

Api Design On The Scale Of Decades Learn How To Architect And Design Long Lasting Apis

This book constitutes the refereed proceedings of the 10th International Conference on Software Business, ICSOB 2019, held in Jyväskylä, Finland, in November 2019. On the occasion of its tenth anniversary the conference theme this year was "The First Decade and Beyond" and focused on the development during the past decade, addressing the future of software-intensive business as well as studies on new and emerging ideas. The 18 full papers and 10 short papers presented together with 3 invited talks, 6 emerging research papers and a tutorial were carefully reviewed and selected from 52 submissions. They are organized in the following topical sections: software ecosystems; management of software products; continual improvement and product development; impacts of digitalization; software business education; software startups and digital business.

This book constitutes the refereed proceedings of the 16th International Conference on Web Engineering, ICWE 2016, held in Lugano, Switzerland, in June 2016. The 19 full research papers, 13 short papers, 3 vision papers, 11 demonstrations, 5 posters, 6 PhD Symposium and 4 tutorials presented were carefully reviewed and selected from 120 submissions. The 16th edition of ICWE accepted contributions related to different research areas revolving around Web engineering, including: Web application modelling and engineering, Human computation and crowdsourcing, Web applications composition and mashups, SocialWeb applications, SemanticWeb, and, for the first time, also the Web of Things.

An effective guide to learning how to build a large-scale distributed application using the wide range of functionalities in Gin Key Features Explore the commonly used functionalities of Gin to build web applications Become well-versed with rendering HTML templates with the Gin engine Solve commonly occurring challenges such as scaling, caching, and deployment Book Description Gin is a high-performance HTTP web framework used to build web applications and microservices in Go. This book is designed to teach you the ins and outs of the Gin framework with the help of practical examples. You'll start by exploring the basics of the Gin framework, before progressing to build a real-world RESTful API. Along the way, you'll learn how to write custom middleware and understand the routing mechanism, as well as how to bind user data and validate incoming HTTP requests. The book also demonstrates how to store and retrieve data at scale with a NoSQL database such as MongoDB, and how to implement a caching layer with Redis. Next, you'll understand how to secure and test your API endpoints with authentication protocols such as OAuth 2 and JWT. Later chapters will guide you through rendering HTML templates on the server-side and building a frontend application with the React web framework to consume API responses. Finally, you'll deploy your application on Amazon Web Services (AWS) and learn how to automate the deployment process with a continuous integration/continuous delivery (CI/CD) pipeline. By the end of this Gin book, you will be able to design, build, and deploy a production-ready distributed application from scratch using the Gin framework. What you will learn Build a production-ready REST API with the Gin framework Scale web applications with event-driven architecture Use NoSQL databases for data persistence Set up authentication middleware with JWT and Auth0 Deploy a Gin-based RESTful API on AWS with Docker and Kubernetes Implement a CI/CD workflow for Gin web apps Who this book is for This book is for Go developers who are comfortable with the Go language and seeking to learn REST API design and development with the Gin framework. Beginner-level knowledge of the Go programming language is required to make the most of this book.

