

Data Abstraction And Problem Solving With Java Walls And Mirrors

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Think Julia - Ben Lauwens 2019-04-05

If you're just learning how to program, Julia is an excellent JIT-compiled, dynamically typed language with a clean syntax. This hands-on guide uses Julia 1.0 to walk you through programming one step at a time, beginning with basic programming concepts before moving on to more advanced capabilities, such as creating new types and multiple dispatch. Designed from the beginning for high performance, Julia is a general-purpose language ideal for not only numerical analysis and computational science but also web programming and scripting. Through exercises in each chapter, you'll try out programming concepts as you learn them. Think Julia is perfect for students at the high school or college level as well as self-learners and professionals who need to learn programming basics. Start with the basics,

including language syntax and semantics Get a clear definition of each programming concept Learn about values, variables, statements, functions, and data structures in a logical progression Discover how to work with files and databases Understand types, methods, and multiple dispatch Use debugging techniques to fix syntax, runtime, and semantic errors Explore interface design and data structures through case studies *Fundamentals of OOP and Data Structures in Java* - Richard Wiener 2000-06-05

Fundamentals of OOP and Data Structures in Java is a text for an introductory course on classical data structures. Part One of the book presents the basic principles of Object-Oriented Programming (OOP) and Graphical User Interface (GUI) programming with Java as the example language. Part Two introduces each of the

major data structures with supporting, GUI-based laboratory programs designed to reinforce the basic concepts and principles of the text. These laboratories allow the reader to explore and experiment with the properties of each data structure. All source code for the laboratories is available on the web. By integrating the principles of OOP and GUI programming, this book takes the unique path of presenting the fundamental issues of data structures within the context of paradigms that are essential to today's professional software developer. The authors assume the reader has only an elementary understanding of Java and no experience with OOP.

Data Structures and Algorithms in Java - Michael T. Goodrich 2014-01-28

The design and analysis of efficient data structures has long been recognized as a key component of the Computer Science curriculum. Goodrich, Tomassia and Goldwasser's approach to this classic topic is based on the object-oriented paradigm as the framework of choice for the design of data structures. For each ADT presented in the text, the authors provide an associated Java interface. Concrete data structures realizing the ADTs are provided as Java classes implementing the interfaces. The Java code implementing fundamental data structures in this book is organized in a single Java package, `net.datastructures`. This package forms a coherent library of data structures and algorithms in Java specifically designed for educational purposes in a way that is complimentary with the Java Collections Framework.

Programming and Problem Solving with Java - Nell B. Dale 2008

Extensively revised, the new Second Edition of

Programming and Problem Solving with Java continues to be the most student-friendly text available. The authors carefully broke the text into smaller, more manageable pieces by reorganizing chapters, allowing student to focus more sharply on the important information at hand. Using Dale and Weems' highly effective "progressive objects" approach, students begin with very simple yet useful class design in parallel with the introduction of Java's basic data types, arithmetic operations, control structures, and file I/O. Students see first hand how the library of objects steadily grows larger, enabling ever more sophisticated applications to be developed through reuse. Later chapters focus on inheritance and polymorphism, using the firm foundation that has been established by steadily developing numerous classes in the early part of the text. A new chapter on Data Structures and Collections has been added making the text ideal for a one or two-semester course. With its numerous new case studies, end-of-chapter material, and clear descriptive examples, the Second Edition is an exceptional text for discovering Java as a first programming language!

Java - Walter Savitch 2014-03-03

Note: You are purchasing a standalone product; MyProgrammingLab does not come packaged with this content. If you would like to purchase both the physical text and MyProgrammingLab search for ISBN-10: 0133862119/ISBN-13: 9780133862119. That package includes ISBN-10: 0133766268/ISBN-13: 9780133766264 and ISBN-10: 0133841030 /ISBN-13: 9780133841039. MyProgrammingLab is not a self-paced technology and should only be purchased when required by an instructor. *Java: An Introduction to Problem Solving and Programming, 7e*, is ideal for introductory Computer Science courses using Java, and

other introductory programming courses in departments of Computer Science, Computer Engineering, CIS, MIS, IT, and Business. It also serves as a useful Java fundamentals reference for programmers. Students are introduced to object-oriented programming and important concepts such as design, testing and debugging, programming style, interfaces inheritance, and exception handling. The Java coverage is a concise, accessible introduction that covers key language features. Objects are covered thoroughly and early in the text, with an emphasis on application programs over applets.

