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XMPP - Peter Saint-Andre 2009-04-23

A guide to the Extensible Messaging and Presence Protocol covers such topics as architecture, data forms, Jingle, binary data, remote commands, connection methods, and security.

Erlang Programming - Francesco Cesarini 2009-06-11

This book is an in-depth introduction to Erlang, a programming language ideal for any situation where concurrency, fault tolerance, and fast response is essential. Erlang is gaining widespread adoption with the advent of multi-core processors and their new scalable approach to concurrency. With this guide you'll learn how to write complex concurrent programs in Erlang, regardless of your programming background or experience. Written by leaders of the international Erlang community -- and based on their training material -- Erlang Programming focuses on the language's syntax and semantics, and explains pattern matching, proper lists, recursion, debugging, networking, and concurrency. This book helps you: Understand the strengths of Erlang and why its designers included specific features Learn the concepts behind concurrency and Erlang's way of handling it Write efficient Erlang programs while keeping code neat and readable Discover how Erlang fills the requirements for distributed systems Add simple graphical user interfaces with little effort Learn Erlang's tracing mechanisms for debugging concurrent and distributed systems Use the built-in Mnesia database and other table storage features Erlang Programming provides exercises at the end of each chapter and simple examples throughout the book.

History of Programming Languages - Richard L. Wexelblat 2014-05-27

History of Programming Languages presents information pertinent to the technical aspects of the language design and creation. This book provides an understanding of the processes of language design as related to the environment in which languages are developed and the knowledge base available to the originators. Organized into 14 sections encompassing 77 chapters, this book begins with an overview of the programming techniques to use to help the system produce efficient programs. This text then discusses how to use parentheses to help the system identify identical subexpressions within an expression and thereby eliminate their duplicate calculation. Other chapters consider FORTRAN programming techniques needed to produce optimum object programs. This book discusses as well the developments leading to ALGOL 60. The final chapter presents the biography of Adin D. Falkoff. This book is a valuable resource for graduate students, practitioners, historians, statisticians, mathematicians, programmers, as well as computer scientists and specialists.

Property-Based Testing with PropEr, Erlang, and Elixir - Fred Hebert 2019-01-17

Property-based testing helps you create better, more solid tests with little code. By using the PropEr framework in both Erlang and Elixir, this book teaches you how to automatically generate test cases, test stateful programs, and change how you design your software for more principled and reliable approaches. You will be able to better explore the problem space, validate the assumptions you make when coming up with program behavior, and expose unexpected weaknesses in your design. PropEr will even show you how to reproduce the bugs it found. With this book, you will be writing efficient property-based tests in no time. Most tests only demonstrate that the code behaves how the developer expected it to behave, and therefore carry the same blind spots as their authors when special conditions or edge cases show up. Learn how to see things differently with property tests written in PropEr. Start with the basics of property tests, such as writing stateless properties, and using the default generators to generate test cases automatically. More importantly, learn how to think in properties. Improve your properties, write custom data generators, and discover what your code can or cannot do. Learn when to use property tests and when to stick with example tests with real-world sample projects. Explore various testing approaches to find the

one that's best for your code. Shrink failing test cases to their simpler expression to highlight exactly what breaks in your code, and generate highly relevant data through targeted properties. Uncover the trickiest bugs you can think of with nearly no code at all with two special types of properties based on state transitions and finite state machines. Write Erlang and Elixir properties that generate the most effective tests you'll see, whether they are unit tests or complex integration and system tests. What You Need Basic knowledge of Erlang, optionally ElixirFor Erlang tests: Erlang/OTP >= 20.0, with Rebar >= 3.4.0For Elixir tests: Erlang/OTP >= 20.0, Elixir >= 1.5.0

Distributed Services with Go - Travis Jeffery 2021-03-11

This is the book for Gophers who want to learn how to build distributed systems. You know the basics of Go and are eager to put your knowledge to work. Build distributed services that are highly available, resilient, and scalable. This book is just what you need to apply Go to real-world situations. Level up your engineering skills today. Take your Go skills to the next level by learning how to design, develop, and deploy a distributed service. Start from the bare essentials of storage handling, then work your way through networking a client and server, and finally to distributing server instances, deployment, and testing. All this will make coding in your day job or side projects easier, faster, and more fun. Create your own distributed services and contribute to open source projects. Build networked, secure clients and servers with gRPC. Gain insights into your systems and debug issues with observable services instrumented with metrics, logs, and traces. Operate your own Certificate Authority to authenticate internal web services with TLS. Automatically handle when nodes are added or removed to your cluster with service discovery. Coordinate distributed systems with replicated state machines powered by the Raft consensus algorithm. Lay out your applications and libraries to be modular and easy to maintain. Write CLIs to configure and run your applications. Run your distributed system locally and deploy to the cloud with Kubernetes. Test and benchmark your applications to ensure they're correct and fast. Dive into writing Go and join the hundreds of thousands who are using it to build software for the real world. What You Need: Go 1.13+ and Kubernetes 1.16+