Showcases the important role of organometallic chemistry in industrial applications and includes practical examples and case studies This comprehensive book takes a practical approach to how organometallic chemistry is being used in industrial applications. It uniquely offers numerous, real-world examples and case studies that aid working R&D researchers as well as Ph.D. and postdoc students preparing to ace interviews in order to enter the workforce. Edited by two world-leading and established industrial chemists, the book covers flow chemistry (catalytic and non-catalytic organometallic chemistry), various cross-coupling reactions (C-C, C-N, and C-B) in classical batch chemistry, conjugate addition reactions, metathesis, and C-H arylation and achiral hydrogenation reactions. Beginning with an overview of the many industrial milestones within the field over the years, Organometallic Chemistry in Industry: A Practical Approach provides chapters covering: the design, development, and execution of a continuous flow enabled API manufacturing route; continuous manufacturing as an enabling technology for low temperature organometallic chemistry; the development of a nickel-catalyzed enantioselective Mizoroki-Heck coupling; and the development of iron-catalyzed Kumada cross-coupling for the large scale production of Aliskiren intermediates. The book also examines aspects of homogeneous hydrogenation from industrial research; the latest industrial uses of olefin metathesis; and more. -Includes rare industrial case studies difficult to find in current literature -Helps readers successfully carry out their own reactions -Covers topics like flow chemistry, cross-coupling reactions, and dehydrative decarbonylation -Features a foreword by Nobel Laureate R. H. Grubbs -A perfect resource for every R&D researcher in industry -Useful for PhD students and postdocs: excellent preparation for a job interview Organometallic Chemistry in Industry: A Practical Approach is an excellent resource for all chemists, including those working in the pharmaceutical industry and organometallics.

The "Age-Friendly Cities & Communities: States of the Art and Future Perspectives" publication presents contemporary, innovative, and insightful narratives, debates, and frameworks based on an international collection of papers from scholars spanning the fields of gerontology, social sciences, architecture, computer science, and gerontechnology. This extensive collection of papers aims to move the narrative and debates forward in this interdisciplinary field of age-friendly cities and communities.

While GraphQL is a technology mainly driven by the needs of clients, there is a clear lack of resources on how to build reliable GraphQL servers. Over the last few years, I helped build and maintain some of the biggest GraphQL APIs out there at both Shopify and GitHub. During those years, I also worked with various companies with their adoption of GraphQL. From my experiences with GraphQL, I've observed the good, the bad, and the ugly. This led to many talks and blog posts on the subject, but still found that teams and individuals willing to use GraphQL in a pragmatic way lacked the resources to do so. This is what led me to write this book: A collection of learnings and good practices when building GraphQL schemas at scale. Every language and every GraphQL implementation does things slightly differently. This book is completely language agnostic and instead focuses on concepts and patterns that are achievable no matter how you're building a GraphQL server. Think of it as a complete journey of what goes into building a GraphQL API, from design, to architectures, to implementation, and even documentation.

Principles of Web API Design Delivering Value with APIs and Microservices Addison-Wesley Signature Series (Vernon)

Design and build Web APIs for a broad range of clients—including browsers and mobile devices—that can adapt to change over time. This practical, hands-on guide takes you through the theory and tools you need to build evolvable HTTP services with Microsoft's ASP.NET Web API framework. In the process, you'll learn how design and implement a real-world Web API. Ideal for experienced .NET developers, this book's sections on basic Web API theory and design also apply to developers who work with other development stacks such as Java, Ruby, PHP, and Node. Dig into HTTP essentials, as well as API development concepts and styles Learn ASP.NET Web API fundamentals, including the lifecycle of a request as it travels through the framework Design the Issue Tracker API example, exploring topics such as hypermedia support with collection+json Use behavioral-driven development with ASP.NET Web API to implement and enhance the application Explore techniques for building clients that are resilient to change, and make it easy to consume hypermedia APIs Get a comprehensive reference on how ASP.NET Web API works under the hood, including security and testability

The basic rules of REST APIs - "many nouns, few verbs, stick with HTTP" - seem easy, but that simplicity and power require discipline to work smoothly. This brief guide provides next steps for implementing complex projects on simple and extensible foundations.

