Java Network Programming

The perimeter defenses guarding your network perhaps are not as secure as you think. Hosts behind the firewall have no defenses of their own, so when a host in the "trusted" zone is breached, access to your data center is not far behind. That's an all-too-familiar scenario today. With this practical book, you'll learn the principles behind zero trust architecture, along with details necessary to implement it. The Zero Trust Model treats all hosts as if they're internet-facing, and considers the entire network to be compromised and hostile. By taking this approach, you'll focus on building strong authentication, authorization, and encryption throughout, while providing compartmentalized access and better operational agility. Understand how perimeter-based defenses have evolved to become the broken model we use today. Explore two case studies of zero trust in production networks on the client side (Google) and on the server side (PagerDuty). Get example configuration for open source tools that you can use to build a zero trust network. Learn how to migrate from a perimeter-based network to a zero trust network in production.

Write your first code in Java using simple, step-by-step examples that model real-world objects and events, making learning easy. With this book you'll be able to pick up the concepts without fuss. Java for Absolute Beginnings teaches Java development in language anyone can understand, giving you the best possible start. You'll see clear code descriptions and layout so that you can get your code running as soon as possible. After reading this book, you'll come away with the basics to get started writing programs in Java. Author Iuliana Cosmina focuses on practical knowledge and getting up to speed quickly—all the bits and pieces a novice needs to get started programming in Java. First, you'll discover how Java is executed, what type of language it is, and what it is good for. With the theory out of the way, you'll install Java, choose an editor such as IntelliJ IDEA, and write your first simple Java program. Along the way you'll compile and execute this program so it can run on any platform that supports Java. As part of this tutorial you'll see how to write high-quality code by following conventions and respecting well-known programming principles, making your projects more professional and efficient. Finally, alongside the core features of Java, you'll learn skills in some of the newest and most exciting features of the language: Generics, Lambda expressions, modular organization, local-variable type inference, and local variable syntax for Lambda expressions. Java for Absolute Beginners gives you all you need to start your Java 9+ programming journey. No experience necessary. What You'll Learn Use data types, operators, and the new stream API Install and use a build tool such as Gradle Build interactive Java applications with JavaFX Exchange data using the new JSON APIs Play with images using multi-resolution APIs Use the publish-subscribe framework

Who This Book Is For Those who are new to programming and who want to start with Java.
contained code solutions that you can freely use, along with a discussion of how and why they work. If you are familiar with Java basics, this cookbook will bolster your knowledge of the language in general and Java 8’s main APIs in particular. Recipes include: Methods for compiling, running, and debugging 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 Directory and filesystem operations Working with graphics, audio, and video GUI development, including JavaFX and handlers Network programming on both client and server Database access, using JPA, Hibernate, and JDBC Processing JSON and XML for data storage Multithreading and concurrency

Here is a complete treatment of network programming and cryptography in Java. This complete guide details all of the Java platform support for networking and offers extensive examples. The Java.10 and Java.net packages are completely documented, including the new features of JDK 1.1, followed by treatment of RMI, Jeeves, and a discussion of CORBA.

This title focuses on using Java for building network computing solutions. The CD-ROM includes sample code from the book and free software, including VisualAge for Java, Lotus Bean Machine, Servlet Express, Web Runner Bean Tools, and Lotus Domino Go Web server.

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.

Beginning Java 8 APIs, Extensions and Libraries completes the Apress Java learning journey and is a comprehensive approach to learning the Java Swing, JavaFX, Java Scripting, JDBC and network programming APIs. This book covers the key extensions of the Java programming language such as Swing, JavaFX, network programming, and JDBC. Each topic starts with a discussion of the topic's background. A step-by-step process, with small snippets of Java code, provides easy-to-follow instructions. At the end of a topic, a complete and ready-to-run Java program is provided. This book contains over 130 images and diagrams to help you visualize and better understand the topics. More than 130 complete programs allow you to practice and quickly learn the topics. The Swing chapters discuss various aspects of working with a GUI, from the
very basic concepts of developing a Swing application, to the most advanced topics, such as decorating a Swing component with a JLayer, drag-and-drop features, Synth Skinnable L&F, etc. The chapter on network programming covers the basics of network technologies first, and then, the advanced topics of network programming, using a Java class library. It covers IPv4 and IPv6, addressing schemes, subnetting, supernetting, multicasting, TCP/IP sockets, UDP sockets, asynchronous socket I/O, etc. The chapter on JDBC provides the details of connecting and working with databases such as Oracle, SQL Server, MySQL, DB2, Java DB (Apache Derby), Sybase, Adaptive Server Anywhere, etc. It contains a complete discussion on processing a ResultSet and a RowSet. It discusses how to use the RowSetFactory, to obtain a RowSet object of a specific type. Working with Large Objects (LOBs), such as Blob, Clob, and NClob, is covered in detail with Java code examples and database scripts.

