Reactive Web Applications With Scala Play Akka And Reactive Streams

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Scala Reactive Programming - Rambabu Posa 2018-02-28
Build fault-tolerant, robust, and distributed applications in Scala Key Features - Understand and use the concepts of reactive programming to build distributed systems running on multiple nodes. - Learn how reactive architecture reduces complexity throughout the development process. - Get to grips with functional reactive programming and Reactive Microservices. Book Description Reactive programming is a scalable, fast way to build applications, and one that helps us write code that is concise, clear, and readable. It can be used for many purposes such as GUIs, robotics, music, and others, and is central to many concurrent systems. This book will be your guide to getting started with Reactive programming in Scala. You will begin with the fundamental concepts of Reactive programming and gradually move on to working with asynchronous data streams. You will then start building an application using Akka Actors and extend it using the Play framework. You will also learn about reactive stream specifications, event sourcing techniques, and different methods to integrate Akka Streams into the Play Framework. This book will also take you one step forward by showing you the advantages of the Lagom framework while working with reactive microservices. You will also learn to scale applications using multi-node clusters and test, secure, and deploy your microservices to the cloud. By the end of the book, you will have gained the knowledge to build robust and distributed systems with Scala and Akka. What you will learn Understand the fundamental principles of Reactive and Functional programming Develop applications utilizing features of the Akka framework Explore techniques to integrate Scala, Akka, and Play together Learn about Reactive Streams with real-time use cases Develop Reactive Web Applications with Play, Scala, Akka, and Akka Streams Develop and deploy Reactive microservices using the Lagom framework and ConductR Who this book is for This book is for Scala developers who would like to build fault-tolerant, scalable distributed systems. No knowledge of Reactive programming is required.

Building Applications with Scala - Diego Pacheco 2017-02-28
Write modern, scalable, and reactive applications in ScalaAbout This Book*Craft a completely reactive functional application from front end to back end*Step-by-step instructions, examples, and hands-on practices designed to help you learn the key secrets and intricacies of Scala app development*Comprehensive coverage of all the most popular tools in the Scala ecosystemWho This Book Is ForIf you are a Java or JVM developer who wants to use Scala to build reactive functional applications for the JVM platform, then this book is for you. Prior knowledge of Java or functional programing would help. No Scala knowledge is required.What You Will Learn*Use Akka to create a chat service for your app*Equip yourself with the techniques and tools to build reports and build database persistence with Scala and Slick*Develop a customer-facing Rest API that makes use of Scala and Spray*Make use of the Scala web development principles and scale up the architecture of your application*Get familiar with the core principles and concepts of Functional Programming*Use the Play framework to create models, controllers, and views*Develop reactive backing frameworks by writing code with RxScala*Discover what proper testing entails with Scala using behavior-driven developmentIn DetailScala is known for incorporating both object-oriented and functional programming into a concise and extremely powerful package. However,

creating an app in Scala can get a little tricky because of the complexity. This book will help you dive straight into app development by creating a real, reactive, and functional application. We will provide you with practical examples and instructions using a hands-on approach that will give you a firm grounding in reactive functional principles.The book will take you through all the fundamentals of app development within Scala as you build an application piece by piece. We've made sure to incorporate everything you need from setting up to building reports and scaling architecture. This book also covers the most useful tools available in the Scala ecosystem, such as Slick, Play, and Akka, and a whole lot more. It will help you unlock the secrets of building your own up-to-date Scala application while maximizing performance and scalability.

Akka in Action - Raymond Roestenburg 2016-09-20
Summary Akka in Action is a comprehensive tutorial on building message-oriented systems using Akka. The book takes a hands-on approach, where each new concept is followed by an example that shows you how it works, how to implement the code, and how to (unit) test it. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Akka makes it relatively easy to build applications in the cloud or on devices with many cores that efficiently use the full capacity of the computing power available. It's a toolkit that provides an actor programming model, a runtime, and required support tools for building scalable applications. About the Book Akka in Action shows you how to build message-oriented systems with Akka. This comprehensive, hands-on tutorial introduces each concept with a working example. You'll start with the big picture of how Akka works, and then quickly build and deploy a fully functional REST service out of actors. You'll explore test-driven development and deploying and scaling fault-tolerant systems. After mastering the basics, you'll discover how to model immutable messages, implement domain models, and apply techniques like event sourcing and CQRS. You'l also find a tutorial on building streaming applications using akka-stream and akka-http. Finally, you'l get practical advice on how to customize and extend your Akka system. What's Inside Getting concurrency right Testing and performance tuning Clustered and cloud-based applications Covers Akka version 2.4 About the Reader This book assumes that you're comfortable with Java and Scala. No prior experience with Akka required. About the Authors A software craftsman and architect, Raymond Roestenburg is an Akka committer. Rob Bakker specializes in concurrent back-end systems and systems integration. Rob Williams has more than 20 years of product development experience. Table of Contents Introducing Akka Up and running Test-driven development with actors Fault tolerance Futures Your first distributed Akka app Configuration, logging, and deployment Structural patterns for actors Routing messages Message channels Finite-state machines and agents System integration Streaming Clustering Actor persistence Performance tips Looking ahead

Hands-On Reactive Programming with Reactor - Rahul Sharma 2018-09-29
Discover how project Reactor enhances the reactive programming paradigm and allows you to build scalable asynchronous applications Key FeaturesUse reactive APIs, Flux, and Mono to implement reactive extensionsCreate concurrent applications without the complexity of Java's concurrent APIUnderstand

techniques to implement event-driven and reactive applicationsBook Description Reactor is an implementation of the Java 9 Reactive Streams specification, an API for asynchronous data processing. This specification is based on a reactive programming paradigm, enabling developers to build enterprise-grade, robust applications with reduced complexity and in less time. Hands-On Reactive Programming with Reactor shows you how Reactor works, as well as how to use it to develop reactive applications in Java. The book begins with the fundamentals of Reactor and the role it plays in building effective applications. You will learn how to build fully non-blocking applications and will later be guided by the Publisher and Subscriber APIs. You will gain an understanding how to use two reactive composable APIs, Flux and Mono, which are used extensively to implement Reactive Extensions. All of these components are combined using various operations to build a complete solution. In addition to this, you will get to grips with the Flow API and understand backpressure in order to control overruns. You will also study the use of Spring WebFlux, an extension of the Reactor framework for building microservices. By the end of the book, you will have gained enough confidence to build reactive and scalable microservices. What you will learnExplore benefits of the Reactive paradigm and the Reactive Streams APIDiscover the impact of Flux and Mono implications in ReactorExpand and repeat data in stream processingGet to grips with various types of processors and choose the best oneUnderstand how to map errors to make corrections easierCreate robust tests using testing utilities offered by ReactorFind the best way to schedule the execution of codeWho this book is for If you're looking to develop event- and data-driven applications easily with Reactor, this book is for you. Sound knowledge of Java fundamentals is necessary to understand the concepts covered in the book.

