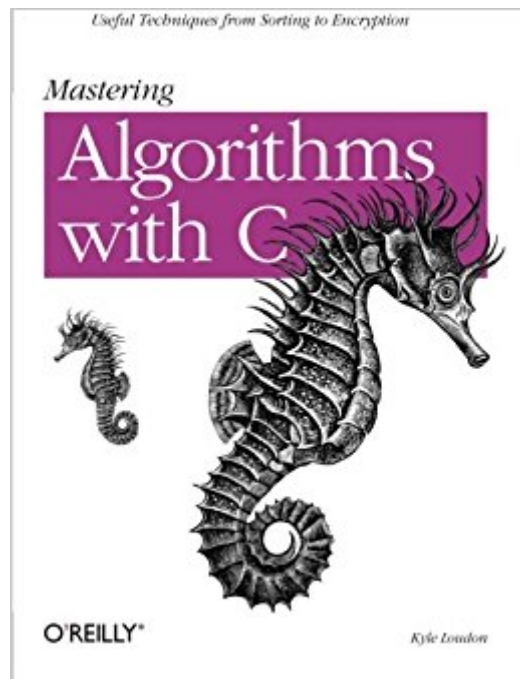




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Mastering Algorithms With C: Useful Techniques From Sorting To Encryption



Synopsis

There are many books on data structures and algorithms, including some with useful libraries of C functions. Mastering Algorithms with C offers you a unique combination of theoretical background and working code. With robust solutions for everyday programming tasks, this book avoids the abstract style of most classic data structures and algorithms texts, but still provides all of the information you need to understand the purpose and use of common programming techniques. Implementations, as well as interesting, real-world examples of each data structure and algorithm, are included. Using both a programming style and a writing style that are exceptionally clean, Kyle Loudon shows you how to use such essential data structures as lists, stacks, queues, sets, trees, heaps, priority queues, and graphs. He explains how to use algorithms for sorting, searching, numerical analysis, data compression, data encryption, common graph problems, and computational geometry. And he describes the relative efficiency of all implementations. The compression and encryption chapters not only give you working code for reasonably efficient solutions, they offer explanations of concepts in an approachable manner for people who never have had the time or expertise to study them in depth.

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Customer Reviews

Written with the intermediate to advanced C programmer in mind, Mastering Algorithms with C delivers a no-nonsense guide to the most common algorithms needed by real-world developers.

The highlight of the book has to be its concise and readable C functions for all the algorithms presented here, including basics like linked lists, stacks to trees, graphs, and sorting/searching algorithms. The C functions that implement these algorithms are clearly printed and remarkably easy to read. You can use this sample code directly or adapt it into your C/C++ code. Although mathematical concepts like Big-O notation are discussed, the authors don't get bogged down in the computer science theory surrounding algorithms. Instead, they present the most tried-and-true algorithms available today in an efficient format. Besides introducing each algorithm, they describe how each is used in computing today, along with a short demo application. Some of these samples are quite low-level, such as a virtual memory manager implemented with linked lists. Most examples are more of general interest, such as a graphing example that counts network hops. Each section ends with questions and answers about how the algorithms work, along with references to other algorithms (both in the book and from other sources). The authors concentrate on the most useful algorithms available today and don't try to cover every available variation. Busy readers will appreciate the intelligent selection--and efficient presentation--used here. There are a number of books on C algorithms, but Master Algorithms with C is one of the most concise and immediately useful. It's a perfect choice for the working C/C++ programmer who's in a hurry to find just the right algorithm for writing real-world code. --Richard Dragan

Topics covered: Algorithm efficiency, pointer basics, arrays, recursion, Big-O Notation, linked lists, stacks, queues, sets, hash tables, trees and B-trees, searching, heaps and priority queues, graphs, sorting and searching algorithms, numerical methods, data compression, Huffman coding, LZ77, data encryption, DES, RSA, graph algorithms, minimum spanning trees, geometric algorithms, and convex hulls.

