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# The Rest Api Design Handbook

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*The Rest Api Design Handbook*

2022-07-14

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## **BRIANNA MACIAS**

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### **A pragmatic guide to designing and building RESTful APIs using Java** Packt Publishing Ltd

The popularity of REST in recent years has led to tremendous growth in almost-RESTful APIs that don't include many of the architecture's benefits. With this practical guide, you'll learn what it takes to design usable REST APIs that evolve over time. By focusing on solutions that cross a variety of domains, this book shows you how to create powerful and secure applications, using the tools designed for the world's most successful distributed computing system: the World Wide Web. You'll explore the concepts behind REST, learn different strategies for creating hypermedia-based APIs, and then put everything together with a step-by-step guide to designing a RESTful Web API. Examine API design strategies, including the collection pattern and pure hypermedia Understand how hypermedia ties representations

together into a coherent API Discover how XMDP and ALPS profile formats can help you meet the Web API "semantic challenge" Learn close to two-dozen standardized hypermedia data formats Apply best practices for using HTTP in API implementations Create Web APIs with the JSON-LD standard and other the Linked Data approaches Understand the CoAP protocol for using REST in embedded systems

The REGTECH Book "O'Reilly Media, Inc."

Thought-provoking and accessible in approach, this updated and expanded second edition of the The REST API Design Handbook provides a user-friendly introduction to the subject, Taking a clear structural framework, it guides the reader through the subject's core elements. A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts. This succinct and enlightening overview is a required reading for advanced graduate-level students. We hope you find this book useful in shaping your future career. Feel free to send us your

enquiries related to our publications to [info@risepress.pw](mailto:info@risepress.pw) Rise Press

### Practical API Design Elsevier

Understand the technical foundations, as well as the non-programming skills needed to be a successful full stack web developer. This book reveals the reasons why a truly successful full stack developer does more than write code. You will learn the principles of the topics needed to help a developer new to agile or full stack working—UX, project management, QA, product management, and more— all from the point of view of a developer. Covering these skills alongside the fundamentals and foundations of modern web development, rather than specifics of current technologies and frameworks (which can age quickly), all programming examples are given in the context of the web as it is in 2018. Although you need to feel comfortable working on code at the system, database, API, middleware or user interface level, depending on the task in hand, you also need to be able to deal with the big picture and the little details. The Full Stack Developer recognizes skills beyond the technical, and gives foundational knowledge of the wide set of skills needed in a modern software development team. What You'll Learn Plan your work including Agile vs Waterfall, tools, scrum, kanban and continuous delivery Translate UX into code: grids, component libraries and style guides Design systems and system architectures (microservices to monoliths) Review patterns for APIs (SOAP, AJAX, REST), defining API domains, patterns for REST APIs and more API goodness Study the various front-end design patterns you need to know Store data, what to consider for security, deployment, in production and more Who This Book Is

For New graduates or junior developers who are transitioning to working as part of a larger team structure in a multi-disciplinary teams and developers previously focused on only front-end or back-end dev transitioning into full stack.

### Manage and Understand the Full Capabilities of Successful REST Development CreateSpace

How can you take advantage of the Django framework to integrate complex client-side interactions and real-time features into your web applications? Through a series of rapid application development projects, this hands-on book shows experienced Django developers how to include REST APIs, WebSockets, and client-side MVC frameworks such as Backbone.js into new or existing projects. Learn how to make the most of Django's decoupled design by choosing the components you need to build the lightweight applications you want. Once you finish this book, you'll know how to build single-page applications that respond to interactions in real time. If you're familiar with Python and JavaScript, you're good to go. Learn a lightweight approach for starting a new Django project Break reusable applications into smaller services that communicate with one another Create a static, rapid prototyping site as a scaffold for websites and applications Build a REST API with django-rest-framework Learn how to use Django with the Backbone.js MVC framework Create a single-page web application on top of your REST API Integrate real-time features with WebSockets and the Tornado networking library Use the book's code-driven examples in your own projects *Understand Your Data and Be More Productive* Simon and Schuster

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.

Simon and Schuster

APIs are transforming the business world at an increasing pace. Gain the essential skills needed to quickly design, build, and deploy quality web APIs that are robust, reliable, and resilient. Go from initial design through prototyping and implementation to deployment of mission-critical APIs for your organization. Test, secure, and deploy your API with confidence and avoid the "release into production" panic. Tackle just about any API challenge with more than a dozen open-source utilities and common programming patterns you can apply right away. Good API design means starting with the API-First principle - understanding who is using the API and what they want to do with it - and applying basic design skills to match customers' needs while solving business-critical problems. Use the Sketch-Design-Build method to create reliable and scalable web APIs quickly and easily without a lot of risk to the day-to-day business operations. Create clear sequence diagrams, accurate specifications, and machine-readable API descriptions all reviewed, tested, and ready to turn into fully-functional NodeJS code. Create reliable test collections with Postman and implement proper identity and access control security with AuthO-without added cost or risk to the company. Deploy all of this to Heroku using a continuous delivery approach that pushes secure, well-tested code to your public servers ready for use by

both internal and external developers. From design to code to test to deployment, unlock hidden business value and release stable and scalable web APIs that meet customer needs and solve important business problems in a consistent and reliable manner.

