

Java Concurrency In Practice Brian Goetz

Are you interested in creating BlackBerry apps using the latest BlackBerry 7 and BlackBerry Java Plug-in for Eclipse? Then this is the book for you. *Beginning BlackBerry 7 Development* offers a hands-on approach to learning how to build and deploy sophisticated BlackBerry apps using the latest tools and techniques available. Assuming only some programming background in Java or a similar language, this book starts with the basics, offering step-by-step tutorials that take you through downloading and installing the BlackBerry development environment, creating your first apps, and exploring the BlackBerry APIs. You'll be introduced to the latest features available in the latest BlackBerry 7 using BlackBerry Java Plug-in for Eclipse, including BlackBerry Application Platform Services, techniques for using multimedia with the BlackBerry, and tools for increasing app performance. To round out the complete development process, you'll also discover the different ways you can package and distribute your apps, from deploying apps on your own website to listing your apps for sale in the BlackBerry App World.

JavaFX is a state-of-the-art graphics toolkit that is now built into Java and can be easily integrated with the NetBeans Platform. With JavaFX, you can create advanced user interfaces, manipulate media, generate graphical effects and animations, and much more. The NetBeans Platform provides a framework for building robust, modular applications with long life expectancies. Together, JavaFX and the NetBeans Platform provide the basis for creating visually appealing, industrial-strength applications. Focusing on JavaFX as the front end for rich client applications, this guide's examples cover JavaFX 8 with the NetBeans Platform, NetBeans IDE, and Java 8. Gail and Paul Anderson fully explain JavaFX and its relationship with the NetBeans Platform architecture, and systematically show Java developers how to use them together effectively. Each concept and technique is supported by clearly written code examples, proven through extensive classroom teaching. Coverage includes Background basics with Java, JavaFX, and UI events Building loosely coupled applications NetBeans Platform Modules and Lookup NetBeans Platform Nodes, Explorer Views, and Actions Building CRUD-based applications Integrating JavaFX with a Swing-based framework Using JavaFX Charts with the NetBeans Platform Using the NetBeans Platform File System and Data System Keeping the UI responsive Performance tuning is an experimental science, but that doesn't mean engineers should resort to guesswork and folklore to get the job done. Yet that's often the case. With this practical book, intermediate to advanced Java technologists working with complex technology stacks will learn how to tune Java applications for performance using a quantitative, verifiable approach. Most resources on performance tend to discuss the theory and internals of Java virtual machines, but this book focuses on the practicalities of performance tuning by examining a wide range of aspects. There are no simple recipes, tips and tricks, or algorithms to learn. Performance tuning is a process of defining and determining desired outcomes. And it requires diligence. Learn how Java principles and technology make the best use of modern hardware and operating systems Explore several performance tests and common anti-patterns that can vex your team Understand the pitfalls of measuring Java performance numbers and the drawbacks of microbenchmarking Dive into JVM garbage collection logging, monitoring, tuning, and tools Explore JIT compilation and Java language performance techniques Learn performance aspects of the Java Collections API and get an overview of Java concurrency

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

To allow the creation of truly modular software, OOP has evolved into aspect-oriented programming. AspectJ is a mature AOP implementation for Java, now integrated with Spring. AspectJ in Action, Second Edition is a fully updated, major revision of Ramnivas Laddad's best-selling first edition. It's a hands-on guide for Java developers. After introducing the core principles of AOP, it shows you how to create reusable solutions using AspectJ 6 and Spring 3. You'll master key features including annotation-based syntax, load-time weaver, annotation-based crosscutting, and Spring-AspectJ

integration. Building on familiar technologies such as JDBC, Hibernate, JPA, Spring Security, Spring MVC, and Swing, you'll apply AOP to common problems encountered in enterprise applications. This book requires no previous experience in AOP and AspectJ, but it assumes you're familiar with OOP, Java, and the basics of Spring. "Clear, concisely worded, well-organized ... a pleasure to read." -From the Foreword by Rod Johnson, Creator of the Spring Framework "This book teaches you how to think in aspects. It is essential reading for both beginners who know nothing about AOP and experts who think they know it all." - Andrew Eisenberg, AspectJ Development Tools Project Committer "Ramnivas showcases how to get the best out of AspectJ and Spring." -Andy Clement, AspectJ Project Lead "One of the best Java books in years." -Andrew Rhine, Software Engineer, eSecLending "By far the best reference for Spring AOP and AspectJ." -Paul Benedict, Software Engineer, Argus Health Systems "Ramnivas expertly demystifies the awesome power of aspect-oriented programming." -Craig Walls, author of Spring in Action

