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Algorithms In C Fundamentals Data Structures Sorting

An introduction to a broad range of topics in deep learning, covering mathematical and conceptual background, deep learning techniques used in industry, and research perspectives. “ Written by three experts in the field, Deep Learning is the only comprehensive book on the subject. ” —Elon Musk, cochair of OpenAI; cofounder and CEO of Tesla and SpaceX Deep learning is a form of machine learning that enables computers to learn from experience and understand the world in terms of a

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hierarchy of concepts. Because the computer gathers knowledge from experience, there is no need for a human computer operator to formally specify all the knowledge that the computer needs. The hierarchy of concepts allows the computer to learn complicated concepts by building them out of simpler ones; a graph of these hierarchies would be many layers deep. This book introduces a broad range of topics in deep learning. The text offers mathematical and conceptual background, covering relevant concepts in linear algebra, probability theory and information theory, numerical computation, and machine learning. It describes deep learning techniques used by

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practitioners in industry, including deep feedforward networks, regularization, optimization algorithms, convolutional networks, sequence modeling, and practical methodology; and it surveys such applications as natural language processing, speech recognition, computer vision, online recommendation systems, bioinformatics, and videogames. Finally, the book offers research perspectives, covering such theoretical topics as linear factor models, autoencoders, representation learning, structured probabilistic models, Monte Carlo methods, the partition function, approximate inference, and deep generative models. Deep Learning

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can be used by undergraduate or graduate students planning careers in either industry or research, and by software engineers who want to begin using deep learning in their products or platforms. A website offers supplementary material for both readers and instructors.

This edition of Robert Sedgewick's popular work provides current and comprehensive coverage of important algorithms for Java programmers. Michael Schidlowsky and Sedgewick have developed new Java implementations that both express the methods in a concise and direct manner and provide programmers with the practical means to test them on real applications. Many new algorithms

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are presented, and the explanations of each algorithm are much more detailed than in previous editions. A new text design and detailed, innovative figures, with accompanying commentary, greatly enhance the presentation. The third edition retains the successful blend of theory and practice that has made Sedgewick's work an invaluable resource for more than 400,000 programmers! This particular book, Parts 1-4 , represents the essential first half of Sedgewick's complete work. It provides extensive coverage of fundamental data structures and algorithms for sorting, searching, and related applications. Although the

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substance of the book applies to programming in any language, the implementations by Schidlowsky and Sedgewick also exploit the natural match between Java classes and abstract data type (ADT) implementations. Highlights Java class implementations of more than 100 important practical algorithms Emphasis on ADTs, modular programming, and object-oriented programming Extensive coverage of arrays, linked lists, trees, and other fundamental data structures Thorough treatment of algorithms for sorting, selection, priority queue ADT implementations, and symbol table ADT implementations (search algorithms) Complete

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implementations for binomial queues, multiway radix sorting, randomized BSTs, splay trees, skip lists, multiway tries, B trees, extendible hashing, and many other advanced methods

Quantitative information about the algorithms that gives you a basis for comparing them

More than 1,000 exercises and more than 250 detailed figures to help you learn properties of the algorithms

Whether you are learning the algorithms for the first time or wish to have up-to-date reference material that incorporates new programming styles with classic and new algorithms, you will find a wealth of useful information in this book.

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Experienced author and teacher Mark Allen Weiss now brings his expertise to the CS2 course with *Algorithms, Data Structures, and Problem Solving with C++*, which introduces both data structures and algorithm design from the viewpoint of abstract thinking and problem solving. The author chooses C++ as the language of implementation, but the emphasis of the book itself remains on uniformly accepted CS2 topics such as pointers, data structures, algorithm analysis, and increasingly complex programming projects. *Algorithms, Data Structures, and Problem Solving with C++* is the first CS2 textbook that clearly separates the interface and implementation of data

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structures. The interface and running time of data structures are presented first, and students have the opportunity to use the data structures in a host of practical examples before being introduced to the implementations. This unique approach enhances the ability of students to think abstractly.