Every enterprise application creates data, whether it's log messages, metrics, user activity, outgoing messages, or something else. And how to move all of this data becomes nearly as important as the data itself. If you're an application architect, developer, or production engineer new to Apache Kafka, this practical guide shows you how to use this open source streaming platform to handle real-time data feeds. Engineers from Confluent and LinkedIn who are responsible for developing Kafka explain how to deploy production Kafka clusters, write reliable event-driven microservices, and build scalable stream-processing applications with this platform. Through detailed examples, you'll learn Kafka's design principles, reliability guarantees, key APIs, and architecture details, including the replication protocol, the controller, and the storage layer. Understand publish-subscribe messaging and how it fits in the big data ecosystem. Explore Kafka producers and consumers for writing and reading messages Understand Kafka patterns and use-case requirements to ensure reliable data delivery Get best practices for building data pipelines and applications with Kafka Manage Kafka in production, and learn to perform monitoring, tuning, and maintenance tasks Learn the most critical metrics among Kafka's operational measurements Explore how Kafka's stream delivery capabilities make it a perfect source for stream processing systems

This complete guide to setting up and running a TCP/IP network is essential for network administrators, and invaluable for users of home systems that access the Internet. The book starts with the fundamentals -- what protocols do and how they work, how addresses and routing are used to move data through the network, how to set up your network connection -- and then covers, in detail, everything you need to know to exchange information via the Internet.Included are discussions on advanced routing protocols (RIPv2, OSPF, and BGP) and the gated software package that implements them, a tutorial on configuring important network services -- including DNS, Apache, sendmail, Samba, PPP, and DHCP -- as well as expanded chapters on troubleshooting and security. TCP/IP Network Administration is also a command and syntax reference for important packages such as gated, pppd, named, dhcpd, and sendmail. With coverage that includes Linux, Solaris, BSD, and System V TCP/IP implementations, the third edition contains: Overview of TCP/IP Delivering the data Network services Getting startedM Basic configuration Configuring the interface Configuring routing Configuring DNS Configuring network servers Configuring sendmail Configuring Apache Network security Troubleshooting Appendices include dip, ppp, and chat reference, a gated
reference, a dhcpd reference, and a sendmail reference. This new edition includes ways of configuring Samba to provide file and print sharing on networks that integrate Unix and Windows, and a new chapter is dedicated to the important task of configuring the Apache web server. Coverage of network security now includes details on OpenSSH, stunnel, gpg, iptables, and the access control mechanism in xinetd. Plus, the book offers updated information about DNS, including details on BIND 8 and BIND 9, the role of classless IP addressing and network prefixes, and the changing role of registrars. Without a doubt, TCP/IP Network Administration, 3rd Edition is a must-have for all network administrators and anyone who deals with a network that transmits data over the Internet.

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:

For programmers already familiar with Java, this book offers new techniques on how to develop distributed applications. Although it discusses four paradigms--low-level Sockets, Remote Method Invocation, CORBA, and Mobile Agents--this book does not favor any one of these technologies. It also allows the reader to judge the easiest approach for a particular domain of applications.

All of Java's Input/Output (I/O) facilities are based on streams, which provide simple ways to read and write data of different types. Java provides many different kinds of streams, each with its own application. The universe of streams is divided into four large categories: input streams and output streams, for reading and writing binary data; and readers and writers, for reading and writing textual (character) data. You're almost certainly familiar with the basic kinds of streams--but did you know that there's a
CipherInputStream for reading encrypted data? And a ZipOutputStream for automatically compressing data? Do you know how to use buffered streams effectively to make your I/O operations more efficient? Java I/O, 2nd Edition has been updated for Java 5.0 APIs and tells you all you ever need to know about streams--and probably more. A discussion of I/O wouldn't be complete without treatment of character sets and formatting. Java supports the Unicode standard, which provides definitions for the character sets of most written languages. Consequently, Java is the first programming language that lets you do I/O in virtually any language. Java also provides a sophisticated model for formatting textual and numeric data. Java I/O, 2nd Edition shows you how to control number formatting, use characters aside from the standard (but outdated) ASCII character set, and get a head start on writing truly multilingual software. Java I/O, 2nd Edition includes: Coverage of all I/O classes and related classes In-depth coverage of Java's number formatting facilities and its support for international character sets Java's rich, comprehensive networking interfaces make it an ideal platform for building today's networked, Internet-centered applications, components, and Web services. Now, two Java networking experts demystify Java's complex networking API, giving developers practical insight into the key techniques of network development, and providing extensive code examples that show exactly how it's done. David and Michael Reilly begin by reviewing fundamental Internet architecture and TCP/IP protocol concepts all network programmers need to understand, as well as general Java features and techniques that are especially important in network programming, such as exception handling and input/output. Using practical examples, they show how to write clients and servers using UDP and TCP; how to build multithreaded network applications; and how to utilize HTTP and access the Web using Java. The book includes detailed coverage of server-side application development; distributed computing development with RMI and CORBA; and email-enabling applications with the powerful JavaMail API. For all beginning to intermediate Java programmers, network programmers who need to learn to work with Java.

