

Practical Clojure

This book presents a selection of papers from the 2017 World Conference on Information Systems and Technologies (WorldCIST'17), held between the 11st and 13th of April 2017 at Porto Santo Island, Madeira, Portugal. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and challenges involved in modern Information Systems and Technologies research, together with technological developments and applications. The main topics covered are: Information and Knowledge Management; Organizational Models and Information Systems; Software and Systems Modeling; Software Systems, Architectures, Applications and Tools; Multimedia Systems and Applications; Computer Networks, Mobility and Pervasive Systems; Intelligent and Decision Support Systems; Big Data Analytics and Applications; Human–Computer Interaction; Ethics, Computers & Security; Health Informatics; Information Technologies in Education; and Information Technologies in Radiocommunications.

Handle every problem you come across in the world of Clojure programming with this expert collection of recipes About This Book Discover a wide variety of practical cases and real world techniques to enhance your productivity with Clojure. Learn to resolve the everyday issues you face with a functional mindset using Clojure You will learn to write highly efficient, more productive, and error-free programs without the risk of deadlocks and race-conditions Who This Book Is For This book is for Clojure developers who have some Clojure programming experience and are well aware of their shortcomings. If you want to learn to tackle common problems, become an expert, and develop a solid skill set, then this book is for you. What You Will Learn Manipulate, access, filter, and transform your data with Clojure Write efficient parallelized code through Clojure abstractions Tackle Complex Concurrency easily with Reactive Programming Build on Haskell abstractions to write dynamic functional tests Write AWS Lambda functions effortlessly Put Clojure in use into your IoT devices Use Clojure with Slack for instant monitoring Scaling your Clojure application using Docker Develop real-time system interactions using MQTT and websockets In Detail When it comes to learning and using a new language you need an effective guide to be by your side when things get rough. For Clojure developers, these recipes have everything you need to take on everything this language offers. This book is divided into three high impact sections. The first section gives you an introduction to live programming and best practices. We show you how to interact with your connections by manipulating, transforming, and merging collections. You'll learn how to work with macros, protocols, multi-methods, and transducers. We'll also teach you how to work with languages such as Java, and Scala. The next section deals with intermediate-level content and enhances your Clojure skills, here we'll teach you concurrency programming with Clojure for high performance. We will provide you with advanced best practices, tips on Clojure programming, and show you how to work with Clojure while developing applications. In the final section you will learn how to test, deploy and analyze websocket behavior when your app is deployed in the cloud. Finally, we will take you through DevOps. Developing with Clojure has never been easier with these recipes by your side! Style and approach This book takes a recipe-based approach by diving directly into helpful programming concepts. It will give you a foolproof approach to programming and teach you how to deal with problems that may arise while working with Clojure. The book is divided into three sections giving you the freedom skip to the section of your choice depending on the problem faced.

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

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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

This book constitutes the refereed proceedings of the Third International Conference on Model and Data Engineering, MEDI 2013, held in Amantea, Calabria, Italy, in September 2013. The 19 long papers and 3 short papers presented were carefully reviewed and selected from 61 submissions. The papers specifically focus on model engineering and data engineering with special emphasis on most recent and relevant topics in the areas of model-driven engineering, ontology engineering, formal modeling, security, and database modeling.

Pro Vim teaches you the real-world workflows, tips, and tricks of this powerful, terminal-based text editor. This book covers all the essentials, as well as lesser-known but equally powerful features that will ensure you become a top-level performant and professional user, able to jump between multiple sessions while manipulating and controlling with ease many different documents and programming files. With easy-to-digest chapters on all the areas you need to learn, this book is a key addition to your library that will enable you to become a fast, efficient user of Vim. Using this book, you will learn how to properly configure your terminal environment and work without even touching the mouse. You will become an expert in how Vim actually works: how buffers and sessions work, automation through Macros and shell scripting, real-world workflows, and how to work efficiently and fast with plugins and different themes. You will also learn practical, real-world tips on how to best utilize Vim alongside the terminal multiplexer tmux; helping you to manage files across multiple servers and terminal sessions. Avoid common pitfalls and work with best practice ways to efficiently edit and control your files and sessions from the terminal interface. Vim is an advanced power tool that is commonly recognized as being difficult to learn, even for experienced developers. This book shows you how to become an expert by focusing on not only the fundamentals of how Vim works, but also by distilling the author's own experiences learning Vim into an easy-to-understand and follow guide. It's time to bring your programming, editing, and workflow skills up to the professional level - use Pro Vim today.