MyProgrammingLab for Java is a total learning package. MyProgrammingLab is an online homework, tutorial, and assessment program that truly engages students in learning. It helps students better prepare for class, quizzes, and exams—resulting in better performance in the course—and provides educators a dynamic set of tools for gauging individual and class progress. Teaching and Learning Experience This program presents a better teaching and learning experience—for you and your students. Personalized Learning with MyProgrammingLab: Through the power of practice and immediate personalized feedback, MyProgrammingLab helps students fully grasp the logic, semantics, and syntax of programming. A Concise, Accessible Introduction to Java: Key Java language features are covered in an accessible manner that resonates with introductory programmers. Tried-and-true Pedagogy: Numerous case studies, programming examples, and programming tips are used to help teach problem-solving and programming techniques. Flexible Coverage that Fits your Course: Flexibility charts and optional graphics sections allow instructors to order chapters and sections based on their course needs. Instructor and Student Resources that Enhance Learning:

Resources are available to expand on the topics presented in the text.

Java 9 Data Structures and Algorithms - Debasish Ray Chawdhuri 2017-04-28

Gain a deep understanding of the complexity of data structures and algorithms and discover the right way to write more efficient code About This Book This book provides complete coverage of reactive and functional data structures Based on the latest version of Java 9, this book illustrates the impact of new features on data structures Gain exposure to important concepts such as Big-O Notation and Dynamic Programming Who This Book Is For This book is for Java developers who want to learn about data structures and algorithms. Basic knowledge of Java is assumed. What You Will Learn Understand the fundamentals of algorithms, data structures, and measurement of complexity Find out what general purpose data structures are, including arrays, linked lists, double ended linked lists, and circular lists Get a grasp on the basics of abstract data types—stack, queue, and double ended queue See how to use recursive functions and immutability while understanding and in terms of recursion Handle reactive programming and its related data structures Use binary search, sorting, and efficient sorting—quicksort and merge sort Work with the important concept of trees and list all nodes of the tree, traversal of tree, search trees, and balanced search trees Apply advanced general purpose data structures, priority queue-based sorting, and random access immutable linked lists Gain a better understanding of the concept of graphs, directed and undirected graphs, undirected trees, and much more In Detail Java 9 Data Structures and Algorithms covers classical, functional, and reactive data structures,

giving you the ability to understand computational complexity, solve problems, and write efficient code. This book is based on the Zero Bug Bounce milestone of Java 9. We start off with the basics of algorithms and data structures, helping you understand the fundamentals and measure complexity. From here, we introduce you to concepts such as arrays, linked lists, as well as abstract data types such as stacks and queues. Next, we'll take you through the basics of functional programming while making sure you get used to thinking recursively. We provide plenty of examples along the way to help you understand each concept. You will get the also get a clear picture of reactive programming, binary searches, sorting, search trees, undirected graphs, and a whole lot more! Style and approach This book will teach you about all the major algorithms in a step-by-step manner. Special notes on the Big-O Notation and its impact on algorithms will give you fresh insights.

Data Abstraction & Problem Solving with Java - Janet J. Prichard 2010-10

Rev. ed. of: *Data abstraction and problem solving with Java* / Frank M. Carrano, Janet J. Prichard. 2007.

Data Abstraction and Problem Solving with Java - Frank M. Carrano 2001

This work focuses on the important concepts of data abstraction and data structures. It also introduces students to java classes along with other basic concepts of object-oriented programming, including inheritance, polymorphism, interfaces and packages.

Data Structures - Elliot B. Koffman 2021-02-03

Data Structures: Abstraction and Design Using Java offers a coherent and well-balanced presentation of data structure implementation and data structure applications with a strong emphasis on problem solving and software

design. Step-by-step, the authors introduce each new data structure as an abstract data type (ADT), explain its underlying theory and computational complexity, provide its specification in the form of a Java interface, and demonstrate its implementation as one or more Java classes. Case studies using the data structures covered in the chapter show complete and detailed solutions to real-world problems, while a variety of software design tools are discussed to help students "Think, then code." The book supplements its rigorous coverage of basic data structures and algorithms with chapters on sets and maps, balanced binary search trees, graphs, event-oriented programming, testing and debugging, and other key topics. Now available as an enhanced e-book, the fourth edition of *Data Structures: Abstraction and Design Using Java* enables students to measure their progress after completing each section through interactive questions, quick-check questions, and review questions.