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

Learn how to code, package, deploy, and test functional Enterprise JavaBeans with the latest edition of this bestselling guide. Written by the developers of JBoss EJB 3.1, this book not only brings you up to speed on each component type and container service in this implementation, it also provides a workbook with several hands-on examples to help you gain immediate experience with these components. With version 3.1, EJB's server-side component model for building distributed business applications is simpler than ever. But it's still a complex technology that requires study and lots of practice to master. Enterprise JavaBeans 3.1 is the most complete reference on this specification. You'll find a straightforward, no-nonsense explanation of the underlying technology, including Java classes and interfaces, the component model, and the runtime behavior of EJB. Develop your first EJBs with a hands-on walkthrough of EJB 3.1 concepts Learn how to encapsulate business logic with Session Beans and Message-Driven Beans Discover how to handle persistence through Entity Beans, the EntityManager, and the Java Persistence API Understand EJB's container services such as dependency injection, concurrency, and interceptors Integrate EJB with other technologies in the Java Enterprise Edition platform Use examples with either the JBossAS, OpenEJB, or GlassFish v3 EJB Containers

Winner of the 2014 Jolt Award for "Best Book" "Whether you are an experienced programmer or are starting your career, Python in Practice is full of valuable advice and example to help you improve your craft by thinking about problems from different perspectives, introducing tools, and detailing techniques to create more effective solutions." —Doug Hellmann, Senior Developer, DreamHost If you're an experienced Python programmer, Python in Practice will help you improve the quality, reliability, speed, maintainability, and usability of all your Python programs. Mark Summerfield focuses on four key themes: design patterns for coding elegance, faster processing through concurrency and compiled Python (Cython), high-level networking, and graphics. He identifies well-proven design patterns that are useful in Python, illuminates them with expert-quality code, and explains why some object-oriented design patterns are irrelevant to Python. He also explodes several counterproductive myths about Python programming—showing, for example, how Python can take full advantage of multicore hardware. All examples, including three complete case studies, have been tested with Python 3.3 (and, where possible, Python 3.2 and 3.1) and crafted to maintain compatibility with future Python 3.x versions. All code has been tested on Linux, and most code has also been tested on OS X and Windows. All code may be downloaded at www.qtrac.eu/pipbook.html. Coverage includes Leveraging Python's most effective creational, structural, and behavioral design patterns Supporting concurrency with Python's multiprocessing, threading, and concurrent.futures modules Avoiding concurrency problems using thread-safe queues and futures rather than fragile locks Simplifying networking with high-level modules, including xmlrpclib and RPyC Accelerating Python code with Cython, C-based Python modules, profiling, and other techniques Creating modern-looking GUI applications with Tkinter Leveraging today's powerful graphics hardware via the OpenGL API using pyglet and PyOpenGL

Java continues to grow and evolve, and this cookbook continues to evolve in tandem. With this guide, you'll get up to speed right away with hundreds of hands-on recipes across a broad range of Java topics. You'll learn useful techniques for everything from string handling and functional programming to network communication. Each recipe includes self-contained code solutions that you can freely use, along with a discussion of how and why they work. If you're familiar with Java basics, this cookbook will bolster your knowledge of the language and its many recent changes, including how to apply them in your day-to-day development. This updated edition covers changes through Java 12 and parts of 13 and 14. Recipes include: Methods for

compiling, running, and debugging Packaging Java classes and building applications Manipulating, comparing, and rearranging text Regular expressions for string and pattern matching Handling numbers, dates, and times Structuring data with collections, arrays, and other types Object-oriented and functional programming techniques Input/output, directory, and filesystem operations Network programming on both client and server Processing JSON for data interchange Multithreading and concurrency Using Java in big data applications Interfacing Java with other languages

As one of the most popular software languages for building Web applications, Java is often the first programming language developers learn. Completely revised and packed with updates for new versions of Java, the Java Programming 24-Hour Trainer, Second Edition self-paced book + video package provides everything beginners need to get started programming Java with no prior programming experience needed. As with the first edition, Java Programming 24-Hour Trainer features easy-to-follow lessons, reinforced by step-by-step instructions, screencasts, and supplemental exercises, all of which allow readers of all learning styles to master Java programming quickly and painlessly. The more than 10 hours of popular Java programming screencasts from the first edition are completely updated and revised to be more watchable than ever. This edition includes updates for Java SE 8 and Java EE 7 but continues to be useful whatever recent version of Java you choose to learn with. Lessons include: Object-Oriented Programming with Java Class Methods and Constructors Java Syntax: Bits and Pieces Packages, Interfaces, and Encapsulation Programming with Abstract Classes and Interfaces Error handling GUI Basics with Swing Event Handling in Swing GUI GUI Basics with JavaFX - NEW! Developing a game with JavaFX - NEW! Collections Generics Lambda Expressions - NEW! Working with Streams Java Serialization Network Programming Basics Streaming API - NEW! Introduction to Multi-Threading More on Concurrency Working with Databases Using JDBC Rendering Table Data to GUI Annotations and Reflection Remote Method Invocation Java EE 7 Overview - NEW! Programming with Servlets JavaServer Pages Web Applications with WebSockets - NEW! Java Messaging Service Java Naming and Directory Interface Enterprise JavaBeans Java Persistence API RESTful Web Services With JAX-RS Introduction to Spring MVC Framework Introduction to Spring Security - NEW! Build Automation with Gradle - NEW! Java Technical Interviews