Play for Java - Nicolas Leroux 2014-02-28
Summary Play for Java shows you how to build Java-based web applications using the Play 2 framework. The 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 contrast Play and JEE patterns and learn how a stateless web application can fit seamlessly in an enterprise environment. About the Book For a Java developer, the Play web application framework is a breath of fresh air. With Play you get the power of Scala's strong type system and functional programming model, and a rock-solid Java API that makes it a snap to create stateless, event-driven, browser-based applications ready to deploy against your existing infrastructure. Play for Java teaches you to build Java-based web applications using Play 2. This book starts with an overview example and then explores each facet of a typical application by discussing simple snippets as they are added to a larger example. Along the way, you'll contrast Play and JEE patterns and learn how a stateless web application can fit seamlessly in an enterprise Java environment. You'll also learn how to develop asynchronous and reactive web applications. The book requires a background in Java. No knowledge of Play or of Scala is assumed. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What's Inside Build Play 2 applications using Java Leverage your JEE skills Work in an asynchronous way Secure and test your Play application About the Authors Nicolas Leroux is a core developer of the Play framework. Sietse de Kaper develops and deploys Java-based Play applications. Table of Contents PART 1 INTRODUCTION AND FIRST STEPS An introduction to Play The parts of an application A basic CRUD application PART 2 CORE FUNCTIONALITY An enterprise app, Play-style Controllers—handling HTTP requests Handling user input Models and persistence Producing output with view templates PART 3 ADVANCED TOPICS Asynchronous data Security Modules and deployment Testing your application

Learning Scala Programming - Vikash Sharma 2018-01-30
Learn how to write scalable and concurrent programs in Scala, a language that grows with you. Key Features Get a grip on the functional features of the Scala programming language Understand and develop optimal applications using object-oriented and functional Scala constructs Learn reactive principles with Scala and work with the Akka framework Book Description Scala is a general-purpose programming language that supports both functional and object-oriented programming paradigms. Due to its concise design and versatility, Scala's applications have been extended to a wide variety of fields such as data science and cluster computing. You will learn to write highly scalable, concurrent, and testable programs to meet everyday software requirements. We will begin by understanding the language basics, syntax, core

data types, literals, variables, and more. From here you will be introduced to data structures with Scala and you will learn to work with higher-order functions. Scala's powerful collections framework will help you get the best out of immutable data structures and utilize them effectively. You will then be introduced to concepts such as pattern matching, case classes, and functional programming features. From here, you will learn to work with Scala's object-oriented features. Going forward, you will learn about asynchronous and reactive programming with Scala, where you will be introduced to the Akka framework. Finally, you will learn the interoperability of Scala and Java. After reading this book, you'll be well versed with this language and its features, and you will be able to write scalable, concurrent, and reactive programs in Scala. What you will learn Get to know the reasons for choosing Scala: its use and the advantages it provides over other languages Bring together functional and object-oriented programming constructs to make a manageable application Master basic to advanced Scala constructs Test your applications using advanced testing methodologies such as TDD Select preferred language constructs from the wide variety of constructs provided by Scala Make the transition from the object-oriented paradigm to the functional programming paradigm Write clean, concise, and powerful code with a functional mindset Create concurrent, scalable, and reactive applications utilizing the advantages of Scala Who this book is for This book is for programmers who choose to get a grip over Scala to write concurrent, scalable, and reactive programs. No prior experience with any programming language is required to learn the concepts explained in this book. Knowledge of any programming language would help the reader understanding concepts faster though.

Reactive Streams in Java - Adam L. Davis 2018-11-29
Get an easy introduction to reactive streams in Java to handle concurrency, data streams, and the propagation of change in today's applications. This compact book includes in-depth introductions to RxJava, Akka Streams, and Reactor, and integrates the latest related features from Java 9 and 11, as well as reactive streams programming with the Android SDK. Reactive Streams in Java explains how to manage the exchange of stream data across an asynchronous boundary—passing elements on to another thread or thread-pool—while ensuring that the receiving side is not forced to buffer arbitrary amounts of data which can reduce application efficiency. After reading and using this book, you'll be proficient in programming reactive streams for Java in order to optimize application performance, and improve memory management and data exchanges. What You Will Learn Discover reactive streams and how to use them Work with the latest features in Java 9 and Java 11Apply reactive streams using RxJava Program using Akka StreamsCarry out reactive streams programming in Android Who This Book Is For Experienced Java programmers.

Microservices for the Enterprise - Kasun Indrasiri 2018-11-14
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 LearnDesign 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

Scala in Action - Nilanjan Raychaudhuri 2013-04-08

Summary Scala in Action is a comprehensive tutorial that introduces Scala through clear explanations and numerous hands-on examples. Because Scala is a rich and deep language, it can be daunting to absorb all the new concepts at once. This book takes a "how-to" approach, explaining language concepts as you explore familiar programming challenges that you face in your day-to-day work. About the Technology Scala runs on the JVM and combines object-orientation with functional programming. It's designed to produce succinct, type-safe code, which is crucial for enterprise applications. Scala implements Actor-based concurrency through the amazing Akka framework, so you can avoid Java's messy threading while interacting seamlessly with Java. About this Book Scala in Action is a comprehensive tutorial that introduces the language through clear explanations and numerous hands-on examples. It takes a "how to" approach, explaining language concepts as you explore familiar programming tasks. You'll tackle concurrent programming in Akka, learn to work with Scala and Spring, and learn how to build DSLs and other productivity tools. You'll learn both the language and how to use it. Experience with Java is helpful but not required. Ruby and Python programmers will also find this book accessible. What's Inside A Scala tutorial How to use Java and Scala open source libraries How to use SBT Test-driven development Debugging Updated for Scala 2.10 Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Author Nilanjan Raychaudhuri is a skilled developer, speaker, and an avid polyglot programmer who works with Scala on production systems. Table of Contents PART 1 SCALA: THE BASICS Why Scala? Getting started OOP in Scala Having fun with functional data structures Functional programming PART 2 WORKING WITH SCALA Building web applications in functional style Connecting to a database Building scalable and extensible components Concurrency programming in Scala Building confidence with testing PART 3 ADVANCED STEPS Interoperability between Scala and Java Scalable and distributed applications using Akka