Although older than some of the current languages, C still is one of the best general purpose programming languages around. Loudon's book discusses C pointers, recursion, data structures from lists and stacks to trees and graphs, sorting and searching, and encryption. This is not a beginner's manual but will work well for programmers wanting to refresh their C techniques and for those moving from another language to C. Copyright 1999 Reed Business Information, Inc.

I'm new to C, but not to programming in general. First, my five stars is kind of dependent upon the audience. You shouldn't buy this to teach yourself algorithms, it isn't a textbook. Instead it's quite good as a reference book for how algorithms you know pseudo for should be properly implemented in C. It's also enormously useful for data structure implementation, which can be tricky if you come from mainly using a language without pointers. The only downside is it's bigger than necessary due

to comment size, but unlike others I don't think the book should really be judged on editor induced padding. It's a solid reference with excellent diagrams and clear explanations.

If you know C and want to brush up on your skills, this is a great book to have. They favor clear code and sane APIs with discussions of the techniques. I found it good if you already knew some details but had perhaps forgotten specific details about the algorithm. Though it is no fault of the book, the code referenced in the book is provided on a 3.5 inch floppy disk -- which I can't really use on my modern system without buying a USB floppy drive. My criticism would be if you didn't know an algorithm at all, it can be a bit rough to get the exact details -- and given the large amount of code in the book, I suppose the author expects you to fill in the details by reading the code. This probably makes it inferior to other books for /learning/, but again, if you're just reviewing, this isn't really a problem.

You will see how seemingly unrelated areas of technology can be approached in similar ways. The kind of thinking expressed in the book may apply to topics as diverse as social networks, databases, healthcare systems, air traffic control, video games, robots, drones and mobile apps. Kyle reveals an approach that can improve code reuse, the way code runs, and how the code is fundamentally structured. The code is example code, not real-world code. That means that the code clearly shows the approach to solving a problem so you know how the solution in code may appear. You will still have to adjust the code for style, performance, and security. Importantly, he explains various approaches very well, includes diagrams and uses the C programming language for code examples which makes the code translatable to Java, C++, and PHP. It takes patience and attention to progress through 17 chapters, but the results are well worth it. Can you read the book once? You can as an overview and to become more broadly familiar with the material, but it is definitely a worthwhile reference.

It clearly takes you step by step through learning algorithms. Each algorithm builds on previous ones. I highly recommend it for those wanting to understand algorithms.

Text struct a good balance between practical and theoretical. All common data structures and algorithms were thoroughly covered from practical and theoretical aspects. Code samples were clean and elegant. Great refresher for a seasoned 'C' programmer.

The content is great, five stars to the author. The printing is horrible! At least, my copy, looks like a pirate book printed on a cheap laser printer (hence 4 stars).

Overall the information presented in this book is good and there's a good bit of it packed in here, but the commenting style is so completely insane and a constant distraction, especially if you are reading this on an eReader such as a Kindle. Tech books and Kindle don't usually get along, but there are some great exceptions to this, such as CLR via C# (Richter), but with this book many of the code samples look like an absolute mess because of all the asterisks spanning across the pages (since the Kindle is only so wide and I can only have the font so small). Every single comment is formatted as follows. It doesn't matter if you're in the middle of an if-loop or other control structure, they all go like: (blank space) /***** (except instead of 30 asterisks there's always 80!) **Comment goes here** /***** (another 80 stars here) (another blank space) That's right, every comment takes up 9 lines if your screen is wide enough, even more if characters have to wrap around! It's completely crazy that the author thinks this is an acceptable commenting style, it's actually the worst I've seen in my entire 18 year career. It would be one thing if these comments were only at the very top of the code snippet or above a method signature or something, but this is his standard commenting style throughout the code, and he writes a LOT of comments, it really beaks up the flow.

I've enjoyed every O'Reilly book I've ever gotten, and this is no disappointment. I am trying to strengthen my C skills and this will definitely help. Thanks again for another awesome book!

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