strong style="color: Fully updated to reflect Java SE 7 language changes, Advance Java®, Volume II—Advanced Features, Fifteenth Best Selling Edition, is the definitive guide to Java's most powerful features for enterprise and desktop application development."I was fortunate indeed to have worked with a fantastic team on the design and implementation of the concurrency features added to the Java platform in Java 5.0 and Java 6. Now this same team provides the best explanation yet of these new features, and of concurrency in general. Concurrency is no longer a subject for advanced users only. Every Java developer should read this book."--Martin BuchholzJDK Concurrency Czar, Sun Microsystems"For the past 30 years, computer performance has been driven by Moore's Law; from now on, it will be driven by Amdahl's Law. Writing code that effectively exploits multiple processors can be very challenging. Java Concurrency in Practice provides you with the concepts and techniques needed to write safe and scalable Java programs for today's--and tomorrow's--systems."--Doron RajwanResearch Scientist, Intel Corp"This is the book you need if you're writing--or designing, or debugging, or maintaining, or contemplating--multithreaded Java programs. If you've ever had to synchronize a method and you weren't sure why, you owe it to yourself and your users to read this book, cover to cover."--Ted NewardAuthor of Effective Enterprise Java"Brian addresses the fundamental issues and complexities of concurrency with uncommon clarity. This book is a must-read for anyone who uses threads and cares about performance."--Kirk PepperdineCTO, JavaPerformanceTuning.com"This book covers a very deep and subtle topic in a very clear and concise way, making it the perfect Java Concurrency reference manual. Each page is filled with the problems (and solutions!) that programmers struggle with every day. Effectively exploiting concurrency is becoming more and more important now that Moore's Law is delivering more cores but not faster cores, and this book will show you how to do it."--Dr. Cliff ClickSenior Software Engineer, Azul Systems"I have a strong interest in concurrency, and have probably written more thread deadlocks and made more synchronization mistakes than most programmers. Brian's book is the most readable on the topic of threading and concurrency in Java, and deals with this difficult subject with a wonderful hands-on approach. This is a book I am recommending to all my readers of The Java Specialists' Newsletter, because it is interesting, useful, and relevant to the problems facing Java developers today."--Dr. Heinz KabutzThe Java Specialists' Designed for serious programmers, this reliable, unbiased, no-nonsense tutorial illuminates advanced Java language and library features with thoroughly tested code examples. As in previous editions, all code is easy to understand and displays modern best-practice solutions to the realworld challenges faced by professional developers. Volume II quickly brings you up-to-speed on key Java SE 7 enhancements, ranging from the new file I/O API to improved concurrency utilities. All code examples are updated to reflect these enhancements. Complete descriptions of new language and platform features are highlighted and integrated with insightful explanations of advanced Java programming techniques. You'll learn all you need to build robust production software with Streams, files, and regular expressionsXMLNetworkingDatabase programming facilitiesJNDI/LDAP directory integrationInternationalizationAdvanced Swing techniquesJavaBeans componentsWeb servicesAdvanced platform security featuresAnnotationsDistributed objectsNative methods, and more For detailed coverage of fundamental Java SE 7 features, including objects, classes, inheritance, interfaces, reflection, events, exceptions, graphics, Swing, generics, collections, concurrency, and debugging,

If you want to push your Java skills to the next level, this book provides expert advice from Java leaders and practitioners. You'll be encouraged to look at problems in new ways, take broader responsibility for your work, stretch yourself by learning new techniques, and become as good at the entire craft of development as you possibly can. Edited by Kevlin Henney and Trisha Gee, 97 Things Every Java Programmer Should Know reflects lifetimes of experience writing Java software and living with the process of software development. Great programmers share their collected wisdom to help you rethink Java practices, whether working with legacy code or incorporating changes since Java 8. A few of the 97 things you should know: "Behavior Is Easy, State Is Hard"—Edson Yanaga "Learn Java Idioms and Cache in Your Brain"—Jeanne Boyarsky "Java Programming from a JVM Performance Perspective"—Monica Beckwith "Garbage Collection Is Your Friend"—Holly K Cummins "Java's Unspeakable Types"—Ben Evans "The Rebirth of Java"—Sander Mak "Do You Know What Time It Is?"—Christin Gorman

In today's app-driven era, when programs are asynchronous and responsiveness is so vital, reactive programming can help you write code that's more reliable, easier to scale, and better-performing. With this practical book, Java developers will first learn how to view problems in the reactive way, and then build programs that leverage the best features of this exciting new programming paradigm. Authors Tomasz Nurkiewicz and Ben Christensen include concrete examples that use the RxJava library to solve real-world performance issues on Android devices as well as the server. You'll learn how RxJava leverages parallelism and

concurrency to help you solve today's problems. This book also provides a preview of the upcoming 2.0 release. Write programs that react to multiple asynchronous sources of input without descending into "callback hell" Get to that aha! moment when you understand how to solve problems in the reactive way Cope with Observables that produce data too quickly to be consumed Explore strategies to debug and to test programs written in the reactive style Efficiently exploit parallelism and concurrency in your programs Learn about the transition to RxJava version 2