**REST API Design Rulebook** "O'Reilly Media, Inc."

Get a comprehensive understanding of gRPC fundamentals through real-world examples. With this practical guide, you'll learn how this high-performance interprocess communication protocol is capable of connecting polyglot services in microservices architecture, while providing a rich framework for defining service contracts and data types. Complete with hands-on examples written in Go, Java, Node, and Python, this book also covers the essential techniques and best practices to use gRPC in production systems. Authors Kasun Indrasiri and Danesh Kuruppu discuss the importance of gRPC in the context of microservices development.

**Graphic Design Handbook** Springer Science & Business Media  
REST continues to gain momentum as the best method for building Web services, and this down-to-earth book delivers techniques and examples that show how to design and implement integration solutions using the REST architectural style.

**CORS in Action** Radu Frasier

Web APIs are everywhere, giving developers an efficient way to interact with applications, services, and data. Well-designed APIs are a joy to use; poorly-designed APIs are cumbersome, confusing, and frustrating. The Design of Web APIs is a practical, example packed guide to crafting extraordinary web APIs. Author

Arnaud Lauret demonstrates fantastic design principles and techniques you can apply to both public and private web APIs. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

*Building APIs That Developers Love* Packt Publishing Ltd

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.

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Request authentication

*Everyone and Their Dog Wants an API, So You Should Probably Learn How to Build Them Apress*

Develop RESTful web services using the Flask micro-framework and integrate them using MySQL. Use Flask to develop, deploy, and manage REST APIs with easy-to-read and understand Python code. Solve your problem from a choice of libraries. Learn to use MySQL as the web services database for your Flask API using SQLAlchemy ORM. Building REST APIs with Flask provides a primer on Flask, RESTful services, and working with pip to set up your virtual environment. The key differences between NoSQL and SQL are covered, and you are taught how to connect MySQL and Flask using SQLAlchemy. Author Kunal Relan presents best practices for creating REST APIs and guides you in structuring your app and testing REST endpoints. He teaches you how to set up authentication and render HTML using views. You learn how to write unit tests for your REST APIs, and understand mocks, assertions, and integration testing. You will know how to document your REST APIs, deploy your Flask application on all of the major cloud platforms, and debug and monitor your Flask application.

What You'll Learn

Use MySQL to create Flask REST APIs

Test REST endpoints

Create CRUD endpoints with Flask and MySQL

Deploy Flask on all of the major cloud platforms

Monitor your Flask application

Who This Book Is For

Python developers interested in REST API development using Flask and web developers with basic programming knowledge who want to learn how Python and REST APIs work together. Readers should be familiar with Python (command line, or at least pip) and MySQL.

*RESTful Web APIs Apress*

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 *BIM Handbook* O'Reilly Media Master core REST concepts and create RESTful web services in Java About This Book Build efficient and secure RESTful web APIs in Java.. Design solutions to produce, consume and visualize RESTful web services using WADL, RAML, and Swagger Familiarize the role of RESTful APIs usage in emerging technology trends like Cloud, IoT, Social Media. Who This Book Is For If you are a web developer with a basic understanding of the REST concepts and envisage to get acquainted with the idea of designing and developing RESTful web services, this is the book for you. As all the code samples for the book are written in Java, proficiency in Java is a must. What You Will Learn Introduce yourself to the RESTful software architectural style and the REST API design principles Make use of the JSR 353 API, JSR 374 API, JSR 367 API and Jackson API for JSON processing Build portable RESTful web APIs, making use of the JAX-RS 2.1 API Simplify API development using the Jersey and RESTEasy extension APIs Secure your RESTful web services with various authentication and authorization mechanisms Get to grips with the various metadata solutions to describe, produce, and consume RESTful web

services Understand the design and coding guidelines to build well-performing RESTful APIs See how the role of RESTful web services changes with emerging technologies and trends In Detail Representational State Transfer (REST) is a simple yet powerful software architecture style to create lightweight and scalable web services. The RESTful web services use HTTP as the transport protocol and can use any message formats, including XML, JSON(widely used), CSV, and many more, which makes it easily inter-operable across different languages and platforms. This successful book is currently in its 3rd edition and has been used by thousands of developers. It serves as an excellent guide for developing RESTful web services in Java. This book attempts to familiarize the reader with the concepts of REST. It is a pragmatic guide for designing and developing web services using Java APIs for real-life use cases following best practices and for learning to secure REST APIs using OAuth and JWT. Finally, you will learn the role of RESTful web services for future technological advances, be it cloud, IoT or social media. By the end of this book, you will be able to efficiently build robust, scalable, and secure RESTful web services using Java APIs. Style and approach Step-by-step guide to designing and developing robust RESTful web services. Each topic is explained in a simple and easy-to-understand manner with lots of real-life use-cases and their solutions.