Java Network Programming, Third Edition, brings you up-to-date with the latest features of Java's network APIs. This book discusses all the changes and additions to networking in JDK 1.4 and 1.5 (now christened J2SE 5). It covers everything from networking fundamentals to remote method invocation (RMI), including chapters on TCP and UDP sockets, server sockets, URLs and URIs, multicasting, and special-purpose APIs such as JavaMail. This book shows you how to use JSSE to write secure networking applications and explains how to use the NIO APIs to write ultra high-performance servers. And it covers Java's support for network proxies, web cookies, and URL caching. Java Network Programming doesn't just explain the APIs: it shows you how to put them to work. This book is full of examples; it contains thousands of lines of working code (all of which are available online), implementing fully functional network clients and servers. Whether you want to write a special-purpose web server, a secure online order taker, a simple multicast agent, or even an email client, you'll find code that you can learn from and borrow. Whether you're an experienced network developer, a new Java programmer, or someone who just wants to see what's possible, you'll find that Java Network Programming, Third Edition is an important part of your library. Once you've started using the Java Networking APIs, the possibilities are only
limited by your imagination.
* Covers low-level networking in Python — essential for writing a new networked application protocol. * Many working examples demonstrate concepts in action and can be used as starting points for new projects. * Networked application security is demystified. * Exhibits and explains multitasking network servers using several models, including forking, threading, and non-blocking sockets. * Features extensive coverage of Web and E-mail. Describes Python’s database APIs.

A text focusing on the methods and alternatives for designed TCP/IP-based client/server systems and advanced techniques for specialized applications with Perl. A guide examining a collection of the best third party modules in the Comprehensive Perl Archive Network. Topics covered: Perl function libraries and techniques that allow programs to interact with resources over a network. IO: Socket library; Net: FTP library -- Telnet library -- SMTP library; Chat problems; Internet Message Access Protocol (IMAP) issues; Markup-language parsing; Internet Protocol (IP) broadcasting and multicasting.

In addition to showing the programmer how to construct Neural Networks, the book discusses the Java Object Oriented Neural Engine (JOONE), a free open source Java neural engine.

Java is the preferred language for many of today’s leading-edge technologies—everything from smartphones and game consoles to robots, massive enterprise systems, and supercomputers. If you’re new to Java, the fourth edition of this bestselling guide provides an example-driven introduction to the latest language features and APIs in Java 6 and 7. Advanced Java developers will be able to take a deep dive into areas such as concurrency and JVM enhancements. You’ll learn powerful new ways to manage resources and exceptions in your applications, and quickly get up to speed on Java’s new concurrency utilities, and APIs for web services and XML. You’ll also find an updated tutorial on how to get started with the Eclipse IDE, and a brand-new introduction to database access in Java.

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
A tutorial introducing Java basics covers programming principles, integrating applets with Web applications, and using threads, arrays, and sockets.

A guide to developing network programs covers networking fundamentals as well as TCP and UDP sockets, multicasting protocol, content handlers, servlets, I/O, parsing, Java Mail API, and Java Secure Sockets Extension.