Beginning Java Data Structures and Algorithms - James Cutajar 2018-07-30

Though your application serves its purpose, it might not be a high performer. Learn techniques to accurately predict code efficiency, easily dismiss inefficient solutions, and improve the performance of your application. Key Features Explains in detail different algorithms and data structures with sample problems and Java implementations where appropriate Includes interesting tips and tricks that enable you to efficiently use algorithms and data structures Covers over 20 topics using 15 practical activities and exercises Book Description Learning about data structures and algorithms gives you a better insight on how to solve common programming problems. Most of the

problems faced everyday by programmers have been solved, tried, and tested. By knowing how these solutions work, you can ensure that you choose the right tool when you face these problems. This book teaches you tools that you can use to build efficient applications. It starts with an introduction to algorithms and big O notation, later explains bubble, merge, quicksort, and other popular programming patterns. You'll also learn about data structures such as binary trees, hash tables, and graphs. The book progresses to advanced concepts, such as algorithm design paradigms and graph theory. By the end of the book, you will know how to correctly implement common algorithms and data structures within your applications. What you will learn

- Understand some of the fundamental concepts behind key algorithms
- Express space and time complexities using Big O notation.
- Correctly implement classic sorting algorithms such as merge and quicksort
- Correctly implement basic and complex data structures
- Learn about different algorithm design paradigms, such as greedy, divide and conquer, and dynamic programming
- Apply powerful string matching techniques and optimize your application logic
- Master graph representations and learn about different graph algorithms

Who this book is for If you want to better understand common data structures and algorithms by following code examples in Java and improve your application efficiency, then this is the book for you. It helps to have basic knowledge of Java, mathematics and object-oriented programming techniques.

MapReduce Design Patterns - Donald Miner 2012-11-21
Until now, design patterns for the MapReduce framework have been scattered among various research papers, blogs, and books. This handy guide brings together a unique collection of valuable MapReduce patterns that

will save you time and effort regardless of the domain, language, or development framework you're using. Each pattern is explained in context, with pitfalls and caveats clearly identified to help you avoid common design mistakes when modeling your big data architecture. This book also provides a complete overview of MapReduce that explains its origins and implementations, and why design patterns are so important. All code examples are written for Hadoop.

- Summarization patterns: get a top-level view by summarizing and grouping data
- Filtering patterns: view data subsets such as records generated from one user
- Data organization patterns: reorganize data to work with other systems, or to make MapReduce analysis easier
- Join patterns: analyze different datasets together to discover interesting relationships
- Metapatterns: piece together several patterns to solve multi-stage problems, or to perform several analytics in the same job
- Input and output patterns: customize the way you use Hadoop to load or store data

"A clear exposition of MapReduce programs for common data processing patterns--this book is indispensable for anyone using Hadoop." --Tom White, author of Hadoop: The Definitive Guide

Object-Oriented Data Structures Using Java - Nell Dale
2011-02-27

Continuing the success of the popular second edition, the updated and revised *Object-Oriented Data Structures Using Java, Third Edition* is sure to be an essential resource for students learning data structures using the Java programming language. It presents traditional data structures and object-oriented topics with an emphasis on problem-solving, theory, and software engineering principles. Beginning early and continuing throughout the text, the authors introduce and expand upon the use

of many Java features including packages, interfaces, abstract classes, inheritance, and exceptions. Numerous case studies provide readers with real-world examples and demonstrate possible solutions to interesting problems. The authors' lucid writing style guides readers through the rigor of standard data structures and presents essential concepts from logical, applications, and implementation levels. Key concepts throughout the Third Edition have been clarified to increase student comprehension and retention, and end-of-chapter exercises have been updated and modified. New and Key Features to the Third Edition: -Includes the use of generics throughout the text, providing the dual benefits of allowing for a type safe use of data structures plus exposing students to modern approaches. -This text is among the first data structures textbooks to address the topic of concurrency and synchronization, which are growing in the importance as computer systems move to using more cores and threads to obtain additional performance with each new generation. Concurrency and synchronization are introduced in the new Section 5.7, where it begins with the basics of Java threads. -Provides numerous case studies and examples of the problem solving process. Each case study includes problem description, an analysis of the problem input and required output, and a discussion of the appropriate data structures to use. -Expanded chapter exercises allow you as the instructor to reinforce topics for your students using both theoretical and practical questions. -Chapters conclude with a chapter summary that highlights the most important topics of the chapter and ties together related topics.

