
Title Data Structures And Algorithms Made Easy In Java

A Common-Sense Guide to Data Structures and Algorithms

Algorithms and Information Retrieval in Java

A Practical Guide to Data Structures and Algorithms using Java

Java 9 Data Structures and Algorithms

Data Structures and Algorithm Analysis in C++

Sequential and Parallel Algorithms and Data Structures

Data Structures and Algorithms in Java

Data Structures and Algorithm Analysis in Java

Data Structures and Algorithms with Python

C# Data Structures and Algorithms

Think Data Structures

The Basic Toolbox

The Basic Toolbox

Data Structures & Algorithms in Java

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A Practitioner's Approach with Emphasis on Functional Programming

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REYNA BEARD

A Common-Sense Guide to Data Structures and Algorithms
Pragmatic Bookshelf

Algorithms are at the heart of every nontrivial computer application, and algorithmics is a modern and active area of computer science. Every computer scientist and every professional programmer should know about the basic algorithmic toolbox: structures that allow efficient organization and retrieval of data, frequently used algorithms, and basic techniques for modeling, understanding and solving algorithmic problems. This book is a concise introduction addressed to students and professionals familiar with programming and basic

mathematical language. Individual chapters cover arrays and linked lists, hash tables and associative arrays, sorting and selection, priority queues, sorted sequences, graph representation, graph traversal, shortest paths, minimum spanning trees, and optimization. The algorithms are presented in a modern way, with explicitly formulated invariants, and comment on recent trends such as algorithm engineering, memory hierarchies, algorithm libraries and certifying algorithms. The authors use pictures, words and high-level pseudocode to explain the algorithms, and then they present more detail on efficient implementations using real programming languages like C++ and Java. The authors have extensive experience teaching these subjects to undergraduates and graduates, and they offer a clear presentation, with examples, pictures, informal explanations, exercises, and some linkage to the real world. Most

chapters have the same basic structure: a motivation for the problem, comments on the most important applications, and then simple solutions presented as informally as possible and as formally as necessary. For the more advanced issues, this approach leads to a more mathematical treatment, including some theorems and proofs. Finally, each chapter concludes with a section on further findings, providing views on the state of research, generalizations and advanced solutions.

Algorithms and Information Retrieval in Java Springer

A complete guide on using data structures and algorithms to write sophisticated C# code Key Features Master array, set and map with trees and graphs, among other fundamental data structures Delve into effective design and implementation techniques to meet your software requirements Explore illustrations to present data structures and algorithms, as well as their analysis in a clear, visual manner. Book Description Data structures allow organizing data efficiently. They are critical to various problems and their suitable implementation can provide a complete solution that acts like reusable code. In this book, you will learn how to use various data structures while developing in the C# language as well as how to implement some of the most common algorithms used with such data structures. At the beginning, you will get to know arrays, lists, dictionaries, and sets together with real-world examples of your application. Then, you will learn how to create and use stacks and queues. In the following part of the book, the more complex data structures will be introduced, namely trees and graphs, together with some algorithms for searching the shortest path in a graph. We will also discuss how to organize the code in a manageable, consistent,

and extendable way. By the end of the book, you will learn how to build components that are easy to understand, debug, and use in different applications. What you will learn How to use arrays and lists to get better results in complex scenarios Implement algorithms like the Tower of Hanoi on stacks of C# objects Build enhanced applications by using hashtables, dictionaries and sets Make a positive impact on efficiency of applications with tree traversal Effectively find the shortest path in the graph Who this book is for This book is for developers who would like to learn the Data Structures and Algorithms in C#. Basic C# programming knowledge would be an added advantage.

A Practical Guide to Data Structures and Algorithms using Java
"O'Reilly Media, Inc."

In this second edition of his successful book, experienced teacher and author Mark Allen Weiss continues to refine and enhance his innovative approach to algorithms and data structures. Written for the advanced data structures course, this text highlights theoretical topics such as abstract data types and the efficiency of algorithms, as well as performance and running time. Before covering algorithms and data structures, the author provides a brief introduction to C++ for programmers unfamiliar with the language. Dr Weiss's clear writing style, logical organization of topics, and extensive use of figures and examples to demonstrate the successive stages of an algorithm make this an accessible, valuable text. New to this Edition *An appendix on the Standard Template Library (STL) *C++ code, tested on multiple platforms, that conforms to the ANSI ISO final draft standard
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Java 9 Data Structures and Algorithms Packt Publishing Ltd

This practically-focused textbook presents a concise tutorial on data structures and algorithms using the object-functional language Scala. The material builds upon the foundation established in the title *Programming with Scala: Language Exploration* by the same author, which can be treated as a companion text for those less familiar with Scala. Topics and features: discusses data structures and algorithms in the form of design patterns; covers key topics on arrays, lists, stacks, queues, hash tables, binary trees, sorting, searching, and graphs; describes examples of complete and running applications for each topic; presents a functional approach to implementations for data structures and algorithms (excepting arrays); provides numerous challenge exercises (with solutions), encouraging the reader to take existing solutions and improve upon them; offers insights from the author's extensive industrial experience; includes a glossary, and an appendix supplying an overview of discrete mathematics. Highlighting the techniques and skills necessary to quickly derive solutions to applied problems, this accessible text will prove invaluable to time-pressured students and professional software engineers.