This book is for those with a basic knowledge of Clojure, who are looking to push the language to excel with data analysis.

"Clojure programming ... This functional programming language not only lets you take advantage of Java libraries, services, and other JVM resources, it rivals other dynamic languages such as Ruby and Python. With this comprehensive guide, you'll learn Clojure fundamentals with examples that relate it to languages you already know"--P. [4] of cover.

Explore the world of lightning fast Clojure apps with asynchronous channels, logic, reactive programming, and more About This Book

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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 Criterion 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.

This book is the first definitive reference for the Clojure language, providing both an introduction to functional programming in general and a more specific introduction to Clojure's features. This book demonstrates the use of the language through examples, including features such as software transactional memory (STM) and immutability, which may be new to programmers coming from other languages. Overview of functional programming and description of what sets Clojure apart from other languages Detailed explanation of Clojure's special features Examples of real-world tasks that are well-suited to Clojure's capabilities, starting with simple tasks and moving on to more complex applications Annotation 'Professional Clojure' is the experienced developer's guide to functional programming using the Clojure language. Designed specifically to meet the needs of professional developers, it briefly introduces functional programming before skipping directly to the heart of using Clojure in a real-world setting.

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.

This book is the first definitive reference for the Clojure language, providing both an introduction to functional programming in general and a more specific introduction to Clojure's features. This book demonstrates the use of the language through examples, including features such as software transactional memory (STM) and immutability, which may be new to programmers coming from other languages. Overview of functional programming and description of what sets Clojure apart from other languages Detailed explanation of Clojure's special features Examples of real-world tasks that are well-suited to Clojure's capabilities, starting with simple tasks and moving on to more complex applications If you're an experienced programmer who has not worked with Clojure before, this guide is the perfect thorough but

gentle introduction 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. The first half of the book takes you through Clojure's unique design and lets you try your hand at two Clojure projects, including a web app. The holistic course in second half provides you with critical tools and resources, including ways to plug into the Clojure community. Understand the basic structure of a Clojure expression Learn how to shape and control code in a functional way Discover how Clojure handles real-world state and concurrency Take advantage of Java classes and learn how Clojure handles polymorphism Manage and use libraries in a Clojure project Use the core.async library for asynchronous and concurrent communication Explore the power of macros in Clojure programming Learn how to think in Clojure by following the book's seven-week training course

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 three-volume set LNCS 12476 - 12478 constitutes the refereed proceedings of the 9th International Symposium on Leveraging Applications of Formal Methods, ISoLA 2020, which was planned to take place during October 20–30, 2020, on Rhodes, Greece. The event itself was postponed to 2021 due to the COVID-19 pandemic. The papers presented were carefully reviewed and selected for inclusion in the proceedings. Each volume focusses on an individual topic with topical section headings within the volume: Part I, Verification Principles: Modularity and (De-)Composition in Verification; X-by-Construction: Correctness meets Probability; 30 Years of Statistical Model Checking; Verification and Validation of Concurrent and Distributed Systems. Part II, Engineering Principles: Automating Software Re-Engineering; Rigorous Engineering of Collective Adaptive Systems. Part III, Applications: Reliable Smart Contracts: State-of-the-art, Applications, Challenges and Future Directions; Automated Verification of Embedded Control Software; Formal methods for DIStributed COmputing in future RAILway systems.

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.

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.