Data Structures and Abstractions with Java - Frank M. Carrano 2007

Using the latest features of Java 5, this unique object-oriented presentation introduces readers to data structures via thirty, manageable chapters. KEY FeaturesTOPICS: Introduces each ADT in its own chapter, including examples or applications. Provides aA variety of exercises and projects, plus additional self-assessment questions throughout. the text Includes generic data types as well as enumerations, for-each loops, the interface Iterable, the class Scanner, assert statements, and autoboxing and unboxing. Identifies important Java code as a Listing. Provides NNotes and Pprogramming Ttips in each chapter. For programmers and software engineers interested in learning more about data structures and abstractions.

Problem Solving with Algorithms and Data Structures Using Python - Bradley N. Miller 2011

THIS TEXTBOOK is about computer science. It is also about Python. However, there is much more. The study of algorithms and data structures is central to understanding what computer science is all about. Learning computer science is not unlike learning any other type of difficult subject matter. The only way to be successful is through deliberate and incremental exposure to the fundamental ideas. A beginning computer scientist needs practice so that there is a thorough understanding before continuing on to the more complex parts of the curriculum. In addition, a beginner needs to be given the opportunity to be successful and gain confidence. This textbook is designed to serve as a text for a first course on data structures and algorithms, typically taught as the second course in the computer science curriculum. Even though the second course is considered more advanced than the first course, this book assumes you are beginners at this level. You may

still be struggling with some of the basic ideas and skills from a first computer science course and yet be ready to further explore the discipline and continue to practice problem solving. We cover abstract data types and data structures, writing algorithms, and solving problems. We look at a number of data structures and solve classic problems that arise. The tools and techniques that you learn here will be applied over and over as you continue your study of computer science.

Data Structures and Problem Solving Using Java - Mark Allen Weiss 2002

Data Structures and Problem Solving Using Java, Second Edition provides a practical introduction to data structures and algorithms from the viewpoint of abstract thinking and problem solving, as well as the use of Java. This text has a clear separation of the interface and implementation to promote abstract thinking. Java allows the programmer to write the interface and implementation separately, to place them in separate files and compile separately, and to hide the implementation details. This book goes a step further: the interface and implementation are discussed in separate parts of the book. Part I (Tour of Java), Part II (Algorithms and Building Blocks), and Part III (Applications) lay the groundwork by discussing basic concepts and tools and providing some practical examples, but implementation of data structures is not shown until Part IV (Implementations). Class interfaces are written and used before the implementation is known, forcing the reader to think about the functionality and potential efficiency of the various data structures (e.g., hash tables are written well before the hash table is implemented). *NEW! Complete chapter covering Design Patterns (Chapter 5). *NE

Computer Science - Robert Sedgewick 2016-06-17
Named a Notable Book in the 21st Annual Best of Computing list by the ACM! Robert Sedgewick and Kevin Wayne's Computer Science: An Interdisciplinary Approach is the ideal modern introduction to computer science with Java programming for both students and professionals. Taking a broad, applications-based approach, Sedgewick and Wayne teach through important examples from science, mathematics, engineering, finance, and commercial computing. The book demystifies computation, explains its intellectual underpinnings, and covers the essential elements of programming and computational problem solving in today's environments. The authors begin by introducing basic programming elements such as variables, conditionals, loops, arrays, and I/O. Next, they turn to functions, introducing key modular programming concepts, including components and reuse. They present a modern introduction to object-oriented programming, covering current programming paradigms and approaches to data abstraction. Building on this foundation, Sedgewick and Wayne widen their focus to the broader discipline of computer science. They introduce classical sorting and searching algorithms, fundamental data structures and their application, and scientific techniques for assessing an implementation's performance. Using abstract models, readers learn to answer basic questions about computation, gaining insight for practical application. Finally, the authors show how machine architecture links the theory of computing to real computers, and to the field's history and evolution. For each concept, the authors present all the information readers need to build confidence, together with examples that solve intriguing problems. Each chapter contains question-and-

answer sections, self-study drills, and challenging problems that demand creative solutions. Companion web site (introcs.cs.princeton.edu/java) contains Extensive supplementary information, including suggested approaches to programming assignments, checklists, and FAQs Graphics and sound libraries Links to program code and test data Solutions to selected exercises Chapter summaries Detailed instructions for installing a Java programming environment Detailed problem sets and projects Companion 20-part series of video lectures is available at informit.com/title/9780134493831