Principles of Concurrent and Distributed Programming - M. Ben-Ari 2006

Principles of Concurrent and Distributed Programming provides an introduction to concurrent programming focusing on general principles and not on specific systems. Software today is inherently concurrent or distributed - from event-based GUI designs to operating and real-time systems to Internet applications. This edition is an introduction to concurrency and examines the growing importance of concurrency constructs embedded in programming languages and of formal methods such as model checking.

Build It With Nitrogen - Lloyd R. Prentice 2020-11-09

Build It with Nitrogen: the Fast Off the Block Erlang Web Framework guides web developers step-by-step through construction of highly reliable web applications. This easy-to-read book assumes minimal Linux or JavaScript skills; guides the reader through 12 hands-on projects. Each project builds on the last toward high-level competency. Readers learn Erlang as they go. Nitrogen simplifies development of web applications, making simple things easy and difficult things manageable. Erlang delivers the high availability, massively scalable, soft real-time performance required by banking, e-commerce, computer telephony, and instant messaging applications.

Concurrent Programming in ERLANG - Joe Armstrong 1996

This bok employs a tutorial approach to guide the reader through the programming of real-time and distributed fault-tolerant systems. Written by experts in the field, this practically-oriented bok shows how the use of ERLANG results in modular systems which are easy to specify, design and test.

Designing for Scalability with Erlang/OTP - Francesco Cesarini

2016-05-16

If you need to build a scalable, fault tolerant system with requirements for high availability, discover why the Erlang/OTP platform stands out for the breadth, depth, and consistency of its features. This hands-on guide demonstrates how to use the Erlang programming language and its OTP framework of reusable libraries, tools, and design principles to develop complex commercial-grade systems that simply cannot fail. In the first part of the book, you'll learn how to design and implement process behaviors and supervision trees with Erlang/OTP, and bundle them into standalone nodes. The second part addresses reliability, scalability, and high availability in your overall system design. If you're familiar with Erlang, this book will help you understand the design choices and trade-offs necessary to keep your system running. Explore OTP's building blocks: the Erlang language, tools and libraries collection, and its abstract principles and design rules Dive into the fundamentals of OTP reusable frameworks: the Erlang process structures OTP uses for behaviors Understand how OTP behaviors support client-server structures, finite state machine patterns, event handling, and runtime/code integration Write your own behaviors and special processes Use OTP's tools, techniques, and architectures to handle deployment, monitoring, and operations

Functional Programming in Java - Venkat Subramaniam 2014-02-19
Intermediate level, for programmers fairly familiar with Java, but new to the functional style of programming and lambda expressions. Get ready to program in a whole new way. Functional Programming in Java will help you quickly get on top of the new, essential Java 8 language features and the functional style that will change and improve your code. This short, targeted book will help you make the paradigm shift from the old imperative way to a less error-prone, more elegant, and concise coding style that's also a breeze to parallelize. You'll explore the syntax and semantics of lambda expressions, method and constructor references, and functional interfaces. You'll design and write applications better using the new standards in Java 8 and the JDK. Lambda expressions are lightweight, highly concise anonymous methods backed by functional interfaces in Java 8. You can use them to leap forward into a whole new world of programming in Java. With functional programming capabilities, which have been around for decades in other languages, you can now write elegant, concise, less error-prone code using standard Java. This book will guide you through the paradigm change, offer the essential details about the new features, and show you how to transition from your old way of coding to an improved style. In this book you'll see popular design patterns, such as decorator, builder, and strategy, come to life to solve common design problems, but with little ceremony and effort. With these new capabilities in hand, Functional Programming in Java will help you pick up techniques to implement designs that were beyond easy reach in earlier versions of Java. You'll see how you can reap the benefits of tail call optimization, memoization, and effortless parallelization techniques. Java 8 will change the way you write applications. If you're eager to take advantage of the new features in the language, this is the book for you. What you need: Java 8 with support for lambda expressions and the JDK is required to make use of the concepts and the examples in this book.

