Cloud," Geoff Hughes "Even in the Cloud, the Network Is the Foundation," David Murray "Cloud Engineering Is About Culture, Not Containers," Holly Cummins Your one stop guide to making the most out of Azure Cloud About This Book Get familiar with the different design patterns available in Microsoft Azure Develop Azure cloud architecture and a pipeline management system Get to know the security best practices for your Azure deployment Who This Book Is For If you are Cloud Architects, DevOps Engineers, or developers who want to learn key architectural aspects of the Azure Cloud platform, then this book is for you. Prior basic knowledge of the Azure Cloud platform is good to have. What You Will Learn Familiarize yourself with the components of the Azure Cloud platform Understand the cloud design patterns Use enterprise security guidelines for your Azure deployment Design and implement Serverless solutions See Cloud architecture and the deployment pipeline Understand cost management for Azure solutions In Detail Over the years, Azure cloud services has grown quickly, and the number of organizations adopting Azure for their cloud services is also gradually increasing. Leading industry giants are finding that Azure fulfills their extensive cloud requirements. This book will guide you through all the important and tough decision-making aspects involved in architecting a Azure public cloud for your organization. The book starts with an extensive introduction to all the categories of designs available with Azure. These design patterns focus on different

aspects of cloud such as high availability, data management, and so on. Gradually, we move on to various aspects such as building your cloud structure and architecture. It will also include a brief description about different types of services provided by Azure, such as Azure functions and Azure Analytics, which can prove beneficial for an organization. This book will cover each and every aspect and function required to develop a Azure cloud based on your organizational requirements. By the end of this book, you will be in a position to develop a full-fledged Azure cloud. Style and approach This hands-on guide to the Azure Cloud platform covers different architectural concepts and implementations necessary for any enterprise scale deployment.

As data management and integration continue to evolve rapidly, storing all your data in one place, such as a data warehouse, is no longer scalable. In the very near future, data will need to be distributed and available for several technological solutions. With this practical book, you'll learn how to migrate your enterprise from a complex and tightly coupled data landscape to a more flexible architecture ready for the modern world of data consumption. Executives, data architects, analytics teams, and compliance and governance staff will learn how to build a modern scalable data landscape using the Scaled Architecture, which you can introduce incrementally without a large upfront investment. Author Piethein Strengholt provides blueprints, principles, observations, best practices, and patterns to get you up to speed. Examine data management trends, including technological developments, regulatory requirements, and privacy concerns Go deep into the Scaled Architecture and learn how the pieces fit together Explore data governance and data security, master data management, self-service data marketplaces, and the importance of metadata

44 reusable patterns to develop and deploy reliable production-quality microservices-based applications, with worked examples in Java Key Features 44 design patterns for building and deploying microservices applications Drawing on decades of unique experience from author and microservice architecture pioneer Chris Richardson A pragmatic approach to the benefits and the drawbacks of microservices architecture Solve service decomposition, transaction management, and inter-service communication Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Microservices Patterns teaches you 44 reusable patterns to reliably develop and deploy production-quality microservices-based applications. This invaluable set of design patterns builds on decades of distributed system experience, adding new patterns for composing services into systems that scale and perform under real-world conditions. More than just a patterns catalog, this practical guide with worked examples offers industry-tested advice to help you design, implement, test, and deploy your microservices-based application. What You Will Learn How (and why!) to use microservices architecture Service decomposition strategies Transaction management and querying patterns Effective testing strategies Deployment patterns This Book Is Written For Written for

enterprise developers familiar with standard enterprise application architecture. Examples are in Java. About The Author
Chris Richardson is a Java Champion, a JavaOne rock star, author of Manning's POJOs in Action, and creator of the original CloudFoundry.com. Table of Contents Escaping monolithic hell Decomposition strategies Interprocess communication in a microservice architecture Managing transactions with sagas Designing business logic in a microservice architecture Developing business logic with event sourcing Implementing queries in a microservice architecture External API patterns Testing microservices: part 1 Testing microservices: part 2 Developing production-ready services Deploying microservices Refactoring to microservices