Play for Scala - Peter Hilton 2013-10-03
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

Java: High-Performance Apps with Java 9 - Mayur Ramgir 2018-03-13
Optimize the powerful techniques of Java 9 to boost your application's performance Key Features Tackle all kinds of performance-related issues and streamline your development Dive into the new features of Java 9 Implement highly efficient and reliable codes with the help of new APIs of Java Embedded with assessments that will help you revise the concepts you have learned in this book Book Description Java 9 which is one of the most popular application development languages. The latest released version Java 9 comes with a host

of new features and new APIs with lots of ready to use components to build efficient and scalable applications. Streams, parallel and asynchronous processing, multithreading, JSON support, reactive programming, and microservices comprise the hallmark of modern programming and are now fully integrated into the JDK. This book focuses on providing quick, practical solutions to enhance your application's performance. You will explore the new features, APIs, and various tools added in Java 9 that help to speed up the development process. You will learn about jshell, Ahead-of-Time (AOT) compilation, and the basic threads related topics including sizing and synchronization. You will also explore various strategies for building microservices including container-less, self-contained, and in-container. This book is ideal for developers who would like to build reliable and high-performance applications with Java. This book is embedded with useful assessments that will help you revise the concepts you have learned in this book. What you will learn Familiarize with modular development and its impact on performance Learn various string-related performance improvements, including compact string and modify string concatenation Explore various underlying compiler improvements, such as tiered attribution and Ahead-of-Time (AOT) compilation Learn security manager improvements Understand enhancements in graphics rasterizers Use of command-line tools to speed up application development Learn how to implement multithreading and reactive programming Build microservices in Java 9 Implement APIs to improve application code Who this book is for This book is targeted at developers who would like to build reliable and high-performance applications with Java.

Programming in Scala - Martin Odersky 2008
Presents an introduction to the new programming language for the Java Platform.

Hands-On Reactive Programming in Spring 5 - Oleh Dokuka 2018-10-08
Explore the reactive system and create efficient microservices with Spring Boot 2.1 and Spring Cloud Key Features Understand the kind of system modern businesses require with Spring Gain deeper insights into reactive programming with Reactor and Spring Cloud Get in-depth knowledge on asynchronous and nonblocking communication with Spring 5 WebFlux Book Description These days, businesses need a new type of system that can remain responsive at all times. This is achievable with reactive programming; however, the development of these kinds of systems is a complex task, requiring a deep understanding of the domain. In order to develop highly responsive systems, the developers of the Spring Framework came up with Project Reactor. Hands-On Reactive Programming in Spring 5 begins with the fundamentals of Spring Reactive programming. You'll explore the endless possibilities of building efficient reactive systems with the Spring 5 Framework along with other tools such as WebFlux and Spring Boot. Further on, you'll study reactive programming techniques and apply them to databases and cross-server communication. You will advance your skills in scaling up Spring Cloud Streams and run independent, high-performant reactive microservices. By the end of the book, you will be able to put your skills to use and get on board with the reactive revolution in Spring 5.1! What you will learn Discover the difference between a reactive system and reactive programming Explore the benefits of a reactive system and understand its applications Get to grips with using reactive programming in Spring 5 Gain an understanding of Project Reactor Build a reactive system using Spring 5 and Project Reactor Create a highly efficient reactive microservice with Spring Cloud Test, monitor, and release reactive applications Who this book is for This book is for Java developers who use Spring to develop their applications and want to build robust and reactive applications that can scale in the cloud. Basic knowledge of distributed systems and asynchronous programming will help you understand the concepts covered in this book.

Mastering Play Framework for Scala - Shiti Saxena 2015-05-29
This book is intended for those developers who are keen to master the internal workings of Play Framework to effectively build and deploy web-related apps.

Lift in Action - Tim Perrett 2011-11-17
Summary Lift in Action is a step-by-step exploration of the Lift framework. It moves through the subject quickly using carefully crafted, well-explained examples that make you comfortable from the start. This book is written for developers who are new to both Scala and Lift. About the Technology Lift is a Scala-based web framework designed for extremely interactive and engaging web applications. It's highly scalable, production-ready, and will run in any servlet container. And Lift's convention-over-configuration

approach lets you avoid needless work. About this Book Lift in Action is a step-by-step exploration of the Lift framework. It moves through the subject quickly using carefully crafted, well-explained examples that make you comfortable from the start. You'll follow an entertaining Travel Auction application that covers the core concepts and shows up architectural and development strategies. Handy appendixes offer a Scala crash course and guidance for setting up a good coding environment. This book is written for developers who are new to both Scala and Lift and covers just enough Scala to get you started. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside Complete coverage of the Lift framework Security, maintainability, and performance Integration and scaling Covers Lift 2.x Table of Contents PART 1 GETTING STARTED Introducing Lift Hello Lift PART 2 APPLICATION TUTORIAL The auction application Customers, auctions, and bidding Shopping basket and checkout PART 3 LIFT IN DETAIL Common tasks with Lift WebKit SiteMap and access control HTTP in Lift AJAX, wiring, and Comet Persistence with Mapper Persistence with Record