Concurrent Programming in ERLANG - Joe Armstrong 1993
A complete description of Erlang, a programming language for building robust concurrent systems. The book contains many examples of how robust real-time systems can be programmed using this language.

Men's Health - Joe Michael Armstrong 2001-07
In an informal and often humorous style, Joe Armstrong addresses the many, and frequently complex, issues around men's health, covering everything from taking care of one's body, to dealing with sex and relationships, to coping with stress, anger, jealousy, and depression.

Programming Elixir ≥ 1.6 - Dave Thomas 2018-05-18
This book is the introduction to Elixir for experienced programmers, completely updated for Elixir 1.6 and beyond. Explore functional programming without the academic overtones (tell me about monads just one more time). Create concurrent applications, but get them right without all the locking and consistency headaches. Meet Elixir, a modern, functional, concurrent language built on the rock-solid Erlang VM. Elixir's pragmatic syntax and built-in support for metaprogramming will make you productive and keep you interested for the long haul. Maybe the time is right for the Next Big Thing. Maybe it's Elixir. Functional programming techniques help you manage the complexities of today's real-world, concurrent systems; maximize uptime; and manage security. Enter Elixir, with its modern, Ruby-like, extendable syntax, compile and runtime evaluation, hygienic macro system, and more. But,

just as importantly, Elixir brings a sense of enjoyment to parallel, functional programming. Your applications become fun to work with, and the language encourages you to experiment. Part 1 covers the basics of writing sequential Elixir programs. We'll look at the language, the tools, and the conventions. Part 2 uses these skills to start writing concurrent code-applications that use all the cores on your machine, or all the machines on your network! And we do it both with and without OTP. Part 3 looks at the more advanced features of the language, from DSLs and code generation to extending the syntax. This edition is fully updated with all the new features of Elixir 1.6, with a new chapter on structuring OTP applications, and new sections on the debugger, code formatter, Distillery, and protocols. What You Need: You'll need a computer, a little experience with another high-level language, and a sense of adventure. No functional programming experience is needed.

Grokking Simplicity - Eric Normand 2021-05-18
Distributed across servers, difficult to test, and resistant to modification--modern software is complex. Grokking Simplicity is a friendly, practical guide that will change the way you approach software design and development. It introduces a unique approach to functional programming that explains why certain features of software are prone to complexity, and teaches you the functional techniques you can use to simplify these systems so that they're easier to test and debug. Available in PDF (ePub, kindle, and liveBook formats coming soon). about the technology Even experienced developers struggle with software systems that sprawl across distributed servers and APIs, are filled with redundant code, and are difficult to reliably test and modify. Adopting ways of thinking derived from functional programming can help you design and refactor your codebase in ways that reduce complexity, rather than encouraging it. Grokking Simplicity lays out how to use functional programming in a professional environment to write a codebase that's easier to test and reuse, has fewer bugs, and is better at handling the asynchronous nature of distributed systems. about the book In Grokking Simplicity, you'll learn techniques and, more importantly, a mindset that will help you tackle common problems that arise when software gets complex. Veteran functional programmer Eric Normand guides you to a crystal-clear understanding of why certain features of modern software are so prone to complexity and introduces you to the functional techniques you can use to simplify these systems so that they're easier to read, test, and debug. Through hands-on examples, exercises, and numerous self-assessments, you'll learn to organize your code for maximum reusability and internalize methods to keep unwanted complexity out of your codebase. Regardless of the language you're using, the ways of thinking in this book will help recognize problematic code and tame even the most complex software. what's inside Apply functional programming principles to reduce codebase complexity Work with data transformation pipelines for code that's easier to test and reuse Tools for modeling time to simplify asynchrony 60 exercises and 100 questions to test your knowledge about the reader For experienced programmers. Examples are in JavaScript. about the author Eric Normand has been a functional programmer since 2001 and has been teaching functional programming online and in person since 2007. Visit LispCast.com to see more of his credentials.

Occam Programming Manual - INMOS Limited 1984

Seven Languages in Seven Weeks - Bruce Tate 2010
"Seven Languages in Seven Weeks" presents a meaningful exploration of seven languages within a single book. Rather than serve as a complete reference or installation guide, the book hits what's essential and unique about each language.

