

# The Joy Of Clojure Second Edition

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**Groovy in Action** Jul 31 2020 Summary Groovy in Action, Second Edition is a thoroughly revised, comprehensive guide to Groovy programming. It introduces Java developers to the dynamic features that Groovy provides, and shows how to apply Groovy to a range of tasks including building new apps, integration with existing code, and DSL development. Covers Groovy 2.4. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology In the last ten years, Groovy has become an integral part of a Java developer's toolbox. Its comfortable, common-sense design, seamless integration with Java, and rich ecosystem that includes the Grails web framework, the Gradle build system, and Spock testing platform have created a large Groovy community About the Book Groovy in Action, Second Edition is the undisputed definitive reference on the Groovy language. Written by core members of the Groovy language team, this book presents Groovy like no other can—from the inside out. With relevant examples, careful explanations of Groovy's key concepts and features, and insightful coverage of how to use Groovy in-production tasks, including building new applications, integration with existing code, and DSL development, this is the only book you'll need. Updated for Groovy 2.4. Some experience with Java or another programming language is helpful. No Groovy experience is assumed. What's Inside Comprehensive coverage of Groovy 2.4 including language features, libraries, and AST transformations Dynamic, static, and extensible typing Concurrency: actors, data parallelism, and dataflow Applying Groovy: Java integration, XML, SQL, testing, and domain-specific language support Hundreds of reusable examples About the Authors Authors Dierk König, Paul King, Guillaume Laforge, Hamlet D'Arcy, Cédric Champeau, Erik Pragt, and Jon Skeet are intimately involved in the creation and ongoing development of the Groovy language and its ecosystem. Table of Contents PART 1 THE GROOVY LANGUAGE Your way to Groovy Overture: Groovy basics Simple Groovy datatypes Collective Groovy datatypes Working with closures Groovy control structures Object orientation, Groovy style Dynamic programming with Groovy Compile-time metaprogramming and AST transformations Groovy as a static language PART 2 AROUND THE GROOVY LIBRARY Working with builders Working with the GDK Database programming with Groovy Working with XML and JSON Interacting with Web Services Integrating Groovy PART 3 APPLIED GROOVY Unit testing with Groovy Concurrent Groovy with GPar Domain-specific languages The Groovy ecosystem [Clojure Data Analysis Cookbook - Second Edition](#) Apr 08 2021 This book is for those with a basic knowledge of Clojure, who are looking to push the language to excel with data analysis.

**Structure and Interpretation of Classical Mechanics, second edition** Mar 27 2020 The new edition of a classic text that concentrates on developing general methods for studying the behavior of classical systems, with extensive use of computation. We now know that there is much more to classical mechanics than previously suspected. Derivations of the equations of motion, the focus of traditional presentations of mechanics, are just the beginning. This innovative textbook, now in its second edition, concentrates on developing general methods for studying the behavior of classical systems, whether or not they have a symbolic solution. It focuses on the phenomenon of motion and makes extensive use of computer simulation in its explorations of the topic. It weaves recent discoveries in nonlinear dynamics throughout the text, rather than presenting them as an afterthought. Explorations of phenomena such as the transition to chaos, nonlinear resonances, and resonance overlap to help the student develop appropriate analytic tools for understanding. The book uses computation to constrain notation, to capture and formalize methods, and for simulation and symbolic analysis. The requirement that the computer be able to interpret any expression provides the student with strict and immediate feedback about whether an expression is correctly formulated. This second edition has been updated throughout, with revisions that reflect insights gained by the authors from using the text every year at MIT. In addition, because of substantial software improvements, this edition provides algebraic proofs of more generality than those in the previous edition; this improvement permeates the new edition.

**Learning ClojureScript** Jun 29 2020 Master the art of agile single page web application development with ClojureScript About This Book Set up interactive development workflows for the browser or Node.js thanks to the ClojureScript ecosystem Learn the basics of interactive single page web app development taking advantage of the functional nature of ClojureScript Delve into advanced rich web application development concepts such as Om, along with core.async, using zippers and logic programming, and preparing code for production with testing or optimizing via the Google Closure Compiler Who This Book Is For This book is for web application developers who want to benefit from the power of ClojureScript to get an agile and highly productive development platform that targets mainly browser JavaScript. You are not required to be fluent in Clojure, but it will be easier for you if you have a basic understanding of browser and server-side JavaScript. What You Will Learn Understand how the ClojureScript compiler operates Set up interactive development workflows for ClojureScript Grasp the basics of the ClojureScript language, including basic syntax, data structures, variable scoping, namespaces, and finally the powerful sequence abstraction Delve into advanced concepts such as functional programming, macro writing, asynchronous programming, app routing, and real-time web Develop simple one page web applications Explore techniques to make your web apps aware of the external world through external or embedded database access or OAuth 2 integration Learn more advanced ClojureScript concepts like in app routing, real-time web Prepare your work for production, getting insights into optional type-checking, writing portable Clojure/ClojureScript code, and testing In Detail Clojure is an expressive language that makes it possible to easily tackle complex software development challenges. Its bias toward interactive development has made it a powerful tool, enabling high developer productivity. In this book, you will first learn how to construct an interactive development experience for ClojureScript.. You will be guided through ClojureScript language concepts, looking at the basics first, then being introduced to advanced concepts such as functional programming or macro writing. After that, we elaborate on the subject of single page web applications, showcasing how to build a simple one, then covering different possible enhancements. We move on to study more advanced ClojureScript concepts, where you will be shown how to address some complex algorithmic cases. Finally, you'll learn about optional type-checking for your programs, how you can write portable code, test it, and put the advanced compilation mode of the Google Closure Compiler to good use. Style and approach This book is a comprehensive reference guide on ClojureScript

development for the front end, and will gradually help you master interactive ClojureScript development workflows, through detailed step-by-step information illustrated with annotated code samples.