Computational Thinking - Karl Beecher 2017-08-11
Computational thinking (CT) is a timeless, transferable skill that enables you to think more clearly and logically, as well as a way to solve specific problems. With this book you'll learn to apply computational thinking in the context of software development to give you a head start on the road to becoming an experienced and effective programmer.

Objects, Abstraction, Data Structures and Design -

Elliot B. Koffman 2005-10-20

"It is a practical book with emphasis on real problems the programmers encounter daily." --Dr. Tim H. Lin, California State Polytechnic University, Pomona "My overall impressions of this book are excellent. This book emphasizes the three areas I want: advanced C++, data structures and the STL and is much stronger in these areas than other competing books." --Al Verbanec, Pennsylvania State University Think, Then Code When it comes to writing code, preparation is crucial to success. Before you can begin writing successful code, you need to first work through your options and analyze the expected performance of your design. That's why Elliot Koffman and Paul Wolfgang's Objects, Abstraction,

Data Structures, and Design: Using C++ encourages you to Think, Then Code, to help you make good decisions in those critical first steps in the software design process. The text helps you thoroughly understand basic data structures and algorithms, as well as essential design skills and principles. Approximately 20 case studies show you how to apply those skills and principles to real-world problems. Along the way, you'll gain an understanding of why different data structures are needed, the applications they are suited for, and the advantages and disadvantages of their possible implementations. Key Features * Object-oriented approach. * Data structures are presented in the context of software design principles. * 20 case studies reinforce good programming practice. * Problem-solving methodology used throughout... "Think, then code!" * Emphasis on the C++ Standard Library. * Effective pedagogy.

Problem Solving, Abstraction, and Design Using C++ -

Frank L. Friedman 1994

Using C++, this book presents introductory programming material. Only the features of C++ that are appropriate to introductory concepts are introduced. Object-oriented concepts are presented. Abstraction is stressed throughout the book and pointers are presented in a gradual and gentle fashion for easier learning.

Objects, Abstraction, Data Structures and Design Using

Java Version 5.0 - Elliot B. Koffman 2004-11-10

This version of the book uses the latest Java technology, Java 2 Standard Edition Version 5.0 (J2SE V. 5.0), or otherwise known as "Version 5.0." This revolutionary book intertwines problem solving and software engineering with the study of traditional data structures topics. The book emphasizes the use of

objects and object-oriented design. Early chapters provide background coverage of software engineering. Then, in the chapters on data structures, these principles are applied. The authors encourage use of a five-step process for the solution of case studies: problem specification, analysis, design, implementation, and testing. As is done in industry, these steps are sometimes performed in an iterative fashion rather than in strict sequence. The Java Application Programming Interface (API) is used throughout the text. Wherever possible, the specification and interface for a data structure follow the Java Collections Framework.

Emphasizes the use of objects and object-oriented design Provides a primer on the Java language and offers background coverage of software engineering Encourages an iterative five-step process for the solution of case studies: problem specification, analysis, design, implementation, and testing The Java Application Programming Interface (API) is used throughout

Data Structures and Abstractions with Java - Frank M. Carrano 2014-08-13

Data Structures and Abstractions with Java is suitable for one- or two-semester courses in data structures (CS-2) in the departments of Computer Science, Computer Engineering, Business, and Management Information Systems. This book is also useful for programmers and software engineers interested in learning more about data structures and abstractions. This is the most student-friendly data structures text available that introduces ADTs in individual, brief chapters -- each with pedagogical tools to help students master each concept. Using the latest features of Java, this unique object-oriented presentation makes a clear distinction between specification and implementation to simplify

learning, while providing maximum classroom flexibility. Teaching and Learning Experience This book will provide a better teaching and learning experience--for you and your students. It will help: Aid comprehension and facilitate teaching with an approachable format and content organization: Material is organized into small segments that focus a reader's attention and provide greater instructional flexibility. Support learning with student-friendly pedagogy: In-text and online features help students master the material.