The only comprehensive set of guidelines for secure Java programming - from the field's leading organizations, CERT and Oracle

- Authoritative, end-to-end code-level requirements for building secure systems with any recent version of Java, including the new Java 7
- Presents techniques that also improve safety, reliability, dependability, robustness, availability, maintainability, and other attributes of quality.
- Includes extensive risk assessment guidance, plus references for further information. This is the first authoritative, comprehensive compilation of code-level requirements for building secure systems in Java. Organized by CERT's pioneering software security experts, with support from Oracle's own Java platform developers, it covers every facet of secure software coding with Java 7 SE and Java 6 SE, and offers value even to developers working with other Java versions. The authors itemize the most common coding errors leading to vulnerabilities in Java programs, and provide specific guidelines for avoiding each of them. They show how to produce programs that are not only secure, but also safer, more reliable, more robust, and easier to maintain. After a high-level introduction to Java application security, eighteen consistently-organized chapters detail specific guidelines for each facet of Java development. Each set of guidelines defines conformance, presents both noncompliant examples and corresponding compliant solutions, shows how to assess risk, and offers references for further information. To limit this book's size, the authors focus on 'normative requirements': strict rules for what programmers must do for their work to be secure, as defined by conformance to specific standards that can be tested through automated analysis software. (Note: A follow-up book will present 'non-normative requirements': recommendations for what Java developers typically 'should' do to further strengthen program security beyond testable 'requirements'.)

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.

Make the most of Kotlin by leveraging design patterns and best practices to build scalable and high performing apps Key Features Understand traditional GOF design patterns to apply generic solutions Shift from OOP to FP; covering reactive and concurrent patterns in a step-by-step manner Choose the best microservices architecture and MVC for your development environment Book Description Design patterns enable you as a developer to speed up the development process by providing you with proven development paradigms. Reusing design patterns helps prevent complex issues that can cause major problems, improves your code base, promotes code reuse, and makes an architecture more robust. The mission of this book is to ease the adoption of design patterns in Kotlin and provide good practices for programmers. The book begins by showing you the practical aspects of smarter coding in Kotlin, explaining the basic Kotlin syntax and the impact of design patterns. From there, the book provides an in-depth explanation of the classical design patterns of creational, structural, and behavioral families, before heading into functional programming. It then takes you through reactive and concurrent patterns, teaching you about using streams, threads, and coroutines to write better code along the way By the end of the book, you will be able to efficiently address common problems faced while developing applications and be comfortable working on scalable and maintainable projects of any size. What you will learn Get to grips with Kotlin principles, including its strengths and weaknesses Understand classical design patterns in Kotlin Explore functional programming using built-in features of Kotlin Solve real-world problems using reactive and concurrent design patterns Use threads and coroutines to simplify concurrent code flow Understand antipatterns to write clean Kotlin code, avoiding common pitfalls Learn about the design considerations necessary while choosing between architectures Who this book is for This book is for developers who would like to master design patterns with Kotlin to build efficient and scalable applications. Basic Java or Kotlin programming knowledge is assumed

The release of Java SE 8 introduced significant enhancements that impact the Core Java technologies and APIs at the heart of the Java platform. Many old Java idioms are no longer required and new features like lambda expressions will increase programmer productivity, but navigating these changes can be challenging. Core Java® for the Impatient is a complete but concise guide to Java SE 8. Written by Cay Horstmann—the author of Java SE 8 for the Really Impatient and Core Java™, the classic, two-volume introduction to the Java language—this indispensable new tutorial offers a faster, easier pathway for learning the language and libraries. Given the size of the language and the scope of the new features introduced in Java SE 8, there's plenty of material to cover, but it's presented in small chunks organized for quick access and easy understanding. If you're an experienced programmer, Horstmann's practical insights and sample code will help you quickly take advantage of lambda expressions (closures), streams, and other Java language and platform improvements. Horstmann covers everything developers need to know about modern Java, including Crisp and effective coverage of lambda expressions, enabling you to express actions with a concise syntax A thorough introduction to the new streams API, which makes working with data far more flexible and efficient A treatment of concurrent programming that encourages you to design your programs in terms of cooperating tasks instead of low-level threads and locks Up-to-date coverage of new libraries like Date and Time Other new features that will be especially valuable for server-side or mobile programmers Whether you are just getting started with modern Java or are an experienced developer, this guide will be invaluable for anyone who wants to write tomorrow's most robust, efficient, and secure Java code.

The Complete Coding Interview Guide in Java is an all-inclusive solution guide with meticulously crafted questions and answers that will help you crack any Java Developer job. This book will help you build a strong foundation and the skill-set required to confidently appear in the toughest coding interviews.