**Programming Clojure** Aug 24 2022 Drowning in unnecessary complexity, unmanaged state, and tangles of spaghetti code? In the best tradition of Lisp, Clojure gets out of your way so you can focus on expressing simple solutions to hard problems. Clojure cuts through complexity by providing a set of composable tools--immutable data, functions, macros, and the interactive REPL. Written by members of the Clojure core team, this book is the essential, definitive guide to Clojure. This new edition includes information on all the newest features of Clojure, such as transducers and specs. Clojure joins the flexibility and agility of Lisp with the reach, stability, and performance of Java. Combine Clojure's tools for maximum effectiveness as you work with immutable data, functional programming, and safe concurrency to write programs that solve real-world problems. Start by reading and understanding Clojure syntax and see how Clojure is evaluated. From there, find out about the sequence abstraction, which combines immutable collections with functional programming to create truly reusable data transformation code. Clojure is a functional language; learn how to write programs in a functional style, and when and how to use recursion to your advantage. Discover Clojure's unique approach to state and identity, techniques for polymorphism and open systems using multimethods and protocols, and how to leverage Clojure's metaprogramming capabilities via macros. Finally, put all the pieces together in a real program. New to this edition is coverage of Clojure's spec library, one of the most interesting new features of Clojure for describing both data and functions. You can use Clojure spec to validate data, destructure data, explain invalid data, and generate large numbers of tests to verify the correctness of your code. With this book, you'll learn how to think in Clojure, and how to take advantage of its combined strengths to build powerful programs quickly. What You Need: Java 6 or higher Clojure 1.9

**Clojure Reactive Programming** May 09 2021 If you are a Clojure developer who is interested in using Reactive Programming to build asynchronous and concurrent applications, this book is for you. Knowledge of Clojure and Leiningen is required. Basic understanding of ClojureScript will be helpful for the web chapters, although it is not strictly necessary.

Living Clojure Oct 14 2021 Annotation If you're an experienced programmer looking for a thorough but gentle introduction to Clojure, this is the perfect guide for you. Author Carin Meier not only provides a practical overview of this JVM language and its functional programming concepts, but also includes a complete hands-on training course to help you learn Clojure in a structured way.

Getting Clojure Aug 12 2021 Behind every programming language lies a vision of how programs should be built. The vision behind Clojure is of a radically simple language framework holding together a sophisticated collection of programming features. Learning Clojure involves much more than just learning the mechanics of the language. To really get Clojure you need to understand the ideas underlying this structure of framework and features. You need this book: an accessible introduction to Clojure that focuses on the ideas behind the language as well as the practical details of writing code. Clojure attracts developers on the cutting edge and is arguably the best language for learning to program in the functional style without compromise. But this comes with a steep learning curve. Getting Clojure directly addresses this by teaching you how to think functionally as it teaches you the language. You'll learn about Clojure's powerful data structures and high-level functions, but you'll also learn what it means for a language to be functional, and how to think in Clojure's functional way. Each chapter of Getting Clojure takes a feature or two or three from the language, explains the syntax and the mechanics behind that feature so that you can make it work before digging into the deeper questions: What is the thinking behind the feature? And how does it fit in with the rest of the language? In Getting Clojure you'll learn Clojure's very simple syntax, but you'll also learn why that syntax is integral the way the language is constructed. You'll discover that most data structures in Clojure are immutable, but also why that leads to more reliable programs. And you'll see how easy it is to write Clojure functions and also how you can use those functions to build complex and capable systems. With real-world examples of how working Clojure programmers use the language, Getting Clojure will help you see the challenges of programming through the eye of experienced Clojure developers. What You Need: You will need to some background in programming. To follow along with the examples in the book, you will need Java 6 or new, Clojure 1.8 or 1.9, and Leiningen 2.

Learn You a Haskell for Great Good! Oct 22 2019 It's all in the name: Learn You a Haskell for Great Good! is a hilarious, illustrated guide to this complex functional language. Packed with the author's original artwork, pop culture references, and most importantly, useful example code, this book teaches functional fundamentals in a way you never thought possible. You'll start with the kid stuff: basic syntax, recursion, types and type classes. Then once you've got the basics down, the real black belt master-class begins: you'll learn to use applicative functors, monads, zippers, and all the other mythical Haskell constructs you've only read about in storybooks. As you work your way through the author's imaginative (and occasionally insane) examples, you'll learn to: -Laugh in the face of side effects as you wield purely functional programming techniques -Use the magic of Haskell's "laziness" to play with infinite sets of data -Organize your programs by creating your own types, type classes, and modules -Use Haskell's elegant input/output system to share the genius of your programs with the outside world Short of eating the author's brain, you will not find a better way to learn this powerful language than reading Learn You a Haskell for Great Good!

**Clojure for Machine Learning** Jun 17 2019 A book that brings out the strengths of Clojure programming that have to facilitate machine learning. Each topic is described in substantial detail, and examples and libraries in Clojure are also demonstrated. This book is intended for Clojure developers who want to explore the area of machine learning. Basic understanding of the Clojure programming language is required, but thorough acquaintance with the standard Clojure library or any libraries are not required. Familiarity with theoretical concepts and notation of mathematics and statistics would be an added advantage.

*How to Design Programs, second edition* Feb 06 2021 A completely revised edition, offering new design recipes for interactive programs and support for images as plain values, testing, event-driven programming, and even distributed programming. This introduction to programming places computer science at the core of a liberal arts education. Unlike other introductory books, it focuses on the program design process, presenting program design guidelines that show the reader how to analyze a problem statement, how to formulate concise goals, how to make up examples, how to develop an outline of the solution, how to finish the program, and how to test it. Because learning to design programs is about the study of principles and the acquisition of transferable skills, the text does not use an off-the-shelf industrial language but presents a tailor-made teaching language. For the same reason, it offers DrRacket, a programming environment for novices that supports playful, feedback-oriented learning. The environment grows with readers as they master the material in the book until it supports a full-fledged language for the whole spectrum of programming tasks. This second edition has been completely revised. While the book continues to teach a systematic approach to program design, the second edition introduces different design recipes for interactive programs with graphical interfaces and batch programs. It also enriches its design recipes for functions with numerous new hints. Finally, the teaching languages and their IDE now come with support for images as plain values, testing, event-driven programming, and even distributed programming.