Data Structures Using Java - Langsam 2003-09

Java, Java, Java - Ralph Morelli 2006

Functional and flexible, this guide takes an objects-first approach to Java programming and problem using games and puzzles. Updated to cover Java version 1.5 features, such as generic types, enumerated types, and the Scanner class. Offers independent introductions to both a command-line interface and a graphical user interface (GUI). Features coverage of Unified Modeling Language (UML), the industry-standard, object-oriented design tool. Illustrates key aspects of Java with a collection of game and puzzle examples. Instructor and Student resources available online. For introductory computer programming students or professionals interested in learning Java.

A Practical Introduction to Data Structures and Algorithm Analysis - Clifford A. Shaffer 2001

This practical text contains fairly "traditional" coverage of data structures with a clear and complete use of algorithm analysis, and some emphasis on file processing techniques as relevant to modern programmers. It fully integrates OO programming with these topics, as part of the detailed presentation of OO programming

itself. Chapter topics include lists, stacks, and queues; binary and general trees; graphs; file processing and external sorting; searching; indexing; and limits to computation. For programmers who need a good reference on data structures.

Better, Faster, Lighter Java - Bruce Tate 2004-05-28

Sometimes the simplest answer is the best. Many Enterprise Java developers, accustomed to dealing with Java's spiraling complexity, have fallen into the habit of choosing overly complicated solutions to problems when simpler options are available. Building server applications with "heavyweight" Java-based architectures, such as WebLogic, JBoss, and WebSphere, can be costly and cumbersome. When you've reached the point where you spend more time writing code to support your chosen framework than to solve your actual problems, it's time to think in terms of simplicity. In *Better, Faster, Lighter Java*, authors Bruce Tate and Justin Gehtland argue that the old heavyweight architectures are unwieldy, complicated, and contribute to slow and buggy application code. As an alternative means for building better applications, the authors present two "lightweight" open source architectures: Hibernate--a persistence framework that does its job with a minimal API and gets out of the way, and Spring--a container that's not invasive, heavy or complicated. Hibernate and Spring are designed to be fairly simple to learn and use, and place reasonable demands on system resources. *Better, Faster, Lighter Java* shows you how they can help you create enterprise applications that are easier to maintain, write, and debug, and are ultimately much faster. Written for intermediate to advanced Java developers, *Better, Faster, Lighter Java*, offers fresh ideas--often

unorthodox--to help you rethink the way you work, and techniques and principles you'll use to build simpler applications. You'll learn to spend more time on what's important. When you're finished with this book, you'll find that your Java is better, faster, and lighter than ever before.

Data Abstraction and Problem Solving with C++ - Frank M. Carrano 2005

Designed for a second course in computer science, this textbook introduces the data abstraction technique for building walls between a program and its data structures, and presents various abstract data types and their implementations as C++ classes. The author evaluates the advantages and disadvantages of array-based and pointer-based data structures, and explains the concepts behind recursion, inheritance, polymorphism, algorithm efficiency, and balanced search trees. Annotation : 2004 Book News, Inc., Portland, OR (booknews.com).

Algorithmic Thinking - Daniel Zingaro 2020-12-15

A hands-on, problem-based introduction to building algorithms and data structures to solve problems with a computer. *Algorithmic Thinking* will teach you how to solve challenging programming problems and design your own algorithms. Daniel Zingaro, a master teacher, draws his examples from world-class programming competitions like USACO and IOI. You'll learn how to classify problems, choose data structures, and identify appropriate algorithms. You'll also learn how your choice of data structure, whether a hash table, heap, or tree, can affect runtime and speed up your algorithms; and how to adopt powerful strategies like recursion, dynamic programming, and binary search to solve challenging problems. Line-by-line breakdowns of the

code will teach you how to use algorithms and data structures like:

- The breadth-first search algorithm to find the optimal way to play a board game or find the best way to translate a book
- Dijkstra's algorithm to determine how many mice can exit a maze or the number of fastest routes between two locations
- The union-find data structure to answer questions about connections in a social network or determine who are friends or enemies
- The heap data structure to determine the amount of money given away in a promotion
- The hash-table data structure to determine whether snowflakes are unique or identify compound words in a dictionary

NOTE: Each problem in this book is available on a programming-judge website. You'll find the site's URL and problem ID in the description. What's better than a free correctness check?

