

Scala For Java Developers

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.

Summary Making Java Groovy is a practical handbook for developers who want to blend Groovy into their day-to-day work with Java. It starts by introducing the key differences between Java and Groovy—and how you can use them to your advantage. Then, it guides you step-by-step through realistic development challenges, from web applications to web services to desktop applications, and shows how Groovy makes them easier to put into production.

About this Book You don't need the full force of Java when you're writing a build script, a simple system utility, or a lightweight web app—but that's where Groovy shines brightest. This elegant JVM-based dynamic language extends and simplifies Java so you can concentrate on the task at hand instead of managing minute details and unnecessary complexity.

Making Java Groov is a practical guide for developers who want to benefit from Groovy in their work with Java. It starts by introducing the key differences between Java and Groovy and how to use them to your advantage. Then, you'll focus on the situations you face every day, like consuming and creating RESTful web services, working with databases, and using the Spring framework. You'll also explore the great Groovy tools for build processes, testing, and

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deployment and learn how to write Groovy-based domain-specific languages that simplify Java development. Written for developers familiar with Java. No Groovy experience required. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What's Inside Easier Java Closures, builders, and metaprogramming Gradle for builds, Spock for testing Groovy frameworks like Grails and Griffon About the Author Ken Kousen is an independent consultant and trainer specializing in Spring, Hibernate, Groovy, and Grails. Table of Contents PART 1: UP TO SPEED WITH GROOVY Why add Groovy to Java? Groovy by example Code-level integration Using Groovy features in Java PART 2: GROOVY TOOLS Build processes Testing Groovy and Java projects PART 3: GROOVY IN THE REAL WORLD The Spring framework Database access RESTful web services Building and testing web applications

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.

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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. Describes how to use Scala to create applications for the Java VM.

Summary Scala in Depth is a unique new book designed to help you integrate Scala effectively into your development process. By presenting the emerging best practices and designs from the Scala community, it guides you through dozens of powerful techniques example by example. About the Book Scala is a powerful JVM language that blends the functional and OO programming models. You'll have no trouble getting introductions to Scala in books or online, but it's hard to find great examples and insights from experienced practitioners. You'll find them in Scala in Depth. There's little heavy-handed theory here—just dozens of crisp, practical techniques for coding in Scala. Written for readers who know Java, Scala, or another OO

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language. 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 Concise, expressive, and readable code style How to integrate Scala into your existing Java projects Scala's 2.8.0 collections API How to use actors for concurrent programming Mastering the Scala type system Scala's OO features—type member inheritance, multiple inheritance, and composition Functional concepts and patterns—immutability, applicative functors, and monads
=====Table of Contents Scala—a blended language The core rules Modicum of style—coding conventions Utilizing object orientation Using implicits to write expressive code The type system Using implicits and types together Using the right collection Actors Integrating Scala with Java Patterns in functional programming

"You're a Java developer who has heard of Scala and maybe now you're being asked to work on Scala code. Concerned? Don't be. Taught by Java-Scala experts Ben Evans and Julian Templeman, this course answers the questions you want answered: What is Scala really useful for? Does it help with concurrency? What is functional programming and how much do I really need to know? How do I set up a Scala development environment, how do I test, and what are the must-know Scala idioms? If you're an intermediate level Java developer with six months of experience under your belt, then this course will quickly transform you from the Scala ignorant to the Scala capable."--Resource description page.

Scala is a concise, statically typed scripting language that runs on the Java Virtual Machine. It is both a functional programming language and object-oriented language but its emphasis on functional programming sets it apart from Java. Learn Scala for Java Developers is for Java

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developers looking to transition to programming Scala. The book will help you translate the Java you already know into Scala and kick-start your productivity. What's Inside Tour Scala and learn the basic syntax, constructs and how to use the REPL Translate Java syntax that you already know into Scala Learn what Scala offers over and above Java, functional programming concepts and idioms Tips and advice useful when transitioning existing Java projects to Scala

