

Programming With Threads

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Threads Primer - Bil Lewis 1996

Providing an overview of the Solaris and POSIX multithreading architectures, this book explains threads at a level that is completely accessible to programmers and system architects with no previous knowledge of threads. It covers the business and technical benefits of threaded programs, along with discussions of third party software that is threaded, pointing out the benefits. It also describes the design of the Solaris MT API, with references to distinctions in POSIX, contains a set of example programs which illustrate the usage of the Solaris and POSIX APIs, and explains the use of programming tools: Thread Analyzer, LockLint, LoopTool and Debugger.

Efficient Android Threading - Anders Goransson
2014-05-22

Multithreading is essential if you want to create an Android app with a great user experience, but how do you know which techniques can help solve your problem? This practical book describes many asynchronous mechanisms available in the Android SDK, and provides guidelines for selecting the ones most appropriate for the app you're building. Author Anders Goransson demonstrates the advantages and disadvantages of each technique, with sample code and detailed explanations for using it efficiently. The first part of the book describes the building blocks of asynchronous processing, and the second part covers Android libraries and constructs for developing fast, responsive, and well-structured apps. Understand multithreading basics in Java and on the Android platform Learn how threads communicate within and between processes Use strategies to reduce the risk of

memory leaks Manage the lifecycle of a basic thread Run tasks sequentially in the background with HandlerThread Use Java's Executor Framework to control or cancel threads Handle background task execution with AsyncTask and IntentService Access content providers with AsyncQueryHandler Use loaders to update the UI with new data

Java Threads - Scott Oaks 1999

Explains how to use Java's portable platforms to program and use threads effectively and efficiently while avoiding common mistakes
Java Concurrency in Practice - Tim Peierls
2006-05-09

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

High Performance IOS Apps - Gaurav Vaish
2016-06-16

Now that more people spend more time interacting with mobile apps than with their desktop counterparts, you need to think about your iOS app's performance the moment you write your first line of code. This practical hands-on guide shows you how. Through specific and concise tips for designing and optimizing your apps, author Gaurav Vaish provides solutions to many common performance scenarios, including reusable code that you can put to work right away.

Programming with Threads - Steve Kleiman
1996

A practical guide and reference to developing multithreaded programs on UNIX systems written by the foremost experts on the technology. Covers the two main UNIX threads and the UNIX International threads standard. All examples in the book use the POSIX standard.

Modern Multithreading - Richard H. Carver
2005-11-28

Master the essentials of concurrent programming, including testing and debugging This textbook examines languages and libraries for multithreaded programming. Readers learn how to create threads in Java and C++, and develop essential concurrent programming and problem-solving skills. Moreover, the textbook sets itself apart from other comparable works by helping readers to become proficient in key testing and debugging techniques. Among the topics covered, readers are introduced to the relevant aspects of Java, the POSIX Pthreads library, and the Windows Win32 Applications Programming Interface. The authors have developed and fine-tuned this book through

the concurrent programming courses they have taught for the past twenty years. The material, which emphasizes practical tools and techniques to solve concurrent programming problems, includes original results from the authors' research. Chapters include: * Introduction to concurrent programming * The critical section problem * Semaphores and locks * Monitors * Message-passing * Message-passing in distributed programs * Testing and debugging concurrent programs As an aid to both students and instructors, class libraries have been implemented to provide working examples of all the material that is covered. These libraries and the testing techniques they support can be used to assess student-written programs. Each chapter includes exercises that build skills in program writing and help ensure that readers have mastered the chapter's key concepts. The source code for all the listings in the text and for the synchronization libraries is also provided, as well as startup files and test cases for the exercises. This textbook is designed for upper-level undergraduates and graduate students in computer science. With its abundance of practical material and inclusion of working code, coupled with an emphasis on testing and debugging, it is also a highly useful reference for practicing programmers.

PThreads Programming - Bradford Nichols
1996-09

With threads programming, multiple tasks run concurrently within the same program. They can share a single CPU as processes do or take advantage of multiple CPUs when available. They provide a clean way to divide the tasks of a program while sharing data.