"A must-read for all Java developers. . . . Every developer has a responsibility to author code that is free of significant security vulnerabilities. This book provides realistic guidance to help Java developers implement desired functionality with security, reliability, and maintainability goals in mind." —Mary Ann Davidson, Chief Security Officer, Oracle Corporation Organizations worldwide rely on Java code to perform mission-critical tasks, and therefore that code must be reliable, robust, fast, maintainable, and secure. Java™ Coding Guidelines brings together expert guidelines, recommendations, and code examples to help you meet these demands. Written by the same team that brought you The CERT® Oracle® Secure Coding Standard for Java™, this guide extends that previous work's expert security advice to address many additional quality attributes. You'll find 75 guidelines, each presented consistently and intuitively. For each guideline, conformance requirements are specified; for most, noncompliant code examples and compliant solutions are also offered. The authors explain when to apply each guideline and provide references to even more detailed information. Reflecting pioneering research on Java security, Java™ Coding Guidelines offers updated techniques for protecting against both deliberate attacks and other unexpected events. You'll find best practices for improving code reliability and clarity, and a full chapter exposing common misunderstandings that lead to suboptimal code. With

a Foreword by James A. Gosling, Father of the Java Programming Language

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

Learn the art of building intricate, modern, scalable, and concurrent applications using Scala About This Book Make the most of Scala by understanding its philosophy and harnessing the power of multicores Get acquainted with cutting-edge technologies in the field of concurrency, through practical, real-world applications Get this step-by-step guide packed with pragmatic examples Who This Book Is For If you are a Scala programmer with no prior knowledge about concurrent programming, or seeking to broaden your existing knowledge about concurrency, this book is for you. Basic knowledge of the Scala programming language will be helpful. Also if you have a solid knowledge in another programming language, such as Java, you should find this book easily accessible. What You Will Learn Get to grips with the fundamentals of concurrent programming on modern multiprocessor systems Build high-performance concurrent systems from simple, low-level concurrency primitives Express asynchrony in concurrent computations with futures and promises Seamlessly accelerate sequential programs by using data-parallel collections Design safe, scalable, and easy-to-comprehend in-memory transactional data models Transparently create distributed applications that scale across multiple machines Integrate different concurrency frameworks together in large applications Develop and implement scalable and easy-to-understand concurrent applications in Scala 2.12 In Detail Scala is a modern, multiparadigm programming language designed to express common programming patterns in a concise, elegant, and type-safe way. Scala smoothly integrates the features of object-oriented and functional languages. In this second edition, you will find updated coverage of the Scala 2.12 platform. The Scala 2.12 series targets Java 8 and requires it for execution. The book starts by introducing you to the foundations of concurrent programming on the JVM, outlining the basics of the Java Memory Model, and then shows some of the classic building blocks of concurrency, such as the atomic variables, thread pools, and concurrent data structures, along with the caveats of traditional concurrency. The book then walks you through different high-level concurrency abstractions, each tailored toward a specific class of programming tasks, while touching on the latest advancements of async programming capabilities of Scala. It also covers some useful patterns and idioms to use with the techniques described. Finally, the book presents an overview of when to use which concurrency library and demonstrates how they all work together, and then presents new exciting approaches to building concurrent and distributed systems. Style and approach The book provides a step-by-step introduction to concurrent programming. It focuses on easy-to-understand examples that are pragmatic and applicable to real-world applications. Different topics are approached in a bottom-up fashion, gradually going from the simplest foundations to the most advanced features.

Sharpen your coding skills by exploring established computer science problems! Classic Computer Science Problems in Java challenges you with time-tested scenarios and algorithms. Summary Sharpen your coding skills by exploring established computer science problems! Classic Computer Science Problems in Java challenges you with time-tested scenarios and algorithms. You'll work through a series of exercises based in computer science fundamentals that are designed to improve your software development abilities, improve your understanding of artificial intelligence, and even prepare you to ace an interview. As you work through examples in search, clustering, graphs, and more, you'll remember important things you've forgotten and discover classic solutions to your "new" problems! Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Whatever software development problem you're facing, odds are someone has already uncovered a solution. This book collects the most useful solutions devised, guiding you through a variety of challenges and tried-and-true problem-solving techniques. The principles and algorithms presented here are guaranteed to save you countless hours in project after project. About the book *Classic Computer Science Problems in Java* is a master class in computer programming designed around 55 exercises that have been used in computer science classrooms for years. You'll work through hands-on examples as you explore core algorithms, constraint problems, AI applications, and much more. What's inside Recursion, memoization, and bit manipulation Search, graph, and genetic algorithms Constraint-satisfaction problems K-means clustering, neural networks, and adversarial search About the reader For intermediate Java programmers. About the author David Kopec is an assistant professor of Computer Science and Innovation at Champlain College in Burlington, Vermont. Table of Contents 1 Small problems 2 Search problems 3 Constraint-satisfaction problems 4 Graph problems 5 Genetic algorithms 6 K-means clustering 7 Fairly simple neural networks 8 Adversarial search 9 Miscellaneous problems 10 Interview with Brian Goetz