Handbook of Neuroevolution Through Erlang - Gene I. Sher 2012-11-06
Handbook of Neuroevolution Through Erlang presents both the theory behind, and the methodology of, developing a neuroevolutionary-based computational intelligence system using Erlang. With a foreword written by Joe Armstrong, this handbook offers an extensive tutorial for creating a state of the art Topology and Weight Evolving Artificial Neural Network (TWEANN) platform. In a step-by-step format, the reader is guided from a single simulated neuron to a complete system. By following these steps, the reader will be able to use novel technology to build a TWEANN system, which can be applied to Artificial Life simulation, and Forex trading. Because of Erlang's architecture, it perfectly matches that of evolutionary and neurocomputational systems. As a programming language, it is a concurrent, message passing paradigm which allows the developers to make full use of the multi-core & multi-cpu systems. Handbook of Neuroevolution Through Erlang explains how to leverage Erlang's features in the field of machine

learning, and the system's real world applications, ranging from algorithmic financial trading to artificial life and robotics.

Elixir in Action - Sasa Juric 2019-01-03

Summary Revised and updated for Elixir 1.7, *Elixir in Action*, Second Edition teaches you how to apply Elixir to practical problems associated with scalability, fault tolerance, and high availability. Along the way, you'll develop an appreciation for, and considerable skill in, a functional and concurrent style of programming. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology When you're building mission-critical software, fault tolerance matters. The Elixir programming language delivers fast, reliable applications, whether you're building a large-scale distributed system, a set of backend services, or a simple web app. And Elixir's elegant syntax and functional programming mindset make your software easy to write, read, and maintain. About the Book *Elixir in Action*, Second Edition teaches you how to build production-quality distributed applications using the Elixir programming language. Author Saša Jurić introduces this powerful language using examples that highlight the benefits of Elixir's functional and concurrent programming. You'll discover how the OTP framework can radically reduce tedious low-level coding tasks. You'll also explore practical approaches to concurrency as you learn to distribute a production system over multiple machines. What's inside Updated for Elixir 1.7 Functional and concurrent programming Introduction to distributed system design Creating deployable releases About the Reader You'll need intermediate skills with client/server applications and a language like Java, C#, or Ruby. No previous experience with Elixir required. About the Author Saša Jurić is a developer with extensive experience using Elixir and Erlang in complex server-side systems. Table of Contents First steps Building blocks Control flow Data abstractions Concurrency primitives Generic server processes Building a concurrent system Fault-tolerance basics Isolating error effects Beyond GenServer Working with components Building a distributed system Running the system

Coders at Work - Peter Seibel 2009-12-21

Peter Seibel interviews 15 of the most interesting computer programmers alive today in *Coders at Work*, offering a companion volume to Apress's highly acclaimed best-seller *Founders at Work* by Jessica Livingston. As the words "at work" suggest, Peter Seibel focuses on how his interviewees tackle the day-to-day work of programming, while revealing much more, like how they became great programmers, how they recognize programming talent in others, and what kinds of problems they find most interesting. Hundreds of people have suggested names of programmers to interview on the *Coders at Work* web site: www.codersatwork.com. The complete list was 284 names. Having digested everyone's feedback, we selected 15 folks who've been kind enough to agree to be interviewed: Frances Allen: Pioneer in optimizing compilers, first woman to win the Turing Award (2006) and first female IBM fellow Joe Armstrong: Inventor of Erlang Joshua Bloch: Author of the Java collections framework, now at Google Bernie Cosell: One of the main software guys behind the original ARPANET IMPs and a master debugger Douglas Crockford: JSON founder, JavaScript architect at Yahoo! L. Peter Deutsch: Author of Ghostscript, implementer of Smalltalk-80 at Xerox PARC and Lisp 1.5 on PDP-1 Brendan Eich: Inventor of JavaScript, CTO of the Mozilla Corporation Brad Fitzpatrick: Writer of LiveJournal, OpenID, memcached, and Perlbal Dan Ingalls: Smalltalk implementor and designer Simon Peyton Jones: Coinventor of Haskell and lead designer of Glasgow Haskell Compiler Donald Knuth: Author of *The Art of Computer Programming* and creator of TeX Peter Norvig: Director of Research at Google and author of the standard text on AI Guy Steele: Coinventor of Scheme and part of the Common Lisp Gang of Five, currently working on Fortress Ken Thompson: Inventor of UNIX Jamie Zawinski: Author of XEmacs and early Netscape/Mozilla hacker

Programming Erlang - Joe Armstrong 2013-09-23

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.