Do you want to know how OpenID Connect works? This book is for you! Exploring how OpenID Connect works in detail is the subject of this book. We take a bottom-up approach and first study all the elements (actors, endpoints, and tokens) of OpenID Connect. This puts us in an excellent position for the second step: to understand the various OpenID Connect Flows - how the actors, endpoints, and tokens are put together to transmit identity claims securely. Do you wonder why there are several OpenID Connect Flows? Whether we use OpenID Connect from a mobile app, a script in a browser or from a secure backend server, there is an appropriate OpenID Connect Flow with the right tradeoffs in security, functionality, and convenience for each of these scenarios. This book helps you to choose the right one. Do you think that these OpenID Connect Flows are confusing? You are not alone; the OpenID Connect Flows tend to get confusing. However, with this book, we make it clear and easy to understand: We visualize these flows and show how to choose the flow that is appropriate for a given scenario. A picture says more than a 1000 words - that is why we explain the OpenID Connect Flows using easy to understand sequence diagrams. Do you want to understand how JWT works? This book explains what a JSON Web Token (JWT) is, how it is used in OpenID Connect, how it is constructed, what data it contains, how to read it, and how to protect its contents. Do you wonder why there are so many tokens in OpenID Connect and how to use them? There are JWT, JWS, JWE, access tokens, refresh tokens, identity tokens, and authorization codes. This book helps you to make sense of them all. Using examples, we explore how the tokens are used, constructed, signed, and encrypted. Why is OpenID Connect so popular? If used in the right way, OpenID Connect is powerful, and everyone loves it: End-users don't need to signup and remember a new password Business owners enjoy high conversion rates Developers don't get any grey hair over securely storing credentials Do you want to increase the conversion rate of your app? Signup and login to a new app become so smooth and convenient that end-users are much more likely to try a new app. It is supported, e.g. by Google, Yahoo, or Microsoft. Would you like to manage no credentials but still have authenticated users? For us developers of web and mobile apps, these signup and login features are attractive, too: we do not need to manage user credentials, and we get a higher conversion rate resulting in

more new customers. In effect, this means cutting costs and increasing the number of new customers for our apps. Which programming language do you use in the book? This is not a programming book, don't expect implementations with a specific programming language or library. Instead, we focus on understanding OpenID Connect on a conceptual level, so we can design and architect apps that work with OpenID Connect. And OpenID Connect is the standard behind creating smooth login and signup experiences, increasing the customer signup rate, and creating highly converting apps. 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

Looking for Best Practices for RESTful APIs? This book is for you! Why? Because this book is packed with practical experience on what works best for RESTful API Design. You want to design APIs like a Pro? Use API description languages to both design APIs and develop APIs efficiently. The book introduces the two most common API description languages RAML, OpenAPI, and Swagger. Your company cares about its customers? Learn API product management with a customer-centric design and development approach for APIs. Learn how to manage APIs as a product and how to follow an API-first approach. Build APIs your customers love! You want to manage the complete API lifecycle? An API development methodology is proposed to guide you through the lifecycle: API inception, API design, API development, API publication, API evolution, and maintenance. You want to build APIs right? This book shows best practices for REST design, such as the correct use of resources, URIs, representations, content types, data formats, parameters, HTTP status codes, and HTTP methods. Your APIs connect to legacy systems? The book shows best practices for connecting APIs to existing backend systems. Your APIs connect to a mesh of microservices? The book shows the principles for designing APIs for scalable, autonomous microservices. You expect lots of traffic on your API? The book shows you how to achieve high performance, availability and maintainability. You want to build APIs that last for decades? We study API versioning, API evolution, backward- and forward-compatibility and show API design patterns for versioning. The API-University Series is a modular series of books on API-related topics. Each book focuses on a particular API topic, so you can select the topics within APIs, which are relevant for you.

This authoritative Java security book is written by the architect of the Java security model. It chronicles J2EE v1.4 security model enhancements that will allow developers to build safer, more reliable, and more impenetrable programs.

Microservices can have a positive impact on your enterprise—just ask Amazon and Netflix—but you can fall into many traps if you don't approach them in the right way. This practical guide covers the entire microservices landscape, including the principles, technologies, and methodologies of this unique, modular style of system building. You'll learn about the experiences of organizations around the globe that have successfully adopted microservices. In three parts, this book explains how these services work and what it means to build an application the Microservices Way. You'll explore a design-based approach to microservice architecture with guidance for implementing various elements. And you'll get a set of recipes and practices for meeting practical, organizational, and cultural challenges to microservice adoption. Learn how microservices can help you drive business objectives Examine the principles, practices, and culture that define microservice architectures Explore a model for creating complex systems and a design process for building a microservice architecture Learn the fundamental design concepts for individual microservices Delve into the operational elements of a microservices architecture, including containers and service discovery Discover how to handle the challenges of introducing microservice architecture in your organization

The software development ecosystem is constantly changing, providing a constant stream of new tools, frameworks, techniques, and paradigms. Over the past few years, incremental developments in core engineering practices for software development have created the foundations for rethinking how architecture changes over time, along with ways to protect important architectural characteristics as it evolves. This practical guide ties those parts together with a new way to think about architecture and time.