Features Retains an emphasis on data structures and algorithm design while using C++ as the language of implementation.

Reinforces abstraction by discussing interface and implementations of data structures in different parts of the book.

Incorporates case studies such as expression evaluation, cross-reference generation, and shortest

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path calculations. Provides a complete discussion of time complexity and Big-Oh notation early in the text. Gives the instructor flexibility in choosing an appropriate balance between practice, theory, and level of C++ detail. Contains optional advanced material in Part V. Covers classes, templates, and inheritance as fundamental concepts in sophisticated C++ programs. Contains fully functional code that has been tested on g++2.6.2, Sun 3.0.1, and Borland 4.5 compilers. Code is integrated into the book and also available by ftp. Includes end-of-chapter glossaries, summaries of common errors, and a variety of exercises.

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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

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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

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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 Through C

A Practical Introduction to Data

Structures and Algorithm Analysis

C++ Data Structures and

Algorithms

Data Structures and Algorithm

Analysis in C++, Third Edition

Algorithms In C: Fundamentals,

Data Structures, Sorting,

Searching, Parts 1-4, 3/E

Now in its second edition, D.S. Malik

brings his proven approach to C++

programming to the CS2 course.

Clearly written with the student in

mind, this text focuses on Data

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Structures and includes advanced topics in C++ such as Linked Lists and the Standard Template Library (STL).

The text features abundant visual diagrams, examples, and extended Programming Examples, all of which serve to illuminate difficult concepts.

Complete programming code and clear display of syntax, explanation, and example are used throughout the text, and each chapter concludes with a robust exercise set. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Strengthen your understanding of data structures and their algorithms for the foundation you need to successfully design, implement and maintain

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virtually any software system.

Theoretical, yet practical, DATA STRUCTURES AND ALGORITHMS IN C++, 4E by experienced author Adam Drosdek highlights the fundamental connection between data structures and their algorithms, giving equal weight to the practical implementation of data structures and the theoretical analysis of algorithms and their efficiency. This edition provides critical new coverage of treaps, k-d trees and k-d B-trees, generational garbage collection, and other advanced topics such as sorting methods and a new hashing technique. Abundant C++ code examples and a variety of case studies provide valuable insights into data structures implementation. DATA

STRUCTURES AND ALGORITHMS IN C++ provides the balance of theory and practice to prepare readers for a variety of applications in a modern, object-oriented paradigm. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

This second edition of *Data Structures Using C* has been developed to provide a comprehensive and consistent coverage of both the abstract concepts of data structures as well as the implementation of these concepts using C language. It begins with a thorough overview of the concepts of C programming followed by introduction of different data structures and methods to analyse the complexity of different

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algorithms. It then connects these concepts and applies them to the study of various data structures such as arrays, strings, linked lists, stacks, queues, trees, heaps, and graphs. The book utilizes a systematic approach wherein the design of each of the data structures is followed by algorithms of different operations that can be performed on them, and the analysis of these algorithms in terms of their running times. Each chapter includes a variety of end-chapter exercises in the form of MCQs with answers, review questions, and programming exercises to help readers test their knowledge. An updated, innovative approach to data structures and algorithms Written by an author team of experts in their fields, this authoritative guide

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demystifies even the most difficult mathematical concepts so that you can gain a clear understanding of data structures and algorithms in C++. The unparalleled author team incorporates the object-oriented design paradigm using C++ as the implementation language, while also providing intuition and analysis of fundamental algorithms. Offers a unique multimedia format for learning the fundamentals of data structures and algorithms Allows you to visualize key analytic concepts, learn about the most recent insights in the field, and do data structure design Provides clear approaches for developing programs Features a clear, easy-to-understand writing style that breaks down even the most difficult mathematical concepts Building on the

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success of the first edition, this new version offers you an innovative approach to fundamental data structures and algorithms.

Algorithms in C.