Summary The Well-Grounded Java Developer offers a fresh and practical look at new Java 7 features, new JVM languages, and the array of supporting technologies you need for the next generation of Java-based software. About the Book The Well-Grounded Java Developer starts with thorough coverage of Java 7 features like try-with-resources and NIO.2. You'll then explore a cross-section of emerging JVM-based languages, including Groovy, Scala, and Clojure. You will find clear examples that are practical and that help you dig into dozens of valuable development techniques showcasing modern approaches to the dev process, concurrency, performance, and much more. Written for readers familiar with Java. No experience with Java 7 or new JVM languages required. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside New Java 7 features Tutorials on Groovy, Scala, and Clojure Discovering multicore processing and concurrency Functional programming with new JVM languages Modern approaches to testing, build, and CI Table of Contents PART 1 DEVELOPING WITH JAVA 7 Introducing Java 7 New I/O PART 2 VITAL TECHNIQUES Dependency Injection Modern concurrency Class files and bytecode Understanding performance tuning PART 3 POLYGLOT PROGRAMMING ON THE JVM Alternative JVM languages Groovy: Java's dynamic friend Scala: powerful and concise Clojure: safer programming PART 4 CRAFTING THE POLYGLOT PROJECT Test-driven development Build and continuous integration Rapid web development Staying well-grounded

The introduction of functional programming concepts in Java SE 8 was a drastic change for this venerable object-oriented language. Lambda expressions, method references, and streams fundamentally changed the idioms of the language, and many developers have been trying to catch up ever since. This cookbook will help. With more than 70 detailed recipes, author Ken Kousen shows you how to use the newest features of Java to solve a wide range of problems. For developers comfortable with previous Java versions, this guide covers nearly all of Java SE 8, and includes a chapter focused on changes coming in Java 9. Need to understand how functional idioms will change the way you write code? This cookbook—chock full of use cases—is for you. Recipes cover: The basics of lambda expressions and method references Interfaces in the java.util.function package Stream operations for transforming and filtering data Comparators and Collectors for sorting and converting streaming data Combining lambdas, method references, and streams Creating instances and extract values from Java's Optional type New I/O capabilities that support functional streams The Date-Time API that replaces the legacy Date and Calendar classes Mechanisms for experimenting with concurrency and parallelism

Summary Netty in Action introduces the Netty framework and shows you how to incorporate it into your Java network applications. You'll learn to write highly scalable applications without the need to dive into the low-level non-blocking APIs at the core of Java. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Netty is a Java-based networking framework that manages complex networking, multithreading, and concurrency for your applications. And Netty hides the boilerplate and low-level code, keeping your business logic separate and easier to reuse. With Netty, you get an easy-to-use API, leaving you free to focus on what's unique to your application. About the Book Netty in Action introduces the Netty framework and shows you how to incorporate it into your Java network applications. You will discover how to write highly scalable applications without getting into low-level APIs. The book teaches you to think in an asynchronous way as you work through its many hands-on examples and helps you master the best practices of building large-scale network apps. What's Inside Netty from the ground up Asynchronous, event-driven programming Implementing services using different protocols Covers Netty 4.x About the Reader This book assumes readers are comfortable with Java and basic network architecture. About the Authors Norman Maurer is a senior software engineer at Apple and a core developer of Netty. Marvin Wolfthal is a Dell Services consultant who has implemented mission-critical enterprise systems using Netty. Table of Contents PART 1 NETTY CONCEPTS AND ARCHITECTURE Netty-asynchronous and event-driven Your first Netty application Netty components and design Transports ByteBuf ChannelHandler and ChannelPipeline EventLoop and threading model Bootstrapping Unit testing PART 2 CODECS The codec framework Provided ChannelHandlers and codecs PART 3 NETWORK PROTOCOLS WebSocket Broadcasting events with UDP PART 4 CASE STUDIES Case studies, part 1 Case studies, part 2

Threads are a fundamental part of the Java platform. As multicore processors become the norm, using concurrency effectively becomes essential for building high-performance applications. Java SE 5 and 6 are a huge step forward for the development of concurrent applications, with improvements to the Java Virtual Machine to support high-performance, highly scalable concurrent classes and a rich set of new concurrency building blocks. In Java Concurrency in Practice , the creators of these new facilities explain not only how they work and how to use them, but also the motivation and design patterns behind them. However, developing, testing, and debugging multithreaded programs can still be very difficult; it is all too easy to create concurrent programs that appear to work, but fail when it matters most: in production, under heavy load. Java Concurrency in Practice arms readers with both the theoretical underpinnings and concrete techniques for building reliable, scalable, maintainable concurrent applications. Rather than simply offering an inventory of concurrency APIs and mechanisms, it provides design rules, patterns, and mental models that make it easier to build concurrent programs that are both correct and performant. This book covers: Basic concepts of concurrency and thread safety Techniques for building and composing thread-safe classes Using the concurrency building blocks in java.util.concurrent Performance optimization dos and don'ts Testing concurrent programs Advanced topics such as atomic variables, nonblocking algorithms, and the Java Memory Model