*The Joy of Clojure* Oct 26 2022 Summary The Joy of Clojure, Second Edition is a deep look at the Clojure language. Fully updated for Clojure 1.6, this new edition goes beyond just syntax to show you the "why" of Clojure and how to write fluent Clojure code. You'll learn functional and declarative approaches to programming and will master the techniques that make Clojure so elegant and efficient. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology The Clojure programming language is a dialect of Lisp that runs on the Java Virtual Machine and JavaScript runtimes. It is a functional programming language that offers great performance, expressive power, and stability by design. It gives you built-in concurrency and the predictable precision of immutable and persistent data structures. And it's really, really fast. The instant you see long blocks of Java or Ruby dissolve into a few lines of Clojure, you'll know why the authors of this book call it a "joyful language." It's no wonder that enterprises like Staples are betting their infrastructure on Clojure. About the Book The Joy of Clojure, Second Edition is a deep account of the Clojure language. Fully updated for Clojure 1.6, this new edition goes beyond the syntax to show you how to write fluent Clojure code. You'll learn functional and declarative approaches to programming and will master techniques that make Clojure elegant and efficient. The book shows you how to solve hard problems related to concurrency, interoperability, and performance, and how great it can be to think in the Clojure way. Appropriate for readers with some experience using Clojure or common Lisp. What's Inside Build web apps using ClojureScript

Master functional programming techniques Simplify concurrency Covers Clojure 1.6 About the Authors Michael Fogus and Chris Houser are contributors to the Clojure and ClojureScript programming languages and the authors of various Clojure libraries and language features. Table of Contents PART 1 FOUNDATIONS Clojure philosophy Drinking from the Clojure fire hose Dipping your toes in the pool PART 2 DATA TYPES On scalars Collection types PART 3 FUNCTIONAL PROGRAMMING Being lazy and set in your ways Functional programming PART 4 LARGE-SCALE DESIGN Macros Combining data and code Mutation and concurrency Parallelism PART 5 HOST SYMBIOSIS Java.next Why ClojureScript? PART 6 TANGENTIAL CONSIDERATIONS Data-oriented programming Performance Thinking programs Clojure changes the way you think

**The Rails Way** May 29 2020 The expert guide to building Ruby on Rails applications Ruby on Rails strips complexity from the development process, enabling professional developers to focus on what matters most: delivering business value. Now, for the first time, there's a comprehensive, authoritative guide to building production-quality software with Rails. Pioneering Rails developer Obie Fernandez and a team of experts illuminate the entire Rails API, along with the Ruby idioms, design approaches, libraries, and plug-ins that make Rails so valuable. Drawing on their unsurpassed experience, they address the real challenges development teams face, showing how to use Rails' tools and best practices to maximize productivity and build polished applications users will enjoy. Using detailed code examples, Obie systematically covers Rails' key capabilities and subsystems. He presents advanced programming techniques, introduces open source libraries that facilitate easy Rails adoption, and offers important insights into testing and production deployment. Dive deep into the Rails codebase together, discovering why Rails behaves as it does— and how to make it behave the way you want it to. This book will help you Increase your productivity as a web developer Realize the overall joy of programming with Ruby on Rails Learn what's new in Rails 2.0 Drive design and protect long-term maintainability with TestUnit and RSpec Understand and manage complex program flow in Rails controllers Leverage Rails' support for designing REST-compliant APIs Master sophisticated Rails routing concepts and techniques Examine and troubleshoot Rails routing Make the most of ActiveRecord object-relational mapping Utilize Ajax within your Rails applications Incorporate logins and authentication into your application Extend Rails with the best third-party plug-ins and write your own Integrate email services into your applications with ActionMailer Choose the right Rails production configurations Streamline deployment with Capistrano

**Clojure for Data Science** Jan 05 2021 Statistics, big data, and machine learning for Clojure programmers About This Book Write code using Clojure to harness the power of your data Discover the libraries and frameworks that will help you succeed A practical guide to understanding how the Clojure programming language can be used to derive insights from data Who This Book Is For This book is aimed at developers who are already productive in Clojure but who are overwhelmed by the breadth and depth of understanding required to be effective in the field of data science. Whether you're tasked with delivering a specific analytics project or simply suspect that you could be deriving more value from your data, this book will inspire you with the opportunities—and inform you of the risks—that exist in data of all shapes and sizes. What You Will Learn Perform hypothesis testing and understand feature selection and statistical significance to interpret your results with confidence Implement the core machine learning techniques of regression, classification, clustering and recommendation Understand the importance of the value of simple statistics and distributions in exploratory data analysis Scale algorithms to web-sized datasets efficiently using distributed programming models on Hadoop and Spark Apply suitable analytic approaches for text, graph, and time series data Interpret the terminology that you will encounter in technical papers Import libraries from other JVM languages such as Java and Scala Communicate your findings clearly and convincingly to nontechnical colleagues In Detail The term “data science” has been widely used to define this new profession that is expected to interpret vast datasets and translate them to improved decision-making and performance. Clojure is a powerful language that combines the interactivity of a scripting language with the speed of a compiled language. Together with its rich ecosystem of native libraries and an extremely simple and consistent functional approach to data manipulation, which maps closely to mathematical formula, it is an ideal, practical, and flexible language to meet a data scientist's diverse needs. Taking you on a journey from simple summary statistics to sophisticated machine learning algorithms, this book shows how the Clojure programming language can be used to derive insights from data. Data scientists often forge a novel path, and you'll see how to make use of Clojure's Java interoperability capabilities to access libraries such as Mahout and Mllib for which Clojure wrappers don't yet exist. Even seasoned Clojure developers will develop a deeper appreciation for their language's flexibility! You'll learn how to apply statistical thinking to your own data and use Clojure to explore, analyze, and visualize it in a technically and statistically robust way. You can also use Incanter for local data processing and ClojureScript to present interactive visualisations and understand how distributed platforms such as Hadoop and Spark's MapReduce and GraphX's BSP solve the challenges of data analysis at scale, and how to explain algorithms using those programming models. Above all, by following the explanations in this book, you'll learn not just how to be effective using the current state-of-the-art methods in data science, but why such methods work so that you can continue to be productive as the field evolves into the future. Style and approach This is a practical guide to data science that teaches theory by example through the libraries and frameworks accessible from the Clojure programming language.