Deep Learning

Advanced Algorithms and Data Structures

An illustrated guide for programmers and other curious people

Fundamentals, data structures, sorting, searching. Parts 1-4

About the Book: Principles of DATA STRUCTURES using C and C++ covers all the fundamental topics to give a better understanding about the subject. The study of data structures is essential to every one who comes across with computer science. This book is written in accordance with the

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revised syllabus for B. Tech./B.E. (both Computer Science and Electronics branches) and MCA. students of Kerala University, MG University, Calicut University, CUSAT Cochin (deemed) University. NIT Calicut (deemed) University, Anna University, UP Technical University, Amritha Viswa (deemed) Vidyapeeth, Karunya (deed.

Learn how to build efficient, secure and robust code in C++ by using data structures and algorithms - the building blocks of C++ Key Features Use data structures such as arrays, stacks, trees, lists, and graphs with real-world examples Learn the functional and reactive implementations of the traditional data structures Explore illustrations to present data structures

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and algorithms, as well as their analysis, in a clear, visual manner

Book Description C++ is a general-purpose programming language which has evolved over the years and is used to develop software for many different sectors. This book will be your companion as it takes you through implementing classic data structures and algorithms to help you get up and running as a confident C++ programmer. We begin with an introduction to C++ data structures and algorithms while also covering essential language constructs. Next, we will see how to store data using linked lists, arrays, stacks, and queues. Then, we will learn how to implement different sorting algorithms, such as quick sort and heap sort. Along with

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these, we will dive into searching algorithms such as linear search, binary search and more. Our next mission will be to attain high performance by implementing algorithms to string datatypes and implementing hash structures in algorithm design. We'll also analyze Brute Force algorithms, Greedy algorithms, and more. By the end of the book, you'll know how to build components that are easy to understand, debug, and use in different applications. What you will learn

- Know how to use arrays and lists to get better results in complex scenarios*
- Build enhanced applications by using hashtables, dictionaries, and sets*
- Implement searching algorithms such as linear search, binary search, jump*

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search, exponential search, and more

Have a positive impact on the

efficiency of applications with tree

traversal Explore the design used in

sorting algorithms like Heap sort,

Quick sort, Merge sort and Radix sort

Implement various common algorithms

in string data types Find out how to

design an algorithm for a specific task

using the common algorithm

paradigms 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 is expected.

Michael McMillan discusses the

implementation of data structures and

algorithms from the .NET framework.

The comprehensive text includes basic

data structures and algorithms plus

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advanced algorithms such as probabilistic algorithms and dynamics programming.

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,

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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.

Data Structures and Algorithms Using C#

The Bulgarian C# Book

Grokking Algorithms

Fundamentals, data structures, sorting, searching

Data Structures Using C

The first edition won the award for Best 1990 Professional and Scholarly Book in Computer Science and Data Processing by the Association of American Publishers. There are books on algorithms that are rigorous but

incomplete and others that cover masses of material but lack rigor. Introduction to Algorithms combines rigor and comprehensiveness. The book covers a broad range of algorithms in depth, yet makes their design and analysis accessible to all levels of readers. Each chapter is relatively self-contained and can be used as a unit of study. The algorithms are described in English and in a pseudocode designed to be readable by anyone who has done a little programming. The explanations have been kept elementary without sacrificing depth of coverage or mathematical rigor.

The first edition became the standard reference for professionals and a widely used text in universities worldwide. The second edition features new chapters on the role of algorithms, probabilistic analysis and randomized algorithms, and linear programming, as well as extensive revisions to virtually every section of the book. In a subtle but important change, loop invariants are introduced early and used throughout the text to prove algorithm correctness. Without changing the mathematical and analytic focus, the authors have moved much of the mathematical foundations material from Part I

to an appendix and have included additional motivational material at the beginning.