Revised and updated second edition of the bestselling hands-on guide to building enterprise-ready web apps using an evergreen Angular platform Key Features Updated examples, projects, and a new overview of tools – including NgRX and Ivy, automated testing, and Firebase authentication New chapter summarizing history of web frameworks and Angular version updates All-new RESTful API implementation leveraging the MEAN stack with MongoDB, Express.js, Angular and Node.js Book Description This second edition of Angular for Enterprise-Ready Web Applications is updated with in-depth coverage of the evergreen Angular platform. You'll start by mastering Angular programming fundamentals. Using the Kanban method and GitHub tools, you'll build great-looking apps with Angular Material and also leverage reactive programming patterns with RxJS, discover the flux pattern with NgRx, become familiar with automated testing, utilize continuous integration using CircleCI, and deploy your app to the cloud using Vercel Now and GCloud. You will then learn how to design and develop line-of-business apps using router-first architecture with observable data anchors, demonstrated through oft-used recipes like master/detail views, and data tables with pagination and forms. Next, you'll discover robust authentication and authorization design demonstrated via integration with Firebase, API documentation using Swagger, and API implementation using the MEAN stack. Finally, you will learn about DevOps using Docker, build a highly available cloud infrastructure on AWS, capture user behavior with Google Analytics, and perform load testing. By the end of the book, you'll be familiar with the entire gamut of modern web development and full-stack architecture, learning patterns and practices to be successful as an individual developer on the web or as a team in the enterprise. What you will learn Adopt a minimalist, value-first approach to delivering web apps Master Angular development fundamentals, RxJS, CLI tools, GitHub, and Docker Discover the flux pattern and NgRx Implement a RESTful APIs using Node.js, Express.js, and MongoDB Create secure and efficient web apps for any cloud provider or your own servers Deploy your app on highly available cloud infrastructure using DevOps, CircleCI, and AWS Who this book is for This book is for developers who want to confidently deliver high-quality and production-grade Angular apps from design to deployment. Developers that have prior experience in writing a RESTful APIs will also benefit, as well as developers who will gain greater awareness of how they fit into the larger picture of delivering a web application. Prior experience with RESTful APIs is desired.

This volume offers a comprehensive guide on the theory and practice of amorphous solid dispersions (ASD) for handling challenges associated with poorly soluble drugs. In twenty-three inclusive chapters, the book examines thermodynamics and kinetics of the amorphous state and amorphous solid dispersions, ASD technologies, excipients for stabilizing amorphous solid dispersions such as polymers, and ASD manufacturing technologies, including spray drying, hot melt extrusion, fluid bed layering and solvent-controlled micro-precipitation technology (MBP). Each technology is illustrated by specific case studies. In addition, dedicated sections cover analytical tools and technologies for characterization of amorphous solid dispersions, the prediction of long-term stability, and the development of suitable dissolution methods and regulatory aspects. The book also highlights future technologies on the horizon, such as supercritical fluid processing, mesoporous silica, KinetiSol®, and the use of non-salt-forming organic acids and amino acids for the stabilization of amorphous systems. Amorphous Solid Dispersions: Theory and Practice is a valuable reference to pharmaceutical scientists interested in developing bioavailable and therapeutically effective formulations of poorly soluble molecules in order to advance these technologies and develop better medicines for the future.

In this book, the CEO of Cazton, Inc. and internationally-acclaimed speaker, Chander Dhall, demonstrates current website design scalability patterns and takes a pragmatic approach to explaining their pros and cons to show you how to select the appropriate pattern for your site. He then tests the patterns by deliberately forcing them to fail and exposing potential flaws before discussing how to design the optimal pattern to match your scale requirements. The author explains the use of polyglot programming and how to match the right patterns to your business needs. He also details several No-SQL patterns and explains the fundamentals of different paradigms of No-SQL by showing complementary strategies of using them along with relational databases to achieve the best results. He also teaches how to make the scalability pattern work with a real-world microservices pattern. With the proliferation of countless electronic devices and the ever growing number of Internet users, the scalability of websites has become an increasingly important challenge. Scalability, even though highly coveted, may not be so easy to achieve. Think that you can't attain responsiveness along with scalability? Chander Dhall will demonstrate that, in fact, they go hand in hand. What You'll Learn Architect and develop applications so that they are easy to scale. Learn different scaling and partitioning options and the combinations. Learn techniques to speed up responsiveness. Deep dive into caching, column-family databases, document databases, search engines and