**The Well-Grounded Java Developer, Second Edition** Apr 27 2020 Understanding Java from the JVM up gives you a solid foundation to grow your expertise and take on advanced techniques for performance, concurrency, containerization, and more. The Well-Grounded Java Developer, Second Edition is a complete revision of the classic original with the latest innovations of the Java platform. It upgrades your existing Java skills with both JVM fundamentals like bytecode, and powerful new features such as modules and concurrency models. You'll broaden your understanding of what's possible by exploring Kotlin and other JVM languages, and learn how functional programming can offer a powerful new perspective. Each concept is illustrated with hands-on examples, including a fully modularized application/library, build setups for Maven and Gradle, and creating your own multithreaded application. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

**Clojure in Action** Jul 23 2022 Summary A fully revised edition that covers the new features available in Clojure 1.6. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Clojure is a modern Lisp for the JVM. It has the strengths you expect: first-class functions, macros, and Lisp's clean programming style. It supports functional programming, making it ideal for concurrent programming and for creating domain-specific languages. Clojure lets you solve harder problems, make faster changes, and end up with a smaller code base. It's no wonder that there are so many Clojure success stories. About the Book Clojure in Action, Second Edition is an expanded and improved version that's been updated to cover the new features of Clojure 1.6. The book gives you a rapid introduction to the Clojure language, moving from abstract theory to practical examples. You'll start by learning how to use Clojure as a general-purpose language. Next, you'll explore Clojure's efficient concurrency model, based on the database concept of Software Transactional Memory (STM). You'll gain a new level of productivity through Clojure DSLs that can run on the JVM. Along the way, you'll learn countless tips, tricks, and techniques for writing smaller, safer, and faster code. What's Inside Functional programming basics Metaprogramming with Clojure's macros Interoperating with Java Covers Clojure 1.6 About the Reader Assumes readers are familiar with a programming language like C, Java, Ruby, or Python. Table of Contents Introducing Clojure Clojure elements: Data structures and functions Building blocks of Clojure Multimethod polymorphism Exploring Clojure and Java interop State and the concurrent world Evolving Clojure through macros More on functional programming Protocols, records, and types Test-driven development and more More macros and DSL

**The Joy of Clojure** Nov 03 2020 Provides information on the features and functions of Clojure and describes how to create applications.

**Functional Thinking** Jun 10 2021 If you're familiar with functional programming basics and want to gain a much deeper understanding, this in-depth guide takes you beyond syntax and demonstrates how you need to think in a new way. Software architect Neal Ford shows intermediate to advanced developers how functional coding allows you to step back a level of abstraction so you can see your programming problem with greater clarity. Each chapter shows you various examples of functional thinking, using numerous code examples from Java 8 and other JVM languages that include functional capabilities. This book may bend your mind, but you'll come away with a much better grasp of functional programming concepts. Understand why many imperative languages are adding functional capabilities Compare functional and imperative solutions to common problems Examine ways to cede control of routine chores to the runtime Learn how memoization and laziness eliminate hand-crafted solutions Explore

functional approaches to design patterns and code reuse View real-world examples of functional thinking with Java 8, and in functional architectures and web frameworks Learn the pros and cons of living in a paradigmatically richer world If you're new to functional programming, check out Josh Backfield's book *Becoming Functional*.

**The Pragmatic Programmer** Sep 20 2019 What others in the trenches say about *The Pragmatic Programmer*... "The cool thing about this book is that it's great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there." —Kent Beck, author of *Extreme Programming Explained: Embrace Change* "I found this book to be a great mix of solid advice and wonderful analogies!" —Martin Fowler, author of *Refactoring and UML Distilled* "I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I would worry about it being lost." —Kevin Ruland, Management Science, MSG-Logistics "The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful.... By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike." —John Lakos, author of *Large-Scale C++ Software Design* "This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients." —Eric Vought, Software Engineer "Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft well. An excellent book." —Pete McBreen, Independent Consultant "Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living." —Jared Richardson, Senior Software Developer, iRenaissance, Inc. "I would like to see this issued to every new employee at my company...." —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. "If I'm putting together a project, it's the authors of this book that I want. . . . And failing that I'd settle for people who've read their book." —Ward Cunningham Straight from the programming trenches, *The Pragmatic Programmer* cuts through the increasing specialization and technicalities of modern software development to examine the core process—taking a requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, *The Pragmatic Programmer* illustrates the best practices and major pitfalls of many different aspects of software development. Whether you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer.

**Clojure Programming** Feb 18 2022 Clojure is a practical, general-purpose language that offers expressivity rivaling other dynamic languages like Ruby and Python, while seamlessly taking advantage of Java libraries, services, and all of the resources of the JVM ecosystem. This book helps you learn the fundamentals of Clojure with examples relating it to the languages you know already, in the domains and topics you work with every day. See how this JVM language can help eliminate unnecessary complexity from your programming practice and open up new options for solving the most challenging problems. Clojure Programming demonstrates the language's flexibility by showing how it can be used for common tasks like web programming and working with databases, up through more demanding applications that require safe, effective concurrency and parallelism, data analysis, and more. This in-depth look helps tie together the full Clojure development experience, from how to organize your project and an introduction to Clojure build tooling, to a tutorial on how to make the most of Clojure's REPL during development, and how to deploy your finished application in a cloud environment. Learn how to use Clojure while leveraging your investment in the Java platform Understand the advantages of Clojure as an efficient Lisp for the JVM See how Clojure is used today in several practical domains Discover how Clojure eliminates the need for many verbose and complicated design patterns Deploy large or small web applications to the cloud with Clojure