The Pragmatic Programmer - Andrew Hunt 1999-10-20

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.

[Introducing Erlang](#) - Simon St. Laurent 2017-03-06

If you're new to Erlang, its functional style can seem difficult, but with help from this hands-on introduction, you'll scale the learning curve and discover how enjoyable, powerful, and fun this language can be. In this updated second edition, author Simon St. Laurent shows you how to write simple Erlang programs by teaching you one skill at a time. You'll learn about pattern matching, recursion, message passing, process-oriented programming, and establishing pathways for data rather than telling it where to go. By the end of your journey, you'll understand why Erlang is ideal for concurrency and resilience. Get cozy with Erlang's shell, its command line interface Define functions, using the fun tool, to represent repeated calculations Discover atoms, pattern matching, and guards: the foundations of your program structure Delve into the heart of Erlang processing with recursion, strings, lists, and higher-order functions Create processes, send messages among them, and apply pattern matching to incoming messages Store and manipulate structured data with Erlang Term Storage and the Mnesia database Learn about Open Telecom Platform, Erlang's open source libraries and tools

[Head First Programming](#) - David Griffiths 2009-11-16

Looking for a reliable way to learn how to program on your own, without being overwhelmed by confusing concepts? Head First Programming introduces the core concepts of writing computer programs -- variables, decisions, loops, functions, and objects -- which apply regardless of the programming language. This book offers concrete examples and exercises in the dynamic and versatile Python language to demonstrate and reinforce these concepts. Learn the basic tools to start writing the programs that interest you, and get a better understanding of what software can (and cannot) do. When you're finished, you'll have the necessary foundation to learn any programming language or tackle any software project you choose. With a focus on programming concepts, this book teaches you how to: Understand the core features of all programming languages, including: variables, statements, decisions, loops, expressions, and operators Reuse code with functions Use library code to save time and effort Select the best data structure to manage complex data Write programs that talk to the Web Share your data with other programs Write programs that test themselves and help you avoid embarrassing coding errors We think your time is too valuable to waste struggling with new concepts. Using the latest research in cognitive science and learning theory to craft a multi-sensory learning experience, Head First Programming uses a visually rich format designed for the way your brain works, not a text-heavy approach that puts you to sleep.

[Let Over Lambda](#) - Doug Hoyte 2008

Let Over Lambda is one of the most hardcore computer programming books out there. Starting with the fundamentals, it describes the most advanced features of the most advanced language: Common Lisp. Only the top percentile of programmers use lisp and if you can understand this book you are in the top percentile of lisp programmers. If you are looking for a dry coding manual that re-hashes common-sense techniques in whatever langue du jour, this book is not for you. This book is about pushing the boundaries of what we know about programming. While this book teaches useful skills that can help solve your programming problems today and now, it has also been designed to be entertaining and inspiring. If you have ever wondered what lisp or even programming itself is really about, this is the book you have been looking for.

[Proceedings of the 17th ACM SIGPLAN International Workshop on Erlang](#) - Natalia Chechina 2018

[Learn Functional Programming with Elixir](#) - Ulisses Almeida 2018-03-05

Elixir's straightforward syntax and this guided tour give you a clean, simple path to learn modern functional programming techniques. No previous functional programming experience required! This book walks you through the right concepts at the right pace, as you explore immutable values and explicit data transformation, functions, modules, recursive functions, pattern matching, high-order functions, polymorphism, and failure handling, all while avoiding side effects. Don't board the Elixir train with an imperative mindset! To get the most out of functional languages, you need to think functionally. This book will get you there. Functional programming offers useful techniques for building maintainable and scalable software that solves today's difficult problems. The demand for software written in this way is increasing - you don't want to miss out. In this book, you'll not only learn Elixir and its features, you'll also learn the mindset required to program functionally. Elixir's clean syntax is excellent for exploring the critical skills of using functions and concurrency. Start with the basic techniques of the functional way: working with immutable data, transforming data in discrete steps, and

avoiding side effects. Next, take a deep look at values, expressions, functions, and modules. Then extend your programming with pattern matching and flow control with case, if, cond, and functions. Use recursive functions to create iterations. Work with data types such as lists, tuples, and maps. Improve code reusability and readability with Elixir's most common high-order functions. Explore how to use lazy computation with streams, design your data, and take advantage of polymorphism with protocols. Combine functions and handle failures in a maintainable way using Elixir features and libraries. Learn techniques that matter to make code that lives harmoniously with the language. What You Need: You'll need a computer and Elixir 1.4 or newer version installed. No previous functional programming or Elixir experience is required. Some experience with any programming language is recommended.