Scala is a modern programming language for the Java Virtual Machine (JVM) that combines the best features of object-oriented and functional programming languages. Using Scala, you can write programs more concisely than in Java, as well as leverage the full power of concurrency. Since Scala runs on the JVM, it can access any Java library and is interoperable with Java frameworks. Scala for the Impatient concisely shows developers what Scala can do and how to do it. In this book, Cay Horstmann, the principal author of the international best-selling Core Java™, offers a rapid, code-based introduction that's completely practical. Horstmann introduces Scala concepts and techniques in "blog-sized" chunks that you can quickly master and apply. Hands-on activities guide you through well-defined stages of competency, from basic to expert. Coverage includes Getting started quickly with Scala's interpreter, syntax, tools, and unique idioms Mastering core language features: functions, arrays, maps, tuples, packages, imports, exception handling, and more Becoming familiar with object-oriented programming in Scala: classes, inheritance, and traits Using Scala for real-world programming tasks: working with files, regular expressions, and XML Working with higher-order functions and the powerful Scala collections library Leveraging Scala's powerful pattern matching and case classes Creating concurrent programs with Scala actors

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Implementing domain-specific languages Understanding the Scala type system Applying advanced “power tools” such as annotations, implicits, and delimited continuations Scala is rapidly reaching a tipping point that will reshape the experience of programming. This book will help object-oriented programmers build on their existing skills, allowing them to immediately construct useful applications as they gradually master advanced programming techniques. Presents an introduction to the new programming language for the Java Platform. The release of Java SE 8 introduced significant enhancements that impact the Core Java technologies and APIs at the heart of the Java platform. Many old Java idioms are no longer required and new features like lambda expressions will increase programmer productivity, but navigating these changes can be challenging. Core Java for the Impatient is a complete but concise guide to Java SE 8. Written by Cay Horstmann--the author of Java SE 8 for the Really Impatient and Core Java(tm), the classic, two-volume introduction to the Java language--this indispensable new tutorial offers a faster, easier pathway for learning the language and libraries. Given the size of the language and the scope of the new features introduced in Java SE 8, there's plenty of material to cover, but it's presented in small chunks organized for quick access and easy understanding. If you're an experienced programmer, Horstmann's practical insights and sample code will help you quickly take advantage of lambda expressions (closures), streams, and other Java language and platform improvements. Horstmann covers everything developers need to know about modern Java, including Crisp and effective coverage of

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lambda expressions, enabling you to express actions with a concise syntax A thorough introduction to the new streams API, which makes working with data far more flexible and efficient A treatment of concurrent programming that encourages you to design your programs in terms of cooperating tasks instead of low-level threads and locks Up-to-date coverage of new libraries like Date and Time Other new features that will be especially valuable for server-side or mobile programmers Whether you are just getting started with modern Java or are an experienced developer, this guide will be invaluable for anyone who wants to write tomorrow's most robust, efficient, and secure Java code. Unleash the data processing and analytics capability of Apache Spark with the language of choice: Java About This Book Perform big data processing with Spark—without having to learn Scala! Use the Spark Java API to implement efficient enterprise-grade applications for data processing and analytics Go beyond mainstream data processing by adding querying capability, Machine Learning, and graph processing using Spark Who This Book Is For If you are a Java developer interested in learning to use the popular Apache Spark framework, this book is the resource you need to get started. Apache Spark developers who are looking to build enterprise-grade applications in Java will also find this book very useful. What You Will Learn Process data using different file formats such as XML, JSON, CSV, and plain and delimited text, using the Spark core Library. Perform analytics on data from various data sources such as Kafka, and Flume using Spark Streaming Library Learn SQL schema creation and