**Hands-On Reactive Programming with Clojure** Sep 25 2022 Learn how to use RxClojure to deal with stateful computations Key FeaturesLeverage the features of Functional Reactive Programming using ClojureCreate dataflow-based systems that are the building blocks of Reactive ProgrammingUse different Functional Reactive Programming frameworks, techniques, and patterns to solve real-world problemsBook Description Reactive Programming is central to many concurrent systems, and can help make the process of developing highly concurrent, event-driven, and asynchronous applications simpler and less error-prone. This book will allow you to explore Reactive Programming in Clojure 1.9 and help you get to grips with some of its new features such as transducers, reader conditionals, additional string functions, direct linking, and socket servers. *Hands-On Reactive Programming with Clojure* starts by introducing you to Functional Reactive Programming (FRP) and its formulations, as well as showing you how it inspired Compositional Event Systems (CES). It then guides you in understanding Reactive Programming as well as learning how to develop your ability to work with time-varying values thanks to examples of reactive applications implemented in different frameworks. You'll also gain insight into some interesting Reactive design patterns such as the simple component, circuit breaker, request-response, and multiple-master replication. Finally, the book introduces microservices-based architecture in Clojure and closes with examples of unit testing frameworks. By the end of the book, you will have gained all the knowledge you need to create applications using different Reactive Programming approaches. What you will learnUnderstand how to think in terms of time-varying values and event streamsCreate, compose, and transform observable sequences using Reactive extensionsBuild a CES framework from scratch using core.async as its foundationDevelop a simple ClojureScript game using ReagiIntegrate Om and RxJS in a web applicationImplement a reactive API in Amazon Web Services (AWS) Discover helpful approaches to backpressure and error handlingGet to grips with futures and their applicationsWho this book is for If you're interested in using Reactive Programming to build asynchronous and concurrent applications, this is the book for you. Basic knowledge of Clojure programming is necessary to understand the concepts covered in this book.

**Clojure: High Performance JVM Programming** Feb 24 2020 Explore the world of lightning fast Clojure apps with asynchronous channels, logic, reactive programming, and more About This Book Discover Clojure's features and advantages and use them in your existing projects Explore lesser-known and more advanced features, constructs, and methodologies such as asynchronous channels, actors, logic programming, and reactive programming Measure and monitor performance, and understand optimization techniques Who This Book Is For If you're looking to learn more about its core libraries and delve into the Clojure language in detail, then this book is ideal for you. Prior knowledge of the Clojure language is required. What You Will Learn Understand tools for the Clojure world and how they relate to Java tools and standards (such as Maven) Write simple multicore programs using Clojure's core concepts, such as atoms, agents, and refs Get to grips with Clojure's concurrency and state-management primitives in depth Analyze latency using the Criterium library Avoid reflection and boxing with type hints Maximize the impact of parallelization, functional composition, and process transformation by composing reducers and transducers Modify and add features to the Clojure language using macros Test your code with unit tests, specs, and type checks to write testable code Troubleshoot and style your Clojure code to make it more maintainable In Detail Clojure is a general-purpose language from the Lisp family with an emphasis on functional programming. It has some interesting concepts and features such as immutability, gradual typing, thread-safe concurrency primitives, and macro-based metaprogramming, which makes it a great choice to create modern, performant, and scalable applications. This learning path aims at unleashing the true potential of the Clojure language so you can use it in your projects. It begins with installing and setting up the Clojure environment before moving on to explore the language in depth. You'll get acquainted with its various features such as functional programming, concurrency, reducers, transducers, core.async and core.logic, and so on with a great level of detail. Moving on, you'll also learn how to enhance performance using Java interoperability and JVM-specific features from Clojure; you'll even master language features such as asynchronous channels, actors, logic programming, reactive programming, metaprogramming,

and so on. This learning path combines some of the best that Packt has to offer in one complete, curated package. It includes content from the following Packt products: Clojure for Java Developers by Eduardo Diaz Clojure High Performance Programming, Second Edition by Shantanu Kumar Mastering Clojure by Akhil Wali Style and approach This is an easy-to-follow, step-by-step guide to start writing Clojure programs, making use of all of its varied features and advantages.

**Clojure in Action** Mar 19 2022 Summary A fully revised edition that covers the new features available in Clojure 1.6. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Clojure is a modern Lisp for the JVM. It has the strengths you expect: first-class functions, macros, and Lisp's clean programming style. It supports functional programming, making it ideal for concurrent programming and for creating domain-specific languages. Clojure lets you solve harder problems, make faster changes, and end up with a smaller code base. It's no wonder that there are so many Clojure success stories. About the Book Clojure in Action, Second Edition is an expanded and improved version that's been updated to cover the new features of Clojure 1.6. The book gives you a rapid introduction to the Clojure language, moving from abstract theory to practical examples. You'll start by learning how to use Clojure as a general-purpose language. Next, you'll explore Clojure's efficient concurrency model, based on the database concept of Software Transactional Memory (STM). You'll gain a new level of productivity through Clojure DSLs that can run on the JVM. Along the way, you'll learn countless tips, tricks, and techniques for writing smaller, safer, and faster code. What's Inside Functional programming basics Metaprogramming with Clojure's macros Interoperating with Java Covers Clojure 1.6 About the Reader Assumes readers are familiar with a programming language like C, Java, Ruby, or Python. Table of Contents Introducing Clojure Clojure elements: Data structures and functions Building blocks of Clojure Multimethod polymorphism Exploring Clojure and Java interop State and the concurrent world Evolving Clojure through macros More on functional programming Protocols, records, and types Test-driven development and more More macros and DSL

**Clojure Cookbook** Sep 13 2021 With more than 150 detailed recipes, this cookbook shows experienced Clojure developers how to solve a variety of programming tasks with this JVM language. The solutions cover everything from building dynamic websites and working with databases to network communication, cloud computing, and advanced testing strategies. And more than 60 of the world's best Clojurians contributed recipes. Each recipe includes code that you can use right away, along with a discussion on how and why the solution works, so you can adapt these patterns, approaches, and techniques to situations not specifically covered in this cookbook. Master built-in primitive and composite data structures Create, develop and publish libraries, using the Leiningen tool Interact with the local computer that's running your application Manage network communication protocols and libraries Use techniques for connecting to and using a variety of databases Build and maintain dynamic websites, using the Ring HTTP server library Tackle application tasks such as packaging, distributing, profiling, and logging Take on cloud computing and heavyweight distributed data crunching Dive into unit, integration, simulation, and property-based testing Clojure Cookbook is a collaborative project with contributions from some of the world's best Clojurians, whose backgrounds range from aerospace to social media, banking to robotics, AI research to e-commerce.