This book constitutes the post conference proceedings of the 7th International Workshop on Enterprise and Organizational Modeling and Simulation, EOMAS 2011, held in conjunction with CAiSE 2011 in London, UK, in June 2011. Enterprises are purposefully designed systems used to fulfill certain functions. An extended enterprise and organizational study involves both analysis and design activities, in which modeling and simulation play prominent roles. The related techniques and methods are effective, efficient, economic, and widely used in enterprise engineering, organizational study, and business process management. The 14 contributions in this volume were carefully reviewed and selected from 29 submissions, and they explore these topics, address the underlying challenges, find and improve on solutions, and demonstrate the application of modeling and simulation in the domains of enterprises, their organizations and underlying business processes.

Clojure is a new version of Lisp that runs on the Java Virtual Machine. "Clojure in Action" is a hands-on tutorial for the working programmer who has written code in a language like Java or Ruby, but has no prior experience with Lisp.

If you are a business user or data professional, this book will give you a solid grounding in the use of TIBCO Spotfire. This book assumes no prior knowledge of Spotfire or even basic data and visualization concepts.

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!

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, Leiningen 2, and Java 6 or higher.

Get up to speed with Clojure in this quick and practical primer. You'll learn the nuts and bolts of functional programming, data structures, sequences, destructuring, pattern matching, polymorphism, concurrency, conventions, and more. Author Mark McDonnell talks about organization with namespaces; how to change the language via macros; object-oriented programming; and creating command-line apps. Finally, he shows you how to write Clojure from shell languages and interfaces such as Vim. After reading and using Quick Clojure, you'll come away with first-hand knowledge and advice on how to quickly adopt, use, and apply Clojure without all the theoretical baggage that bigger books can sometimes bring. What You'll Learn Work with data structures and their syntax Discover OOP in Clojure with patterns, polymorphisms, pattern matching, and concurrency Use conventions, organization, and namespaces in Clojure Create command-line apps Build various Clojure projects with the Leiningen IDE tool and framework Who This Book Is For Programmers with experience. A Java background would be helpful, but not required.

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

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.

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"This book presents current research on all aspects of domain-specific language for scholars and practitioners in the software engineering fields, providing new results and answers to open problems in DSL research"--

Web development is still one of today's most popular, active, and important programming and development activities. From a single web page to an e-commerce-enabled web site to a fully-fledged web application, the Java programming language and its frameworks allow you great flexibility and productivity for your web application development. Learn Java for Web Development teaches web developers who are new to Java key skills, Java-based languages, and frameworks to build simple or complex web sites and applications. As soon as you pick up this book, Vishal Layka's experience guides you on a very practical learning and building journey. You will learn the Java nuts and bolts necessary to build a simple "HelloWorld" Java (native) application, as well as a "HelloWorld" Java-based web application example that utilizes servlets and Java Server Pages (JSPs). Over the course of the book, you'll learn more about servlets and JSPs and delve into Java

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Server Faces (JSFs) and the expression language found in each of these by applying them in a real-world case study—a book store e-commerce application. Then you'll build your web application using Apache Struts2 and the Spring MVC framework. The book concludes by exploring the web application that you've built and examining industry best practices and how these might fit with your application, as well as covering alternative Java Web frameworks like Groovy/Grails and Scala/Play 2. You also can explore the basics of Java, Groovy, and Scala in the book's appendices. While reading this book, you'll see all this in action and you can use it as a starting point for further Java web development. Study and experiment with the many source code examples, and later apply them to your own web application building endeavors and 2:00 AM challenges.

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.