This book is Part I of the fourth edition of Robert Sedgewick and Kevin Wayne's Algorithms , the leading textbook on algorithms today, widely used in colleges and universities worldwide. Part I contains Chapters 1 through 3 of the book. The fourth edition of Algorithms surveys the most important computer algorithms currently in use and provides a full treatment of data structures and algorithms for sorting, searching, graph processing, and string processing -- including fifty algorithms every programmer should know. In this

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edition, new Java

implementations are written in an accessible modular

programming style, where all of the code is exposed to the reader and ready to use. The algorithms

in this book represent a body of knowledge developed over the last 50 years that has become

indispensable, not just for

professional programmers and computer science students but

for any student with interests in science, mathematics, and

engineering, not to mention

students who use computation in the liberal arts. The companion

web site, algs4.cs.princeton.edu

contains An online synopsis Full

Java implementations Test data

Exercises and answers Dynamic visualizations Lecture slides Programming assignments with checklists Links to related material The MOOC related to this book is accessible via the "Online Course" link at algs4.cs.princeton.edu. The course offers more than 100 video lecture segments that are integrated with the text, extensive online assessments, and the large-scale discussion forums that have proven so valuable. Offered each fall and spring, this course regularly attracts tens of thousands of registrants. Robert Sedgwick and Kevin Wayne are developing a modern approach to

disseminating knowledge that fully embraces technology, enabling people all around the world to discover new ways of learning and teaching. By integrating their textbook, online content, and MOOC, all at the state of the art, they have built a unique resource that greatly expands the breadth and depth of the educational experience. The classic data structure textbook provides a comprehensive and technically rigorous introduction to data structures such as arrays, stacks, queues, linked lists, trees and graphs, and techniques such as sorting hashing that form the basis of all software. In addition,

it presents advanced of specialized data structures such as priority queues, efficient binary search trees, multiway search trees and digital search structures. The book now discusses topics such as weight biased leftist trees, pairing heaps, symmetric min-max heaps, interval heaps, top-down splay trees, B+ trees and suffix trees. Red-black trees have been made more accessible. The section on multiway tries has been significantly expanded and several trie variations and their application to Internet packet forwarding have been disused. 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.

Data Structures And Algorithms
Explore the possibilities of C# for developing a variety of efficient

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applications

Data Structures, Algorithms, and Software Principles in C

**Learn the fundamentals of Data
Structures through C
Algorithms in C++.**

**This is an excellent, up-to-date
and easy-to-use text on data
structures and algorithms that
is intended for
undergraduates in computer
science and information
science. The thirteen
chapters, written by an
international group of
experienced teachers, cover
the fundamental concepts of
algorithms and most of the
important data structures as**

well as the concept of interface design. The book contains many examples and diagrams. Whenever appropriate, program codes are included to facilitate learning. This book is supported by an international group of authors who are experts on data structures and algorithms, through its website at www.cs.pitt.edu/~jung/GrowingBook/, so that both teachers and students can benefit from their expertise. Explore data structures and algorithm concepts and their relation to everyday JavaScript development. A

basic understanding of these ideas is essential to any JavaScript developer wishing to analyze and build great software solutions. You'll discover how to implement data structures such as hash tables, linked lists, stacks, queues, trees, and graphs. You'll also learn how a URL shortener, such as bit.ly, is developed and what is happening to the data as a PDF is uploaded to a webpage. This book covers the practical applications of data structures and algorithms to encryption, searching, sorting, and pattern

matching. It is crucial for JavaScript developers to understand how data structures work and how to design algorithms. This book and the accompanying code provide that essential foundation for doing so. With JavaScript Data Structures and Algorithms you can start developing your knowledge and applying it to your JavaScript projects today. What You'll Learn Review core data structure fundamentals: arrays, linked-lists, trees, heaps, graphs, and hash-table Review core algorithm fundamentals: search, sort,

recursion, breadth/depth first search, dynamic programming, bitwise operators Examine how the core data structure and algorithms knowledge fits into context of JavaScript explained using prototypical inheritance and native JavaScript objects/data types Take a high-level look at commonly used design patterns in JavaScript Who This Book Is For Existing web developers and software engineers seeking to develop or revisit their fundamental data structures knowledge; beginners and students

studying JavaScript independently or via a course or coding bootcamp. Summary Grokking Algorithms is a fully illustrated, friendly guide that teaches you how to apply common algorithms to the practical problems you face every day as a programmer. You'll start with sorting and searching and, as you build up your skills in thinking algorithmically, you'll tackle more complex concerns such as data compression and artificial intelligence. Each carefully presented example includes helpful diagrams and