The instant New York Times bestseller about humanity's place in the universe—and how we understand it.

“Vivid...impressive....Splendidly informative.”—The New York Times “Succeeds spectacularly.”—Science “A tour de force.”—Salon Already internationally acclaimed for his elegant, lucid writing on the most challenging notions in modern physics, Sean Carroll is emerging as one of the greatest humanist thinkers of his generation as he brings his extraordinary intellect to bear not only on Higgs bosons and extra dimensions but now also on our deepest personal questions: Where are we? Who are we? Are our emotions, our beliefs, and our hopes and dreams ultimately meaningless out there in the void? Do human purpose and meaning fit into a scientific worldview? In short chapters filled with intriguing historical anecdotes, personal asides, and rigorous exposition, readers learn the difference between how the world works at the quantum level, the cosmic level, and the human level—and then how each connects to the other. Carroll's presentation of the principles that have guided the scientific revolution from Darwin and Einstein to the origins of life, consciousness, and the universe is dazzlingly unique. Carroll shows how an avalanche of discoveries in the past few hundred years has changed our world and what really matters to us. Our lives are dwarfed like never before by the immensity of space and time, but they are redeemed by our capacity to comprehend it and give it meaning. The Big Picture is an unprecedented scientific worldview, a tour de force that will sit on shelves alongside the works of Stephen Hawking, Carl Sagan, Daniel Dennett, and E. O. Wilson for years to come.

A lot of work is required to release an API, but the effort doesn't always pay off. Overplanning before an API matures is a wasted investment, while underplanning can lead to disaster. This practical guide provides maturity models for individual APIs and multi-API landscapes to help you invest the right human and company resources for the right maturity level at the right time. How do you balance the desire for agility and speed with the need for robust and scalable operations? Four experts from the API Academy show software architects, program directors, and product owners how to maximize the value of their APIs by managing them as products through a continuous life cycle. Learn which API decisions you need to govern and how and where to do so Design, deploy, and manage APIs using an API-as-a-product (AaaP) approach Examine ten pillars that form the foundation of API product work Learn how the continuous improvement model governs changes throughout an API's lifetime Explore the five stages of a complete API product life cycle Delve into team roles needed to design, build, and maintain your APIs Learn how to manage your API landscape—the set of APIs published by your organization

"Probing, jargon-free and written with the pace of a detective story... [Procter] dissects western museum culture with such forensic fury that it might be difficult for the reader ever to view those institutions in the same way again. " Financial Times 'A smart, accessible and brilliantly structured work that encourages readers to go beyond the grand architecture of cultural institutions and see the problematic colonial histories behind them.' - Sumaya Kassim Should museums be made to give back their marbles? Is it even possible to 'decolonize' our galleries? Must Rhodes fall? How to deal with the colonial history of art in museums and monuments in the public realm is a thorny issue that we are only just beginning to address. Alice Procter, creator of the Uncomfortable Art Tours, provides a manual for deconstructing everything you thought you knew about art history and tells the stories that have been left out of the canon. The book is divided into four chronological sections, named after four different kinds of art space: The Palace, The Classroom, The Memorial and The Playground. Each section tackles the fascinating, enlightening and often shocking stories of a selection of art pieces, including the propaganda painting the East India Company used to justify its rule in India; the tattooed Maori skulls collected as 'art objects' by Europeans; and works by contemporary artists who are taking on colonial history in their work and activism today. The Whole Picture is a much-needed provocation to look more critically at the accepted narratives about art, and rethink and disrupt the way we interact with the museums and galleries that display it.

What others in the trenches say about The Pragmatic Programmer... "The cool thing about this book is that it's great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there." —Kent Beck, author of Extreme Programming Explained: Embrace Change "I found this book to be a great mix of solid advice and wonderful analogies!" —Martin Fowler, author of Refactoring and UML Distilled "I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I would worry about it being lost." —Kevin Ruland, Management Science, MSG-Logistics "The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful... By far its greatest strength for me

has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike.” —John Lakos, author of *Large-Scale C++ Software Design* “This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients.” —Eric Vought, Software Engineer “Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company....” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham

Straight from the programming trenches, *The Pragmatic Programmer* cuts through the increasing specialization and technicalities of modern software development to examine the core process--taking a requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, *The Pragmatic Programmer* illustrates the best practices and major pitfalls of many different aspects of software development. Whether you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer.