Harness the power of DevOps to boost your skill set and make your IT organization perform better About This Book Get to know the background of DevOps so you understand the collaboration between different aspects of an IT organization and a software developer Improve your organization's performance to ensure smooth production of software and services Deploy top-quality software and ensure software maintenance and release management with this practical guide Who This Book Is For This book is aimed at developers and system administrators who wish to take on larger responsibilities and understand how the infrastructure that builds today's enterprises works. This book is also great for operations personnel who would like to better support developers. You do not need to have any previous knowledge of DevOps. What You Will Learn Appreciate the merits of DevOps and continuous delivery and see how DevOps supports the agile process Understand how all the systems fit together to form a larger whole Set up and familiarize yourself with all the tools you need to be efficient with DevOps Design an application that is suitable for continuous deployment systems with Devops in mind Store and manage your code effectively using different options such as Git, Gerrit, and Gitlab Configure a job to build a sample CRUD application Test the code using automated regression testing with Jenkins Selenium Deploy your code using tools such as Puppet, Ansible, Palletops, Chef, and Vagrant Monitor the health of your code with Nagios, Munin, and Graphite Explore the workings of Trac—a tool used for issue tracking In Detail DevOps is a practical field that focuses on delivering business value as efficiently as possible. DevOps encompasses all the flows from code through testing environments to production environments. It stresses the cooperation between different roles, and how they can work together more closely, as the roots of the word imply—Development and Operations. After a quick refresher to DevOps and continuous delivery, we quickly move on to looking at how DevOps affects architecture. You'll create a sample enterprise Java application that you'll continue to work with through the remaining chapters. Following this, we explore various code storage and build server options. You will then learn how to perform code testing with a few tools and deploy your test successfully. Next, you will learn how to monitor code for any anomalies and make sure it's running properly. Finally, you will discover how to handle logs and keep track of the issues that affect processes Style and approach This book is primarily a technical guide to DevOps with practical examples suitable for people who like to learn by implementing concrete working code. It starts out with background information and gradually delves deeper into technical subjects. Over the last decade, ontology has become an important modeling component in software engineering. Semantic Web Enabled Software Engineering presents some critical findings on opening a new direction of the research of Software Engineering, by exploiting Semantic Web technologies. Most of these findings are from selected papers from the Semantic Web Enabled Software Engineering (SWESE) series of

workshops starting from 2005. Edited by two leading researchers, this advanced text presents a unifying and contemporary perspective on the field. The book integrates in one volume a unified perspective on concepts and theories of connecting Software Engineering and Semantic Web. It presents state-of-the-art techniques on how to use Semantic Web technologies in Software Engineering and introduces techniques on how to design ontologies for Software Engineering.

Understand the philosophy of the Clojure language and dive into its inner workings to unlock its advanced features, methodologies, and constructs About This Book Learn to handle data using sequences, reducers, and transducers in Clojure Explore the lesser known and more advanced features, constructs, and methodologies of the Clojure language and its ecosystem, such as asynchronous channels, actors, logic programming, and reactive programming Sharpen your Clojure skills through illustrative and comprehensive examples Who This Book Is For If you're looking to learn more about the core libraries and dive deep into the Clojure language, then this book is ideal for you. Prior knowledge of the Clojure language is required. What You Will Learn Maximize the impact of parallelization, functional composition, and process transformation by composing reducers and transducers Process and manipulate data using sequences, reducers, and transducers in Clojure Modify and add features to the Clojure language using macros Explore the features of category theory and custom data sources for logic programming in Clojure Orchestrate parallelism and concurrency using built-in primitives as well as community libraries in Clojure Handle data with asynchronous and reactive programming methodologies and leverage it using the core.async library 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. Mastering Clojure gives you an insight into the nitty-gritty details and more advanced features of the Clojure programming language to create more scalable, maintainable, and elegant applications. You'll start off by learning the details of sequences, concurrency primitives, and macros. Packed with a lot of examples, you'll get a walkthrough on orchestrating concurrency and parallelism, which will help you understand Clojure reducers, and we'll walk through composing transducers so you know about functional composition and process transformation inside out. We also explain how reducers and transducers can be used to handle data in a more performant manner. Later on, we describe how Clojure also supports other programming paradigms such as pure functional programming and logic programming. Furthermore, you'll level up your skills by taking advantage of Clojure's powerful macro system. Parallel, asynchronous, and reactive programming techniques are also described in detail. Lastly, we'll show you how to test and troubleshoot your code to speed up your development cycles and allow you to deploy the code faster. Style and approach This is an easy-to-follow project-based guide that throws you directly into the excitement of Clojure code. Mastering Clojure is for anyone who is interested in expanding their knowledge of language features and advanced functional programming.

