

Inside The Java 2 Virtual Machine

Coding and testing are often considered separate areas of expertise. In this comprehensive guide, author and Java expert Scott Oaks takes the approach that anyone who works with Java should be equally adept at understanding how code behaves in the JVM, as well as the tunings likely to help its performance. You'll gain in-depth knowledge of Java application performance, using the Java Virtual Machine (JVM) and the Java platform, including the language and API. Developers and performance engineers alike will learn a variety of features, tools, and processes for improving the way Java 7 and 8 applications perform. Apply four principles for obtaining the best results from performance testing Use JDK tools to collect data on how a Java application is performing Understand the advantages and disadvantages of using a JIT compiler Tune JVM garbage collectors to affect programs as little as possible Use techniques to manage heap memory and JVM native memory Maximize Java threading and synchronization performance features Tackle performance issues in Java EE and Java SE APIs Improve Java-driven database application performance

Written by the inventors of the technology, *The Java Virtual Machine Specification, Java SE 8 Edition* is the definitive technical reference for the Java Virtual Machine. The book provides complete, accurate, and detailed coverage of the Java Virtual Machine. It fully describes the new features added in Java SE 8, including the invocation of default methods and the class file extensions for type annotations and method parameters. The book also clarifies the interpretation of class file attributes and the rules of bytecode verification.

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This new edition provides step-by-step instruction on modern 3D graphics shader programming in OpenGL, along with its theoretical foundations. It is appropriate both for computer science undergraduate graphics programming courses in degree programs that emphasize Java, and for professionals interested in mastering 3D graphics skills who prefer Java. It has been designed in a 4-color, "teach-yourself" format with numerous examples that the reader can run just as presented. New sections have been added covering soft shadows, performance optimization, Nsight debugging, as well as updated industry-standard libraries and steps for running the examples on a Macintosh. Includes companion DVD with source code, models, textures, etc. used in the book. Features: • Includes new sections on implementing soft shadows, performance optimization, and updated tools and libraries such as the JOML math library and Nvidia's Nsight. • Covers modern OpenGL 4.0+ shader programming in Java, using Windows or Mac. • Illustrates every technique with complete running code examples. Everything needed to install JOGL and run every example is provided and fully explained. • Includes step-by-step instruction for every GLSL programmable pipeline stage (vertex, tessellation, geometry, and fragment) -- with examples.

"This book provides both advanced and novice programmers with comprehensive, detailed coverage of all of the important issues in Java 3D"--Provided by publisher.

This IBM® Redbooks® publication provides information about the new Java virtual machine (JVM) server technology in IBM CICS® Transaction Server for z/OS® V4.2. We begin by outlining the many advantages of its multi-threaded operation over the pooled JVM function of earlier releases. The Open Services Gateway initiative (OSGi) is described and we highlight the benefits OSGi brings to both development and deployment. Details are then provided about how to configure and use the new JVM server environment. Examples are included of

the deployment process, which takes a Java application from the workstation Eclipse integrated development environment (IDE) with the IBM CICS Explorer® software development kit (SDK) plug-in, through the various stages up to execution in a stand-alone CICS region and an IBM CICSplex® environment. The book continues with a comparison between traditional CICS programming, and CICS programming from Java. As a result, the main functional areas of the Java class library for CICS (JCICS) application programming interface (API) are extensively reviewed. Further chapters are provided to demonstrate interaction with structured data such as copybooks, and how to access relational databases by using Java Database Connectivity (JDBC) and Structured Query Language for Java (SQLJ). Finally, we devote a chapter to the migration of applications from the pooled JVM model to the new JVM server run time.