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fully annotated code samples in Python. Learning about algorithms doesn't have to be boring! Get a sneak peek at the fun, illustrated, and friendly examples you'll find in Grokking Algorithms on Manning Publications' YouTube channel. Continue your journey into the world of algorithms with Algorithms in Motion, a practical, hands-on video course available exclusively at Manning.com (www.manning.com/livevideo/algorithms-in-motion). Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning

**Publications. About the
Technology An algorithm is
nothing more than a step-by-
step procedure for solving a
problem. The algorithms you'll
use most often as a
programmer have already
been discovered, tested, and
proven. If you want to
understand them but refuse to
slog through dense multipage
proofs, this is the book for
you. This fully illustrated and
engaging guide makes it easy
to learn how to use the most
important algorithms
effectively in your own
programs. About the Book
Grokking Algorithms is a**

friendly take on this core computer science topic. In it, you'll learn how to apply common algorithms to the practical programming problems you face every day. You'll start with tasks like sorting and searching. As you build up your skills, you'll tackle more complex problems like data compression and artificial intelligence. Each carefully presented example includes helpful diagrams and fully annotated code samples in Python. By the end of this book, you will have mastered widely applicable algorithms

as well as how and when to use them. What's Inside Covers search, sort, and graph algorithms Over 400 pictures with detailed walkthroughs Performance trade-offs between algorithms Python-based code samples About the Reader This easy-to-read, picture-heavy introduction is suitable for self-taught programmers, engineers, or anyone who wants to brush up on algorithms. About the Author Aditya Bhargava is a Software Engineer with a dual background in Computer Science and Fine Arts. He blogs on programming at

adit.io. Table of Contents

Introduction to algorithms

Selection sort Recursion

**Quicksort Hash tables Breadth-
first search Dijkstra's**

algorithm Greedy algorithms

**Dynamic programming K-
nearest neighbors**

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

Data Structures and

Algorithms in Java

Algorithms in C++, Parts 1-4

**Principles of Data Structures
Using C and C++
Fundamentals, Data Structure,
Sorting, Searching
Data Structures and
Algorithms in C++**

In The Second Edition Of This Best-Selling Book, The Author Continues To Refine And Enhance His Innovative Approach To Algorithms And Data Structures. Using A C Implementation, He Highlights Conceptual Topics, Focusing On Adts And The Analysis Of Algorithms For Efficiency As Well As Performance And Running Time.

Covers fundamental data structures and algorithms for sorting, searching, and related applications. Includes expanded coverage of arrays, linked

lists, strings, trees, and other basic data structures. Contains many examples.

The free book "Fundamentals of Computer Programming with C#" is a comprehensive computer programming tutorial that teaches programming, logical thinking, data structures and algorithms, problem solving and high quality code with lots of examples in C#. It starts with the first steps in programming and software development like variables, data types, conditional statements, loops and arrays and continues with other basic topics like methods, numeral systems, strings and string processing, exceptions, classes and objects. After the basics this fundamental programming book enters into more

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advanced programming topics like recursion, data structures (lists, trees, hash-tables and graphs), high-quality code, unit testing and refactoring, object-oriented principles (inheritance, abstraction, encapsulation and polymorphism) and their implementation the C# language. It also covers fundamental topics that each good developer should know like algorithm design, complexity of algorithms and problem solving. The book uses C# language and Visual Studio to illustrate the programming concepts and explains some C# / .NET specific technologies like lambda expressions, extension methods and LINQ. The book is written by a team of developers lead by Svetlin Nakov who has 20+ years practical software

development experience. It teaches the major programming concepts and way of thinking needed to become a good software engineer and the C# language in the meantime. It is a great start for anyone who wants to become a skillful software engineer. The books does not teach technologies like databases, mobile and web development, but shows the true way to master the basics of programming regardless of the languages, technologies and tools. It is good for beginners and intermediate developers who want to put a solid base for a successful career in the software engineering industry. The book is accompanied by free video lessons, presentation slides and mind maps, as well as hundreds of exercises and live