Parallel and Concurrent Programming in Haskell - Simon Marlow 2013-07-12

If you have a working knowledge of Haskell, this hands-on book shows you how to use the language's many APIs and frameworks for writing both parallel and concurrent programs. You'll learn how parallelism exploits multicore processors to speed up computation-heavy programs, and how concurrency enables you to write programs with threads for multiple interactions. Author Simon Marlow walks you through the process with lots of code examples that you can run, experiment with, and extend. Divided into separate sections on Parallel and

Concurrent Haskell, this book also includes exercises to help you become familiar with the concepts presented: Express parallelism in Haskell with the Eval monad and Evaluation Strategies Parallelize ordinary Haskell code with the Par monad Build parallel array-based computations, using the Repa library Use the Accelerate library to run computations directly on the GPU Work with basic interfaces for writing concurrent code Build trees of threads for larger and more complex programs Learn how to build high-speed concurrent network servers Write distributed programs that run on multiple machines in a network

Programming with POSIX Threads - David R. Butenhof 1993-05-15

With this practical book, you will attain a solid understanding of threads and will discover how to put this powerful mode of programming to work in real-world applications. The primary advantage of threaded programming is that it enables your applications to accomplish more than one task at the same time by using the number-crunching power of multiprocessor parallelism and by automatically exploiting I/O concurrency in your code, even on a single processor machine. The result: applications that are faster, more responsive to users, and often easier to maintain. Threaded programming is particularly well suited to network programming where it helps alleviate the bottleneck of slow network I/O. This book offers an in-depth description of the IEEE operating system interface standard, POSIXAE (Portable Operating System Interface) threads, commonly called Pthreads. Written for experienced C programmers, but assuming no previous knowledge of threads, the book explains basic concepts such as asynchronous programming, the lifecycle of a thread, and synchronization. You then move to more advanced topics such as attributes objects, thread-specific data, and realtime scheduling. An entire chapter is devoted to "real code," with a look at barriers, read/write locks, the work queue manager, and how to utilize existing libraries. In addition, the book tackles one of the thorniest problems faced by thread programmers-debugging-with valuable suggestions on how to avoid code errors and performance problems from the outset. Numerous annotated examples are used to

illustrate real-world concepts. A Pthreads mini-reference and a look at future standardization are also included.

UNIX Systems Programming - Kay A. Robbins 2003

bull; Learn UNIX essentials with a concentration on communication, concurrency, and multithreading techniques bull; Full of ideas on how to design and implement good software along with unique projects throughout bull; Excellent companion to Stevens' Advanced UNIX System Programming

Learning Concurrency in Python - Elliot Forbes 2017-08-16

Practically and deeply understand concurrency in Python to write efficient programs About This Book Build highly efficient, robust, and concurrent applications Work through practical examples that will help you address the challenges of writing concurrent code Improve the overall speed of execution in multiprocessor and multicore systems and keep them highly available Who This Book Is For This book is for Python developers who would like to get started with concurrent programming. Readers are expected to have a working knowledge of the Python language, as this book will build on these fundamentals concepts. What You Will Learn Explore the concept of threading and multiprocessing in Python Understand concurrency with threads Manage exceptions in child threads Handle the hardest part in a concurrent system — shared resources Build concurrent systems with Communicating Sequential Processes (CSP) Maintain all concurrent systems and master them Apply reactive programming to build concurrent systems Use GPU to solve specific problems In Detail Python is a very high level, general purpose language that is utilized heavily in fields such as data science and research, as well as being one of the top choices for general purpose programming for programmers around the world. It features a wide number of powerful, high and low-level libraries and frameworks that complement its delightful syntax and enable Python programmers to create. This book introduces some of the most popular libraries and frameworks and goes in-depth into how you can leverage these libraries for your own high-concurrent, highly-performant Python programs.

We'll cover the fundamental concepts of concurrency needed to be able to write your own concurrent and parallel software systems in Python. The book will guide you down the path to mastering Python concurrency, giving you all the necessary hardware and theoretical knowledge. We'll cover concepts such as debugging and exception handling as well as some of the most popular libraries and frameworks that allow you to create event-driven and reactive systems. By the end of the book, you'll have learned the techniques to write incredibly efficient concurrent systems that follow best practices. Style and approach This easy-to-follow guide teaches you new practices and techniques to optimize your code, and then moves toward more advanced ways to effectively write efficient Python code. Small and simple practical examples will help you test the concepts yourself, and you will be able to easily adapt them for any application.