If you're interested in JRuby, you probably don't need a tutorial on Ruby, Rails, or Java -- you just need to know how to get things done. This Cookbook offers practical solutions for using the Java implementation of the Ruby language, with targeted recipes for deploying Rails web applications on Java servers, integrating JRuby code with Java technologies, developing JRuby desktop applications with Java toolkits, and more. Using numerous reusable code samples, JRuby Cookbook shows you how to: Install and update JRuby on Windows, Mac OS X, and Linux, and IDEs such as NetBeans and Eclipse Package and deploy Rails apps on Java Servlet containers and Java EE application servers, including JBoss, Tomcat, and GlassFish Integrate Ruby and Rails applications with popular Java EE technologies such as JMS, JMX, JPA, Spring, and Hibernate Develop desktop and client applications with cross-platform Java UI technologies and toolkits such as Swing, SWT, and Java 2D Maximize the flexibility of your testing and build environment, using both existing Java-based tools such as Ant and Maven and newer Ruby-based tools such as Rake, Raven, and Buildr The JRuby interpreter combines Ruby's simplicity and ease of use with Java's extensive libraries and technologies, a potent blend that opens new possibilities for Ruby, Rails, and Java. This Cookbook helps you take full advantage of JRuby's potential. "The JRuby Cookbook is an excellent book for any polyglot who is trying to bridge the gap between Java and Ruby. It provides solutions to specific problems developers face in both their development and testing environments, along with the applications they're building."-- Bob McWhirter, Research & Prototyping, Red Hat Middleware

Inside Java2 Virtual Machine W/CdTata McGraw-Hill Education

The Java Virtual Machine (JVM) is the underlying technology behind Java's most distinctive features including size, security and cross-platform delivery. This guide shows programmers how to write programs for the Java Virtual Machine.

Although the number of commercial Java games is still small compared to those written in C or C++, the market is expanding rapidly. Recent updates to Java make it faster and easier to create powerful gaming applications-particularly Java 3D-is fueling an explosive growth in Java games. Java games like Puzzle Pirates, Chrome, Star Wars Galaxies, Runescape, Alien Flux, Kingdom of Wars, Law and Order II, Roboforge, Tom Clancy's Politika, and scores of others have earned awards and become bestsellers. Java developers new to graphics and game programming, as well as game developers new to Java 3D, will find Killer Game Programming in Java invaluable. This new book is a practical introduction to the latest Java graphics and game programming technologies and techniques. It is the first book to thoroughly cover Java's 3D capabilities for all types of graphics and game development projects. Killer Game Programming in Java is a comprehensive guide to everything you need to know to program cool, testosterone-drenched Java games. It will give you reusable techniques to create everything from fast, full-screen action games to multiplayer 3D games. In addition to the most thorough coverage of Java 3D available, Killer Game Programming in Java also clearly details the older, better-known 2D APIs, 3D sprites, animated 3D sprites, first-person shooter

programming, sound, fractals, and networked games. Killer Game Programming in Java is a must-have for anyone who wants to create adrenaline-fueled games in Java.

This two-volume set LNCS 3760/3761 constitutes the refereed proceedings of the three confederated conferences CoopIS 2005, DOA 2005, and ODBASE 2005 held as OTM 2005 in Agia Napa, Cyprus in October/November 2005. The 89 revised full and 7 short papers presented together with 3 keynote speeches were carefully reviewed and selected from a total of 360 submissions. Corresponding with the three OTM 2005 main conferences CoopIS, DOA, and ODBASE, the papers are organized in topical sections on workflow, workflow and business processes, mining and filtering, petri nets and process management, information access and integrity, heterogeneity, semantics, querying and content delivery, Web services, agents, security, integrity and consistency, chain and collaboration management, Web services and service-oriented architectures, multicast and fault tolerance, communication services, techniques for application hosting, mobility, security and data persistence, component middleware, java environments, peer-to-peer computing architectures, aspect oriented middleware, information integration and modeling, query processing, ontology construction, metadata, information retrieval and classification, system verification and evaluation, and active rules and Web services.

Software -- Programming Languages.

UNDERSTANDING JAVA VIRTUAL MACHINE helps readers in gaining in-depth knowledge of underlying Java virtual machine architecture. Chapters in this book are outcome of author's understanding, developed while coding Java Virtual Machine. Initial chapters give the background of platform dependency and how platform independence can be achieved. It explains the building blocks of the Java Virtual Machine like heap, stacks and other storage areas. In subsequent chapters, it continues with algorithms that Java Virtual Machine performs. This book uses 'C' programming language for explaining the algorithms. Audience having background of 'C' or other language will have an advantage in understanding Java Virtual Machine algorithms. Final chapters help target audience in understanding the implementation of java native interface, multi-threading and garbage collection in Java Virtual Machine. This authoritative Java security book is written by the architect of the Java security model. It chronicles J2EE v1.4 security model enhancements that will allow developers to build safer, more reliable, and more impenetrable programs.