Probability and Statistics for Computer Scientists -

Michael Baron 2013-08-05

Student-Friendly Coverage of Probability, Statistical Methods, Simulation, and Modeling Tools
Incorporating feedback from instructors and researchers who used the previous edition, *Probability and Statistics for Computer Scientists, Second Edition* helps students understand general methods of stochastic modeling, simulation, and data analysis; make o

Program Development in Java - Barbara Liskov 2000-06-06

Written by a world-renowned expert on programming methodology, and the winner of the 2008 Turing Award, this book shows how to build production-quality programs--programs that are reliable, easy to maintain, and quick to modify. Its emphasis is on modular program construction: how to get the modules right and how to organize a program as a collection of modules. The book presents a methodology effective for either an

individual programmer, who may be writing a small program or a single module in a larger one; or a software engineer, who may be part of a team developing a complex program comprised of many modules. Both audiences will acquire a solid foundation for object-oriented program design and component-based software development from this methodology. Because each module in a program corresponds to an abstraction, such as a collection of documents or a routine to search the collection for documents of interest, the book first explains the kinds of abstractions most useful to programmers: procedures; iteration abstractions; and, most critically, data abstractions. Indeed, the author treats data abstraction as the central paradigm in object-oriented program design and implementation. The author also shows, with numerous examples, how to develop informal specifications that define these abstractions--specifications that describe what the modules do--and then discusses how to implement the modules so that they do what they are supposed to do with acceptable performance. Other topics discussed include: Encapsulation and the need for an implementation to provide the behavior defined by the specification Tradeoffs between simplicity and performance Techniques to help readers of code understand and reason about it, focusing on such properties as rep invariants and abstraction functions Type hierarchy and its use in defining families of related data abstractions Debugging, testing, and requirements analysis Program design as a top-down, iterative process, and design patterns The Java programming language is used for the book's examples. However, the techniques presented are language independent, and an introduction to key Java concepts is

included for programmers who may not be familiar with the language.

Data Structures - Elliot B. Koffman 2016

Data Abstraction and Problem Solving with Java - Janet J. Prichard 2011

Data Abstraction and Problem Solving in C++, and is now updated to the Java programming language. It uses the running theme of "Walls and Mirrors" to help make clear the challenging concepts of recursion (the mirrors) and data abstraction (the walls). Authors Carrano and Prichard cover key object-oriented concepts, including encapsulation, inheritance, and polymorphism. However, the focus of the book remains on data abstraction instead of simply Java syntax.

Objects, Abstraction, Data Structures and Design - Elliot B. Koffman 2004-08-09

A revolutionary book that intertwines problem solving and software engineering with the study of traditional data structures topics Promotes a five-step methodology to limit program errors and increase efficiency: problem specification, analysis, design, implementation, and testing The Java Application Programming Interface (API) is used throughout and wherever possible, the specification and interface for a data structure follow the Java Collections Framework

Thinking in Java - Bruce Eckel 2003

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

AI Algorithms, Data Structures, and Idioms in Prolog, Lisp, and Java - George F. Luger 2009

Big Data Analytics with Java - Rajat Mehta 2017-07-31

Learn the basics of analytics on big data using Java, machine learning and other big data tools About This Book Acquire real-world set of tools for building enterprise level data science applications Surpasses the barrier of other languages in data science and learn create useful object-oriented codes Extensive use of Java compliant big data tools like apache spark, Hadoop, etc. Who This Book Is For This book is for Java developers who are looking to perform data analysis in production environment. Those who wish to implement data analysis in their Big data applications will find this book helpful. What You Will Learn Start from simple analytic tasks on big data Get into more complex tasks with predictive analytics on big data using machine learning Learn real time analytic tasks Understand the concepts with examples and case studies Prepare and refine data for analysis Create charts in order to understand the data See various real-world datasets In Detail This book covers case studies such as sentiment analysis on a tweet dataset, recommendations on a movielens dataset, customer segmentation on an ecommerce dataset, and graph analysis on actual flights dataset. This book is an end-to-end guide to implement analytics on big data with Java. Java is the de facto language for major big data environments, including Hadoop. This book will teach you how to perform analytics on big data with production-friendly Java. This book basically divided into two sections. The first part is an introduction that will help the readers get acquainted with big data environments, whereas the second part will contain a hardcore discussion on all the concepts in analytics on big data. It will take you from data analysis and data visualization to the core concepts and advantages of

