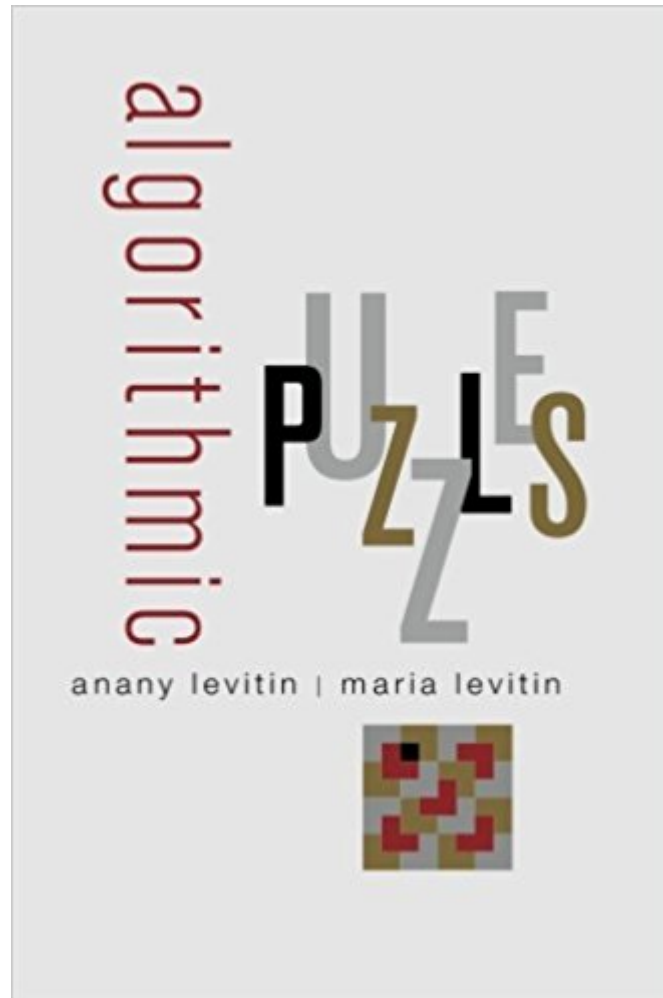




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# Algorithmic Puzzles



## Synopsis

While many think of algorithms as specific to computer science, at its core algorithmic thinking is defined by the use of analytical logic to solve problems. This logic extends far beyond the realm of computer science and into the wide and entertaining world of puzzles. In *Algorithmic Puzzles*, Anany and Maria Levitin use many classic brainteasers as well as newer examples from job interviews with major corporations to show readers how to apply analytical thinking to solve puzzles requiring well-defined procedures. The book's unique collection of puzzles is supplemented with carefully developed tutorials on algorithm design strategies and analysis techniques intended to walk the reader step-by-step through the various approaches to algorithmic problem solving. Mastery of these strategies--exhaustive search, backtracking, and divide-and-conquer, among others--will aid the reader in solving not only the puzzles contained in this book, but also others encountered in interviews, puzzle collections, and throughout everyday life. Each of the 150 puzzles contains hints and solutions, along with commentary on the puzzle's origins and solution methods. The only book of its kind, *Algorithmic Puzzles* houses puzzles for all skill levels. Readers with only middle school mathematics will develop their algorithmic problem-solving skills through puzzles at the elementary level, while seasoned puzzle solvers will enjoy the challenge of thinking through more difficult puzzles.

## Book Information

Paperback: 280 pages

Publisher: Oxford University Press; 1 edition (October 14, 2011)

Language: English

ISBN-10: 0199740445

ISBN-13: 978-0199740444

Product Dimensions: 9.1 x 0.7 x 6.1 inches

Shipping Weight: 9.9 ounces (View shipping rates and policies)

Average Customer Review: 4.2 out of 5 stars 21 customer reviews

Best Sellers Rank: #196,565 in Books (See Top 100 in Books) #64 in Books > Humor &

Entertainment > Puzzles & Games > Math Games #769 in Books > Textbooks > Science &