Java Testing with Spock - Konstantinos Kapelonis 2016-03-06
Summary Java Testing with Spock teaches you how to use Spock for a wide range of testing use cases in Java. Readers new to Groovy will appreciate the succinct language tutorial that'll give you just enough Groovy to use Spock effectively. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Spock combines the features of tools like JUnit, Mockito, and JBehave into a single powerful Java testing library. With Spock, you use Groovy to write more readable and concise tests. Spock enables seamless integration testing, and with the intuitive Geb library, you can even handle functional testing of web applications. About the Book Java Testing with Spock teaches you how to use Spock for a wide range of testing use cases in Java. You'll start with a quick overview of Spock and work through writing unit tests using the Groovy language. You'll discover best practices for test design as you learn to write mocks, implement integration tests, use Spock's built-in BDD testing tools, and do functional web testing using Geb. Readers new to Groovy will appreciate the succinct language tutorial in chapter 2 that gives you just enough Groovy to use Spock effectively. What's Inside Testing with Spock from the ground up Write mocks without an external library BDD tests your business analyst can read Just enough Groovy to use Spock About the Reader Written for Java developers. Knowledge of Groovy and JUnit is helpful but not required. About the Author Konstantinos Kapelonis is a software engineer who works with Java daily. Table of Contents PART 1 FOUNDATIONS AND BRIEF TOUR OF SPOCK Introducing the Spock testing framework Groovy knowledge for Spock testing A tour of Spock functionality PART 2 STRUCTURING SPOCK TESTS Writing unit tests with Spock Parameterized tests Mocking and stubbing PART 3 SPOCK IN THE ENTERPRISE Integration and functional testing with Spock Spock features for enterprise testing

Learn Scala Programming - Slava Schmidt 2018-10-31
A step-by-step guide in building high-performance scalable applications with the latest features of Scala. Key FeaturesDevelop a strong foundation in functional programming and Scala's Standard Library (STL)Get a detailed coverage of Lightbend Lagom—the latest microservices framework from LightbendUnderstand the Akka framework and learn event-based Programming with Scala Book Description The second version of Scala has undergone multiple changes to support features and library implementations. Scala 2.13, with its main focus on modularizing the standard library and simplifying collections, brings with it a host of updates. Learn Scala Programming addresses both technical and architectural changes to the redesigned standard library and collections, along with covering in-depth type systems and first-level support for functions. You will discover how to leverage implicits as a primary mechanism for building type classes and look at different ways to test Scala code. You will also learn about abstract building blocks used in functional programming, giving you sufficient understanding to pick and use any existing functional programming library out there. In the concluding chapters, you will explore reactive programming by covering the Akka framework and reactive streams. By the end of this book, you will have built microservices and learned to implement them with the Scala and Lagom framework. What you will learnAcquaint yourself with the new standard library of Scala 2.13Get to grips with the Grok functional paradigmsGet familiar with type system to express domain constraintsUnderstand the actor model and

different Akka librariesGrasp the concept of building microservices using Lagom frameworkDeep dive into property-based testing and its practical applicationsWho this book is for This book is for beginner to intermediate level Scala developers who would like to advance and gain knowledge of the intricacies of the Scala language, expand their functional programming tools, and explore actor-based concurrency models.

Effective Akka - Jamie Allen 2013-08-15
Avoid common mistakes when building distributed, asynchronous, high-performance software with the Akka toolkit and runtime. With this concise guide, author Jamie Allen provides a collection of best practices based on several years of using the actor model. The book also includes examples of actor application types and two primary patterns of actor usage, the Extra Pattern and Cameo Pattern. Allen, the Director of Consulting for Typesafe—creator of Akka and the Scala programming language—examines actors with a banking-service use case throughout the book, using examples shown in Akka and Scala. If you have any experience with Akka, this guide is essential. Delve into domain-driven and work-distribution actor applications Understand why it's important to have actors do only one job Avoid thread blocking by allowing logic to be delegated to a Future Model interactions as simply as possible to avoid premature optimization Create well-defined interactions, and know exactly what failures can occur Learn why you should never treat actors as you would an ordinary class Keep track of what goes on in production by monitoring everything Tune Akka applications with the Typesafe Console

Mastering Functional Programming - Anatolii Kmetiuk 2018-08-31
In large projects, programmers tend to get overwhelmed by their complexity. It can be hard to keep track of all the interdependencies in the code-base and how its state changes on runtime. The solution to these problems is Functional Programming, a paradigm specifically designed to deal with the complexity of software development. Mastering ...

Functional Programming in Scala - Paul Chiusano 2014-09-01
Summary Functional Programming in Scala is a serious tutorial for programmers looking to learn FP and apply it to the everyday business of coding. The book guides readers from basic techniques to advanced topics in a logical, concise, and clear progression. In it, you'll find concrete examples and exercises that open up the world of functional programming. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Functional programming (FP) is a style of software development emphasizing functions that don't depend on program state. Functional code is easier to test and reuse, simpler to parallelize, and less prone to bugs than other code. Scala is an emerging JVM language that offers strong support for FP. Its familiar syntax and transparent interoperability with Java make Scala a great place to start learning FP. About the Book Functional Programming in Scala is a serious tutorial for programmers looking to learn FP and apply it to their everyday work. The book guides readers from basic techniques to advanced topics in a logical, concise, and clear progression. In it, you'll find concrete examples and exercises that open up the world of functional programming. This book assumes no prior experience with functional programming. Some prior exposure to Scala or Java is helpful. What's Inside Functional programming concepts The whys and hows of FP How to write multicore programs Exercises and checks for understanding About the Authors Paul Chiusano and Rúnar Bjarnason are recognized experts in functional programming with Scala and are core contributors to the Scalaz library. Table of Contents PART 1 INTRODUCTION TO FUNCTIONAL PROGRAMMING What is functional programming? Getting started with functional programming in Scala Functional data structures Handling errors without exceptions Strictness and laziness Purely functional state PART 2 FUNCTIONAL DESIGN AND COMBINATOR LIBRARIES Purely functional parallelism Property-based testing Parser combinators PART 3 COMMON STRUCTURES IN FUNCTIONAL DESIGN Monoids Monads Applicative and traversable functors PART 4 EFFECTS AND I/O External effects and I/O Local effects and mutable state Stream processing and incremental I/O

Big Data SMACK - Raul Estrada 2016-09-29
Learn how to integrate full-stack open source big data architecture and to choose the correct technology—Scala/Spark, Mesos, Akka, Cassandra, and Kafka—in every layer. Big data architecture is becoming a requirement for many different enterprises. So far, however, the focus has largely been on collecting, aggregating, and crunching large data sets in a timely manner. In many cases now,

organizations need more than one paradigm to perform efficient analyses. Big Data SMACK explains each of the full-stack technologies and, more importantly, how to best integrate them. It provides detailed coverage of the practical benefits of these technologies and incorporates real-world examples in every situation. This book focuses on the problems and scenarios solved by the architecture, as well as the solutions provided by every technology. It covers the six main concepts of big data architecture and how integrate, replace, and reinforce every layer: The language: Scala The engine: Spark (SQL, MLib, Streaming, GraphX) The container: Mesos, Docker The view: Akka The storage: Cassandra The message broker: Kafka What You Will Learn: Make big data architecture without using complex Greek letter architectures Build a cheap but effective cluster infrastructure Make queries, reports, and graphs that business demands Manage and exploit unstructured and No-SQL data sources Use tools to monitor the performance of your architecture Integrate all technologies and decide which ones replace and which ones reinforce Who This Book Is For: Developers, data architects, and data scientists looking to integrate the most successful big data open stack architecture and to choose the correct technology in every layer