machine learning, real-life usage of regression and classification using Naive Bayes, a deep discussion on the concepts of clustering, and a review of simple neural networks on big data using deepLearning4j or plain Java Spark code. This book is a must-have book for Java developers who want to start learning big data analytics and want to use it in the real world. Style and approach The approach of book is to deliver practical learning modules in manageable content. Each chapter is a self-contained unit of a concept in big data analytics. Book will step by step builds the competency in the area of big data analytics. Examples using real world case studies to give ideas of real applications and how to use the techniques mentioned. The examples and case studies will be shown using both theory and code.

Data Abstraction and Problem Solving with Java - Frank M. Carrano 2006

The Second Edition of *Data Abstraction and Problem Solving with Java: Walls and Mirrors* presents fundamental problem-solving and object-oriented programming skills by focusing on data abstraction (the walls) and recursion (the mirrors). It is fully revised to use the latest version of the Java programming language (Java 5.0). Java 5.0 is particularly well suited for presenting object-oriented programming, and helps enhance this edition's increased focus on object-oriented programming and data abstraction. Clear, accessible writing is complemented by a pedagogically rich presentation throughout this textbook.

Concrete Abstractions - Max Hailperin 1999
CONCRETE ABSTRACTIONS offers students a hands-on, abstraction-based experience of thinking like a computer scientist. This text covers the basics of programming and data structures, and gives first-time computer

science students the opportunity to not only write programs, but to prove theorems and analyze algorithms as well. Students learn a variety of programming styles, including functional programming, assembly-language programming, and object-oriented programming (OOP). While most of the book uses the Scheme programming language, Java is introduced at the end as a second example of an OOP system and to demonstrate concepts of concurrent programming.

Advanced Algorithms and Data Structures - Marcello La Rocca 2021-06-29

This book introduces a collection of algorithms for complex programming challenges in data analysis, machine learning, and graph computing. You'll discover cutting-edge approaches to a variety of tricky scenarios. --

Designing Data Structures in Java - Albert A. Brouillette 2013-01-01

"*Designing Data Structures in Java*" provides a solid foundation for anyone seeking to understand the how and the why of programming data structures. Intended for the reader with an introductory Java background, this book aims to meet the needs of students enrolled in a typical "Data Structures and Algorithms with Java" (CS2) course. Starting with a description of the software development process, the book takes a problem-solving approach to programming, and shows how data structures form the building blocks of well-designed and cleanly-implemented programs. Topics include: Problem solving, Abstraction, Java objects and references, Arrays, Abstract Data Types, Ordered lists, Sorting, Algorithm evaluation, Binary searches, Stacks, Queues, Linked Lists, Double-ended lists, Recursion, Doubly-linked lists, Binary Search Trees, Traversals, Heaps, and more. Mr. Brouillette's 25+ years of experience as a software

engineer and educator allow him to bring a unique and refreshing perspective to the topic of data structures which is rigorous, accessible and practical. Material is presented in a 'top down' approach, beginning with explanations of why different data structures are used, continuing with clearly illustrated concepts of how the structures work, and ending with clear, neat Java code examples. Succinct graphics provide visual representations of the ideas, and verbal explanations supplement the documented code. Each chapter ends with a Chapter Checklist summary page which distills and highlights the most important ideas from the chapter. The book is intended as a step by step explanation and

exploration of the how and why of using Data Structures in modern computer program development. Even though the Java language is used in the explanation and implementation of the various structures, the concepts are applicable to other languages which the reader may encounter in the future. The topics included have been sequenced to build upon each other, always with the perspective of the beginning programming student in mind. There are discussions of software engineering concepts and goals, and motivations for learning different data structures. This text brings the beginning Java student from novice programmer to the next level of programming maturity.

Algorithm Handbook - Mark Thompson