Summary Play for Scala shows you how to build Scala-based web applications using the Play 2 framework. This book starts by introducing Play through a comprehensive overview example. Then, you'll look at each facet of a typical Play application both by exploring simple code snippets and by adding to a larger running example. Along the way, you'll

deepen your knowledge of Scala as a programming language and work with tools like Akka. About this Book Play is a Scala web framework with built-in advantages: Scala's strong type system helps deliver bug-free code, and the Akka framework helps achieve hassle-free concurrency and peak performance. Play builds on the web's stateless nature for excellent scalability, and because it is event-based and nonblocking, you'll find it to be great for near real-time applications. Play for Scala teaches you to build Scala-based web applications using Play 2. It gets you going with a comprehensive overview example. It then explores each facet of a typical Play application by walking through sample code snippets and adding features to a running example. Along the way, you'll deepen your knowledge of Scala and learn to work with tools like Akka. Written for readers familiar with Scala and web-based application architectures. No knowledge of Play is assumed. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What's Inside Intro to Play 2 Play's MVC structure Mastering Scala templates and forms Persisting data and using web services Using Play's advanced features About the Authors Peter Hiltonv, Erik Bakker, and Francisco Canedo, are engineers at Lunatech, a consultancy with Scala and Play expertise. They are contributors to the Play framework. Table of Contents PART 1: GETTING STARTED Introduction to Play Your first Play application PART 2: CORE FUNCTIONALITY Deconstructing Play application architecture Defining the application's HTTP interface Storing data—the persistence layer Building a user interface with view templates Validating and processing input with the forms API PART 3: ADVANCED CONCEPTS Building a single-page JavaScript application with JSON Play and more Web services, iteratees, and WebSockets

This is the eagerly-anticipated revision to one of the seminal books in the field of software architecture which clearly defines and explains the topic.

Today, the world is trying to create and educate data scientists because of the phenomenon of Big Data. And everyone is looking deeply into this technology. But no one is looking at the larger architectural picture of how Big Data needs to fit within the existing systems (data warehousing systems). Taking a look at the larger picture into which Big Data fits gives the data scientist the necessary context for how pieces of the puzzle should fit together. Most references on Big Data look at only one tiny part of a much larger whole. Until data gathered can be put into an existing framework or architecture it can't be used to its full potential. Data Architecture a Primer for the Data Scientist addresses the larger architectural picture of how Big Data fits with the existing information infrastructure, an essential topic for the data scientist. Drawing upon years of practical experience and using numerous examples and an easy to understand framework. W.H. Inmon, and Daniel Linstedt define the importance of data architecture and how it can be used effectively to harness big data within existing systems. You'll be able to: Turn textual information into a form that can be analyzed

by standard tools. Make the connection between analytics and Big Data Understand how Big Data fits within an existing systems environment Conduct analytics on repetitive and non-repetitive data Discusses the value in Big Data that is often overlooked, non-repetitive data, and why there is significant business value in using it Shows how to turn textual information into a form that can be analyzed by standard tools Explains how Big Data fits within an existing systems environment Presents new opportunities that are afforded by the advent of Big Data Demystifies the murky waters of repetitive and non-repetitive data in Big Data

Despite the buzz surrounding the cloud computing, only a small percentage of organizations have actually deployed this new style of IT—so far. If you're planning your long-term cloud strategy, this practical book provides insider knowledge and actionable real-world lessons regarding planning, design, operations, security, and application transformation. This book teaches business and technology managers how to transition their organization's traditional IT to cloud computing. Rather than yet another book trying to sell or convince readers on the benefits of clouds, this book provides guidance, lessons learned, and best practices on how to design, deploy, operate, and secure an enterprise cloud based on real-world experience. Author James Bond provides useful guidance and best-practice checklists based on his field experience with real customers and cloud providers. You'll view cloud services from the perspective of a consumer and as an owner/operator of an enterprise private or hybrid cloud, and learn valuable lessons from successful and less-than-successful organization use-case scenarios. This is the information every CIO needs in order to make the business and technical decisions to finally execute on their journey to cloud computing. Get updated trends and definitions in cloud computing, deployment models, and for building or buying cloud services Discover challenges in cloud operations and management not foreseen by early adopters Use real-world lessons to plan and build an enterprise private or hybrid cloud Learn how to assess, port, and migrate legacy applications to the cloud Identify security threats and vulnerabilities unique to the cloud Employ a cloud management system for your enterprise (private or multi-provider hybrid) cloud ecosystem Understand the challenges for becoming an IT service broker leveraging the power of the cloud

In Team Topologies DevOps consultants Matthew Skelton and Manuel Pais share secrets of successful team patterns and interactions to help readers choose and evolve the right team patterns for their organization, making sure to keep the software healthy and optimize value streams. Team Topologies will help readers discover:

- Team patterns used by successful organizations.
- Common team patterns to avoid with modern software systems.
- When and why to use different team patterns
- How to evolve teams effectively.
- How to split software and align to teams.