Reactive Web Applications - Manuel Bernhardt 2016-06-27
Summary Reactive Web Applications teaches web developers how to benefit from the reactive application architecture and presents hands-on examples using the Play framework. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Reactive applications build on top of components that communicate asynchronously as they react to user and system events. As a result, they become scalable, responsive, and fault-tolerant. Java and Scala developers can use the Play Framework and the Akka concurrency toolkit to easily implement reactive applications without building everything from scratch. About the Book Reactive Web Applications teaches web developers how to benefit from the reactive application architecture and presents hands-on examples using Play, Akka, Scala, and Reactive Streams. This book starts by laying out the fundamentals required for writing functional and asynchronous applications and quickly introduces Play as a framework to handle the plumbing of your application. The book alternates between chapters that introduce reactive ideas (asynchronous programming with futures and actors, managing distributed state with CQRS) and practical examples that show you how to build these ideas into your applications. What's Inside Reactive application architecture Basics of Play and Akka Examples in Scala Functional and asynchronous programming About Reader Description For readers comfortable programming with a higher-level language such as Java or C#, and who can read Scala code. No experience with Play or Akka needed. About the Author Manuel Bernhardt is a passionate engineer, author, and speaker. As a consultant, he guides companies through the technological and organizational transformation to distributed computing. Table of Contents PART 1 GETTING STARTED WITH REACTIVE WEB APPLICATIONS Did you say reactive? Your first reactive web application Functional programming primer Quick introduction to Play PART 2 CORE CONCEPTS Futures Actors Dealing with state Responsive user interfaces PART 3 ADVANCED TOPICS Reactive Streams Deploying reactive Play applications Testing reactive web applications

Functional and Reactive Domain Modeling - Debasish Ghosh 2016-10-04
Summary Functional and Reactive Domain Modeling teaches you how to think of the domain model in terms of pure functions and how to compose them to build larger abstractions. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Traditional distributed applications won't cut it in the reactive world of microservices, fast data, and sensor networks. To capture their dynamic relationships and dependencies, these systems require a different approach to domain modeling. A domain model composed of pure functions is a more natural way of representing a process in a reactive system, and it maps directly onto technologies and patterns like Akka, CQRS, and event sourcing. About the Book Functional and Reactive Domain Modeling teaches you consistent, repeatable techniques for building domain models in reactive systems. This book reviews the relevant concepts of FP and reactive architectures and then methodically introduces this new approach to domain modeling. As you read, you'll learn where and how to apply it, even if your systems aren't purely reactive or functional. An expert blend of theory and practice, this book presents strong examples you'll return to again and again as you apply these principles to your own projects. What's Inside Real-world libraries and frameworks Establish meaningful reliability guarantees Isolate domain logic from side effects

Introduction to reactive design patterns About the Reader Readers should be comfortable with functional programming and traditional domain modeling. Examples use the Scala language. About the Author Software architect Debasish Ghosh was an early adopter of reactive design using Scala and Akka. He's the author of DSLs in Action, published by Manning in 2010. Table of Contents Functional domain modeling: an introduction Scala for functional domain models Designing functional domain models Functional patterns for domain models Modularization of domain models Being reactive Modeling with reactive streams Reactive persistence and event sourcing Testing your domain model Summary - core thoughts and principles

Reactive Application Development - Duncan K. DeVore 2018-05-26
Summary Reactive Application Development is a hands-on guide that teaches you how to build reliable enterprise applications using reactive design patterns. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. Foreword by Jonas Bonér, Creator of Akka About the Technology Mission-critical applications have to respond instantly to changes in load, recover gracefully from failure, and satisfy exacting requirements for performance, cost, and reliability. That's no small task! Reactive designs make it easier to meet these demands through modular, message-driven architecture, innovative tooling, and cloud-based infrastructure. About the Book Reactive Application Development teaches you how to build reliable enterprise applications using reactive design patterns. This hands-on guide begins by exposing you to the reactive mental model, along with a survey of core technologies like the Akka actors framework. Then, you'll build a proof-of-concept system in Scala, and learn to use patterns like CQRS and Event Sourcing. You'll master the principles of reactive design as you implement elasticity and resilience, integrate with traditional architectures, and learn powerful testing techniques. What's Inside Designing elastic domain models Building fault-tolerant systems Efficiently handling large data volumes Examples can be built in Scala or Java About the Reader Written for Java or Scala programmers familiar with distributed application designs. About the Author Duncan DeVore, Sean Walsh, and Brian Hanafee are seasoned architects with experience building and deploying reactive systems in production. Table of Contents PART 1 - FUNDAMENTALS What is a reactive application? Getting started with Akka Understanding Akka PART 2 - BUILDING A REACTIVE APPLICATION Mapping from domain to toolkit Domain-driven design Using remote actors Reactive streaming CQRS and Event Sourcing A reactive interface Production readiness

Learn Java for Web Development - Vishal Layka 2014-02-15
AngularJS is the leading framework for building dynamic JavaScript applications that take advantage of the capabilities of modern browsers and devices. AngularJS, which is maintained by Google, brings the power of the Model-View-Controller (MVC) pattern to the client, providing the foundation for complex and rich web apps. It allows you to build applications that are smaller, faster, and with a lighter resource footprint than ever before.Best-selling author Adam Freeman explains how to get the most from AngularJS. He begins by describing the MVC pattern and the many benefits that can be gained...