Hands-On Parallel Programming with C# 8 and .NET Core 3 - Shakti Tanwar 2019-12-20

Enhance your enterprise application development skills by mastering parallel programming techniques in .NET and C# Key Features Write efficient, fine-grained, and scalable parallel code with C# and .NET Core Experience how parallel programming works by building a powerful application Learn the fundamentals of multithreading by working with IIS and Kestrel Book Description In today's world, every CPU has a multi-core processor. However, unless your application has implemented parallel programming, it will fail to utilize the hardware's full processing capacity. This book will show you how to write modern software on the optimized and high-performing .NET Core 3 framework using C# 8. Hands-On Parallel Programming with C# 8 and .NET Core 3 covers how to build multithreaded, concurrent, and optimized applications that harness the power of multi-core processors. Once you've understood the fundamentals of threading and concurrency, you'll gain insights into the data structure in .NET Core that supports parallelism. The book will then help you perform asynchronous programming in C# and diagnose and debug parallel code effectively. You'll also get to grips with the new Kestrel server and understand the difference between the IIS and

Kestrel operating models. Finally, you'll learn best practices such as test-driven development, and run unit tests on your parallel code. By the end of the book, you'll have developed a deep understanding of the core concepts of concurrency and asynchrony to create responsive applications that are not CPU-intensive. What you will learn Analyze and break down a problem statement for parallelism Explore the APM and EAP patterns and how to move legacy code to Task Apply reduction techniques to get aggregated results Create PLINQ queries and study the factors that impact their performance Solve concurrency problems caused by producer-consumer race conditions Discover the synchronization primitives available in .NET Core Understand how the threading model works with IIS and Kestrel Find out how you can make the most of server resources Who this book is for If you want to learn how task parallelism is used to build robust and scalable enterprise architecture, this book is for you. Whether you are a beginner to parallelism in C# or an experienced architect, you'll find this book useful to gain insights into the different threading models supported in .NET Standard and .NET Core. Prior knowledge of C# is required to understand the concepts covered in this book.

Real World Haskell - Bryan O'Sullivan
2008-11-15

This easy-to-use, fast-moving tutorial introduces you to functional programming with Haskell. You'll learn how to use Haskell in a variety of practical ways, from short scripts to large and demanding applications. Real World Haskell takes you through the basics of functional programming at a brisk pace, and then helps you increase your understanding of Haskell in real-world issues like I/O, performance, dealing with data, concurrency, and more as you move through each chapter.

Python GUI Programming with Tkinter - Alan D. Moore 2018-05-15

Find out how to create visually stunning and feature-rich applications by empowering Python's built-in Tkinter GUI toolkit Key Features Explore Tkinter's powerful features to easily design and customize your GUI application Learn the basics of 2D and 3D

animation in GUI applications. Learn to integrate stunning Data Visualizations using Tkinter Canvas and Matplotlib. Book Description Tkinter is a lightweight, portable, and easy-to-use graphical toolkit available in the Python Standard Library, widely used to build Python GUIs due to its simplicity and availability. This book teaches you to design and build graphical user interfaces that are functional, appealing, and user-friendly using the powerful combination of Python and Tkinter. After being introduced to Tkinter, you will be guided step-by-step through the application development process. Over the course of the book, your application will evolve from a simple data-entry form to a complex data management and visualization tool while maintaining a clean and robust design. In addition to building the GUI, you'll learn how to connect to external databases and network resources, test your code to avoid errors, and maximize performance using asynchronous programming. You'll make the most of Tkinter's cross-platform availability by learning how to maintain compatibility, mimic platform-native look and feel, and build executables for deployment across popular computing platforms. By the end of this book, you will have the skills and confidence to design and build powerful high-end GUI applications to solve real-world problems. What you will learn Implement the tools provided by Tkinter to design beautiful GUIs Discover cross-platform development through minor customizations in your existing application Visualize graphs in real time as data comes in using Tkinter's animation capabilities Use PostgreSQL authentication to ensure data security for your application Write unit tests to avoid regressions when updating code Who this book is for This book will appeal to developers and programmers who would like to build GUI-based applications. Knowledge of Python is a prerequisite.