Data Structures and Algorithm Analysis in C++ Sams Publishing
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.

Sequential and Parallel Algorithms and Data Structures

Pragmatic Bookshelf

This textbook explains the concepts and techniques required to write programs that can handle large amounts of data efficiently. Project-oriented and classroom-tested, the book presents a number of important algorithms supported by examples that bring meaning to the problems faced by computer programmers. The idea of computational complexity is also introduced, demonstrating what can and cannot be computed efficiently so that the programmer can make informed judgements about the algorithms they use. Features: includes both introductory and advanced data structures and algorithms topics, with suggested chapter sequences for those respective courses provided in the preface; provides learning goals, review questions and programming exercises in each chapter, as well as numerous illustrative examples; offers downloadable programs and supplementary files at an associated website, with instructor materials available from the author; presents a primer on Python for those from a different language background.

[Data Structures and Algorithms in Java](#) Pearson Education India

Data Structures & Theory of Computation

Data Structures and Algorithm Analysis in Java Simon and Schuster

If you're a student studying computer science or a software developer preparing for technical interviews, this practical book

will help you learn and review some of the most important ideas in software engineering—data structures and algorithms—in a way that's clearer, more concise, and more engaging than other materials. By emphasizing practical knowledge and skills over theory, author Allen Downey shows you how to use data structures to implement efficient algorithms, and then analyze and measure their performance. You'll explore the important classes in the Java collections framework (JCF), how they're implemented, and how they're expected to perform. Each chapter presents hands-on exercises supported by test code online. Use data structures such as lists and maps, and understand how they work Build an application that reads Wikipedia pages, parses the contents, and navigates the resulting data tree Analyze code to predict how fast it will run and how much memory it will require Write classes that implement the Map interface, using a hash table and binary search tree Build a simple web search engine with a crawler, an indexer that stores web page contents, and a retriever that returns user query results Other books by Allen Downey include Think Java, Think Python, Think Stats, and Think Bayes.

Data Structures and Algorithms with Python Addison Wesley
About The Book: Bruno Preiss presents readers with a modern, object-oriented perspective for looking at data structures and algorithms, clearly showing how to use polymorphism and inheritance, and including fragments from working and tested programs. The book uses a single class hierarchy as a framework to present all of the data structures. This framework clearly shows the relationships between data structures and illustrates how polymorphism and inheritance can be used effectively.

C# Data Structures and Algorithms Packt Publishing Ltd
 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.

Addison-Wesley Longman

Essential Information about Algorithms and Data Structures A Classic Reference The latest version of Sedgewick, s best-selling series, reflecting an indispensable body of knowledge developed over the past several decades. Broad Coverage Full treatment of

data structures and algorithms for sorting, searching, graph processing, and string processing, including fifty algorithms every programmer should know. See

Think Data Structures Addison-Wesley Professional

This accessible and engaging textbook/guide provides a concise introduction to data structures and associated algorithms. Emphasis is placed on the fundamentals of data structures, enabling the reader to quickly learn the key concepts, and providing a strong foundation for later studies of more complex topics. The coverage includes discussions on stacks, queues, lists, (using both arrays and links), sorting, and elementary binary trees, heaps, and hashing. This content is also a natural continuation from the material provided in the separate Springer title Guide to Java by the same authors. Topics and features: reviews the preliminary concepts, and introduces stacks and queues using arrays, along with a discussion of array-based lists; examines linked lists, the implementation of stacks and queues using references, binary trees, a range of varied sorting techniques, heaps, and hashing; presents both primitive and generic data types in each chapter, and makes use of contour diagrams to illustrate object-oriented concepts; includes chapter summaries, and asks the reader questions to help them interact with the material; contains numerous examples and illustrations, and one or more complete program in every chapter; provides exercises at the end of each chapter, as well as solutions to selected exercises, and a glossary of important terms. This clearly-written work is an ideal classroom text for a second semester course in programming using the Java programming language, in preparation for a subsequent advanced course in

data structures and algorithms. The book is also eminently suitable as a self-study guide in either academe or industry.