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## Customer Reviews

"Algorithmic Puzzles by Anany Levitin and Maria Levitin is an interesting and novel style of puzzle

book. The emphasis lies in training the reader to think algorithmically and develop new puzzle-solving skills: the majority of puzzles are problems where we are asked to find the shortest distance or the fewest moves to get from A to B, or construct a proof that a puzzle has no solution. the book provides plenty of puzzles to keep even the most avid problem-solvers busy for a long time, all with varying levels of difficulty and different styles/contexts. The solutions provided are comprehensive and explain themselves in a friendly, constructive manner, complete with illustrations. In addition to questions and answers, a section of brief hints is also provided to assist the reader in their puzzle-solving endeavours." -- Graham Wheeler, Significance

Anany Levitin is a professor of Computing Sciences at Villanova University. He is the author of a popular textbook on design and analysis of algorithms, which has been translated into Chinese, Greek, Korean, and Russian. He has also published papers on mathematical optimization theory, software engineering, data management, algorithm design, and computer science education. Maria Levitin is an independent consultant. After some years working for leading software companies and developing business applications for large corporations, she now specializes in web-based applications and wireless computing.

I bought this book on sight. It's possibly my favorite book of any and all books I own. The puzzles are not only ubiquitous and exciting... they're educational and provide many "Aha!" moments. I've been looking for a book like this for years, and I recommend it to those looking for fun and challenging puzzles of varying difficulty levels. Being a computer science major, many of the puzzles are also fun to implement and solve using programming, emphasizing the "algorithmic" component in the title. Buy this book!!

This book is a great resource for software development interviews or if you just want to blow off some steam and solve some fun puzzles. In many software interviews you will be asked to devise an algorithm to solve a problem or execute an objective. This book is by no means an exhaustive list of algorithmic puzzles that you'll encounter in interviews, but it does have several classic puzzles, as well as a number of puzzles I've never seen before. The puzzles themselves are very fun to solve and they'll get your brain thinking algorithmically. There's also great advice and information about how to devise systems to solve common problems using algorithms, so even if the challenges you're given in an interview aren't in this book you'll be studied up on how to devise your own systems for solving problems. One notable omission is the Tower of Hanoi puzzle, that is a

classic and I suggest you look it up if you enjoy this type of thing. Overall I think this book is great for software developers looking to get into mental shape for interviewing, but don't think that you have to be a computer science major to enjoy this book. The puzzles are just plain fun to solve, and the skills you will acquire when learning to devise algorithms are certainly applicable in other fields. I highly recommend this book to any developers looking for a mental workout before an interview or anyone that just likes fun, challenging puzzles.

This is a very good book. Among many techniques used in math and in puzzles, algorithmic type of proofs exist for problems where the problem state either directly involves an algorithm or the problem state can be used to derive an algorithm. Algorithms of this sort have certain properties like some quantity either strictly increases, or strictly decreases, or it remains constant etc. Observations of what happens to such quantities can lead to solution of such problems. Good thing is that it has hints and solutions which are given in separate sections so that if you cannot solve it using hints, you can look at the solutions later. Highly recommended for people interested in problem solving.

Took this book camping. Very clever puzzles from one of the best professors I ever had. This book is a great learning tool.

This book is not an introductory book to algorithms or a general algorithmic book in the computer science paradigm. But it contains loads of puzzles which you can understand, solve using a pen and a paper and apply the same in your favorite programming language. The book is written in a very clear and crisp way. For someone who loves brain teasers this book is a must have in their collection. Also it would be of immense help for anyone preparing for interviews on algorithms.

Love this book. I agreed with some reviewers' comment about the Kindle formatting of this book. You are better off with a paper version. Fortunately I have no need of hints and solutions. I bought this book only to entertain my puzzle-loving daughter, in lieu of a bed time story. So I skipped the tutorial and went all the way to main section. She successfully fell into asleep after 6th puzzle, so far as good.

More than I ever wanted to know about puzzle analysis. Interesting to see all the logic behind the design. Highly recommended for the puzzle-minded.

The content of the book itself is OK; there a lot of rehashing of things that have already been rehashed to death. However, the Kindle edition is terrible. There is no useful navigation, and it's as if someone took a source document for the book and exported to a Kindle document. There was a real opportunity here to make an extremely useful document; each puzzle can be linked to the hints and solution, and those in turn could be linked back to each other. I really hope that the publisher will revisit the Kindle edition and make it useful.

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