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the analysis of structured data using various SQL functions including Windowing functions in the Spark SQL Library Explore Spark Mlib APIs while implementing Machine Learning techniques to solve real-world problems Get to know Spark GraphX so you understand various graph-based analytics that can be performed with Spark In Detail Apache Spark is the buzzword in the big data industry right now, especially with the increasing need for real-time streaming and data processing. While Spark is built on Scala, the Spark Java API exposes all the Spark features available in the Scala version for Java developers. This book will show you how you can implement various functionalities of the Apache Spark framework in Java, without stepping out of your comfort zone. The book starts with an introduction to the Apache Spark 2.x ecosystem, followed by explaining how to install and configure Spark, and refreshes the Java concepts that will be useful to you when consuming Apache Spark's APIs. You will explore RDD and its associated common Action and Transformation Java APIs, set up a production-like clustered environment, and work with Spark SQL. Moving on, you will perform near-real-time processing with Spark streaming, Machine Learning analytics with Spark MLlib, and graph processing with GraphX, all using various Java packages. By the end of the book, you will have a solid foundation in implementing components in the Spark framework in Java to build fast, real-time applications. Style and approach This practical guide teaches readers the fundamentals of the Apache Spark framework and how to implement components using the Java language. It is a unique blend of

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theory and practical examples, and is written in a way that will gradually build your knowledge of Apache Spark.

Save time and trouble when using Scala to build object-oriented, functional, and concurrent applications. With more than 250 ready-to-use recipes and 700 code examples, this comprehensive cookbook covers the most common problems you'll encounter when using the Scala language, libraries, and tools. It's ideal not only for experienced Scala developers, but also for programmers learning to use this JVM language. Author Alvin Alexander (creator of DevDaily.com) provides solutions based on his experience using Scala for highly scalable, component-based applications that support concurrency and distribution. Packed with real-world scenarios, this book provides recipes for: Strings, numeric types, and control structures Classes, methods, objects, traits, and packaging Functional programming in a variety of situations Collections covering Scala's wealth of classes and methods Concurrency, using the Akka Actors library Using the Scala REPL and the Simple Build Tool (SBT) Web services on both the client and server sides Interacting with SQL and NoSQL databases Best practices in Scala development

Scala is a new and exciting programming language that is a hybrid between object oriented languages such as Java and functional languages such as Haskell. As such it has its own programming idioms and development styles. Scala Design Patterns looks at how code reuse can be successfully achieved in Scala. A major aspect of this is the

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reinterpretation of the original Gang of Four design patterns in terms of Scala and its language structures (that is the use of Traits, Classes, Objects and Functions). It includes an exploration of functional design patterns and considers how these can be interpreted in Scala's uniquely hybrid style. A key aspect of the book is the many code examples that accompany each design pattern, allowing the reader to understand not just the design pattern but also to explore powerful and flexible Scala language features. Including numerous source code examples, this book will be of value to professionals and practitioners working in the field of software engineering.

Rust is a new systems programming language that combines the performance and low-level control of C and C++ with memory safety and thread safety. Rust's modern, flexible types ensure your program is free of null pointer dereferences, double frees, dangling pointers, and similar bugs, all at compile time, without runtime overhead. In multi-threaded code, Rust catches data races at compile time, making concurrency much easier to use. Written by two experienced systems programmers, this book explains how Rust manages to bridge the gap between performance and safety, and how you can take advantage of it. Topics include: How Rust represents values in memory (with diagrams) Complete explanations of ownership, moves, borrows, and lifetimes Cargo, rustdoc, unit tests, and how to publish your code on crates.io, Rust's public package repository High-level features like generic code, closures, collections, and iterators that make Rust productive and flexible Concurrency in Rust: threads,

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mutexes, channels, and atomics, all much safer to use than in C or C++ Unsafe code, and how to preserve the integrity of ordinary code that uses it Extended examples illustrating how pieces of the language fit together

Packed with examples and exercises, *Get Programming with Scala* is perfect starting point for developers with some OO knowledge who want to learn this multi-style programming language for the JVM, and pick up a few FP skills along the way. Master Scala, and you'll be well-equipped to match your programming approach to the type of problem you're dealing with. Packed with examples and exercises, *Get Programming with Scala* is perfect starting point for developers with some OO knowledge who want to learn this multi-style programming language for the JVM, and pick up a few FP skills along the way. Master Scala, and you'll be well-equipped to match your programming approach to the type of problem you're dealing with. *Get Programming with Scala* teaches you the core skills you'll need to code with Scala. You'll start by reviewing OOP concepts in the Scala language. Then, you'll gradually open up the world of functional programming. You'll explore functions and types and learn how to combine them to create powerful, flexible abstractions. Scala can be daunting at first, especially if you're seeing FP ideas for the first time. Fortunately, with the examples and exercises in this book, you'll get over the initial learning hump quickly and start doing interesting projects before you know it! Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