[Design Patterns in Ruby \(Adobe Reader\)](#) - Russ Olsen 2007-12-10

Praise for Design Patterns in Ruby " Design Patterns in Ruby documents smart ways to resolve many problems that Ruby developers commonly encounter. Russ Olsen has done a great job of selecting classic patterns and augmenting these with newer patterns that have special relevance for Ruby. He clearly explains each idea, making a wealth of experience available to Ruby developers for their own daily work." —Steve Metsker, Managing Consultant with Dominion Digital, Inc. "This book provides a great demonstration of the key 'Gang of Four' design patterns without resorting to overly technical explanations. Written in a precise, yet almost informal style, this book covers enough ground that even those without prior exposure to design patterns will soon feel confident applying them using Ruby. Olsen has done a great job to make a book about a classically 'dry' subject into such an engaging and even occasionally humorous read." —Peter Cooper "This book renewed my interest in understanding patterns after a decade of good intentions. Russ picked the most useful patterns for Ruby and introduced them in a straightforward and logical manner, going beyond the GoF's patterns. This book has improved my use of Ruby, and encouraged me to blow off the dust covering the GoF book." —Mike Stok " Design Patterns in Ruby is a great way for programmers from statically typed objectoriented languages to learn how design patterns appear in a more dynamic, flexible language like Ruby." —Rob Sanheim, Ruby Ninja, Relevance Most design pattern books are based on C++ and Java. But Ruby is different—and the language's unique qualities make design patterns easier to implement and use. In this book, Russ Olsen demonstrates how to combine Ruby's power and elegance with patterns, and write more sophisticated, effective software with far fewer lines of code. After reviewing the history, concepts, and goals of design patterns, Olsen offers a quick tour of the Ruby language—enough to allow any experienced software developer to immediately utilize patterns with Ruby. The book especially calls attention to Ruby features that simplify the use of patterns, including dynamic typing, code closures, and "mixins" for easier code reuse. Fourteen of the classic "Gang of Four" patterns are considered from the Ruby point of view, explaining what problems each pattern solves, discussing whether traditional implementations make sense in the Ruby environment, and introducing Ruby-specific improvements. You'll discover opportunities to implement patterns in just one or two lines of code, instead of the endlessly repeated boilerplate that conventional languages often require. Design Patterns in Ruby also identifies innovative new patterns that have emerged from the Ruby community. These include ways to create custom objects with metaprogramming, as well as the ambitious Rails-based "Convention Over Configuration" pattern, designed to help integrate entire applications and frameworks. Engaging, practical, and accessible, Design Patterns in Ruby will help you build better software while making your Ruby programming experience more rewarding.

[Building Web Applications with Erlang](#) - Zachary Kessin 2012-06-07 "Working with REST and Web-Sockets on Yaws"--Cover.

[Essentials of Programming Languages](#) - Daniel P. Friedman 2001

This textbook offers an understanding of the essential concepts of programming languages. The text uses interpreters, written in Scheme, to express the semantics of many essential language elements in a way that is both clear and directly executable.

[Erlang and OTP in Action](#) - Eric Merritt 2010-11-15

Concurrent programming has become a required discipline for all programmers. Multi-core processors and the increasing demand for maximum performance and scalability in mission-critical applications have renewed interest in functional languages like Erlang that are designed to handle concurrent programming. Erlang, and the OTP platform, make it possible to deliver more robust applications that satisfy

rigorous uptime and performance requirements. Erlang and OTP in Action teaches you to apply Erlang's message passing model for concurrent programming--a completely different way of tackling the problem of parallel programming from the more common multi-threaded approach. This book walks you through the practical considerations and steps of building systems in Erlang and integrating them with real-world C/C++, Java, and .NET applications. Unlike other books on the market, Erlang and OTP in Action offers a comprehensive view of how concurrency relates to SOA and web technologies. This hands-on guide is perfect for readers just learning Erlang or for those who want to apply their theoretical knowledge of this powerful language. You'll delve into the Erlang language and OTP runtime by building several progressively more interesting real-world distributed applications. Once you are competent in the fundamentals of Erlang, the book takes you on a deep dive into the process of designing complex software systems in Erlang. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book.