This practical guide provides a complete introduction to developing network programs with Java. You’ll learn how to use Java’s network class library to quickly and easily accomplish common networking tasks such as writing multithreaded servers, encrypting communications, broadcasting to the local network, and posting data to server-side programs. Author Elliotte Rusty Harold provides complete working programs to illustrate the methods and classes he describes. This thoroughly revised fourth edition covers REST, SPDY, asynchronous I/O, and many other recent technologies. Explore protocols that underlie the Internet, such as TCP/IP and UDP/IP Learn how Java’s core I/O API handles network input and output Discover how the InetAddress class helps Java programs interact with DNS Locate, identify, and download network resources with Java’s URI and URL classes Dive deep into the HTTP protocol, including REST, HTTP headers, and cookies Write servers and network clients, using Java’s low-level socket classes Manage many connections at the same time with the nonblocking I/O Dive into key topics in network architecture and Go, such as data serialization, application level protocols, character sets and encodings. This book covers network architecture and gives an overview of the Go language as a primer, covering the latest Go release. Beyond the fundamentals, Network Programming with Go covers key networking and security issues such as HTTP and HTTPS, templates, remote procedure call (RPC), web sockets including HTML5 web sockets, and more. Additionally, author Jan Newmarch guides you in building and connecting to a complete web server based on Go. This book can serve as both as an essential learning guide and reference on Go networking. What You Will Learn Master network programming with Go Carry out data serialization Use application-level protocols Manage character sets and encodings Deal with HTTP(S) Build a complete Go-based web server Work with RPC, web sockets, and more Who This Book Is For Experienced Go programmers and other programmers with some experience with the Go language.

The book is logically divided into 5 main categories with each category representing a major skill set required by most security professionals: 1. Coding – The ability to program and script is quickly becoming a mainstream requirement for just about everyone in the security industry. This section covers the basics in coding complemented with a slue of programming tips and tricks in C/C++, Java, Perl and NASL. 2. Sockets – The technology that allows programs and scripts to communicate over a network is sockets. Even though the theory remains the same – communication over TCP and UDP, sockets are implemented differently in nearly ever language. 3. Shellcode – Shellcode, commonly defined as bytecode converted from Assembly, is utilized to execute commands on remote systems via direct memory access. 4. Porting – Due to the differences between operating platforms and language implementations on those platforms, it is a common practice to modify an original body of code to work on a different platforms. This technique is known as porting and is incredible useful in the real world environments since it allows you to not “recreate the wheel. 5. Coding Tools – The culmination of the previous four sections, coding tools brings all of the techniques that you have learned to the forefront. With the background technologies and techniques you will now be able to code quick utilities that will not only make you more productive, they will arm you with an extremely valuable skill that will remain with you
as long as you make the proper time and effort dedications. *Contains never before seen chapters on writing and automating exploits on windows systems with all-new exploits. *Perform zero-day exploit forensics by reverse engineering malicious code. *Provides working code and scripts in all of the most common programming languages for readers to use TODAY to defend their networks.

The book provides complete coverage of fundamental IP networking in Java. It introduces the concepts behind TCP/IP and UDP and their intended use and purpose; gives complete coverage of Java networking APIs, includes an extended discussion of advanced server design, so that the various design principles and tradeoffs concerned are discussed and equips the reader with analytic queuing-theory tools to evaluate design alternatives; covers UDP multicasting, and covers multi-homed hosts, leading the reader to understand the extra programming steps and design considerations required in such environments. After reading this book the reader will have an advanced knowledge of fundamental network design and programming concepts in the Java language, enabling them to design and implement distributed applications with advanced features and to predict their performance. Special emphasis is given to the scalable I/O facilities of Java 1.4 as well as complete treatments of multi-homing and UDP both unicast and multicast.

Books on computation in the marketplace tend to discuss the topics within specific fields. Many computational algorithms, however, share common roots. Great advantages emerge if numerical methodologies break the boundaries and find their uses across disciplines. Interdisciplinary Computing In Java Programming Language introduces readers of different backgrounds to the beauty of the selected algorithms. Serious quantitative researchers, writing customized codes for computation, enjoy cracking source codes as opposed to the black-box approach. Most C and Fortran programs, despite being slightly faster in program execution, lack built-in support for plotting and graphical user interface. This book selects Java as the platform where source codes are developed and applications are run, helping readers/users best appreciate the fun of computation. Interdisciplinary Computing In Java Programming Language is designed to meet the needs of a professional audience composed of practitioners and researchers in science and technology. This book is also suitable for senior undergraduate and graduate-level students in computer science, as a secondary text.

Examines next generation APIs in detail Provides broad coverage of several different call models and APIs, including JAIN, JTAPI, JCC, and Parlay Discusses technical trade-offs involved in call control modeling and services Sample call flows are shown to aid programmers using UML or Java

A package which provides an in-depth tutorial on programming networked applications with Java. It offers complete coverage of the Java networking APIs, including streams, TCP/IP and UDP/IP, with practical examples. The pack presents a cryptographic framework for developing Internet applications.