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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
Build reactive, scalable applications and integrate Java code with the power of Scala
Overview
Learn the syntax interactively to smoothly transition to Scala by reusing your Java code
Leverage the full power of modern web programming by building scalable and reactive applications
Easy to follow instructions and real

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world examples to help you integrate java code and tackle big data challenges In Detail Scala for Java Developers is a step-by-step guide full of easy-to-follow code taken from real-world examples explaining the migration and integration of Scala in a Java project. With this book, you will first get comfortable with the Scala syntax and its Java-like ecosystem, and then dive into new ways of building reactive web apps using the Typesafe stack including the actor-based Akka framework, the Play web framework, and the emerging Slick framework for persistence. The book will then teach you how to review useful tools for unit, integration, and functional testing; demonstrate how integrating with external systems applies to the Scala world and what its benefits are. From learning the Scala syntax interactively to writing modern, scalable, reactive applications, this book will help you to take your skills to the next level by solving complex problems in a concise and maintainable way. What you will learn from this book

- Apply and control the Scala Ecosystem
- Migrate Java code to Scala
- Discover Play Framework web development
- Test data using Scala's testing frameworks
- Manipulate XML and JSON in Scala
- Learn the Scala syntax interactively
- Integrate Java projects in Scala
- Build reactive web apps using the Typesafe stack
- Use new systems including the Akka framework, the Play web framework, and the emerging Slick framework
- Tackle big data challenges
- Approach This

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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. Who this book is written for If you are a Java developer or a Java architect working with Java EE-based solutions and want to start using Scala in your daily programming, then 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.

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,

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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 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

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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

If you want to push your Java skills to the next level, this book provides expert advice from Java leaders and practitioners. You'll be encouraged to look at problems in new ways, take broader responsibility for your work, stretch yourself by learning new techniques, and become as good at the entire craft of development as you possibly can. Edited by Kevlin Henney and Trisha Gee, *97 Things Every Java Programmer Should Know* reflects lifetimes of experience writing Java software and living with the process of software development. Great programmers share their collected wisdom to help you rethink Java practices, whether working with legacy code or incorporating changes since Java 8. A few of the 97 things you should know: "Behavior Is Easy, State Is Hard"—Edson

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Yanaga “Learn Java Idioms and Cache in Your Brain”—Jeanne Boyarsky “Java Programming from a JVM Performance Perspective”—Monica Beckwith “Garbage Collection Is Your Friend”—Holly K Cummins “Java's Unspeakable Types”—Ben Evans “The Rebirth of Java”—Sander Mak “Do You Know What Time It Is?”—Christin Gorman

Summary The Well-Grounded Java Developer offers a fresh and practical look at new Java 7 features, new JVM languages, and the array of supporting technologies you need for the next generation of Java-based software. About the Book The Well-Grounded Java Developer starts with thorough coverage of Java 7 features like try-with-resources and NIO.2. You'll then explore a cross-section of emerging JVM-based languages, including Groovy, Scala, and Clojure. You will find clear examples that are practical and that help you dig into dozens of valuable development techniques showcasing modern approaches to the dev process, concurrency, performance, and much more. Written for readers familiar with Java. No experience with Java 7 or new JVM languages required. 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 New Java 7 features Tutorials on Groovy, Scala, and Clojure Discovering multicore processing and concurrency Functional programming with new JVM languages