RDBMS. Learn scalability and responsiveness concepts that are usually ignored. Effectively balance scalability, performance, responsiveness, and availability while minimizing downtime. Who This Book Is For Executives (CXOs), software architects, developers, and IT Pros

With this concise book, you'll learn the art of building hypermedia APIs that don't simply run on the Web, but that actually exist in the Web. You'll start with the general principles and technologies behind this architectural approach, and then dive hands-on into three fully-functional API examples. Too many APIs rely on concepts rooted in desktop and local area network patterns that don't scale well—costly solutions that are difficult to maintain over time. This book shows system architects and web developers how to design and implement human- and machine-readable web services that remain stable and flexible as they scale. Learn the H-Factors for representing application metadata across all media types and formats Understand the four basic design elements for authoring hypermedia types Convert a simple read-only XML-based media type into a successful API design Examine the challenges and advantages of designing a hypermedia type with JSON Use HTML5's rich set of hypermedia controls in the API design process Learn the details of documenting, publishing, and registering media type designs and link-relation types

Use ASP.NET Core 2 to create durable and cross-platform web APIs through a series of applied, practical scenarios. Examples in this book help you build APIs that are fast and scalable. You'll progress from the basics of the framework through to solving the complex problems encountered in implementing secure RESTful services. The book is packed full of examples showing how Microsoft's ground-up rewrite of ASP.NET Core 2 enables native cross-platform applications that are fast and modular, allowing your cloud-ready server applications to scale as your business grows. Major topics covered in the book include the fundamentals and core concepts of ASP.NET Core 2. You'll learn about building RESTful APIs with the MVC pattern using proven best practices and following the six principles of REST. Examples in the book help in learning to develop world-class web APIs and applications that can run on any platform, including Windows, Linux, and MacOS. You can even deploy to Microsoft Azure and automate your delivery by implementing Continuous Integration and Continuous Deployment pipelines. What You Will Learn Incorporate automated API tooling such as Swagger from the OpenAPI specification Standardize query and response formats using Facebook's GraphQL query language Implement security by applying authentication and authorization using ASP.NET Identity Ensure the safe storage of sensitive data using the data protection stack Create unit and integration tests to guarantee code quality Who This Book Is For Developers who build server applications such as web sites and web APIs that need to run fast and cross platform; programmers who want to implement practical solutions for real-world problems; those who want in-depth knowledge of the latest bits of ASP.NET Core 2.0

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

Maximize the impact of your assets and business services by providing APIs for developers and other users. The journey described in this book starts with identifying business assets. As part of the API team, you then need to identify and define the requirements of traffic management, security, mediation, and orchestration. You also must define metrics for the analytics to measure the success of the overall API program. API documentation and the ease of developer onboarding also determine the success of the APIs. Finally, monetization of these APIs leads to revenue generation for the enterprise. Author De — an expert in building and managing API solutions — provides enterprise architects, designers, and technologists with insight into the world of APIs and the various technical aspects of building and managing an effective API management solution. API Management: Developing and Managing APIs for your Organization: Introduces the basics of APIs and highlights their value Provides an overview of technologies for building an API management solution and defines the requirements, including how to build a RESTful API Offers design principles for building developer-friendly APIs Explains how to secure your APIs Shows how to use API analytics to measure the success of your APIs Demonstrates how to monetize APIs Finally, API Management touches on various technical nuances of creating, distributing, and managing an API. This book will not only help you learn how to design, build, deploy, and manage an API for an enterprise scale, but also generate revenue for your organization. What You'll Learn Discover the API life cycle Design and develop APIs Implement API security Test your APIs Deploy and monitor your APIs Who This Book Is For Enterprise architects, technology enthusiasts, security architects, and operations specialists.