**Web Development with Clojure** Nov 22 2019 Modern web applications deserve modern tools. Harness the JVM's rich infrastructure while taking advantage of the expressive power and brisk performance of a modern functional language. Exploit Clojure's unique advantages for web development. Step by step, apply the fundamentals of programming in Clojure to build real-world, professional web applications. This edition features new libraries, tools, and best practices, and focuses on developing modern single-page applications. Stop developing web apps with yesterday's tools. Today, developers are increasingly adopting Clojure as a web-development platform. See for yourself what makes Clojure so desirable, as you create a series of web apps of growing complexity, exhibiting the full process of web development using a modern functional language. Journey through all the steps in developing a rich Picture Gallery web application--from conception to packaging and deployment. You'll work hands-on with Clojure and build real-world, professional web apps. This fully updated second edition reveals the changes in the rapidly evolving Clojure ecosystem. Get up to speed on the many new libraries, tools, and best practices. Gain expertise in the popular Ring/Compojure stack using the Luminus framework. Learn how Clojure works with databases and speeds development of RESTful services. See why ClojureScript is rapidly becoming a popular front-end platform, and use ClojureScript with the popular Reagent library to build single-page applications. This book is for you, whether you're already familiar with Clojure or if you're completely new to the language. What You Need: The latest JVM, Clojure 1.6+, and the Leiningen build tool, as well as an editor such as Emacs, IntelliJ, Eclipse, Light Table, or VI.

**Elements of Clojure** Jun 22 2022 This book tries to put words to what most experienced programmers already know. It provides a framework for making better design choices, and a vocabulary for teams to discuss the software they collaborate on.

**The Reasoned Schemer, second edition** Nov 15 2021 A new edition of a book, written in a humorous question-and-answer style, that shows how to implement and use an elegant little programming language for logic programming. The goal of this book is to show the beauty and elegance of relational programming, which captures the essence of logic programming. The book shows how to implement a relational programming language in Scheme, or in any other functional language, and demonstrates the remarkable flexibility of the resulting relational programs. As in the first edition, the pedagogical method is a series of questions and answers, which proceed with the characteristic humor that marked The Little Schemer and The Seasoned Schemer. Familiarity with a functional language or with the first five chapters of The Little Schemer is assumed. For this second edition, the authors have greatly simplified the programming language used in the book, as well as the implementation of the language. In addition to revising the text extensively, and simplifying and revising the "Laws" and "Commandments," they have added explicit "Translation" rules to ease translation of Scheme functions into relations.

**Clojure Applied** Jan 17 2022 Think in the Clojure way! Once you're familiar with Clojure, take the next step with extended lessons on the best practices and most critical decisions you'll need to make while developing. Learn how to model your domain with data, transform it with pure functions, manage state, spread your work across cores, and structure apps with components. Discover how to use Clojure in the real world, and unlock the speed and power of this beautiful language on the Java Virtual Machine. Clojure Applied gives you the practical, realistic advice and depth of field that's been missing from your development practice. You want to develop software in the most effective, efficient way possible. This book gives you the answers you've been looking for in friendly, clear language. Dive into the core concepts of Clojure: immutable collections, concurrency, pure functions, and state management. You'll finally get the complete picture you've been looking for, rather than dozens of puzzle pieces you must assemble yourself. First, explore the core concepts of Clojure development: learn how to model your domain with immutable data; choose the ideal collection; and write simple, pure functions for efficient transformation. Next you'll apply those core concepts to build applications: discover how Clojure manages state and identity; spread your work for concurrent programming; and create and assemble components. Finally, see how to manage external integration and deployment concerns by developing a testing strategy, connecting with other data sources, and getting your libraries and applications out the door. Go beyond the toy box and into Clojure's way of thinking. By the end of this book, you'll have the tools and information to put Clojure's strengths to work. What You Need: To follow along with the examples in the book, you will need Clojure 1.6, Leinegen 2, and Java 6 or higher.

**Clojure Data Structures and Algorithms Cookbook** Jul 11 2021 25 recipes to deeply understand and implement advanced algorithms in Clojure About This Book Explore various advanced algorithms and learn how they are used to address many real-world computing challenges Construct elegant solutions using impressive techniques including zippers, parsing, and pattern matching Solve complex problems by adopting innovative approaches such as logic or asynchronous programming In Detail Data-structures and algorithms often cross your path when you compress files, compile programs, access databases, or simply use your favourite text editor. Understanding and implementing them can be daunting. Curious learners and industrial developers can find these complex, especially if they focus on the detailed implementation of these data structures. Clojure is a highly pragmatic and expressive language with efficient and easy data manipulation capabilities. As such, it is great for implementing these algorithms. By abstracting away a great share of the unnecessary complexity resulting from implementation, Clojure and its contrib libraries will help you address various algorithmic challenges, making your data exploration both profitable and enjoyable. Through 25 recipes, you'll explore advanced algorithms