Jakarta Tomcat is not only the most commonly used open source servlet engine today, it's become the de facto standard by which other servlet engines are measured. Powerful and flexible, it can be used as a stand-alone web server or in conjunction with another server, like Apache or IIS, to run servlets or JSPs. But mastery of Tomcat is not easy: because it's as complex as it is complete. Tomcat: The Definitive Guide answers vexing questions that users, administrators, and developers alike have been asking. This concise guide provides much needed information to help harness Tomcat's power and wealth of features. Tomcat: The Definitive Guide offers something for everyone who uses Tomcat. System and network administrators will find detailed instructions on installation, configuration, and maintenance. For users, it supplies insightful information on how to deploy Tomcat. And seasoned enterprise Java developers will have a complete reference to setting up, running, and using this powerful software. The book begins with an introduction to the Tomcat server and includes an overview of the three types of server configurations: stand-alone, in-process, and out-of-process. The authors show how directories are laid out, cover the initial setup, and describe how to set the environment variables and modify the configuration files, concluding with common errors, problems, and solutions. In subsequent chapters, they cover: The server.xml configuration file Java Security manager Authentication schemes and Tomcat users The Secure Socket Layer (SSL) Tomcat JDBC Realms Installing servlets and Java Server Pages Integrating Tomcat with Apache Advanced Tomcat configuration and much more. Tomcat: The Definitive Guide covers

all major platforms, including Windows, Solaris, Linux, and Mac OS X, contains details on Tomcat configuration files, and has a quick-start guide to get developers up and running with Java servlets and JavaServer Pages. If you've struggled with this powerful yet demanding technology in the past, this book will provide the answers you need.

Immersing students in Java and the Java Virtual Machine (JVM), Introduction to Compiler Construction in a Java World enables a deep understanding of the Java programming language and its implementation. The text focuses on design, organization, and testing, helping students learn good software engineering skills and become better programmers. The book covers all of the standard compiler topics, including lexical analysis, parsing, abstract syntax trees, semantic analysis, code generation, and register allocation. The authors also demonstrate how JVM code can be translated to a register machine, specifically the MIPS architecture. In addition, they discuss recent strategies, such as just-in-time compiling and hotspot compiling, and present an overview of leading commercial compilers. Each chapter includes a mix of written exercises and programming projects. By working with and extending a real, functional compiler, students develop a hands-on appreciation of how compilers work, how to write compilers, and how the Java language behaves. They also get invaluable practice working with a non-trivial Java program of more than 30,000 lines of code. Fully documented Java code for the compiler is accessible at <http://www.cs.umb.edu/j--/>

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Today's incoming students are more likely to be exposed to Java than ever before. Focusing on a modern architecture (the Java Virtual Machine, or JVM), this text provides a thorough treatment of the principles of computer organization in the context of today's portable computer. Students are given simple but realistic examples to gain a complete understanding of how computation works on such a machine. Juola makes the material useful and relevant in a course that is often difficult for second-year CS students.

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

An overview of the programming language's fundamentals covers syntax, initialization, implementation, classes, error handling, objects, applets, multiple threads, projects, and network programming.

Gives you all the information you need to create a reasonable Java use strategy. Provides: guidelines for safely using Java; what to expect in the Java security future; a clear treatment of the risks of using Java; vital information explaining the 3 prongs of the Java security model: the

Byte Code Verifier, the Applet Class Loader, & the Security Manager; & clear explanations of holes in the Java security model. "This book is mandatory reading for every user & developer of webware." "Provocative & useful."