Learn what a microservices architecture is, its advantages, and why you should consider using one when starting a new application. The book describes how taking a microservices approach from the start helps avoid the complexity and expense of moving to a service-oriented approach after applications reach a critical code base size or traffic load. Microservices from Day One discusses many of the decisions you face when adopting a service-oriented approach and defines a set of rules to follow for easily adopting microservices. The book provides simple guidelines and tips for dividing a problem domain into services. It also describes best practices for documenting and generating APIs and client libraries, testing applications with service dependencies, optimizing services for client performance, and much more. Throughout the book, you will follow the development of a sample project to see how to apply the best practices described. What You Will Learn: Apply guidelines and best practices for developing projects that use microservices Define a practical microservices architecture at the beginning of a project that allows for fast development Define and build APIs based on real-world best practices Build services that easily scale by using tools available in most programming languages Test applications in a distributed environment Who This Book is For: Software engineers and web developers who have heard about microservices, and want to either move the project/applications they work on to a service-oriented environment, or want to start a new project knowing that building services helps with ease of scaling and maintainability. The book is a reference for developers who have a desire to build software in smaller, more focused and manageable chunks, but do not know how to get started.

API Design Patterns lays out a set of design principles for building internal and public-facing APIs. Summary A collection of best practices and design standards for web and internal APIs. In API Design Patterns you will learn: Guiding principles for API patterns Fundamentals of resource layout and naming Handling data types for any programming language Standard methods that ensure predictability Field masks for targeted partial updates Authentication and validation methods for secure APIs Collective operations for moving, managing, and deleting data Advanced patterns for special interactions and data transformations API Design Patterns reveals best practices for building stable, user-friendly APIs. These design patterns can be applied to solve common API problems and flexibly altered to fit your specific

needs. Hands-on examples and relevant use-cases illustrate patterns for API fundamentals, advanced functionalities, and even uncommon scenarios. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology APIs are contracts that define how applications, services, and components communicate. API design patterns provide a shared set of best practices, specifications and standards that ensure APIs are reliable and simple for other developers to use. This book collects and explains the most important patterns from both the API design community and the experts at Google. About the book API Design Patterns lays out a set of design principles for building internal and public-facing APIs. Google API expert JJ Geewax presents patterns that ensure your APIs are consistent, scalable, and flexible. You'll improve the design of the most common APIs, plus discover techniques for tricky edge cases. Precise illustrations, relevant examples, and detailed scenarios make every pattern clear and easy to understand. What's inside Guiding principles for API patterns Fundamentals of resource layout and naming Advanced patterns for special interactions and data transformations A detailed case-study on building an API and adding features About the reader For developers building web and internal APIs in any language. About the author JJ Geewax is a software engineer at Google, focusing on Google Cloud Platform, API design, and real-time payment systems. He is also the author of Manning's Google Cloud Platform in Action. Table of Contents PART 1 INTRODUCTION 1 Introduction to APIs 2 Introduction to API design patterns PART 2 DESIGN PRINCIPLES 3 Naming 4 Resource scope and hierarchy 5 Data types and defaults PART 3 FUNDAMENTALS 6 Resource identification 7 Standard methods 8 Partial updates and retrievals 9 Custom methods 10 Long-running operations 11 Rerunnable jobs PART 4 RESOURCE RELATIONSHIPS 12 Singleton sub-resources 13 Cross references 14 Association resources 15 Add and remove custom methods 16 Polymorphism PART 5 COLLECTIVE OPERATIONS 17 Copy and move 18 Batch operations 19 Criteria-based deletion 20 Anonymous writes 21 Pagination 22 Filtering 23 Importing and exporting PART 6 SAFETY AND SECURITY 24 Versioning and compatibility 25 Soft deletion 26 Request deduplication 27 Request validation 28 Resource revisions 29 Request retrial 30 Request authentication