Answering the need for an accessible overview of the field, this text/reference presents a manageable introduction to both the theoretical and practical aspects of computer networks and network programming. Clearly structured and easy to follow, the book describes cutting-edge developments in network architectures, communication
protocols, and programming techniques and models, supported by code examples for hands-on practice with creating network-based applications. Features: presents detailed coverage of network architectures; gently introduces the reader to the basic ideas underpinning computer networking, before gradually building up to more advanced concepts; provides numerous step-by-step descriptions of practical examples; examines a range of network programming techniques; reviews network-based data storage and multimedia transfer; includes an extensive set of practical code examples, together with detailed comments and explanations.

On its own, C# simplifies network programming. Combine it with the precise instruction found in C# Network Programming, and you'll find that building network applications is easier and quicker than ever. This book helps newcomers get started with a look at the basics of network programming as they relate to C#, including the language's network classes, the Winsock interface, and DNS resolution. Spend as much time here as you need, then dig into the core topics of the network layer. You'll learn to make sockets connections via TCP and "connectionless" connections via UDP. You'll also discover just how much help C# gives you with some of your toughest chores, such as asynchronous socket programming, multithreading, and multicasting. Network-layer techniques are just a means to an end, of course, and so this book keeps going, providing a series of detailed application-layer programming examples that show you how to work with real protocols and real network environments to build and implement a variety of applications. Use SNMP to manage network devices, SMTP to communicate with remote mail servers, and HTTP to Web-enable your applications. And use classes native to C# to query and modify Active Directory entries. Rounding it all out is plenty of advanced coverage to push your C# network programming skills to the limit. For example, you'll learn two ways to share application methods across the network: using Web services and remoting. You'll also master the security features intrinsic to C# and .NET--features that stand to benefit all of your programming projects.

Harness the hidden power of Java to build network-enabled applications with lower network traffic and faster processes. About This Book Learn to deliver superior server-to-server communication through the networking channels Gain expertise of the networking features of your own applications to support various network architectures such as client/server and peer-to-peer. Explore the issues that impact scalability, affect security, and allow applications to work in a heterogeneous environment. Who This Book Is For Learning Network Programming with Java is oriented to developers who wish to use network technologies to enhance the utility of their applications. You should have a working knowledge of Java and an interest in learning the latest in network programming techniques using Java. No prior experience with network development or special software beyond the Java SDK is needed. Upon completion of the book, beginner and experienced developers will be able to use Java to access resources across a network and the Internet. What You Will Learn Connect to other applications using sockets Use channels and buffers to enhance communication between applications. Access network services and develop client/server applications. Explore the critical elements of peer-to-peer applications and current technologies available. Use UDP to perform multicasting. Address scalability through the use of core and advanced threading techniques. Incorporate techniques into an application to make it more secure. Configure and address interoperability issues to enable your applications to work in a heterogeneous environment. In Detail Network-aware applications are becoming more prevalent and play an ever-increasing role in the world today. Connecting and using an Internet-based service is a frequent requirement for many applications. Java provides numerous classes that have evolved over the years to meet...
evolving network needs. These range from low-level socket and IP-based approaches to those
encapsulated in software services. This book explores how Java supports networks, starting
with the basics and then advancing to more complex topics. An overview of each relevant
network technology is presented followed by detailed examples of how to use Java to support
these technologies. We start with the basics of networking and then explore how Java supports
the development of client/server and peer-to-peer applications. The NIO packages are
examined as well as multithreading and how network applications can address practical issues
such as security. A discussion on networking concepts will put many network issues into
perspective and let you focus on the appropriate technology for the problem at hand. The
examples used will provide a good starting point to develop similar capabilities for many of
your network needs. Style and approach Each network technology’s terms and concepts are
introduced first. This is followed up with code examples to explain these technologies. Many of
the examples are supplemented with alternate Java 8 solutions when appropriate. Knowledge
of Java 8 is not necessary but these examples will help you better understand the power of
Java 8.

The 1st edition of this book was equally useful as an undergraduate textbook and as the lucid,
no-nonsense guide required by IT professionals, featuring many code examples, screenshots
and exercises. The new 2nd edition adds revised language reflecting significant changes in
J2SE 5.0; update of support software; non-blocking servers; DataSource interface and Data
Access Objects for connecting to remote databases.