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Modern approaches to testing, build, and CI Table of Contents PART 1 DEVELOPING WITH JAVA 7 Introducing Java 7 New I/O PART 2 VITAL TECHNIQUES Dependency Injection Modern concurrency Class files and bytecode Understanding performance tuning PART 3 POLYGLOT PROGRAMMING ON THE JVM Alternative JVM languages Groovy: Java's dynamic friend Scala: powerful and concise Clojure: safer programming PART 4 CRAFTING THE POLYGLOT PROJECT Test-driven development Build and continuous integration Rapid web development Staying well-grounded Summary Functional Programming in Java teaches Java developers how to incorporate the most powerful benefits of functional programming into new and existing Java code. You'll learn to think functionally about coding tasks in Java and use FP to make your applications easier to understand, optimize, maintain, and scale. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Here's a bold statement: learn functional programming and you'll be a better Java developer. Fortunately, you don't have to master every aspect of FP to get a big payoff. If you take in a few core principles, you'll see an immediate boost in the scalability, readability, and maintainability of your code. And did we mention that you'll have fewer bugs? Let's get started! About the Book Functional Programming in Java

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teaches you how to incorporate the powerful benefits of functional programming into new and existing Java code. This book uses easy-to-grasp examples, exercises, and illustrations to teach core FP principles such as referential transparency, immutability, persistence, and laziness. Along the way, you'll discover which of the new functionally inspired features of Java 8 will help you most. What's Inside Writing code that's easier to read and reason about Safer concurrent and parallel programming Handling errors without exceptions Java 8 features like lambdas, method references, and functional interfaces About the Reader Written for Java developers with no previous FP experience. About the Author Pierre-Yves Saumont is a seasoned Java developer with three decades of experience designing and building enterprise software. He is an R&D engineer at Alcatel-Lucent Submarine Networks. Table of Contents What is functional programming? Using functions in Java Making Java more functional Recursion, corecursion, and memoization Data handling with lists Dealing with optional data Handling errors and exceptions Advanced list handling Working with laziness More data handling with trees Solving real problems with advanced trees Handling state mutation in a functional way Functional input/output Sharing mutable state with actors Solving common problems functionally Beginning Scala, Second Edition takes a down-to-earth approach to teaching

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Scala that leads you through simple examples that can be combined to build complex, scalable systems and applications. This book introduces you to the Scala programming language, its object-oriented and functional programming characteristics, and then guides you through Scala constructs and libraries that allow you to assemble small components into high-performance, scalable systems. You will learn why Scala is judiciously used for critical business applications by leading companies such as Twitter, LinkedIn, Foursquare, the Guardian, Morgan Stanley, Credit Suisse, UBS, and HSBC. Scala is a multi-paradigm programming language that combines both functional and object-oriented features. Moreover, this highly scalable language lends itself well to building cloud-based/deliverable Software as a Service (SaaS) online applications.

What others in the trenches say about *The Pragmatic Programmer*... “The cool thing about this book is that it’s great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there.” —Kent Beck, author of *Extreme Programming Explained: Embrace Change* “I found this book to be a great mix of solid advice and wonderful analogies!” —Martin Fowler, author of *Refactoring* and *UML Distilled* “I would buy a copy, read it twice, then tell all my colleagues to run out and grab a

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copy. This is a book I would never loan because I would worry about it being lost.” —Kevin Ruland, Management Science, MSG-Logistics “The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful.... By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike.” —John Lakos, author of *Large-Scale C++ Software Design* “This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients.” —Eric Vought, Software Engineer “Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software

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Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company....” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham

Straight from the programming trenches, *The Pragmatic Programmer* cuts through the increasing specialization and technicalities of modern software development to examine the core process--taking a requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, *The Pragmatic Programmer* illustrates the best practices and major pitfalls of many different aspects of software development. Whether

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you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer.