The Basic Toolbox Springer Science & Business Media

Increase speed and performance of your applications with efficient data structures and algorithms

About This Book See how to use data structures such as arrays, stacks, trees, lists, and graphs through real-world examples Find out about important and advanced data structures such as searching and sorting algorithms Understand important concepts such as big-o notation, dynamic programming, and functional data structured

Who This Book Is For This book is for R developers who want to use data structures efficiently. Basic knowledge of R is expected.

What You Will Learn Understand the rationality behind data structures and algorithms Understand computation evaluation of a program featuring asymptotic and empirical algorithm analysis Get to know the fundamentals of arrays and linked-based data structures Analyze types of sorting algorithms Search algorithms along with hashing Understand linear and tree-based indexing Be able to implement a graph including topological sort, shortest path problem, and Prim's algorithm Understand dynamic programming (Knapsack) and randomized algorithms

In Detail In this book, we cover not only classical data structures, but also functional data structures. We begin by answering the fundamental question: why data structures? We then move on to cover the relationship between data structures and algorithms, followed by an analysis and evaluation of algorithms. We introduce the fundamentals of data structures, such as lists, stacks, queues, and dictionaries, using real-world examples. We also cover topics such as indexing, sorting, and searching in

depth. Later on, you will be exposed to advanced topics such as graph data structures, dynamic programming, and randomized algorithms. You will come to appreciate the intricacies of high performance and scalable programming using R. We also cover special R data structures such as vectors, data frames, and atomic vectors. With this easy-to-read book, you will be able to understand the power of linked lists, double linked lists, and circular linked lists. We will also explore the application of binary search and will go in depth into sorting algorithms such as bubble sort, selection sort, insertion sort, and merge sort. Style and approach This easy-to-read book with its fast-paced nature will improve the productivity of an R programmer and improve the performance of R applications. It is packed with real-world examples.

The Basic Toolbox Data Structures & Algorithms in Java Peeling Data Structures and Algorithms for interviews [re-printed with corrections and new problems]: "Data Structures And Algorithms Made Easy: Data Structure And Algorithmic Puzzles" is a book that offers solutions to complex data structures and algorithms. There are multiple solutions for each problem and the book is coded in C/C++, it comes handy as an interview and exam guide for computer scientists. A handy guide of sorts for any computer science professional, "Data Structures And Algorithms Made Easy: Data Structure And Algorithmic Puzzles" is a solution bank for various complex problems related to data structures and algorithms. It can be used as a reference manual by those readers in the computer science industry. The book has around 21 chapters and covers Recursion and Backtracking, Linked Lists, Stacks, Queues, Trees, Priority Queue and Heaps,

Disjoint Sets ADT, Graph Algorithms, Sorting, Searching, Selection Algorithms [Medians], Symbol Tables, Hashing, String Algorithms, Algorithms Design Techniques, Greedy Algorithms, Divide and Conquer Algorithms, Dynamic Programming, Complexity Classes, and other Miscellaneous Concepts. *Data Structures And Algorithms Made Easy: Data Structure And Algorithmic Puzzles* by Narasimha Karumanchi was published in March, and it is coded in C/C++ language. This book serves as guide to prepare for interviews, exams, and campus work. It is also available in Java. In short, this book offers solutions to various complex data structures and algorithmic problems. What is unique? Our main objective isn't to propose theorems and proofs about DS and Algorithms. We took the direct route and solved problems of varying complexities. That is, each problem corresponds to multiple solutions with different complexities. In other words, we enumerated possible solutions. With this approach, even when a new question arises, we offer a choice of different solution strategies based on your priorities. Topics Covered: Introduction Recursion and Backtracking Linked Lists Stacks Queues Trees Priority Queue and Heaps Disjoint Sets ADT Graph Algorithms Sorting Searching Selection Algorithms [Medians] Symbol Tables Hashing String Algorithms Algorithms Design Techniques Greedy Algorithms Divide and Conquer Algorithms Dynamic Programming Complexity Classes Miscellaneous Concepts Target Audience? These books prepare readers for interviews, exams, and campus work. Language? All code was written in C/C++. If you are using Java, please search for "Data Structures and Algorithms Made Easy in Java." Also, check out sample chapters and the blog at: CareerMonk.com

Data Structures & Algorithms in Java Packt Publishing Ltd
Data Structures and Algorithm Analysis in Java is an "advanced algorithms" book that fits between traditional CS2 and Algorithms Analysis courses. In the old ACM Curriculum Guidelines, this course was known as CS7. This text is for readers who want to learn good programming and algorithm analysis skills simultaneously so that they can develop such programs with the maximum amount of efficiency. Readers should have some knowledge of intermediate programming, including topics as object-based programming and recursion, and some background in discrete math. As the speed and power of computers increases, so does the need for effective programming and algorithm analysis. By approaching these skills in tandem, Mark Allen Weiss teaches readers to develop well-constructed, maximally efficient programs in Java. Weiss clearly explains topics from binary heaps to sorting to NP-completeness, and dedicates a full chapter to amortized analysis and advanced data structures and their implementation. Figures and examples illustrating successive stages of algorithms contribute to Weiss' careful, rigorous and in-depth analysis of each type of algorithm. A logical organization of topics and full access to source code complement the text's coverage.