Inhaltsangabe:Abstract: Distributed computing is playing an increasingly important role in many areas of industry, the sciences, in business processes and in the development of new and emerging technologies. It facilitates inter-process communication across heterogeneous networks, hardware platforms and operating systems. We compare four distributed and object-oriented architectures: Sockets in Java 2, Sockets in Berkeley Unix, Remote Method Invocation in Java - RMI - and the Common Object Request Broker Architecture - CORBA - of the Object Management Group consortium. We provide a survey of each of the distributed architectures including its constituting components. To present the architectures in a practical context, we amend each survey with a corresponding application framework. We conclude with a comparative study of the Socket APIs in Java 2 and in Berkeley UNIX and the distributed object models of Java RMI and CORBA. Although the distributed object model as defined by CORBA represents an adopted industry standard, Java RMI has features unattainable by CORBA. The first part of the discussion offers a comprehensive overview of the Socket architecture in Java 2 and Berkeley UNIX and the distributed object model of Java Remote Method Invocation and the Common Object Request Broker Architecture. The second part concludes the discussion with a comparative study of selected features with emphasis on the Common Object Request Broker Architecture and Java Remote Method Invocation. Chapter 1 - The TCP/IP Protocol Suite: We provide an introductory overview of the TCP/IP protocol suite and its architecture including layers and protocols. The TCP/IP architecture is based on three concepts: processes, layers and protocols. There is no official protocol model as compared to the OSI proposal. We can however devise a logical structure of the TCP/IP protocol suit based on the associated protocols and their relationships. The chapter concludes with a brief discussion of Internet-related organizations and standards. Chapter 2 - Sockets in Berkeley Unix: We present the Berkeley UNIX socket architecture in relation to the Internet communication domain and illustrate connection-oriented and connectionless models of communication. The socket architecture forms the basis for the development of distributed applications. A socket represents an endpoint of communication for connectionless or connection-oriented protocols. A socket address data structure [...]

Pro (IBM) WebSphere Application Server 7 Internals covers the internal architecture and implementation of the WebSphere Application Server (WAS) version 7 product set and how other IBM products extend it. It presents information to enable administrators, developers, and architects to learn about the aspects of WAS that apply to them: Administrators will come to understand how the WAS7 environment functions to best optimize it for their environment, and what to do when things go wrong. Developers will learn to extend the functionality in the base WAS product. Architects will see how the WAS product underpins the IBM offerings to fit in an enterprise.

The origin of this book goes back to the Dagstuhl seminar on Logic for System Engineering, organized during the first week of March 1997 by S. Jiihnichen, J. Loeckx, and M. Wirsing. During that seminar, after Egon Borger's talk on How to Use Abstract State Machines in Software Engineering, Wolfram Schulte, at the time a research assistant at the University of Ulm, Germany, questioned whether ASMs provide anything special as a scientifically well founded and rigorous yet simple and industrially viable framework for high level design and analysis of complex systems, and for natural refinements of models to executable code. Wolfram Schulte argued, referring to his work with K. Achatz on A Formal Object-Oriented Method Inspired by Fusion and Object-Z [1], that with current techniques of functional programming and of axiomatic specification, one can achieve the same result. An intensive and long debate arose from this discussion. At the end of the week, it led Egon Borger to

propose a collaboration on a real-life specification project of Wolfram Schulte's choice, as a comparative field test of purely functional declarative methods and of their enhancement within an integrated abstract state-based operational (ASM) approach. After some hesitation, in May 1997 Wolfram Schulte accepted the offer and chose as the theme a high-level specification of Java and of the Java Virtual Machine.

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 Presents instructions for creating Android applications for mobile devices using Java. Take advantage of 55% Book Stores Discount! Win the Royalty of Your Customers with This Manuscript Discover How to Take Advantage of the Tremendous Development Tools and Versatility of Java in 2021! Java is a widely-used programming language on the Web and in computing applications. It is a free download solution that allows users to access the latest versions and implement updates. This particular Programming Language is present in the majority of today's Web Applications and Computing Technologies. Java's scalable characteristics make it suitable for deployment in a wide range of applications, including apps for small electronic devices like cell phones and software solutions for large scale operations such as data centres. The growing preference for deploying Java is attributable to its robust functional features and sound security credentials. Java bears the Unique Distinction of Operating as a Modernized Programming Language but also as a Platform. This book includes: Why is Java crucial in 2021 ? ? Get to know the Richest Application Programming Interface ? Different Type Open Source Libraries ? Discover the 7 Best Development Tools of Java ? Get access to Extraordinary Documentation Support ? Identifiers ? What are the Variables ? ? Java Runtime Environment ? The book provides details of the different basic aspects of Java to guide you through the beginner's level of this Programming Language. This guide highlights the underlying concepts of Java, provides relevant examples, and incorporates exercises that will help you understand its fundamental parameters, structure, characteristics, and operations. Get Your Customer Addicted to Your Store! This IBM Redbooks publication gives a broad understanding of a new 32-bit Java Virtual Machine (JVM) in IBM i5/OS. With the arrival of this new JVM, IBM System i platform now comfortably supports Java and WebSphere applications on a wide array of different server models: from entry size boxes to the huge enterprise systems. This book provides in-depth information about setting Java and IBM WebSphere environments with new 32-bit JVM, tuning its performance, and monitoring or troubleshooting its runtime with the new set of tools. Information in this book helps system architects, Java application developers, and system administrators in their work