If you've had trouble trying to learn Functional Programming (FP), you're not alone. In this book, Alvin Alexander -- author of the Scala Cookbook and former teacher of Java and Object-Oriented Programming (OOP) classes -- writes about his own problems in trying to understand FP, and how he finally conquered it. What he originally learned is that experienced FP developers are driven by two goals: to use only immutable values, and write only pure functions. What he later learned is that they have these goals as the result of another larger goal: they want all of their code to look and work just like algebra. While that sounds simple, it turns out that these goals require them to use many advanced Scala features -- which they often use all at the same time. As a result, their code can look completely foreign to novice FP developers. As Mr. Alexander writes, "When you first see their code it's easy to ask, 'Why would anyone write code like this?'" Mr. Alexander answers that "Why?" question by explaining the benefits of writing pure functional code. Once you understand those benefits -- your motivation for learning FP -- he shares five rules for programming in the book: All fields must be immutable ('val' fields). All functions must be pure functions. Null values are not

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allowed. Whenever you use an 'if' you must also use an 'else'. You won't create OOP classes that encapsulate data and behavior; instead you'll design data structures using Scala 'case' classes, and write pure functions that operate on those data structures. In the book you'll see how those five, simple rules naturally lead you to write pure, functional code that reads like algebra. He also shares one more Golden Rule for learning: Always ask "Why"? Lessons in the book include: How and why to write only pure functions Why pure function signatures are much more important than OOP method signatures Why recursion is a natural tool for functional programming, and how to write recursive algorithms Because the Scala 'for' expression is so important to FP, dozens of pages explain the details of how it works In the end you'll see that monads aren't that difficult because they're a natural extension of the Five Rules The book finishes with lessons on FP data modeling, and two main approaches for organizing your pure functions As Mr. Alexander writes, "In this book I take the time to explain all of the concepts that are used to write FP code in Scala. As I learned from my own experience, once you understand the Five Rules and the small concepts, you can understand Scala/FP." Please note that because of the limits on how large a printed book can be, the paperback version does not include all of the chapters that are in the Kindle eBook. The following lessons are not in the paperback version: Grandma's Cookies (a story about pure functions) The ScalaCheck lessons The Type Classes lessons The appendices Because those lessons didn't fit in the print version, they have

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been made freely available online. (Alvin Alexander (alvinalexander.com) wrote the popular Scala Cookbook for O'Reilly, and also self-published two other books, *How I Sold My Business: A Personal Diary*, and *A Survival Guide for New Consultants*.)

Transition smoothly from Java to the most widely used functional JVM-based language – Clojure

About This Book Write apps for the multithreaded world with Clojure's flavor of functional programming Discover Clojure's features and advantages and use them in your existing projects The book is designed so that you'll be able put to use your existing skills and software knowledge to become a more effective Clojure developer

Who This Book Is For This book is intended for Java developers, who are looking for a way to expand their skills and understand new paradigms of programming. Whether you know a little bit about functional languages, or you are just getting started, this book will get you up and running with how to use your existing skills in Clojure and functional programming.

What You Will Learn Understand the tools for the Clojure world and how they relate to Java tools and standards (like Maven) Learn about immutable data structures, and what makes them feasible for everyday programming Write simple multi-core programs using Clojure's core concepts, like atoms, agents and refs Understand that in Clojure, code is data, and how to take advantage of that fact by generating and manipulating code with macros Learn how Clojure interacts with Java, how the class loaders work and how to use Clojure from Java or the other way around Discover a new, more flexible meaning of polymorphism and understand that OOP is not the only

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way to get it In Detail We have reached a point where machines are not getting much faster, software projects need to be delivered quickly, and high quality in software is more demanding as ever. We need to explore new ways of writing software that helps achieve those goals. Clojure offers a new possibility of writing high quality, multi-core software faster than ever, without having to leave your current platform. Clojure for Java developers aims at unleashing the true potential of the Clojure language to use it in your projects. The book begins with the installation and setup of the Clojure environment before moving on to explore the language in-depth. Get acquainted with its various features such as functional programming, concurrency, etc. with the help of example projects. Additionally, you will also, learn how the tooling works, and how it interacts with the Java environment. By the end of this book, you will have a firm grip on Clojure and its features, and use them effectively to write more robust programs. Style and approach An easy to follow, step-by-step, guide on how to start writing Clojure programs making use of all of its varied features and advantages. As this is a new language, certain new concepts are supported with theoretical section followed by simple projects to help you gain a better understanding and practice of how Clojure works.