Looking for the big picture of building APIs? This book is for you! Building APIs that consumers love should certainly be the goal of any API initiative. However, it is easier said than done. It requires getting the architecture for your APIs right.

This book equips you with both foundations and best practices for API architecture. This book is for you if you want to understand the big picture of API design and development, you want to define an API architecture, establish a platform for APIs or simply want to build APIs your consumers love. This book is NOT for you, if you are looking for a step-by step guide for building APIs, focusing on every detail of the correct application of REST principles. In this case I recommend the book "API Design" of the API-University Series. What is API architecture? Architecture spans the bigger picture of APIs and can be seen from several perspectives: API architecture may refer to the architecture of the complete solution consisting not only of the API itself, but also of an API client such as a mobile app and several other components. API solution architecture explains the components and their relations within the software solution. API architecture may refer to the technical architecture of the API platform. When building, running and exposing not only one, but several APIs, it becomes clear that certain building blocks of the API, runtime functionality and management functionality for the API need to be used over and over again. An API platform provides an infrastructure for developing, running and managing APIs. API architecture may refer to the architecture of the API portfolio. The API portfolio contains all APIs of the enterprise and needs to be managed like a product. API portfolio architecture analyzes the functionality of the API and organizes, manages and reuses the APIs. API architecture may refer to the design decisions for a particular API proxy. To document the design decisions, API description languages are used. We explain the use of API description languages (RAML and Swagger) on many examples. This book covers all of the above perspectives on API architecture. However, to become useful, the architecture needs to be put into practice. This is why this book covers an API methodology for design and development. An API methodology provides practical guidelines for putting API architecture into practice. It explains how to develop an API architecture into an API that consumers love. A lot of the information on APIs is available on the web. Most of it is published by vendors of API products. I am always a bit suspicious of technical information pushed by product vendors. This book is different. In this book, a product-independent view on API architecture is presented. The API-University Series is a modular series of books on API-related topics. Each book focuses on a particular API topic, so you can select the topics within APIs, which are relevant for you.

This book offers an introduction to web-API security with OAuth 2.0 and OpenID Connect. In less than 50 pages you will gain an overview of the capabilities of OAuth. You will learn the core concepts of OAuth. You will get to know all four OAuth flows that are used in cloud solutions and mobile apps. If you have tried to read the official OAuth specification, you may get the impression that OAuth is complex. This book explains OAuth in simple terms. The different OAuth flows are visualized graphically using sequence diagrams. The diagrams allow you to see the big picture of the various OAuth interactions. This high-level overview is complemented with rich set of example requests and responses and an

explanation of the technical details. In the book the challenges and benefits of OAuth are presented, followed by an explanation of the technical concepts of OAuth. The technical concepts include the actors, endpoints, tokens and the four OAuth flows. Each flow is described in detail, including the use cases for each flow. Extensions of OAuth are presented, such as OpenID Connect and the SAML2 Bearer Profile. Who should read this book? You do not have the time to read long books? This book provides an overview, the core concepts, without getting lost in the small-small details. This book provides all the necessary information to get started with OAuth in less than 50 pages. You believe OAuth is complicated? OAuth may seem complex with flows and redirects going back and forth. This book will give you clarity by introducing the seemingly complicated material by many illustrations. These illustrations clearly show all the involved interaction parties and the messages they exchange. You want to learn the OAuth concepts efficiently? This book uses many illustrations and sequence diagrams. A good diagram says more than 1000 words. You want to learn the difference between OAuth and OpenID Connect? You wonder when the two concepts are used, what they have in common and what is different between them. This book will help you answer this question. You want to use OAuth in your mobile app? If you want to access resources that are protected by OAuth, you need to get a token first, before you can access the resource. For this, you need to understand the OAuth flows and the dependencies between the steps of the flows. You want to use OAuth to protect your APIs? OAuth is perfectly suited to protect your APIs. You can learn which OAuth endpoints need to be provided and which checks need to be made within the protected APIs.

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