Data Structures and Algorithm Analysis in C++, Third Edition
 Packt Publishing Ltd

This comprehensive textbook presents a clean and coherent account of most fundamental tools and techniques in Parameterized Algorithms and is a self-contained guide to the area. The book covers many of the recent developments of the field, including application of important separators, branching

based on linear programming, Cut & Count to obtain faster algorithms on tree decompositions, algorithms based on representative families of matroids, and use of the Strong Exponential Time Hypothesis. A number of older results are revisited and explained in a modern and didactic way. The book provides a toolbox of algorithmic techniques. Part I is an overview of basic techniques, each chapter discussing a certain algorithmic paradigm. The material covered in this part can be used for an introductory course on fixed-parameter tractability. Part II discusses more advanced and specialized algorithmic ideas, bringing the reader to the cutting edge of current research. Part III presents complexity results and lower bounds, giving negative evidence by way of $W[1]$ -hardness, the Exponential Time Hypothesis, and kernelization lower bounds. All the results and concepts are introduced at a level accessible to graduate students and advanced undergraduate students. Every chapter is accompanied by exercises, many with hints, while the bibliographic notes point to original publications and related work.

Problem Solving with Algorithms and Data Structures Using Python John Wiley & Sons

Algorithms and data structures are much more than abstract concepts. Mastering them enables you to write code that runs faster and more efficiently, which is particularly important for today's web and mobile apps. Take a practical approach to data structures and algorithms, with techniques and real-world scenarios that you can use in your daily production code, with examples in JavaScript, Python, and Ruby. This new and revised second edition features new chapters on recursion, dynamic

programming, and using Big O in your daily work. Use Big O notation to measure and articulate the efficiency of your code, and modify your algorithm to make it faster. Find out how your choice of arrays, linked lists, and hash tables can dramatically affect the code you write. Use recursion to solve tricky problems and create algorithms that run exponentially faster than the alternatives. Dig into advanced data structures such as binary trees and graphs to help scale specialized applications such as social networks and mapping software. You'll even encounter a single keyword that can give your code a turbo boost. Practice your new skills with exercises in every chapter, along with detailed solutions. Use these techniques today to make your code faster and more scalable.

Parameterized Algorithms Wiley Global Education

This is a central topic in any computer science curriculum. To distinguish this textbook from others, the author considers probabilistic methods as being fundamental for the construction of simple and efficient algorithms, and in each chapter at least one problem is solved using a randomized algorithm. Data structures are discussed to the extent needed for the implementation of the algorithms. The specific algorithms examined were chosen because of their wide field of application. This book originates from lectures for undergraduate and graduate students. The text assumes experience in programming algorithms, especially with elementary data structures such as chained lists, queues, and stacks. It also assumes familiarity with mathematical methods, although the author summarizes some basic notations and results from probability theory and related mathematical terminology in the appendices. He includes many

examples to explain the individual steps of the algorithms, and he concludes each chapter with numerous exercises.

Data Structure and Algorithmic Puzzles, Second Edition Springer Nature

Mark Allen Weiss' successful book provides a modern approach to algorithms and data structures using the C programming language. The book's conceptual presentation focuses on ADTs and the analysis of algorithms for efficiency, with a particular concentration on performance and running time. This edition contains a new chapter that examines advanced data structures such as red black trees, top down splay trees, treaps, k-d trees, and pairing heaps among others. All code examples now conform to ANSI C and coverage of the formal proofs underpinning several key data structures has been strengthened.

JavaScript Data Structures and Algorithms Courier Corporation

F# is a multi-paradigm programming language that encompasses

object-oriented, imperative, and functional programming language properties. The F# functional programming language enables developers to write simple code to solve complex problems. Starting with the fundamental concepts of F# and functional programming, this book will walk you through basic problems, helping you to write functional and maintainable code. Using easy-to-understand examples, you will learn how to design data structures and algorithms in F# and apply these concepts in real-life projects. The book will cover built-in data structures and take you through enumerations and sequences. You will gain knowledge about stacks, graph-related algorithms, and implementations of binary trees. Next, you will understand the custom functional implementation of a queue, review sets and maps, and explore the implementation of a vector. Finally, you will find resources and references that will give you a comprehensive overview of F# ecosystem, helping you to go beyond the fundamentals.

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