240+ Real Java Interview Questions on Core Java, Threads and Concurrency, Algorithms, Data Structures, Design Patterns, Spring, Hibernate, Puzzles & Sample Interview Questions for Investment Banks, HealthCare IT, Startups, Product and Service based companies. This book is ideal if you are preparing for Java Job Interview in Indian Market. Topics Covered in eBook Core Java (Collections, Concurrency & multi-threading, Lambda, Stream & Generics) Hibernate & Spring Problems Object Oriented Design Problems. Data structure and Algorithm problems This book tries to fill in the knowledge gaps for Java developers appearing for interviews in investment banking domain (RBS, BlackRock, UBS, Morgan Stanley, CitiGroup, Credit Suisse, Barclays Capital, Goldman, J.P. Morgan, Bank of America & Nomura, HSBC), product company (Oracle, Adobe, Markit), or service sector companies (Wipro, Infosys, HCL, Sapient, TCS). This book contains collection of Java related questions which are considered important for the interview preparation. A fair try has been given to address the Question, otherwise references has been provided for in depth study.

The latest edition of Java in a Nutshell is designed to help experienced Java programmers get the most out of Java 7 and 8, but it's also a learning path for new developers. Chock full of examples that demonstrate how to take complete advantage of modern Java APIs and development best practices, the first section of this thoroughly updated book provides a fast-paced, no-fluff introduction to the Java programming language and the core runtime aspects of the Java platform. The second section is a reference to core concepts and APIs that shows you how to perform real programming work in the Java environment. Get up to speed on language details, including Java 8 changes Learn object-oriented programming, using basic Java syntax Explore generics, enumerations, annotations, and lambda expressions Understand basic techniques used in object-oriented design Examine concurrency and memory, and how they're intertwined Work with Java collections and handle common data formats Delve into Java's latest I/O APIs, including asynchronous channels Use Nashorn to execute JavaScript on the Java Virtual Machine Become familiar with development tools in OpenJDK

Anyone who develops software for a living needs a proven way to produce it better, faster, and cheaper. The Productive Programmer offers critical timesaving and productivity tools that you can adopt right away, no matter what platform you use. Master developer Neal Ford not only offers advice on the mechanics of productivity-how to work smarter, spurn interruptions, get the most out your computer, and avoid repetition-he also details valuable practices that will help you elude common traps, improve your code, and become more valuable to your team. You'll learn to: Write the test before you write the code Manage the lifecycle of your objects fastidiously Build only what you need now, not what you might need later Apply ancient philosophies to software development Question authority, rather than blindly adhere to standards Make hard things easier and impossible things possible through meta-programming Be sure all code within a method is at the same level of abstraction Pick the right editor and assemble the best tools for the job This isn't theory, but the fruits of Ford's real-world experience as an Application Architect at the global IT consultancy ThoughtWorks. Whether you're a beginner or a pro with years of experience, you'll improve your work and your career with the simple and straightforward principles in The Productive Programmer.

If you're new to Java—or new to programming—this best-selling book will guide you through the language features and APIs of Java 11. With fun, compelling, and realistic examples, authors Marc Loy, Patrick Niemeyer, and Daniel Leuck introduce you to Java fundamentals—including its class libraries, programming techniques, and idioms—with an eye toward building real applications. You'll learn powerful new ways to manage resources and exceptions in your applications—along with core language features included in recent Java versions. Develop with Java, using the compiler, interpreter, and other tools Explore Java's built-in thread facilities and concurrency package Learn text processing and the powerful regular expressions API Write advanced networked or web-based applications and services

Provides information on building concurrent applications using Java.

Troubleshoot the most widespread and pernicious Java performance problems using a set of open-source and freely-available tools that will make you dramatically more productive in finding the root causes of slow performance. This is a brief book that focuses on a small number of performance anti-patterns, and you'll find that most problems you encounter fit into one of these anti-patterns. The book provides a specific method in a series of steps referred to as the "P.A.t.h. Checklist" that encompasses persistence, alien systems, threads, and heap management. These steps guide you through a troubleshooting process that is repeatable, that you can apply to any performance problem in a Java application. This technique is especially helpful in 'dark' environments with little monitoring. Performance problems are not always localized to Java, but often fall into the realms of database access and server load. This book gives attention to both of these issues through examples showing how to identify repetitive SQL, and identify architecture-wide performance problems ahead of production rollout. Learn how to apply load like an expert, and determine how much load to apply to determine whether your system scales. Included are walk-throughs of a dozen server-side performance puzzles that are ready to run on your own machine. Following these examples helps you learn to: Assess the performance health of four main problems areas in a Java system: The P.A.t.h. Checklist presents each area with its own set of plug-it-in-now tools Pinpoint the code at fault for CPU and other bottlenecks without a Java profiler Find memory leaks in just minutes using heapSpank, the author's open-source leak detector utility that is freely available from heapSpank.org The repeatable method provided in this book is an antidote to lackluster average response times that are multi-second throughout the industry. This book provides a long absent, easy-to-follow, performance training regimen that will benefit anyone programming in Java. What You'll Learn Avoid the 6 most common ways to mess up a load test Determine the exact number of threads to dial into the load generator to test your system's scalability Detect the three most common SQL performance anti-patterns Measure network response times of calls to back-end systems ('alien systems') Identify whether garbage collection performance is healthy or unhealthy and whether delays are caused by problems in the old or new generation, so you know which generation needs to be adjusted Who This Book Is For Intermediate and expert Java developers and architects. Java experts will be able to update their skill set with the latest and most productive, open-source Java performance tools. Intermediate Java developers are exposed to the most common performance defects that repeatedly show up in Java applications, ones that account for the bulk of slow-performing systems. Experts and intermediates alike will benefit from the chapters on load generation.