Learning Python - Mark Lutz 2009-10-06

Google and YouTube use Python because it's highly adaptable, easy to maintain, and allows for rapid development. If you want to write high-quality, efficient code that's easily integrated with other languages and tools, this hands-on book will help you be productive with Python quickly -- whether you're new to programming or just new to Python. It's an easy-to-follow self-paced tutorial, based on author and Python expert Mark Lutz's popular training course. Each chapter contains a stand-alone lesson on a key component of the language, and includes a unique Test Your Knowledge section with practical exercises and quizzes, so you can practice new skills and test your understanding as you go. You'll find lots of annotated examples and illustrations to help you get started with Python 3.0. Learn about Python's major built-in object types, such as numbers, lists, and dictionaries Create and process objects using Python statements, and learn Python's general syntax model Structure and reuse code using functions, Python's basic procedural tool Learn about Python modules: packages of statements, functions, and other tools, organized into larger components Discover Python's object-oriented programming tool for structuring code Learn about the exception-handling model, and development tools for writing larger programs Explore advanced Python tools including decorators, descriptors, metaclasses, and Unicode processing

Agile Web Development with Rails 5.1 - Sam Ruby 2017-11-16

Learn Rails the way the Rails core team recommends it, along with the tens of thousands of developers who have used this broad, far-reaching tutorial and reference. If you're new to Rails, you'll get step-by-step guidance. If you're an experienced developer, get the comprehensive, insider information you need for the latest version of Ruby on Rails. The new edition of this award-winning classic is completely updated for Rails 5.1 and Ruby 2.4, with information on system testing, Webpack, and advanced JavaScript. Ruby on Rails helps you produce high-quality, beautiful-looking web applications quickly--you concentrate on creating the application, and Rails takes care of the details. Rails 5.1 brings many improvements, and this edition is updated to cover the new features and changes in best practices. We start with a step-by-step walkthrough of building a real application, and in-depth chapters look at the built-in Rails features. Follow along with an extended tutorial as you write a web-based store application. Eliminate tedious configuration and housekeeping; seamlessly incorporate Ajax and JavaScript; send emails and manage background jobs with ActiveJob; build real-time features using WebSockets and ActionCable. Test your applications as you write them using the built-in unit, integration, and system testing frameworks; internationalize your applications; and deploy your applications easily and securely. New in this edition is support for Webpack and advanced JavaScript, as well as Rails' new browser-based system testing. Rails 1.0 was released in December 2005. This book was there from the start, and didn't just evolve alongside Rails, it evolved with Rails. It has been developed in consultation with the Rails core team. In fact, Rails itself is tested against the code in this book. What You Need: All you need is a Windows, Mac OS X, or Linux machine to do development on. This book will take you through the steps to install Rails and its dependencies. If you aren't familiar with the Ruby programming language, this book contains a chapter that covers the basics necessary to understand the material in the book.

Programming in Haskell - Graham Hutton 2007-01-15

Haskell is one of the leading languages for teaching functional programming, enabling students to write simpler and cleaner code, and to learn how to structure and reason about programs. This introduction

is ideal for beginners: it requires no previous programming experience and all concepts are explained from first principles via carefully chosen examples. Each chapter includes exercises that range from the straightforward to extended projects, plus suggestions for further reading on more advanced topics. The author is a leading Haskell researcher and instructor, well-known for his teaching skills. The presentation is clear and simple, and benefits from having been refined and class-tested over several years. The result is a text that can be used with courses, or for self-learning. Features include freely accessible Powerpoint slides for each chapter, solutions to exercises and examination questions (with solutions) available to instructors, and a downloadable code that's fully compliant with the latest Haskell release.

Programming Concurrency on the JVM - Venkat Subramaniam 2011-08-26

More than ever, learning to program concurrency is critical to creating faster, responsive applications. Speedy and affordable multicore hardware is driving the demand for high-performing applications, and you can leverage the Java platform to bring these applications to life. Concurrency on the Java platform has evolved, from the synchronization model of JDK to software transactional memory (STM) and actor-based concurrency. This book is the first to show you all these concurrency styles so you can compare and choose what works best for your applications. You'll learn the benefits of each of these models, when and how to use them, and what their limitations are. Through hands-on exercises, you'll learn how to avoid shared mutable state and how to write good, elegant, explicit synchronization-free programs so you can create easy and safe concurrent applications. The techniques you learn in this book will take you from dreading concurrency to mastering and enjoying it. Best of all, you can work with Java or a JVM language of your choice - Clojure, JRuby, Groovy, or Scala - to reap the growing power of multicore hardware. If you are a Java programmer, you'd need JDK 1.5 or later and the Akka 1.0 library. In addition, if you program in Scala, Clojure, Groovy or JRuby you'd need the latest version of your preferred language. Groovy programmers will also need GPar.