Programming in Lua - Roberto Ierusalimschy 2006

Authored by Roberto Ierusalimschy, the chief architect of the language, this volume covers all aspects of Lua 5---from the basics to its API with C---explaining how to make good use of its features and giving numerous code examples. (Computer Books)

Java Thread Programming - Paul Hyde 1999

Java Thread Programming shows you how to take full advantage of Java's thread facilities: when to use threads to increase your program's efficiency, how to use them effectively, and how to avoid common mistakes. There is thorough coverage of the Thread API, ThreadGroup classes, the Runnable interface, and the synchronized operator. Extensive, complete, code examples show programmers the details of creating and managing threads in real-world applications.

Multithreaded Programming with Pthreads - Bill Lewis 1998

In-depth coverage is given of the emerging POSIX Threads library for UNIX and how to code with it. These pages explain the concepts and foundations of threads programming, including real-life constructions. The book compares and contrasts the Pthreads library with those for OS/2 and Windows NT throughout.

Concurrent Programming in Java - Douglas Lea 2000

Software -- Programming Languages.

Programming with UNIX Threads - Charles J. Northrup 1996-01-25

Now that multithreaded programming has brought concurrent processing within the reach of a far greater number of businesses and academic institutions, experienced UNIX C programmers need a comprehensive reference to help them take full advantage of this exciting new development. *Programming with UNIX Threads* is the book to fill that need. The most complete book available on the practical applications of UNIX Threads, this invaluable guide is packed with useful, concise examples that both clarify complex information and help you develop a glossary of practical functions that can be easily reused. Charles J. Northrup supplements his detailed, step-by-step presentation with numerous illustrations and code segments as he examines all important aspects of UNIX Threads programming, including: * An overview of multiprocessing and multithreaded programming * Practical programming problems associated with synchronization, including mutex locks, condition variables, Reader-Writer locks, and more * Thread signal management in the extended process model * Scheduling and priorities The book concludes with the creation

of ADAM (a dynamic atom manager), a multithreaded software utility in which all concepts previously discussed are unified to provide a higher level view of parallelism within applications.

Concurrency in C# Cookbook - Stephen Cleary
2014-05-15

If you're one of the many developers uncertain about concurrent and multithreaded development, this practical cookbook will change your mind. With more than 75 code-rich recipes, author Stephen Cleary demonstrates parallel processing and asynchronous programming techniques, using libraries and language features in .NET 4.5 and C# 5.0.

Concurrency is becoming more common in responsive and scalable application development, but it's been extremely difficult to code. The detailed solutions in this cookbook show you how modern tools raise the level of abstraction, making concurrency much easier than before. Complete with ready-to-use code and discussions about how and why the solution works, you get recipes for using: `async` and `await` for asynchronous operations Parallel programming with the Task Parallel Library The TPL Dataflow library for creating dataflow pipelines Capabilities that Reactive Extensions build on top of LINQ Unit testing with concurrent code Interop scenarios for combining concurrent approaches Immutable, threadsafe, and producer/consumer collections Cancellation support in your concurrent code Asynchronous-friendly Object-Oriented Programming Thread synchronization for accessing data

[Taming Java Threads](#) - Allen Holub 2000-06-01
Learning how to write multithreaded applications is the key to taking full advantage of the Java platform. In *Taming Java Threads*, well-known columnist and Java expert Allen Holub provides Java programmers with the information they need to write real multithreaded programs with real code. Holub provides an in-depth explanation of how threads work along with information about how to solve common problems such as deadlocks and race conditions. He not only explains common problems, but also provides the uncommon solutions that mark the difference between production-level code and toy demos. While it is essential to build support for threading into a

Java program from the very beginning, most books on the subjects of Java user interface construction and Java networking barely touch on threading topics. Along with being a basic Java reference, this book is a must-read for any Java developer.

Operating Systems - Remzi H. Arpaci-Dusseau
2018-09

"This book is organized around three concepts fundamental to OS construction: virtualization (of CPU and memory), concurrency (locks and condition variables), and persistence (disks, RAIDS, and file systems"--Back cover.

An Introduction to Programming with Threads - Andrew D. Birrell 1989

Programming with POSIX Threads - David R. Butenhof 1997

Software -- Operating Systems.