Summary Android in Practice is a treasure trove of Android goodness, with over 90 tested, ready-to-use techniques including complete end-to-end example applications and practical tips for real world mobile application developers. Written by real world Android developers, this book addresses the trickiest questions raised in forums and mailing lists. Using an easy-to-follow problem/solution/discussion format, it dives into important topics not covered in other Android books, like advanced drawing and graphics, testing and instrumentation, building and deploying applications, and using alternative languages. About the Book It's not hard to find the information you need to build your first Android app. Then what? If you want to build real apps, you will need some how-to advice, and that's what this book is about. Android in Practice is a rich source of Android tips, tricks, and best practices, covering over 90 clever and useful techniques that will make you a more effective Android developer. Techniques are presented in an easy-to-read problem/solution/discussion format. The book dives into important topics like multitasking and services, testing and instrumentation, building and deploying applications, and using alternative languages. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside Techniques covering Android 1.x to 3.x Android for tablets Working with threads and concurrency Testing and building Using location awareness and GPS Styles and themes And much more! This book requires a working knowledge of Java, but no prior experience with Android is assumed. Source Code can be found at <https://code.google.com/p/android-in-?practice/> Table of Contents PART 1 BACKGROUND AND FUNDAMENTALS Introducing Android Android application fundamentals Managing lifecycle and state PART 2 REAL WORLD RECIPES Getting the pixels perfect Managing background tasks with Services Threads and concurrency Storing data locally Sharing data between apps HTTP networking and web services Location is everything Appeal to the senses using multimedia 2D and 3D drawing PART 3 BEYOND STANDARD DEVELOPMENT Testing and instrumentation Build management Developing for Android tablets A handy notes for Java, which will help in daily programming, development and also when you are giving or taking interview; quick reference guide for daily programming & development. This book is designed to help Java developers from beginner to expert level, with concise information of popular and complex subjects of daily programming & Interviews. Its said lot of Java Coffee was consumed by Java language creators. The cover image is tribute to Java Island in Indonesia where coffee beans called "Java Coffee" are produced. "A chapter won't last longer than your coffee".

This updated edition of Java in a Nutshell not only helps experienced Java programmers get the most out of Java versions 9 through 11, it's also a learning path for new developers. Chock full of examples that demonstrate how to take complete advantage of modern Java APIs and development best practices, this thoroughly revised book includes new material on Java Concurrency Utilities. The book's first section provides a fast-paced, no-fluff introduction to the Java programming language and the core runtime aspects of the Java platform. The second section is a reference to core concepts and APIs that explains how to perform real programming work in the Java environment. Get up to speed on language details, including Java 9-11 changes Learn object-oriented programming, using basic Java syntax Explore generics, enumerations, annotations, and lambda expressions Understand basic techniques used in object-oriented design Examine concurrency and memory, and how they're intertwined Work with Java collections and handle common data formats Delve into Java's latest I/O APIs, including asynchronous channels Use Nashorn to execute JavaScript on the Java Virtual Machine Become familiar with development tools in OpenJDK

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. A unique book-and-video package presented by Java guru Yakov Fain As one of the most popular software languages for building Web applications, Java is often the first programming language developers learn. The latest version includes numerous updates that both novice and experienced developers need to know. With this invaluable book-and-video package, Java authority Yakov Fain fully covers Java's new features as well as its language extensions, classes and class methods, and the Swing Application Framework. For each lesson that he

discusses in the book, there is an accompanying instructional video to reinforce your learning experience. Lessons include: Introducing Java Eclipse IDE Object-Oriented Programming Class Methods Back to Java Basics Packages, Interfaces, and Encapsulation Programming with Abstract Classes and Interfaces Introducing the Graphic User Interface Event Handling in UI Introduction to Java Applets Developing a Tic-Tac-Toe Applet Developing a Ping-Pong Game Error Handling Introduction to Collections Introduction to Generics Working with Streams Java Serialization Network Programming Processing E-Mails with Java Introduction to Multi-Threading Digging Deeper into Concurrent Execution Working with Databases Using JDBC Swing with JTable Annotations and Reflection Remote Method Invocation Java EE 6 Overview Programming with Servlets JavaServer Pages Developing Web Applications with JSF Introducing JMS and MOM Introducing JNDI Introduction to Enterprise JavaBeans Introduction to the Java Persistence API Working with RESTful Web Services Introduction to Spring MVC Framework Introduction to Hibernate Framework Bringing JavaFX to the Mix Java Technical Interviews Note: As part of the print version of this title, video lessons are included on DVD. For e-book versions, video lessons can be accessed at wrox.com using a link provided in the interior of the e-book.

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