[Solutions for Improving Scalability and Simplicity](#) John Wiley & Sons

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.

**Modern API Development with Spring and Spring Boot**  
"O'Reilly Media, Inc."

Discover BIM: A better way to build better buildings Building Information Modeling (BIM) offers a novel approach to design, construction, and facility management in which a digital representation of the building product and process is used to facilitate the exchange and interoperability of information in digital format. BIM is beginning to change the way buildings look, the way they function, and the ways in which they are designed and built. The BIM Handbook, Third Edition provides an in-depth understanding of BIM technologies, the business and organizational issues associated with its implementation, and the profound advantages that effective use of BIM can provide to all members of a project team. Updates to this edition include: Information on the ways in which professionals should use BIM to gain maximum value New topics such as collaborative working,

national and major construction clients, BIM standards and guides  
 A discussion on how various professional roles have expanded through the widespread use and the new avenues of BIM practices and services  
 A wealth of new case studies that clearly illustrate exactly how BIM is applied in a wide variety of conditions  
 Painting a colorful and thorough picture of the state of the art in building information modeling, the BIM Handbook, Third Edition guides readers to successful implementations, helping them to avoid needless frustration and costs and take full advantage of this paradigm-shifting approach to construct better buildings that consume fewer materials and require less time, labor, and capital resources.

Service Design Patterns "O'Reilly Media, Inc."

"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.

**Confessions of a Java Framework Architect** John Wiley & Sons

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

Software Architect's Handbook API-University Press

Summary  
 CORS in Action introduces Cross-Origin Resource Sharing (CORS) from both the server and the client perspective. It starts with the basics: how to make CORS requests and how to



implement CORS on the server. It then explores key details such as performance, debugging, and security. API authors will learn how CORS opens their APIs to a wider range of users. JavaScript developers will find valuable techniques for building rich web apps that can take advantage of APIs hosted anywhere. The techniques described in this book are especially applicable to mobile environments, where browsers are guaranteed to support CORS. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

About the Book Suppose you need to share some JSON data with another application or service. If everything is hosted on one domain, it's a snap. But if the data is on another domain, the browser's "same-origin" policy stops you cold. CORS is a new web standard that enables safe cross-domain access without complex server-side code. Mastering CORS makes it possible for web and mobile applications to share data simply and securely. CORS in Action introduces CORS from both the server and the client perspective. It starts with making and enabling CORS requests and then explores performance, debugging, and security. You'll learn to build apps that can take advantage of APIs hosted anywhere and how to write APIs that expand your products to a wider range of users. For web developers comfortable with JavaScript. No experience with CORS is assumed. What's Inside CORS from the ground up Serving and consuming cross-domain data Best practices for building CORS APIs When to use CORS alternatives like JSON-P and proxies About the Author Monsur Hossain is an engineer at Google who has worked on API-related projects such as the Google JavaScript Client, the APIs Discovery Service, and CORS support for Google APIs. Table of Contents PART 1

INTRODUCING CORS The Core of CORS Making CORS requests PART 2 CORS ON THE SERVER Handling CORS requests Handling preflight requests Cookies and response headers Best practices PART 3 DEBUGGING CORS REQUESTS Debugging CORS requests APPENDIXES CORS reference Configuring your environment What is CSRF? Other cross-origin techniques

### **Designing Consistent RESTful Web Service Interfaces**

"O'Reilly Media, Inc."

A complete practitioner's catalog of proven domain services design solutions that can help any organization leverage SOA's full benefits \* Provides a vocabulary of proven SOA design solutions, with concrete examples and code that is easy for architects to adapt and implement. \* By Rob Daigneau, one of the industry's leading experts in complex systems integration. \* Helps architects and IT leaders accurately set stakeholder expectations for major SOA initiatives. Service-oriented architectures are typically called upon to deliver two general categories of services: enterprise services and domain services. Enterprise services are essentially composite services that typically leverage technologies such as message-oriented middleware. Domain services are the building blocks these composites depend upon. Each service category is best served by a distinct set of design solutions. This is the first book to systematically identify and explain best practice patterns for domain services. Rob Daigneau expands upon the Service Layer concept (covered expertly by Fowler in Patterns of Enterprise Application Architecture ) domain services can be used with Enterprise Integration Patterns (made famous by Hohpe and Woolf). Daigneau begins by reviewing SOA concepts, illuminating the distinctions between enterprise and

domain services, and identifying key relationships between domain services and other pattern groups. Next, he introduces each essential pattern for creating and delivering domain services, providing a vocabulary of design solutions that architects and other IT professionals can implement by referencing and adapting the concrete examples he supplies.

Mastering Regular Expressions API-University Press

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.