Reactive Messaging Patterns with the Actor Model - Vaughn Vernon 2015-07-13
USE THE ACTOR MODEL TO BUILD SIMPLER SYSTEMS WITH BETTER PERFORMANCE AND SCALABILITY Enterprise software development has been much more difficult and failure-prone than it needs to be. Now, veteran software engineer and author Vaughn Vernon offers an easier and more rewarding method to succeeding with Actor model. Reactive Messaging Patterns with the Actor Model shows how the reactive enterprise approach, Actor model, Scala, and Akka can help you overcome previous limits of performance and scalability, and skillfully address even the most challenging non-functional requirements. Reflecting his own cutting-edge work, Vernon shows architects and developers how to translate the longtime promises of Actor model into practical reality. First, he introduces the tenets of reactive software, and shows how the message-driven Actor model addresses all of them–making it possible to build systems that are more responsive, resilient, and elastic. Next, he presents a practical Scala bootstrap tutorial, a thorough introduction to Akka and Akka Cluster, and a full chapter on maximizing performance and scalability with Scala and Akka. Building on this foundation, you'll learn to apply enterprise application and integration patterns to establish message channels and endpoints; efficiently construct, route, and transform messages; and build robust systems that are simpler and far more

successful. Coverage Includes How reactive architecture replaces complexity with simplicity throughout the core, middle, and edges The characteristics of actors and actor systems, and how Akka makes them more powerful Building systems that perform at scale on one or many computing nodes Establishing channel mechanisms, and choosing appropriate channels for each application and integration challenge Constructing messages to clearly convey a sender's intent in communicating with a receiver Implementing a Process Manager for your Domain-Driven Designs Decoupling a message's source and destination, and integrating appropriate business logic into its router Understanding the transformations a message may experience in applications and integrations Implementing persistent actors using Event Sourcing and reactive views using CQRS Find unique online training on Domain-Driven Design, Scala, Akka, and other software craftsmanship topics using the for{comprehension} website at forcomprehension.com.

Scala for Java Developers - Thomas Alexandre 2014-04-25
This step-by-step guide is full of easy-to-follow code taken from real-world examples explaining the migration and integration of Scala in a Java project. If you are a Java developer or a Java architect, working in Java EE-based solutions and want to start using Scala in your daily programming, this book is ideal for you. This book will get you up and running quickly by adopting a pragmatic approach with real-world code samples. No prior knowledge of Scala is required.

Akka Cookbook - Hector Veiga Ortiz 2017-05-26
Learn how to use the Akka framework to build effective applications in Scala About This Book Covers a discussion on Lagom—the newest launched Akka framework that is built to create complex microservices easily The recipe approach of the book allows the reader to know important and independent concepts of Scala and Akka in a seamless manner Provides a comprehensive understanding of the Akka actor model and implementing it to create reactive web applications Who This Book Is For If you are a Scala developer who wants to build scalable and concurrent applications, then this book is for you. Basic knowledge of Akka will help you take advantage of this book. What You Will Learn Control an actor using the ContolAware mailbox Test a fault-tolerant application using the Akka test kit Create a parallel application using futures and agents Package and deploy Akka application inside Docker Deploy remote actors programmatically on different nodes Integrate Streams with Akka actors Install Lagom and create a Lagom project In Detail Akka is an open source toolkit that simplifies the construction of distributed and concurrent applications on the JVM. This book will teach you how to develop reactive applications in Scala using the Akka framework. This book will show you how to build concurrent, scalable, and reactive applications in Akka. You will see how to create high performance applications, extend applications, build microservices with Lagom, and more. We will explore Akka's actor model and show you how to incorporate concurrency into your applications. The book puts a special emphasis on performance improvement and how to make an application available for users. We also make a special mention of message routing and construction. By the end of this book, you will be able to create a high-performing Scala application using the Akka framework. Style and approach This highly practical recipe-based approach will allow you to build scalable, robust, and reactive applications using the Akka framework.

Pragmatic Scala - Venkat Subramaniam 2015-09-10
Our industry is moving toward functional programming, but your object-oriented experience is still valuable. Scala combines the power of OO and functional programming, and Pragmatic Scala shows you how to work effectively with both. Updated to Scala 2.11, with in-depth coverage of new features such as Akka actors, parallel collections, and tail call optimization, this book will show you how to create stellar applications. The first edition of this book was released as Programming Scala. Our industry is moving toward functional programming, but your object-oriented experience is still valuable. Scala combines the power of OO and functional programming, and Pragmatic Scala shows you how to work effectively with both. Updated to Scala 2.11, with in-depth coverage of new features such as Akka actors, parallel collections, and tail call optimization, this book will show you how to create stellar applications. This thorough introduction to Scala will get you coding in this powerful language right away. You'll start from the familiar ground of Java and, with easy-to-follow examples, you'll learn how to create highly concise and expressive applications with Scala. You'll find out when and how to mix both imperative and functional style, and how to use parallel collections and Akka actors to create high-performance concurrent

applications that effectively use multicore processors. Scala has evolved since the first edition of this book, and Pragmatic Scala is a significant update. We've revised each chapter, and added three new chapters and six new sections to explore the new features in Scala. You'll learn how to: Safely manage concurrency with parallel collections and Akka actors Create expressive readable code with value classes and improved implicit conversions Create strings from data with no sweat using string interpolation Create domain-specific languages Optimize your recursions with tail call optimization Whether you're interested in creating concise, robust single-threaded applications or highly expressive, thread-safe concurrent programs, this book has you covered. What You Need: The Scala compiler (2.x) and the JDK are required to make use of the concepts and the examples in this book.

Reactive Design Patterns - Jamie Allen 2017-02-21
Summary Reactive Design Patterns is a clearly written guide for building message-driven distributed systems that are resilient, responsive, and elastic. In this book you'll find patterns for messaging, flow control, resource management, and concurrency, along with practical issues like test-friendly designs. All patterns include concrete examples using Scala and Akka. Foreword by Jonas Bonér. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Modern web applications serve potentially vast numbers of users - and they need to keep working as servers fail and new ones come online, users overwhelm limited resources, and information is distributed globally. A Reactive application adjusts to partial failures and varying loads, remaining responsive in an ever-changing distributed environment. The secret is message-driven architecture - and design patterns to organize it. About the Book Reactive Design Patterns presents the principles, patterns, and best practices of Reactive application design. You'll learn how to keep one slow component from bogging down others with the Circuit Breaker pattern, how to shepherd a many-staged transaction to completion with the Saga pattern, how to divide datasets by Sharding, and more. You'll even see how to keep your source code readable and the system testable despite many potential interactions and points of failure. What's Inside The definitive guide to the Reactive Manifesto Patterns for flow control, delimited consistency, fault tolerance, and much more Hard-won lessons about what doesn't work Architectures that scale under tremendous load About the Reader Most examples use Scala, Java, and Akka. Readers should be familiar with distributed systems. About the Author Dr. Roland Kuhn led the Akka team at Lightbend and coauthored the Reactive Manifesto. Brian Hanafee and Jamie Allen are experienced distributed systems architects. Table of Contents PART 1 - INTRODUCTION Why Reactive? A walk-through of the Reactive Manifesto Tools of the trade PART 2 - THE PHILOSOPHY IN A NUTSHELL Message passing Location transparency Divide and conquer Principled failure handling Delimited consistency Nondeterminism by need Message flow PART 3 - PATTERNS Testing reactive applications Fault tolerance and recovery patterns Replication patterns Resource-management patterns Message flow patterns Flow control patterns State management and persistence patterns