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 first reference to link chemical engineering technologies and surfactant science in such breadth of focus, Surfactants in Chemical/Process Engineering features contributions by major authorities in chemical engineering whose applications have opened important new fields for surfactant use. These applications include dispersion science, separation processes, oil recovery, microemulsions, and environmental control. This volume discusses ultrafiltration processes, flotation, metal extractions, and more ... examines surfactants in process streams for such industrial separations as micellar-enhanced ultrafiltration, adsorbent regeneration, micellar extractions, and oil/water demulsification ... describes methodologies for separations of fatty acids, metals, minerals and impurities, solvents, and hydrocarbons for cost-saving industrial and consumer product manufacture ... details techniques for developing and optimizing formulations for superior agricultural plant control or enhancement systems, micro- and macroemulsions, and liquid surfactant membranes ... and looks closely at emulsion polymers in soil stabilizations, protective coatings, sealants, adhesives, textile processing, paper finishing, specialty concretes, and tire manufacture. Book jacket.

Using a web API to provide services to application developers is one of the more satisfying endeavors that software engineers undertake. But building a popular API with a thriving developer ecosystem is also one of the most challenging. With this practical guide, developers, architects, and tech leads will learn how to navigate complex decisions for designing, scaling, marketing, and evolving interoperable APIs. Authors Brenda Jin, Saurabh Sahni, and Amir Shevat explain API design theory and provide hands-on exercises for building your web API and managing its operation in production. You'll also learn how to build and maintain a following of app developers. This book includes expert advice, worksheets, checklists, and case studies from companies including Slack, Stripe, Facebook, Microsoft, Cloudinary, Oracle, and GitHub. Get an overview of request-response and event-driven API design paradigms Learn best practices for designing an API that meets the needs of your users Use a template to create an API design process Scale your web API to support a growing number of API calls and use cases Regularly adapt the API to reflect changes to your product or business Provide developer resources that include API documentation, samples, and tools

Pro REST API Development with Node.js is your guide to managing and understanding the full capabilities of successful REST development. API design is a hot topic in the programming world, but not many resources exist for developers to really understand how you can leverage the advantages. This book will provide a brief background on REST and the tools it provides (well known and not so well known). Understand how there is more to REST than just JSON and URLs. You will then cover and compare the maintained modules currently available in the npm community, including Express, Restify, Vatican, and Swagger. Finally you will code an example API from start to finish, using a subset of the tools covered. The Node community is currently flooded with modules; some of them are published once and never updated again - cluttering the entire universe of packages. Pro REST API Development with Node.js shines light into that black hole of modules for the developers trying to create an API. Understand REST API development with Node.js using this book today.

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. The second edition of this book 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 show software architects, program directors, and product owners how to maximize the value of their APIs by managing them as products through a continuous lifecycle. Learn which API decisions you need to govern Design, deploy, and manage APIs using an API-as-a-product (AaaS) approach Examine 10 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 lifecycle Delve into team roles needed to design, build, and maintain your APIs Learn how to manage APIs published by your organization

You might think more than enough design books exist in the programming world already. In fact, there are so many that it makes sense to ask why you would read yet another. Is there really a need for yet another design book? In fact, there is a greater need than ever before, and Practical API Design: Confessions of a Java Framework Architect fills that need! Teaches you how to write an API that will stand the test of time Written by the designer of the NetBeans API at Sun Technologies Based on best practices, scalability, and API design patterns

Using a web API to provide services to application developers is one of the more satisfying endeavors that software engineers undertake. But building a popular API with a

thriving developer ecosystem is also one of the most challenging. With this practical guide, developers, architects, and tech leads will learn how to navigate complex decisions for designing, scaling, marketing, and evolving interoperable APIs. Authors Brenda Jin, Saurabh Sahni, and Amir Shevat explain API design theory and provide hands-on exercises for building your web API and managing its operation in production. You'll also learn how to build and maintain a following of app developers. This book includes expert advice, worksheets, checklists, and case studies from companies including Slack, Stripe, Facebook, Microsoft, Cloudinary, Oracle, and GitHub. Get an overview of request-response and event-driven API design paradigms Learn best practices for designing an API that meets the needs of your users Use a template to create an API design process Scale your web API to support a growing number of API calls and use cases Regularly adapt the API to reflect changes to your product or business Provide developer resources that include API documentation, samples, and tools.