Programming Erlang, 2nd Edition - Joe Armstrong 2013

Learn You Some Erlang for Great Good! - Fred Hebert 2013-01-13

Erlang is the language of choice for programmers who want to write robust, concurrent applications, but its strange syntax and functional design can intimidate the uninitiated. Luckily, there's a new weapon in the battle against Erlang-phobia: Learn You Some Erlang for Great Good! Erlang maestro Fred Hébert starts slow and eases you into the basics: You'll learn about Erlang's unorthodox syntax, its data structures, its type system (or lack thereof!), and basic functional programming techniques. Once you've wrapped your head around the simple stuff, you'll tackle the real meat-and-potatoes of the language: concurrency, distributed computing, hot code loading, and all the other dark magic that makes Erlang such a hot topic among today's savvy developers. As you dive into Erlang's functional fantasy world, you'll learn about: -Testing your applications with EUnit and Common Test -Building and releasing your applications with the OTP framework -Passing messages, raising errors, and starting/stopping processes over many nodes -Storing and retrieving data using Mnesia and ETS -Network programming with TCP, UDP, and the inet module -The simple joys and potential pitfalls of writing distributed, concurrent applications Packed with lighthearted illustrations and just the right mix of offbeat and practical example programs, Learn You Some Erlang for Great Good! is the perfect entry point into the sometimes-crazy, always-thrilling world of Erlang.

Functional Programming Patterns in Scala and Clojure - Michael Bevilacqua-Linn 2013

Solve real-life programming problems with a fraction of the code that pure object-oriented programming requires. Use Scala and Clojure to solve in-depth problems with two sets of patterns: object-oriented patterns that become more concise with functional programming, and natively functional patterns. Your code will be more declarative, with fewer bugs and lower maintenance costs. Functional languages have their own patterns that enable you to solve problems with less code than object-oriented programming alone. This book introduces you, the experienced Java programmer, to Scala and Clojure: practical, production-quality languages that run on the JVM and interoperate with existing Java. By using both the statically typed, type-inferred Scala and the dynamically typed, modern Lisp Clojure, you'll gain a broad understanding of functional programming. For each pattern, you'll first see the traditional object-oriented solution, and then dig into the functional replacements in both Scala and Clojure. These patterns are

common in the functional world and deserve to become part of your problem-solving toolkit. On the object-oriented side, you'll see many common patterns, such as Command, Strategy, and Null Object. On the functional side, you'll learn core functional patterns such as Memoization, Lazy Sequence, and Tail Recursion. Each pattern helps you solve a common programming problem. Working through them gives you a set of patterns you can use to solve problems you come across while writing programs. Finally, you'll learn how to work your existing Java code into new Scala or Clojure projects. You can start off small, adding functional code little by little, so you can complement your existing knowledge with Scala and Clojure as these languages gain popularity on the JVM. What You Need Clojure 1.5 and Scala 2.10. Optionally, Eclipse with plugins.

Smart and Gets Things Done - Avram Joel Spolsky 2007-10-17

A "good" programmer can outproduce five, ten, and sometimes more run-of-the-mill programmers. The secret to success for any software company then is to hire the good programmers. But how to do that? In *Joel on Hiring*, Joel Spolsky draws from his experience both at Microsoft and

running his own successful software company based in New York City. He writes humorously, but seriously about his methods for sorting resumes, for finding great candidates, and for interviewing, in person and by phone. Joel's methods are not complex, but they do get to the heart of the matter: how to recognize a great developer when you see one.

ECOOP 2010 -- Object-Oriented Programming - Theo D'Hondt 2010-06-29

Annotation This book constitutes the refereed proceedings of the 24th European Conference on Object-Oriented Programming, ECOOP 2010, held in Maribor, Slovenia, in June 2010. The 24 revised full papers, presented together with one extended abstract were carefully reviewed and selected from a total of 108 submissions. The papers cover topics such as programming environments and tools, theoretical foundations of programming languages, formal methods, concurrency models in Java, empirical methods, type systems, language design and implementation, concurrency abstractions and experiences.

Programming Erlang - 2008