Modern Java in Action - Raoul-Gabriel Urma 2018-09-26
Summary Manning's bestselling Java 8 book has been revised for Java 9! In Modern Java in Action, you'll build on your existing Java language skills with the newest features and techniques. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Modern applications take advantage of innovative designs, including microservices, reactive architectures, and streaming data. Modern Java features like lambdas, streams, and the long-awaited Java Module System make implementing these designs significantly easier. It's time to upgrade your skills and meet these challenges head on! About the Book Modern Java in Action connects new features of the Java language with their practical applications. Using crystal-clear examples and careful attention to detail, this book respects your time. It will help you expand your existing knowledge of core Java as you master modern additions like the Streams API and the Java Module System, explore new approaches to concurrency, and learn how functional concepts can help you write code that's easier to read and maintain. What's inside Thoroughly revised edition of Manning's bestselling Java 8 in Action New features in Java 8, Java 9, and beyond Streaming data and reactive programming The Java Module System About the Reader Written for developers familiar with core Java features. About the Author Raoul-Gabriel Urma is CEO of Cambridge Spark. Mario Fusco is a senior software engineer at Red Hat. Alan Mycroft is a University of Cambridge

computer science professor; he cofounded the Raspberry Pi Foundation. Table of Contents PART 1 - FUNDAMENTALS Java 8, 9, 10, and 11: what's happening? Passing code with behavior parameterization Lambda expressions PART 2 - FUNCTIONAL-STYLE DATA PROCESSING WITH STREAMS Introducing streams Working with streams Collecting data with streams Parallel data processing and performance PART 3 - EFFECTIVE PROGRAMMING WITH STREAMS AND LAMBDAS Collection API enhancements Refactoring, testing, and debugging Domain-specific languages using lambdas PART 4 - EVERYDAY JAVA Using Optional as a better alternative to null New Date and Time API Default methods The Java Module System PART 5 - ENHANCED JAVA CONCURRENCY Concepts behind CompletableFuture and reactive programming CompletableFuture: composable asynchronous programming Reactive programming PART 6 - FUNCTIONAL PROGRAMMING AND FUTURE JAVA EVOLUTION Thinking functionally Functional programming techniques Blending OOP and FP: Comparing Java and Scala Conclusions and where next for Java

Play Framework Essentials - Julien Richard-Foy 2014-09-25
This book targets Java and Scala developers who already have some experience in web development and who want to master Play framework quickly and efficiently. This book assumes you have a good level of knowledge and understanding of efficient Java and Scala code.

Programming Scala - Dean Wampler 2014-12-04
Get up to speed on Scala, the JVM language that offers all the benefits of a modern object model, functional programming, and an advanced type system. Packed with code examples, this comprehensive book shows you how to be productive with the language and ecosystem right away, and explains why Scala is ideal for today's highly scalable, data-centric applications that support concurrency and distribution. This second edition covers recent language features, with new chapters on pattern matching, comprehensions, and advanced functional programming. You'll also learn about Scala's command-line tools, third-party tools, libraries, and language-aware plugins for editors and IDEs. This book is ideal for beginning and advanced Scala developers alike. Program faster with Scala's succinct and flexible syntax Dive into basic and advanced functional programming (FP) techniques Build killer big-data apps, using Scala's functional combinators Use traits for mixin composition and pattern matching for data extraction Learn the sophisticated type system that combines FP and object-oriented programming concepts Explore Scala-specific concurrency tools, including Akka Understand how to develop rich domain-specific languages Learn good design techniques for building scalable and robust Scala applications

Mastering Akka - Christian Baxter 2016-10-21
Master the art of creating scalable, concurrent, and reactive applications using Akka About This Book This book will help you cure anemic models with domain-driven design We cover major Akka programming concepts such as concurrency, scalability, and reactivity You will learn concepts like Event Sourcing and CQRS via Akka Persistence, Akka Streams, Akka Http as well as Akka Clustering Who This Book Is For If you want to use the Lightbend platform to create highly performant reactive applications, then this book is for you. If you are a Scala developer looking for techniques to use all features of the new Akka release and want to incorporate these solutions in your current or new projects, then this book is for you. Expert Java developers who want to build scalable, concurrent, and reactive application will find this book helpful. What You Will Learn Use Akka actors to enable parallel execution Build out domain-driven design based components like entities and aggregates Respond to command requests on that aggregate root that affect the internal state Leverage Akka Persistence, protobuf and Cassandra to save the persistent state of you entities Build out complex processing graphs with the Graph Builder DSL Understand the dynamic push/pull nature of backpressure handling within Akka Streams Route HTTP requests to an actor and return a response Deploy actor instances across a set of nodes via ConductR for high availability In Detail For a programmer, writing multi-threaded applications is critical as it is important to break large tasks into smaller ones and run them simultaneously. Akka is a distributed computing toolkit that uses the abstraction of the Actor model, enabling developers to build correct, concurrent, and distributed applications using Java and Scala with ease. The book begins with a quick introduction that simplifies concurrent programming with actors. We then proceed to master all aspects of domain-driven design. We'll teach you how to scale out with Akka Remoting/Clustering. Finally, we introduce Conductr as a means to deploy to

and manage microservices across a cluster. Style and approach This comprehensive, fast-paced guide is packed with several real-world use cases that will help you understand concepts, issues, and resolutions while using Akka to create highly performant, scalable, and concurrency-proof reactive applications.