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

Cloud computing has created a shift from the use of physical hardware and locally managed software-enabled platforms to that of virtualized cloud-hosted services. Cloud assembles large networks of virtual services, including hardware (CPU, storage, and network) and software resources (databases, message queuing systems, monitoring systems, and load-balancers). As Cloud continues to revolutionize applications in academia, industry, government, and many other fields, the transition to this efficient and flexible platform presents serious challenges at both theoretical and practical levels—ones that will often require new approaches and practices in all areas. Comprehensive and timely, *Cloud Computing: Methodology, Systems, and Applications* summarizes progress in state-of-the-art research and offers step-by-step instruction on how to implement it. Summarizes Cloud Developments, Identifies Research Challenges, and Outlines Future Directions Ideal for a broad audience that includes researchers, engineers, IT professionals, and graduate students, this book is designed in three sections: Fundamentals of Cloud Computing: Concept, Methodology, and Overview Cloud Computing Functionalities and Provisioning Case Studies, Applications, and Future Directions It addresses the obvious technical aspects of using Cloud but goes beyond, exploring the cultural/social and regulatory/legal challenges that are quickly coming to the forefront of discussion. Properly applied as part of an overall IT strategy, Cloud can help small and medium business enterprises (SMEs) and governments in optimizing expenditure on application-hosting infrastructure. This material outlines a strategy for using Cloud to exploit opportunities in areas including, but not limited to, government, research, business, high-performance computing, web hosting, social networking, and multimedia. With contributions from a host of internationally recognized researchers, this reference delves into everything from necessary changes in users' initial mindset to actual physical requirements for the successful integration of Cloud into existing in-house infrastructure. Using case studies throughout to reinforce concepts, this book also addresses recent advances and future directions in methodologies, taxonomies, IaaS/SaaS, data management and processing, programming models, and applications.

API Design for C++ provides a comprehensive discussion of Application Programming Interface (API) development, from initial design through implementation, testing, documentation, release, versioning, maintenance, and deprecation. It is the only book that teaches the strategies of C++ API development, including interface design, versioning, scripting, and plug-in extensibility. Drawing from the author's experience on large scale, collaborative software projects, the text offers practical techniques of API design that produce robust code for the long term. It presents patterns and practices that provide real value to individual developers as well as organizations. *API Design for C++* explores often overlooked issues, both technical and non-technical, contributing to successful design decisions that produce high quality, robust, and long-lived APIs. It focuses on various API styles and patterns that will allow you to produce elegant and durable libraries. A discussion on testing strategies concentrates on automated API testing techniques rather than attempting to include end-user application testing techniques such as GUI testing, system testing, or manual testing. Each concept is illustrated with extensive C++ code examples, and fully functional examples and working source code for experimentation are available online. This book will be helpful to new programmers who understand the fundamentals of C++ and who want to advance their design skills, as well as to senior engineers and software architects seeking to gain new expertise to complement their existing talents. Three specific groups of readers are targeted: practicing software engineers and architects, technical managers, and students and educators. The only book that teaches the strategies of C++ API development, including design, versioning, documentation, testing, scripting, and extensibility. Extensive code examples illustrate each concept, with fully functional examples and working source code for experimentation available online. Covers various API styles and patterns with a focus on practical and efficient designs for large-scale long-term projects.