with 32-bit JVM in i5/OS. Important: Despite the fact that this book targets i5/OS implementation, most information in this book applies to all IBM server platforms, where the new 32-bit JVM is supported.

Sun's J2ME[®] Platform brings unprecedented power and platform independence to the wireless market. Sun has collaborated with virtually every wireless leader, including Motorola, Nokia, NTT DoCoMo, Palm, RIM, and Siemens. Now, a team of J2ME creators and leading-edge developers have come together to present the definitive guide to real-world J2ME development. Whether you're building next-generation cell phones, two-way pagers, personal organizers, or any other wireless device, this book delivers the specific techniques you need to succeed. *Programming Wireless Devices With the J2ME[®] Platform* starts with a much-needed general introduction and technical overview of J2ME technology and standards, and presents detailed case studies demonstrating J2ME at work in actual applications. The authors introduce key J2ME standards such as Connected, Limited Device Configuration (CLDC) and Mobile Information Device Profile (MIDP); and show how to maximize performance, portability, and consistency in real-world J2ME development. For wireless developers, consumer and embedded systems engineers, and all Java developers who want to leverage their expertise in next-generation wireless application development.

Virtual Machine technology applies the concept of virtualization to an entire machine, circumventing real machine compatibility constraints and hardware resource constraints to enable a higher degree of software portability and flexibility. Virtual machines are rapidly becoming an essential element in computer system design. They provide system security, flexibility, cross-platform compatibility, reliability, and resource efficiency. Designed to solve problems in combining and using major computer system components, virtual machine technologies play a key role in many disciplines, including operating systems, programming languages, and computer architecture. For example, at the process level, virtualizing technologies support dynamic program translation and platform-independent network computing. At the system level, they support multiple operating system environments on the same hardware platform and in servers.

Historically, individual virtual machine techniques have been developed within the specific disciplines that employ them (in some cases they aren't even referred to as "virtual machines"), making it difficult to see their common underlying relationships in a cohesive way. In this text, Smith and Nair take a new approach by examining virtual machines as a unified discipline. Pulling together cross-cutting technologies allows virtual machine implementations to be studied and engineered in a well-structured manner. Topics include instruction set emulation, dynamic program translation and optimization, high level virtual machines (including Java and CLI), and system virtual machines for both single-user systems and servers. * Examines virtual machine technologies across the disciplines that use them—operating systems, programming languages and computer architecture—defining a new and unified discipline. * Reviewed by principle researchers at Microsoft, HP, and by other industry research groups. * Written by two authors who combine several decades of expertise in computer system research and development, both in academia and industry.

The Java Virtual Machine Specification is the heart of Java's portability--its ability to run applets in various environments and under different operating systems.

This insider guide gives the understanding needed to write more effective code for Java

programs and get maximum performance from Java applications. Both a tutorial and reference, the book is easy to follow for Java programmers at all levels. Readers learn what's going on underneath their Java programs as they run, and gain valuable insights into garbage collection techniques, multithreading, compilers, bytecodes, the Java interpreter and more. The accompanying CD-ROM contains numerous code examples, as well as interactive illustrations that provide valuable programming insights.

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

For nearly five years, one book has served as the definitive reference to Java for all serious developers: The Java Language Specification, by James Gosling, Bill Joy, and Guy Steele. Now, these world-renowned Java authorities (along with new co-author Gilad Bracha) have delivered a monumental update. This completely revised Second Edition covers the Java 2 Platform Standard Edition Version 1.3 with unprecedented depth and precision, offering the invaluable insights of Java's creators to every developer. There is no better source for learning everything about the Syntax and Semantics of the Java programming language. Developers will turn to this book again and again.