Spring Start Here - Laurentiu Spilca 2021-11-02
"Spring Start Here teaches Java developers how to build applications using Spring framework. Informative graphics, relevant examples, and author Laurenţiu Spilcă's clear and lively writing make it easy to pick up the skills you need. You'll discover how to plan, write, and test applications. And by concentrating on the most important features, this no-nonsense book gives you a firm foundation for exploring Spring's rich ecosystem"--Back cover.

Scala Programming Projects - Mikael Valot 2018-09-29
Discover unique features and powerful capabilities of Scala Programming as you build projects in a wide range of domains Key FeaturesDevelop a range of Scala projects from web applications to big data analysisLeverage full power of modern web programming using Play FrameworkBuild real-time data pipelines in Scala with a Bitcoin transaction analysis appBook Description Scala is a type-safe JVM language that incorporates object-oriented and functional programming (OOP and FP) aspects. This book gets you started with essentials of software development by guiding you through various aspects of Scala programming, helping you bridge the gap between learning and implementing. You will learn about the unique features of Scala through diverse applications and experience simple yet powerful approaches for software development. Scala Programming Projects will help you build a number of applications, beginning with simple projects, such as a financial independence calculator, and advancing to other projects, such as a shopping application and a Bitcoin transaction analyzer. You will be able to use various Scala features, such as its OOP and FP capabilities, and learn how to write concise, reactive, and concurrent applications in a type-safe manner. You will also learn how to use top-notch libraries such as Akka and Play and integrate Scala apps with Kafka, Spark, and Zeppelin, along with deploying applications on a cloud platform. By the end of the book, you will not only know the ins and outs of Scala, but you will also be able to apply it to solve a variety of real-world problems What you will learnBuild, test, and package code using Scala Build ToolDecompose code into functions, classes, and packages for maintainabilityImplement the functional programming capabilities of ScalaDevelop a simple CRUD REST API using the Play frameworkAccess a relational database using SlickDevelop a dynamic web UI using Scala.jsSource streaming data using Spark Streaming and write a Kafka producerUse Spark and Zeppelin to analyze dataWho this book is for If you are an amateur programmer who wishes to learn how to use Scala, this book is for you. Knowledge of Java will be beneficial, but not necessary, to understand the concepts covered in this book.

Hands-On Spring Security 5 for Reactive Applications - Tomcy John 2018-07-31
Secure your Java applications by integrating the Spring Security framework in yours code Key Features Provide authentication, authorization and other security features for Java applications. Learn how to secure microservices, cloud, and serverless applications easily Understand the code behind the implementation of various security features Book Description Security is one of the most vital concerns for any organization. The complexity of an application is compounded when you need to integrate security with existing code, new technology, and other frameworks. This book will show you how to effectively write Java code that is robust and easy to maintain. Hands-On Spring Security 5 for Reactive Applications starts with the essential concepts of reactive programming, Spring Framework, and Spring Security. You will then learn about a variety of authentication mechanisms and how to integrate them easily with the Spring MVC application. You will also understand how to achieve authorization in a Spring WebFlux application using Spring Security.You will be able to explore the security confgurations required to achieve OAuth2 for securing REST APIs and integrate security in microservices and serverless applications. This book will guide you in integrating add-ons that will add value to any Spring Security module. By the end of the book, you will be proficient at integrating Spring Security in your Java applications What you will learn Understand how Spring Framework and Reactive application programming are connected Implement easy security confgurations with Spring Security expressions Discover the relationship between OAuth2 and OpenID Connect Secure microservices and serverless applications with Spring Integrate add-ons, such as HDIV,

Crypto Module, and CORS support Apply Spring Security 5 features to enhance your Java reactive applications Who this book is for If you are a Java developer who wants to improve application security, then this book is for you. A basic understanding of Spring, Spring Security framework, and reactive applications is required to make the most of the book.

Lagom: the Definitive Guide - Lutz Huehnken 2019-10-05

The Lagom Framework is a modern approach to microservices on the JVM, built according to the principles of the Reactive Manifesto, allowing you to write resilient microservices that scale. This book takes Java and Scala developers step-by-step through the development of your first microservice-based system with Lagom, from setting up your development environment to running Lagom services in production. You'll be introduced to the Lagom persistence API, which offers a guide-railed approach to Event Sourcing and CQRS. Furthermore, you'll learn about asynchronous communication between microservices, some common design patterns for asynchronous systems, and how to solve common problems like versioning and schema evolution in Lagom.

Scala Microservices - Pranjut Gogoi 2016-10-31

Use the reactive approach to build mission critical distributed systems with ScalaAbout This Book*Work through real-world examples that can be directly used at the start of the application*Get a complete coverage of all stages of the development processes of building microservices with Scala*Get a comprehensive analysis of the critical aspects of microservice architecture designWho This Book Is ForIf you're already using Scala but want to get up and running with microservices, then this book is for you.

Basic knowledge of Scala is a must.What You Will Learn*Perfect your domain-driven design for microservices*Solve critical problems in database configuration*Perk up your security and configure your app for the cloud*Familiarize yourself with anti-patterns to avoid common mistakes*Transform your monolithic apps to microservices*Test resilience of microservice using Simian Army*Deploy microservices using Docker and other CI toolsIn DetailMicroservices provide several advantages over the traditional monolith architecture. Today's applications have become increasingly complex and Microservices offer the perfect solution when building these applications, especially when combined with Scala.Building a microservice-based architecture is tricky and implementing it in your apps can be challenging. Scala Microservices will equip you with the tools and skills required to build efficient scalable systems. We take you through a reactive approach to building apps using the typesafe (lightbend) technology stack.You will learn to choose the right architecture patterns and appropriate approach depending on your requirements. We have also included important real-world examples, covering crucial topics such as database design and security. The book also shows you how to test and deploy your app using the right tools. Finally, we will take a look at converting a monolithic system into a distributed system to make your life a whole lot easier.

Hands-on Scala Programming: Learn Scala in a Practical, Project-Based Way - Haoyi Li 2020-07-11

Hands-on Scala teaches you how to use the Scala programming language in a practical, project-based fashion. This book is designed to quickly teach an existing programmer everything needed to go from "hello world" to building production applications like interactive websites, parallel web crawlers, and distributed systems in Scala. In the process you will learn how to use the Scala language to solve challenging problems in an elegant and intuitive manner.