examples. Download the free C# programming book, videos, presentations and other resources from <http://introprogramming.info>. Title: Fundamentals of Computer Programming with C# (The Bulgarian C# Programming Book) ISBN: 9789544007737 ISBN-13: 978-954-400-773-7 (9789544007737) ISBN-10: 954-400-773-3 (9544007733) Author: Svetlin Nakov & Co. Pages: 1132 Language: English Published: Sofia, 2013 Publisher: Faber Publishing, Bulgaria Web site: <http://www.introprogramming.info> License: CC-Attribution-Share-Alike Tags: free, programming, book, computer programming, programming fundamentals, ebook, book programming, C#, CSharp, C# book,

tutorial, C# tutorial; programming concepts, programming fundamentals, compiler, Visual Studio, .NET, .NET Framework, data types, variables, expressions, statements, console, conditional statements, control-flow logic, loops, arrays, numeral systems, methods, strings, text processing, StringBuilder, exceptions, exception handling, stack trace, streams, files, text files, linear data structures, list, linked list, stack, queue, tree, balanced tree, graph, depth-first search, DFS, breadth-first search, BFS, dictionaries, hash tables, associative arrays, sets, algorithms, sorting algorithm, searching algorithms, recursion, combinatorial algorithms, algorithm complexity, OOP, object-oriented programming, classes, objects,

constructors, fields, properties, static members, abstraction, interfaces, encapsulation, inheritance, virtual methods, polymorphism, cohesion, coupling, enumerations, generics, namespaces, UML, design patterns, extension methods, anonymous types, lambda expressions, LINQ, code quality, high-quality code, high-quality classes, high-quality methods, code formatting, self-documenting code, code refactoring, problem solving, problem solving methodology, 9789544007737, 9544007733

This text aims to provide an introduction to graph algorithms and data structures and an understanding of the basic properties of a broad range of fundamental graph algorithms. It is suitable for anyone

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with some basic programming concepts. It covers graph properties and types, graph search, directed graphs, minimal spanning trees, shortest paths, and networks. Learn how to write efficient code to build scalable and robust applications in C++

Data Structures and Algorithm Analysis in C

JavaScript Data Structures and Algorithms

Algorithms, Data Structures, and Problem Solving with C++

A comprehensive guide to understanding the language of C offers solutions for everyday programming tasks and provides all the necessary information to

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understand and use common programming techniques. Original. (Intermediate). Based on the authors' market leading data structures books in Java and C++, this textbook offers a comprehensive, definitive introduction to data structures in Python by authoritative authors. Data Structures and Algorithms in Python is the first authoritative object-oriented book available for the Python data structures course. Designed to provide a comprehensive introduction to data structures and algorithms, including their design, analysis, and implementation, the text

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will maintain the same general structure as Data Structures and Algorithms in Java and Data Structures and Algorithms in C++.

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

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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

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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

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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.
Based on the authors' market
leading data structures
books in Java and C++, this
book offers a comprehensive,
definitive introduction to
data structures in Python by
authoritative authors. Data
Structures and Algorithms in

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Python is the first authoritative object-oriented book available for Python data structures. Designed to provide a comprehensive introduction to data structures and algorithms, including their design, analysis, and implementation, the text will maintain the same general structure as Data Structures and Algorithms in Java and Data Structures and Algorithms in C++. Begins by discussing Python's conceptually simple syntax, which allows for a greater focus on concepts. Employs a consistent object-oriented viewpoint throughout the text. Presents each data

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structure using ADTs and their respective implementations and introduces important design patterns as a means to organize those implementations into classes, methods, and objects. Provides a thorough discussion on the analysis and design of fundamental data structures. Includes many helpful Python code examples, with source code provided on the website. Uses illustrations to present data structures and algorithms, as well as their analysis, in a clear, visual manner. Provides hundreds of exercises that promote creativity, help readers

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*learn how to think like
programmers, and reinforce
important concepts. Contains
many Python-code and pseudo-
code fragments, and hundreds
of exercises, which are
divided into roughly 40%
reinforcement exercises, 40%
creativity exercises, and
20% programming projects.*

*Fundamentals of Computer
Programming with C#*

*Fundamentals Of Data
Structures In C(Pul)*

*C# Data Structures and
Algorithms*

Algorithms

Introduction To Algorithms

**Software -- Programming
Techniques.**

Robert Sedgewick has

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thoroughly rewritten and substantially expanded and updated his popular work to provide current and comprehensive coverage of important algorithms and data structures.