There is an easier way to build Hadoop applications. With this hands-on book, you'll learn how to use Cascading, the open source abstraction framework for Hadoop that lets you easily create and manage powerful enterprise-grade data processing applications—without having to learn the intricacies of MapReduce. Working with sample apps based on Java and other JVM languages, you'll quickly learn Cascading's streamlined approach to data processing, data filtering, and workflow optimization. This book demonstrates how this framework can help your business extract meaningful

information from large amounts of distributed data. Start working on Cascading example projects right away Model and analyze unstructured data in any format, from any source Build and test applications with familiar constructs and reusable components Work with the Scalding and Cascalog Domain-Specific Languages Easily deploy applications to Hadoop, regardless of cluster location or data size Build workflows that integrate several big data frameworks and processes Explore common use cases for Cascading, including features and tools that support them Examine a case study that uses a dataset from the Open Data Initiative

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 edition aims at practically exploring reactive programming in the latest version of Clojure, while covering some of the newly added features. 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, exploring the full process of web development using a modern functional language. This fully updated third edition reveals the changes in the rapidly evolving Clojure ecosystem and provides a practical, complete walkthrough of the Clojure web-stack. 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 work hands-on with Clojure and build a series of web apps of increasing size and scope, culminating in a professional grade web app using all the techniques you've learned along the way. This fully updated third edition will get you up to speed on the changes in the rapidly evolving Clojure ecosystem - the many new libraries, tools, and best practices. Build a fully featured SPA app with re-frame, a popular front-end framework for ClojureScript supporting a functional style MVC approach for managing the UI state in Single-Page Application-style applications. 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 re-frame library to build single-page applications. Whether you're already familiar with Clojure or completely new to the language, you'll be able to write web applications with Clojure at a professional level.

Cut through the noise and get real results with a step-by-step approach to learning Clojure programming Key Features Ideal for the Clojure beginner who is getting started for the first time A step-by-step Clojure tutorial with exercises and activities that help build key skills Structured to let you progress at your own pace, on your own terms Use your physical print copy to redeem free access to the online interactive edition Book Description You already know you want to learn Clojure, and a smarter way to learn Clojure is to learn by doing. The Clojure Workshop focuses on building up your

practical skills so that you can write clean, expressive code with a language that is great for applications where concurrency and interoperability with the JVM are a priority. You'll learn from real examples that lead to real results. Throughout The Clojure Workshop, you'll take an engaging step-by-step approach to understanding Clojure. You won't have to sit through any unnecessary theory. If you're short on time you can jump into a single exercise each day or spend an entire weekend learning about Clojure web development with Ring. It's your choice. Learning on your terms, you'll build up and reinforce key skills in a way that feels rewarding. Every physical print copy of The Clojure Workshop unlocks access to the interactive edition. With videos detailing all exercises and activities, you'll always have a guided solution. You can also benchmark yourself against assessments, track progress, and receive content updates. You'll even earn a secure credential that you can share and verify online upon completion. It's a premium learning experience that's included with your printed copy. To redeem, follow the instructions located at the start of your Clojure book. Fast-paced and direct, The Clojure Workshop is the ideal for Clojure beginners. You'll build and iterate on your code like a software developer, learning along the way. This process means that you'll find that your new skills stick, embedded as best practice. A solid foundation for the years ahead. What you will learn

- Learn about Clojure fundamentals like functional programming
- Understand and implement common Clojure patterns and best practices
- Explore Clojure's testing infrastructure and the clojure.test library
- Build a client-server application with Clojure and ClojureScript
- Learn how to debug and resolve errors and exceptions
- Explore Ring - Clojure's interface and library for building web applications

Who this book is for Our goal at Packt is to help you be successful, in whatever it is you choose to do. The Clojure Workshop is an ideal Clojure tutorial for the Clojure beginner who is just getting started. Pick up a Workshop today, and let Packt help you develop skills that stick with you for life.

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.

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