and data-structures, well served by a sound Clojure implementation. This book opens with an exploration of alternative uses of the array data-structure, covering LZ77 compression, drawing fractals using Pascal's triangles, simulating a multi-threaded program execution, and implementing a call-stack winding and un-winding operations. The book elaborates on linked lists, showing you how to construct doubly linked ones, speed up search times over the elements of such structures, use a linked-list as the foundation of a shift-reduce parser, and implement an immutable linked-list using skew binary numbers representation. After that, the tree data-structure is explored, focusing on building self-balancing Splay Trees, designing a B-Tree backing-up an efficient key-value data-store, constructing an undo capable Rope, and showing how Tries can make for an auto-completing facility. Next, some optimization and machine learning techniques are discussed, namely for building a co-occurrence-based recommendation engine, using branch-and-bound to optimize integral cost and profit problems, using Dijkstra's algorithm to determine optimal paths and summarizing texts using the LexRank algorithm. Particular attention is given to logic programming, you will learn to use this to discover interesting relations between social website data, by designing a simple type inferencer for a mini Java-like language, and by building a simple checkers game engine. Asynchronous programming will be addressed and you will design a concurrent web-crawler, an interactive HTML5 game, and an online taxi booking platform. Finally, you'll explore advanced cases for higher order functions in Clojure while implementing a recursive descent parser using efficient mutual recursion, devising a mini reusable firewall simulator thanks to Clojure 1.7 new transducers feature or building a simple unification engine with the help of Continuation Passing Style. What You Will Learn Explore alternative uses of classical data-structures like arrays and linked-lists Discover advanced types of tree data-structures Explore advanced machine learning and optimization techniques Utilise powerful Clojure libraries, such as Instaparse for parsing, core.match for pattern matching, clojure.zip for zippers, and clojure.matrix for matrix operations Learn logic programming through the usage of the library core.logic Master asynchronous programming using the core.async library See the transducers in action while resolving real-world use-cases Who This Book Is For If you are an experienced Clojure developer, longing to take your knowledge to the next level by discovering and using advanced algorithms and seeing how they can be applied to real-world problems, then this book is for you. Style and approach This book consists of a set of step-by-step recipes, each demonstrating the material covered in action so it is put in context. When necessary, pointers to further resources are provided.

**ClojureScript: Up and Running** Mar 07 2021 Learn how to build complete client-side applications with ClojureScript, the Clojure language variant that compiles to optimized JavaScript. This hands-on introduction shows you how ClojureScript not only has similarities to JavaScript—without the flaws—but also supports the full semantics of its parent language. You'll delve into ClojureScript's immutable data structures, lazy sequences, first-class functions, macros, and support for JavaScript libraries. No previous experience with Clojure or ClojureScript is necessary. If you're familiar with JavaScript, HTML, CSS, and the DOM, you'll quickly discover that ClojureScript has the same reach as JavaScript, but with more power. Start writing ClojureScript code with the Leiningen build system Learn how the ClojureScript compiler works to produce optimized JavaScript Use JavaScript functions and libraries directly from ClojureScript code Explore functions in Clojure's sequence library such as map, reduce, and filter Use macros to define new control structures or embed domain-specific languages Compile manually or script your own workflow with ClojureScript's compiler tools Integrate ClojureScript with Clojure on the JVM to build powerful client-server applications

**Clojure for the Brave and True** May 21 2022 For weeks, months—nay!—from the very moment you were born, you've felt it calling to you. At long last you'll be united with the programming language you've been longing for: Clojure! As a Lisp-style functional programming language, Clojure lets you write robust and elegant code, and because it runs on the Java Virtual Machine, you can take advantage of the vast Java ecosystem. Clojure for the Brave and True offers a "dessert-first" approach: you'll start playing with real programs immediately, as you steadily acclimate to the abstract but powerful features of Lisp and functional programming. Inside you'll find an offbeat, practical guide to Clojure, filled with quirky sample programs that catch cheese thieves and track glittery vampires. Learn how to: -Wield Clojure's core functions -Use Emacs for Clojure development -Write macros to modify Clojure itself -Use Clojure's tools to simplify concurrency and parallel programming Clojure for the Brave and True assumes no prior experience with Clojure, the Java Virtual Machine, or functional programming. Are you ready, brave reader, to meet your true destiny? Grab your best pair of parentheses—you're about to embark on an epic journey into the world of Clojure!

**Microservices with Clojure** Sep 01 2020 The common patterns and practices of the microservice architecture and their application using the Clojure programming language. Key Features Relevance of the microservice architecture and benefits of Clojure's functional and simple features to implement it. Learn best practices and common principles to avoid common pitfalls while developing microservices. Learn how to use Pedestal to build your next microservices, secure them using JWT, and monitor them using the ELK stack Book Description The microservice architecture is sweeping the world as the de facto pattern with which to design and build scalable, easy-to-maintain web applications. This book will teach you common patterns and practices, and will show you how to apply these using the Clojure programming language. This book will teach you the fundamental concepts of architectural design and RESTful communication, and show you patterns that provide manageable code that is supportable in development and at scale in production. We will provide you with examples of how to put these concepts and patterns into practice with Clojure. This book will explain and illustrate, with practical examples, how teams of all sizes can start solving problems with microservices. You will learn the importance of writing code that is asynchronous and non-blocking and how Pedestal helps us do this. Later, the book explains how to build Reactive microservices in Clojure that adhere to the principles underlying the Reactive Manifesto. We finish off by showing you various ways to monitor, test, and secure your microservices. By the end, you will be fully capable of setting up, modifying, and deploying a microservice with Clojure and Pedestal. What you will learn Explore the pros and cons of monolithic and microservice architectures Use Clojure to effectively build a real-life application using Microservices Gain practical knowledge of the Clojure Pedestal framework and how to use it to build Microservices Explore various persistence patterns and learn how to use Apache Kafka to build event-driven microservice architectures Secure your Microservices using JWT Monitor Microservices at scale using the ELK stack Deploy Microservices at scale using container orchestration platforms such as Kubernetes Who this book is for You should have a working knowledge of programming in Clojure. However, no knowledge of RESTful architecture, microservices, or web services is expected. If you are looking to apply techniques to your own projects, taking your first steps into microservice architecture, this book is for you.

**Programming Languages and Systems** Jan 25 2020 This book constitutes the proceedings of the 25th European Symposium on Programming, ESOP 2016, which took place in Eindhoven, The Netherlands, in April 2016, held as Part of the European Joint Conferences on Theory and Practice of Software, ETAPS 2016. The 29 papers presented in this volume were carefully reviewed and selected from 98 submissions. Being devoted to fundamental issues in the specification, design, analysis, and implementation of programming languages and systems, ESOP features contributions on all aspects of programming language research; theoretical and/or practical advances.