Since the second edition of this text, the use of the Internet and networks generally has
continued to expand at a phenomenal rate. This has led to both an increase in demand for
network software and to improvements in the technology used to run such networks, with the
latter naturally leading to changes in the former. During this time, the Java libraries have been
updated to keep up with the new developments in network technology, so that the Java
programming language continues to be one of the mainstays of network software
development. In providing a very readable text that avoids getting immersed in low-level
technical details, while still providing a useful, practical guide to network programming for both
undergraduates and busy IT professionals, this third edition continues the trend of its
predecessors. To retain its currency, the text has been updated to reflect changes that have
taken place in Java’s network technology over the past seven years (including the release of
Java 7), whilst retaining its notable features of numerous code examples, screenshots and end-
of-chapter exercises.

Create and unleash the power of neural networks by implementing professional, clean, and
clear Java codeAbout This Book* Learn to build amazing projects using neural networks
including forecasting the weather and pattern recognition* Explore the Java multi-platform
feature to run your personal neural networks everywhere* This step-by-step guide will help you
solve real-world problems and links neural network theory to their applicationWho This Book Is
ForThis book is for Java developers who want to know how to develop smarter applications
using the power of neural networks. Those who deal with a lot of complex data and want to use
it efficiently in their day-to-day apps will find this book quite useful. Some basic experience with
statistical computations is expected.What You Will Learn* Develop an understanding of neural
networks and how they can be fitted* Explore the learning process of neural networks* Build
neural network applications with Java using hands-on examples* Discover the power of neural
network's unsupervised learning process to extract the intrinsic knowledge hidden behind the
data* Apply the code generated in practical examples, including weather forecasting and
pattern recognition* Understand how to make the best choice of learning parameters to ensure
you have a more effective application* Select and split data sets into training, test, and
validation, and explore validation strategiesIn DetailWant to discover the current state-of-art in
the field of neural networks that will let you understand and design new strategies to apply to
more complex problems? This book takes you on a complete walkthrough of the process of
developing basic to advanced practical examples based on neural networks with Java, giving
you everything you need to stand out. You will first learn the basics of neural networks and their
process of learning. We then focus on what Perceptrons are and their features. Next, you will
implement self-organizing maps using practical examples. Further on, you will learn about
some of the applications that are presented in this book such as weather forecasting, disease
diagnosis, customer profiling, generalization, extreme machine learning, and characters
recognition (OCR). Finally, you will learn methods to optimize and adapt neural networks in
real time. All the examples generated in the book are provided in the form of illustrative source
code, which merges object-oriented programming (OOP) concepts and neural network
features to enhance your learning experience.

The networking capabilities of the Java platform have been extended considerably since the
first edition of the book. This new edition covers version 1.5-1.7, the most current iterations, as
well as making the following improvements: The API (application programming interface)
reference sections in each chapter, which describe the relevant parts of each class, have been
replaced with (i) a summary section that lists the classes and methods used in the code, and
(ii) a "gotchas" section that mentions nonobvious or poorly-documented aspects of the objects.
In addition, the book covers several new classes and capabilities introduced in the last few
revisions of the Java platform. New abstractions to be covered include NetworkInterface,
InterfaceAddress, Inet4/6Address, SocketAddress/InetSocketAddress, Executor, and others;
extended access to low-level network information; support for IPv6; more complete access to
socket options; and scalable I/O. The example code is also modified to take advantage of new
language features such as annotations, enumerations, as well as generics and implicit iterators
where appropriate. Most Internet applications use sockets to implement network
communication protocols. This book's focused, tutorial-based approach helps the reader
master the tasks and techniques essential to virtually all client-server projects using sockets in
Java. Chapter 1 provides a general overview of networking concepts to allow readers to
synchronize the concepts with terminology. Chapter 2 introduces the mechanics of simple
clients and servers. Chapter 3 covers basic message construction and parsing. Chapter 4 then
deals with techniques used to build more robust clients and servers. Chapter 5 (NEW)
introduces the scalable interface facilities which were introduced in Java 1.5, including the
buffer and channel abstractions. Chapter 6 discusses the relationship between the
programming constructs and the underlying protocol implementations in more detail.
Programming concepts are introduced through simple program examples accompanied by line-
by-line code commentary that describes the purpose of every part of the program. No other
resource presents so concisely or so effectively the material necessary to get up and running
with Java sockets programming. Focused, tutorial-based instruction in key sockets
programming techniques allows reader to quickly come up to speed on Java applications.
Concise and up-to-date coverage of the most recent platform (1.7) for Java applications in
networking technology.

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