Thread Time - Scott J. Norton 1996

The easiest way for programmers to learn important new multi-threading techniques that are increasingly important in Windows NT/95, UNIX, POSIX, and other application development. Each concept in the book is illustrated with a picture, making this an exceptionally easy-to-understand guide. The book introduces the process model, the thread model, and basic thread management functions. Learn how to synchronize and schedule threads. In a Programming Guidelines chapter, learn the basic do's and don'ts of multithreaded programming. The book includes extensive examples, exercises and references, including manual pages, debugging advice, and a CD-ROM loaded with practical information. This book is an effective introduction to multithreading for both professional programmers and students.

[The Art of Concurrency](#) - Clay Breshears
2009-05-07

If you're looking to take full advantage of multi-core processors with concurrent programming, this practical book provides the knowledge and hands-on experience you need. *The Art of Concurrency* is one of the few resources to focus on implementing algorithms in the shared-memory model of multi-core processors, rather than just theoretical models or distributed-memory architectures. The book provides detailed explanations and usable samples to help you transform algorithms from serial to parallel

code, along with advice and analysis for avoiding mistakes that programmers typically make when first attempting these computations. Written by an Intel engineer with over two decades of parallel and concurrent programming experience, this book will help you: Understand parallelism and concurrency Explore differences between programming for shared-memory and distributed-memory Learn guidelines for designing multithreaded applications, including testing and tuning Discover how to make best use of different threading libraries, including Windows threads, POSIX threads, OpenMP, and Intel Threading Building Blocks Explore how to implement concurrent algorithms that involve sorting, searching, graphs, and other practical computations The Art of Concurrency shows you how to keep algorithms scalable to take advantage of new processors with even more cores. For developing parallel code algorithms for concurrent programming, this book is a must.

Seven Concurrency Models in Seven Weeks - Paul Butcher 2014

Offers information on how to exploit the parallel architectures in a computer's GPU to improve code performance, scalability, and resilience.

C++ GUI Programming with Qt 4 - Jasmin Blanchette 2006

Learn GUI programming using Qt4, the powerful crossplatform framework, with the only official Qt book approved by Trolltech.

Java Threads and the Concurrency Utilities - JEFF FRIESEN 2015-12-16

This concise book empowers all Java developers to master the complexity of the Java thread APIs and concurrency utilities. This knowledge aids the Java developer in writing correct and complex performing multithreaded applications. Java's thread APIs and concurrency utilities are among its most powerful and challenging APIs and language features. Java beginners typically find it very difficult to use these features to write correct multithreaded applications. Threads and the Concurrency Utilities helps all Java developers master and use these capabilities effectively. This book is divided into two parts of four chapters each. Part 1 focuses on the Thread APIs and Part 2 focuses on the concurrency utilities. In Part 1, you learn about Thread API basics and runnables, synchronization and

volatility, waiting and notification, and the additional capabilities of thread groups, thread local variables, and the Timer Framework. In Part 2, you learn about concurrency utilities basics and executors, synchronizers, the Locking Framework, and the additional capabilities of concurrent collections, atomic variables, and the Fork/Join Framework. Each chapter ends with select exercises designed to challenge your grasp of the chapter's content. An appendix provides the answers to these exercises. A second appendix explores how threads are used by various standard class library APIs. Specifically, you learn about threads in the contexts of Swing, JavaFX, and Java 8's Streams API. What You Will Learn • How to do thread runnables, synchronization, volatility, waiting and notification, thread groups, thread local variables, and the Timer Framework • How to create multithreaded applications that work correctly. • What are concurrency utilities basics and executors • What are synchronizers, the Locking Framework, concurrent collections, atomic variables, and the Fork/Join Framework and how to use them • How to leverage the concurrency utilities to write more complex multithreaded applications and achieve greater performance • How to apply thread usage in Swing, JavaFX, and Java 8 Streams API contexts Audience The primary audience is Java beginners and the secondary audience is more advanced Java developers who have worked with the Thread APIs and the Concurrency Utilities. Operating System Concepts - Abraham Silberschatz 2005-12-01