**Clojure High Performance Programming** Apr 20 2022 Become an expert at writing fast and high performant code in Clojure 1.7.0 About This Book Enhance code performance by using appropriate Clojure features Improve the efficiency of applications and plan their deployment A hands-on guide to designing Clojure programs to get the best performance Who This Book Is For This book is intended for intermediate Clojure developers who are looking to get a good grip on achieving optimum performance. Having a basic knowledge of Java would be helpful. What You Will Learn Identify performance issues in Clojure programs using different profiling tools Master techniques to achieve numerical performance in Clojure Use Criterion library to measure latency of Clojure expressions Exploit Java features in Clojure code to enhance performance Avoid reflection and boxing with type hints Understand Clojure's concurrency and state-management primitives in depth Measure and monitor performance, and understand optimization techniques In Detail Clojure treats code as data and has a macro system. It focuses on programming with immutable values and explicit progression-of-time constructs, which are intended to facilitate the development of more robust programs, particularly multithreaded ones. It is built with performance, pragmatism, and simplicity in mind. Like most general purpose languages, various Clojure features have different performance characteristics that one should know in order to write high performance code. This book shows you how to evaluate the performance implications of various Clojure abstractions, discover their underpinnings, and apply the right approach for optimum performance in real-world programs. It starts

by helping you classify various use cases and the need for them with respect to performance and analysis of various performance aspects. You will also learn the performance vocabulary that experts use throughout the world and discover various Clojure data structures, abstractions, and their performance characteristics. Further, the book will guide you through enhancing performance by using Java interoperability and JVM-specific features from Clojure. It also highlights the importance of using the right concurrent data structure and Java concurrency abstractions. This book also sheds light on performance metrics for measuring, how to measure, and how to visualize and monitor the collected data. At the end of the book, you will learn to run a performance profiler, identify bottlenecks, tune performance, and refactor code to get a better performance. Style and approach An easy-to-follow guide full of real-world examples and self-sufficient code snippets that will help you get your hands dirty with high performance programming with Clojure.

**Clojure for Java Developers** Dec 16 2021 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 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.

**Professional Clojure** Oct 02 2020 Clear, practical Clojure for the professional programmer Professional Clojure is the experienced developer's guide to functional programming using the Clojure language. Designed specifically to meet the needs of professional developers, this book briefly introduces functional programming before skipping directly to the heart of using Clojure in a real-world setting. The discussion details the read—eval—print workflow that enables fast feedback loops, then dives into enterprise-level Clojure development with expert guidance on web services, testing, datomics, performance, and more. Read from beginning to end, this book serves as a clear, direct guide to Clojure programming—but the comprehensive coverage and detail makes it extraordinarily useful as a quick reference for mid-project snags. The author team includes four professional Clojure developers, ensuring professional-level instruction from a highly practical perspective. Clojure is an open-source programming language maintained and supported by Cognitect., and quickly gaining use across industries at companies like Amazon, Walmart, Facebook, Netflix, and more. This guide provides a concise, yet thorough resource for professional developers needing to quickly put Clojure to work. Parse the difference between functional and object-oriented programming Understand Clojure performance and capabilities Develop reactive web pages using ClojureScript Adopt an REPL-driven development workflow Clojure is a modern dialect of Lisp, designed for concurrency and Java compatibility. It can be used with the Java virtual machine, Microsoft's Common Language Runtime, and JavaScript engines, providing a level of both versatility and functionality that is appealing to more and more enterprise-level developers. As requirements grow increasingly complex, stepping away from imperative programming can dramatically streamline the development workflow. Professional Clojure provides the expert instruction that gets professionals up to speed and back to work quickly.

**Mastering Clojure Data Analysis** Dec 24 2019 This book consists of a practical, example-oriented approach that aims to help you learn how to use Clojure for data analysis quickly and efficiently. This book is great for those who have experience with Clojure and need to use it to perform data analysis. This book will also be hugely beneficial for readers with basic experience in data analysis and statistics.

**Clojure** Dec 04 2020 The Clojure standard library is a treasure trove of functions and macros that have been battle-tested over the years to solve the most challenging programming problems. Clojure: The Essential Reference is an extensive reference to the standard library but it doesn't read as a dull list of functions. In addition to providing clear explanations for each topic, this guide is full of real-world examples, links, and background information. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

**Programming Scala** Jul 19 2019 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

**Programming Erlang** Aug 20 2019 A multi-user game, web site, cloud application, or networked database can have thousands of users all interacting at the same time. You need a powerful, industrial-strength tool to handle the really hard problems inherent in parallel, concurrent environments. You need Erlang. In this second edition of the bestselling Programming Erlang, you'll learn how to write parallel programs that scale effortlessly on multicore systems. Using Erlang, you'll be surprised at how easy it becomes to deal with parallel problems, and how much faster and more efficiently your programs run. That's because Erlang uses sets of parallel processes-not a single sequential process, as found in most programming languages. Joe Armstrong, creator of Erlang, introduces this powerful language in small steps, giving you a complete overview of Erlang and how to use it in common scenarios. You'll start with sequential programming, move to parallel programming and handling errors in parallel programs, and learn to work confidently with distributed programming and the standard Erlang/Open Telecom Platform (OTP) frameworks. You need no previous knowledge of functional or parallel programming. The chapters are packed with hands-on, real-world tutorial examples and insider tips and advice, and finish with exercises for both beginning and advanced users. The second edition has been extensively rewritten. New to this edition are seven chapters covering the latest Erlang features: maps, the type system and the Dialyzer, WebSockets, programming idioms, and a new stand-alone execution environment. You'll write programs that dynamically detect and correct errors, and that can be upgraded without stopping the system. There's also coverage of rebar (the de facto Erlang build system), and information on how to share and use Erlang projects on github, illustrated with examples from cowboy and bitcask. Erlang will change your view of the world, and of how you program. What You Need The Erlang/OTP system. Download it from [erlang.org](http://erlang.org).