This book constitutes the refereed proceedings of the 14th International Workshop on Security, IWSEC 2019, held in Tokyo, Japan, in August 2019. The 18 regular papers and 5 short papers presented in this volume were carefully reviewed and selected from 61 submissions. They were organized in topical sections named: Public-Key Primitives;

Cryptanalysis on Public-Key Primitives; Cryptographic Protocols; Symmetric-Key Primitives; Malware Detection and Classification; Intrusion Detection and Prevention; Web and Usable Security; Cryptanalysis on Symmetric-Key Primitives; and Forensics.

Developing Solid Oral Dosage Forms is intended for pharmaceutical professionals engaged in research and development of oral dosage forms. It covers essential principles of physical pharmacy, biopharmaceutics and industrial pharmacy as well as various aspects of state-of-the-art techniques and approaches in pharmaceutical sciences and technologies along with examples and/or case studies in product development. The objective of this book is to offer updated (or current) knowledge and skills required for rational oral product design and development. The specific goals are to provide readers with: Basics of modern theories of physical pharmacy, biopharmaceutics and industrial pharmacy and their applications throughout the entire process of research and development of oral dosage forms Tools and approaches of preformulation investigation, formulation/process design, characterization and scale-up in pharmaceutical sciences and technologies New developments, challenges, trends, opportunities, intellectual property issues and regulations in solid product development The first book (ever) that provides comprehensive and in-depth coverage of what's required for developing high quality pharmaceutical products to meet international standards It covers a broad scope of topics that encompass the entire spectrum of solid dosage form development for the global market, including the most updated science and technologies, practice, applications, regulation, intellectual property protection and new development trends with case studies in every chapter A strong team of more than 50 well-established authors/co-authors of diverse background, knowledge, skills and experience from industry, academia and regulatory agencies 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

Application programming interfaces (API) act as the digital glue that links services, applications, and systems together to create compelling customer experiences. Using APIs you can create interfaces between back-end systems and applications that can help you bring new digital services to market, open revenue channels, and exceed customer expectations. IBM® API Connect is an API management solution from IBM that offers capabilities to create, run, manage, and secure APIs and microservices, thus managing the full lifecycle of APIs for both on-premises and cloud environments. This IBM Redpaper™ publication gives a broad overview of APIs and API Connect and covers key considerations for managing the lifecycle of APIs. This paper is targeted for owners of an API Connect based API, such as, C-level executives, members of the business development teams, product managers, and technical evangelists. For practical scenarios using API Connect, refer to the companion IBM Redbooks® publication, Getting Started with IBM API Connect: Scenarios Guide, REDP-5350.

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.

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.

Build straightforward and maintainable APIs to create services that are usable and maintainable. Although this book focuses on distributed services, it also emphasizes how the core principles apply even to pure OOD and OOP constructs. The overall context of Creating Maintainable APIs is to classify the topics into four main areas: classes and interfaces, HTTP REST APIs, messaging APIs, and message payloads (XML, JSON and JSON API as well as Apache Avro). What You Will Learn Use object-oriented design constructs and their APIs Create and manage HTTP REST APIs Build and manage maintainable messaging APIs, including the use of Apache Kafka as a principal messaging hub Handle message payloads via JSON Who This Book Is For Any level software engineers and very experienced programmers.

As a Java programmer, how can you tackle the disruptive client-server approach to web development? With this comprehensive guide, you'll learn how today's client-side technologies and web APIs work with various Java tools. Author Casimir Saternos provides the big picture of client-server development, and then takes you through many practical client-server architectures. You'll work with hands-on projects in several chapters to get a feel for the topics discussed. User habits, technologies, and development methods have drastically altered web app design in recent years. But the Web itself hasn't changed. This book shows you how to build apps that conform to the web's underlying architecture. Learn the advantages of using separate client and server tiers, including code organization and speedy prototyping Explore the major tools, frameworks, and starter projects used in JavaScript development Dive into web API design and REST style of software architecture Understand Java's alternatives to traditional packaging methods and application server deployment Build projects with lightweight servers, using jQuery with Jython, and Sinatra with Angular Create client-server web apps with traditional Java web application servers and libraries

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