A BETTER WAY TO LEARN ABOUT OPERATING SYSTEMS Master the concepts at work behind modern operating systems! Silberschatz, Galvin, and Gagne's Operating Systems Concepts with Java, Sixth Edition illustrates fundamental operating system concepts using the java programming language, and introduces you to today's most popular OS platforms. The result is the most modern and balanced introduction to operating systems available. Before you buy, make sure you are getting the best value and all the learning tools you'll need to succeed in your course. If your professor requires eGrade Plus, you can purchase it here at no additional cost! With this special eGrade Plus package you get the new text_ no highlighting, no missing

pages, no food stains_ and a registration code to eGrade Plus, a suite of effective learning tools to help you get a better grade. All this, in one convenient package!eGrade Plus gives you:A complete online version of the textbookApproximately 25 homework questions per chapter which are linked to the relevant section of the online textStudent source codeInstant feedback on your homework and quizzesand more!eGrade Plus is a powerful online tool that provides students with an integrated suite of teaching and learning resources and an online version of the text in one easy-to-use website.

Extreme C - Kamran Amini 2019-10-31

Push the limits of what C - and you - can do, with this high-intensity guide to the most advanced capabilities of C Key FeaturesMake the most of C's low-level control, flexibility, and high performanceA comprehensive guide to C's most powerful and challenging featuresA thought-provoking guide packed with hands-on exercises and examplesBook Description There's a lot more to C than knowing the language syntax. The industry looks for developers with a rigorous, scientific understanding of the principles and practices. Extreme C will teach you to use C's advanced low-level power to write effective, efficient systems. This intensive, practical guide will help you become an expert C programmer. Building on your existing C knowledge, you will master preprocessor directives, macros, conditional compilation, pointers, and much more. You will gain new insight into algorithm design, functions, and structures. You will discover how C helps you squeeze maximum performance out of critical, resource-constrained applications. C still plays a critical role in 21st-century programming, remaining the core language for precision engineering, aviations, space research, and more. This book shows how C works with Unix, how to implement OO principles in C, and fully covers multi-processing. In Extreme C, Amini encourages you to think, question, apply, and experiment for yourself. The book is essential for anybody who wants to take their C to the next level. What you will learnBuild advanced C knowledge on strong foundations, rooted in first principlesUnderstand memory structures and compilation pipeline and how they work, and

how to make most out of themApply object-oriented design principles to your procedural C codeWrite low-level code that's close to the hardware and squeezes maximum performance out of a computer systemMaster concurrency, multithreading, multi-processing, and integration with other languagesUnit Testing and debugging, build systems, and inter-process communication for C programmingWho this book is for Extreme C is for C programmers who want to dig deep into the language and its capabilities. It will help you make the most of the low-level control C gives you.

The Rust Programming Language (Covers Rust 2018) - Steve Klabnik 2019-09-03

The official book on the Rust programming language, written by the Rust development team at the Mozilla Foundation, fully updated for Rust 2018. The Rust Programming Language is the official book on Rust: an open source systems programming language that helps you write faster, more reliable software. Rust offers control over low-level details (such as memory usage) in combination with high-level ergonomics, eliminating the hassle traditionally associated with low-level languages. The authors of The Rust Programming Language, members of the Rust Core Team, share their knowledge and experience to show you how to take full advantage of Rust's features--from installation to creating robust and scalable programs. You'll begin with basics like creating functions, choosing data types, and binding variables and then move on to more advanced concepts, such as:

- Ownership and borrowing, lifetimes, and traits
- Using Rust's memory safety guarantees to build fast, safe programs
- Testing, error handling, and effective refactoring
- Generics, smart pointers, multithreading, trait objects, and advanced pattern matching
- Using Cargo, Rust's built-in package manager, to build, test, and document your code and manage dependencies
- How best to use Rust's advanced compiler with compiler-led programming techniques

You'll find plenty of code examples throughout the book, as well as three chapters dedicated to building complete projects to test your learning: a number guessing game, a Rust implementation of a command line tool, and a multithreaded server. New to this edition: An extended section on Rust macros, an expanded

chapter on modules, and appendixes on Rust development tools and editions.