Access the power of bare-metal systems programming with Scala Native, an ahead-of-time Scala compiler. Without the baggage of legacy frameworks and virtual machines, Scala Native lets you re-imagine how your programs interact with your operating

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system. Compile Scala code down to native machine instructions; seamlessly invoke operating system APIs for low-level networking and IO; control pointers, arrays, and other memory management techniques for extreme performance; and enjoy instant start-up times. Skip the JVM and improve your code performance by getting close to the metal. Developers generally build systems on top of the work of those who came before, accumulating layer upon layer of abstraction. Scala Native provides a rare opportunity to remove layers. Without the JVM, Scala Native uses POSIX and ANSI C APIs to build concise, expressive programs that run unusually close to bare metal. Scala Native compiles Scala code down to native machine instructions instead of JVM bytecode. It starts up fast, without the sluggish warm-up phase that's common for just-in-time compilers. Scala Native programs can seamlessly invoke operating system APIs for low-level networking and IO. And Scala Native lets you control pointers, arrays, and other memory layout types for extreme performance. Write practical, bare-metal code with Scala Native, step by step. Understand the foundations of systems programming, including pointers, arrays, strings, and memory management. Use the UNIX socket API to write network client and server programs without the sort of frameworks higher-level languages rely on. Put all the pieces together to design and implement a modern, asynchronous microservice-style HTTP framework from scratch. Take advantage of Scala Native's clean, modern syntax to write lean, high-performance code without the JVM. What You Need: A modern Windows, Mac OS, or Linux system capable of

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running Docker. All code examples in the book are designed to run on a portable Docker-based build environment that runs anywhere. If you don't have Docker yet, see the Appendix for instructions on how to get it.

Scala for Java Developers A Practical Primer Apress

Scala is now an established programming language developed by Martin Oderskey and his team at the EPFL. The name Scala is derived from Sca(lable) La(nguage). Scala is a multi-paradigm language, incorporating object oriented approaches with functional programming. Although some familiarity with standard computing concepts is assumed (such as the idea of compiling a program and executing this compiled from etc.) and with basic procedural language concepts (such as variables and allocation of values to these variables) the early chapters of the book do not assume any familiarity with object orientation nor with functional programming. These chapters also step through other concepts with which the reader may not be familiar (such as list processing). From this background, the book provides a practical introduction to both object and functional approaches using Scala. These concepts are introduced through practical experience taking the reader beyond the level of the language syntax to the philosophy and practice of object oriented development and functional programming. Students and those actively involved in the software industry will find this comprehensive introduction to Scala invaluable.

This step-by-step guide is full of easy-to-follow code taken from real-world examples

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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.

Why learn Scala? You don't need to be a data scientist or distributed computing expert to appreciate this object-oriented functional programming language. This practical book provides a comprehensive yet approachable introduction to the language, complete with syntax diagrams, examples, and exercises. You'll start with Scala's core types and syntax before diving into higher-order functions and immutable data structures. Author Jason Swartz demonstrates why Scala's concise and expressive syntax make it an ideal language for Ruby or Python developers who want to improve their craft, while its type safety and performance ensures that it's stable and fast enough for any application. Learn about the core data types, literals, values, and variables Discover how to think and write in expressions, the foundation for Scala's syntax Write higher-order functions that accept or return other functions Become familiar with immutable data structures and easily transform them with type-safe and declarative operations Create custom infix operators to simplify existing operations or even to start your own domain-specific language Build classes that compose one or more traits for full reusability, or create new functionality by mixing them in at instantiation

