



Algorithmic Puzzles

By Anany Levitin, Maria Levitin

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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.

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Editorial Review

Review

"*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*

About the Author

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.

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