Discusses the origin and purpose of the Java language, platform independence, security, network mobility, and related issues, and provides detailed information and advice for programmers

This book is a collection of notes and sample codes written by the author while he was learning JVM himself. Topics include JVM (Java Virtual Machine) Architecture and Components; Oracle JVM implementation - HotSpot; Eclipse JVM implementation - Eclipse OpenJ9; java.lang.Runtime - The JVM Instance class; Loading Native Libraries; java.lang.System - Representing Operating System; java.lang.ClassLoader - Loading class files; java.lang.Class - Class reflections; Runtime data areas, heap memory and Garbage Collection; Stack, Frame and Stack overflow; Multi-threading impacts on CPU and I/O; CDS (Class Data Sharing); Micro Benchmark tests on different types of operations. Updated in 2020 (Version 5.11) with Eclipse OpenJ9. For latest updates and free sample chapters, visit <http://www.herongyang.com/JVM>.

Coding and testing are generally considered separate areas of expertise. In this practical book, Java expert Scott Oaks takes the approach that anyone who works with Java should be adept at understanding how code behaves in the Java Virtual Machine—including the tunings likely to help performance. This updated second edition helps you gain in-depth knowledge of Java application performance using both the JVM and the Java platform. Developers and performance engineers alike will learn a variety of features, tools, and processes for improving the way the Java 8 and 11 LTS releases perform. While the emphasis is on production-supported releases and features, this book also features previews of exciting new technologies such as ahead-of-time compilation and experimental garbage collections. Understand how various Java platforms and compilers affect performance Learn how Java garbage collection works Apply four principles to obtain best results from performance testing Use the JDK and other tools to learn how a Java application is performing Minimize the garbage collector's impact through tuning and programming practices Tackle performance issues in Java APIs Improve Java-driven database application performance Essential Java Programming Skills--Made Easy! Fully updated for Java Platform,

Standard Edition 8 (Java SE 8), *Java: A Beginner's Guide, Sixth Edition* gets you started programming in Java right away. Bestselling programming author Herb Schildt begins with the basics, such as how to create, compile, and run a Java program. He then moves on to the keywords, syntax, and constructs that form the core of the Java language. This Oracle Press resource also covers some of Java's more advanced features, including multithreaded programming, generics, and Swing. Of course, new Java SE 8 features such as lambda expressions and default interface methods are described. An introduction to JavaFX, Java's newest GUI, concludes this step-by-step tutorial. Designed for Easy Learning: Key Skills & Concepts -- Chapter-opening lists of specific skills covered in the chapter Ask the Expert -- Q&A sections filled with bonus information and helpful tips Try This -- Hands-on exercises that show you how to apply your skills Self Tests -- End-of-chapter quizzes to reinforce your skills Annotated Syntax -- Example code with commentary that describes the programming techniques being illustrated The book's code examples are available FREE for download.

The formal study of program behavior has become an essential ingredient in guiding the design of new computer architectures. Accurate characterization of applications leads to efficient design of high performing architectures. Quantitative and analytical characterization of workloads is important to understand and exploit the interesting features of workloads. This book includes ten chapters on various aspects of workload characterization. File caching characteristics of the industry-standard web-serving benchmark SPECweb99 are presented by Keller et al. in Chapter 1, while value locality of SPECJVM98 benchmarks are characterized by Rychlik et al. in Chapter 2.

SPECJVM98 benchmarks are visited again in Chapter 3, where Tao et al. study the operating system activity in Java programs. In Chapter 4, KleinOsowski et al. describe how the SPEC2000 CPU benchmark suite may be adapted for computer architecture research and present the small, representative input data sets they created to reduce simulation time without compromising on accuracy. Their research has been recognized by the Standard Performance Evaluation Corporation (SPEC) and is listed on the official SPEC website, <http://www.spec.org/osg/cpu2000/research/umnl>. The main contribution of Chapter 5 is the proposal of a new measure called locality surface to characterize locality of reference in programs. Sorenson et al. describe how a three-dimensional surface can be used to represent both of programs. In Chapter 6, Thornock et al.

Practical introduction to Java for use in scientific and technical computing.

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