Christopher Van Wyk and Sedgewick have developed new C++ implementations that both express the methods in a concise and direct manner, and also provide programmers with the practical means to test them on real applications. Many new algorithms are presented, and the explanations of each algorithm are much

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more detailed than in previous editions. A new text design and detailed, innovative figures, with accompanying commentary, greatly enhance the presentation. The third edition retains the successful blend of theory and practice that has made Sedgewick's work an invaluable resource for more than 250,000 programmers! This particular book, Parts 1n4, represents the essential first half of Sedgewick's complete work. It provides extensive coverage of fundamental

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data structures and algorithms for sorting, searching, and related applications. Although the substance of the book applies to programming in any language, the implementations by Van Wyk and Sedgewick also exploit the natural match between C++ classes and ADT implementations.

Highlights Expanded coverage of arrays, linked lists, strings, trees, and other basic data structures Greater emphasis on abstract data types (ADTs), modular programming, object-

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oriented programming, and C++ classes than in previous editions Over 100 algorithms for sorting, selection, priority queue ADT implementations, and symbol table ADT (searching) implementations New implementations of binomial queues, multiway radix sorting, randomized BSTs, splay trees, skip lists, multiway tries, B trees, extendible hashing, and much more Increased quantitative information about the algorithms, giving you a basis for comparing them Over 1000

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new exercises to help you learn the properties of algorithms Whether you are learning the algorithms for the first time or wish to have up-to-date reference material that incorporates new programming styles with classic and new algorithms, you will find a wealth of useful information in this book. Experience Data Structures C through animations

DESCRIPTION There are two major hurdles faced by anybody trying to learn Data Structures: Most books attempt to teach it

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using algorithms rather than complete working programs A lot is left to the imagination of the reader, instead of explaining it in detail. Ê This is a different Data Structures book. It uses a common language like C to teach Data Structures. Secondly, it goes far beyond merely explaining how Stacks, Queues, and Linked Lists work. The readers can actually experience (rather than imagine) sorting of an array, traversing of a doubly linked list, construction of a binary

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tree, etc. through carefully crafted animations that depict these processes. All these animations are available on the downloadable DVD. In addition it contains numerous carefully-crafted figures, working programs and real world scenarios where different data structures are used. This would help you understand the complicated operations being performed on different data structures easily. Add to that the customary lucid style of Yashavant Kanetkar and you have a perfect Data

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hands. KEY FEATURES

Strengthens the
foundations, as detailed
explanation of concepts
are givenÊ Focuses on how
to think logically to
solve a problem Algorithms
used in the book are well
explained and illustrated
step by step. Help
students in understanding
how data structures are
implemented in programs

WHAT WILL YOU LEARN

Analysis of Algorithms,
Arrays, Linked Lists,
Sparse Matrices Stacks,
Queues, Trees, Graphs,
Searching and Sorting WHO

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THIS BOOK IS FOR Students,
Programmers, researchers,
and software developers
who wish to learn the
basics of Data structures.

Table of Contents 1.

Analysis of Algorithms 2.

Arrays 3. Linked Lists 4.

Sparse Matrices 5. Stacks

6. Queues

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Comprehensive treatment focuses on

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creation of efficient data structures and algorithms and selection or design of data structure best suited to specific problems. This edition uses C++ as the programming language.

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Fundamentals, data structures, sorting,
searching

Data Structures and Algorithms in Python

Algorithms in Java, Parts 1-4

Algorithms in C++