Intel Threading Building Blocks - James Reinders 2007-07-12

Book explains how to maximize the benefits of Intel's new dual-core and multi-core processors through a portable C++ library that works on Windows, Linux, Macintosh, and Unix systems. *C++ Concurrency in Action* - Anthony Williams 2012

With the new C++ Standard and Technical Report 2 (TR2), multi-threading is coming to C++ in a big way. TR2 will provide higher-level synchronization facilities that allow for a much greater level of abstraction, and make programming multi-threaded applications simpler and safer. Concurrent programming is required if programmers are to take advantage of the multi-core microprocessors increasingly available from Intel and others. The new standard for C++ has extensions to the language that make concurrent programming more accessible to regular developers. As a guide and reference to the new concurrency features in the upcoming C++ Standard and TR2, this book is invaluable for existing programmers familiar with writing multi-threaded code in C++ using platform-specific APIs, or in other languages, as well as C++ programmers who have never written multithreaded code before.

Languages and Compilers for Parallel Computing - Keith Cooper 2011-03-07

This book constitutes the thoroughly refereed post-proceedings of the 23rd International Workshop on Languages and Compilers for Parallel Computing, LCPC 2010, held in Houston, TX, USA, in October 2010. The 18 revised full papers presented were carefully reviewed and selected from 47 submissions. The scope of the workshop spans foundational results and practical experience, and targets all classes of parallel platforms including concurrent, multithreaded, multicore, accelerated, multiprocessor, and cluster systems.

Multithreading Applications in Win32 - Jim Beveridge 1997

Windowsreg; 95 and Windows NT & allow software developers to use the powerful programming technique of multithreading:

dividing a single application into multiple "threads " that execute separately and get their own CPU time. This can result in significant performance gains, but also in programming headaches. Multithreading is difficult to do well, and previous coverage of the subject in Windows has been incomplete. In this book programmers will get hands-on experience in when and how to use multithreading, together with expert advice and working examples in C++ and MFC. The CD-ROM includes the code and sample applications from the book, including code that works with Internet Winsock.

Java Threads - Scott Oaks 2004

Explains how to use Java's portable platforms to program and use threads effectively and efficiently while avoiding common mistakes.

Pro TBB - Michael Voss 2019-07-09

This open access book is a modern guide for all C++ programmers to learn Threading Building Blocks (TBB). Written by TBB and parallel programming experts, this book reflects their collective decades of experience in developing and teaching parallel programming with TBB, offering their insights in an approachable manner. Throughout the book the authors present numerous examples and best practices to help you become an effective TBB programmer and leverage the power of parallel systems. Pro TBB starts with the basics, explaining parallel algorithms and C++'s built-in standard template library for parallelism. You'll learn the key concepts of managing memory, working with data structures and how to handle typical issues with synchronization. Later chapters apply these ideas to complex systems to explain performance tradeoffs, mapping common parallel patterns, controlling threads and overhead, and extending TBB to program heterogeneous systems or system-on-chips. What You'll Learn Use Threading Building Blocks to produce code that is portable, simple, scalable, and more understandable Review best practices for parallelizing computationally intensive tasks in your applications Integrate TBB with other threading packages Create scalable, high performance data-parallel programs Work with generic programming to write efficient algorithms Who This Book Is For C++ programmers learning to run applications on multicore systems, as well as C or C++

programmers without much experience with templates. No previous experience with parallel programming or multicore processors is required.

R for Data Science - Hadley Wickham

2016-12-12

Learn how to use R to turn raw data into insight, knowledge, and understanding. This book introduces you to R, RStudio, and the tidyverse, a collection of R packages designed to work together to make data science fast, fluent, and fun. Suitable for readers with no previous programming experience, R for Data Science is designed to get you doing data science as quickly as possible. Authors Hadley Wickham and Garrett Grolemund guide you through the

steps of importing, wrangling, exploring, and modeling your data and communicating the results. You'll get a complete, big-picture understanding of the data science cycle, along with basic tools you need to manage the details. Each section of the book is paired with exercises to help you practice what you've learned along the way. You'll learn how to:

Wrangle—transform your datasets into a form convenient for analysis
Program—learn powerful R tools for solving data problems with greater clarity and ease
Explore—examine your data, generate hypotheses, and quickly test them
Model—provide a low-dimensional summary that captures true "signals" in your dataset
Communicate—learn R Markdown for integrating prose, code, and results