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Scala programming is a general-purpose computer language that supports both object-oriented and functional styles of programming on a larger scale. Scala is a strong static type of programming language and is influenced by the Java programming language. One of the best similarities of Scala and Java is that you can code Scala just the same way that you code Java. It is also possible to use a lot of Java libraries within Scala along with many of its third-party libraries. Scala has become one of the most in-demand technology among developers and is working its way through today's technology. Learn about Apache Spark from Cloudera Spark Training and excel in your career as a Scala Specialist. Here are some of the topics which would give you a brief explanation of Scala. Why Scala? The biggest strength of Scala is its flexibility in defining abstractions. One of the important components of the Scala language is Scala IDE (Scala Integrated Development Environment) and it is used to connect to the Eclipse Java tool. This way the Eclipse features can explore with the Scala IDE. Scala is designed in such a way that it can inter-operate well with JRE (Java Runtime Environment) and the .NET Framework. The code written in Scala is easier to test and reuse; the parallelization becomes simpler, and there are lesser bugs in the whole program. Scala programming follows a top-down approach; each of the programs is broken down into multiple chunks and each can be processed in parallel thus speeding up the process and also improving the efficiency.

This stepbystep guide is full of easytofollow code taken from realworld examples

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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.

The open source Scala language is a Java-based dynamic scripting, functional programming language. Moreover, this highly scalable scripting language lends itself well to building cloud-based/deliverable Software as a Service (SaaS) online applications. Written by Lift Scala web framework founder and lead Dave Pollak, *Beginning Scala* takes a down-to-earth approach to teaching Scala that leads you through simple examples that can be combined to build complex, scalable systems and applications. This book introduces you to the Scala programming language and then guides you through Scala constructs and libraries that allow small and large teams to assemble small components into high-performance, scalable systems. You will learn why Scala is becoming the language of choice for Web 2.0 companies such as Twitter as well as enterprises such as Siemens and SAP.

Software development today is embracing functional programming (FP), whether it's for writing concurrent programs or for managing Big Data. Where does that

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leave Java developers? This concise book offers a pragmatic, approachable introduction to FP for Java developers or anyone who uses an object-oriented language. Dean Wampler, Java expert and author of *Programming Scala* (O'Reilly), shows you how to apply FP principles such as immutability, avoidance of side-effects, and higher-order functions to your Java code. Each chapter provides exercises to help you practice what you've learned. Once you grasp the benefits of functional programming, you'll discover that it improves all of the code you write. Learn basic FP principles and apply them to object-oriented programming Discover how FP is more concise and modular than OOP Get useful FP lessons for your Java type design—such as avoiding nulls Design data structures and algorithms using functional programming principles Write concurrent programs using the Actor model and software transactional memory Use functional libraries and frameworks for Java—and learn where to go next to deepen your functional programming skills

Master the fundamentals of Scala and understand its emphasis on functional programming that sets it apart from Java. This book will help you translate what you already know in Java to Scala to start your functional programming journey. Learn Scala is split into four parts: a tour of Scala, a comparison between Java and Scala, Scala-specific features and functional programming idioms, and finally

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a discussion about adopting Scala in existing Java teams and legacy projects. After reading and using this tutorial, you'll come away with the skills in Scala to kick-start your productivity with this growing popular language. What You'll Learn Tour Scala and learn the basic syntax, constructs, and how to use the REPL Translate Java syntax that you already know into Scala Learn what Scala offers over and above Java Become familiar with functional programming concepts and idioms Gain tips and advice useful when transitioning existing Java projects to Scala Who This Book Is For Java developers looking to transition to Scala. No prior experience necessary in Scala.

Provides a guide to using Scala and Clojure to solve in-depth programming problems.

Discover unique features and powerful capabilities of Scala Programming as you build projects in a wide range of domains Key Features Develop a range of Scala projects from web applications to big data analysis Leverage full power of modern web programming using Play Framework Build real-time data pipelines in Scala with a Bitcoin transaction analysis app Book 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 learn

- Build, test, and package code using Scala Build Tool
- Decompose code into functions, classes, and packages for maintainability
- Implement the functional programming capabilities of Scala
- Develop a simple CRUD REST API using the Play framework
- Access a relational database using Slick
- Develop a dynamic web UI using Scala.js
- Source streaming data using Spark Streaming and write a Kafka producer
- Use Spark and Zeppelin to analyze data

Who this book is for

If you are an amateur programmer who

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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.

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