Coders at Work

Peter Seibel interviews 15 of the most interesting computer programmers alive today in Coders at Work, offering a companion volume to Apress's highly acclaimed best-seller Founders at Work by Jessica Livingston. As the words “at work” suggest, Peter Seibel focuses on how his interviewees tackle the day-to-day work of programming, while revealing much more, like how they became great programmers, how they recognize programming talent in others, and what kinds of problems they find most interesting. Hundreds of people have suggested names of programmers to interview on the Coders at Work website: www.codersatwork.com. The complete list was 284 names. Having digested everyone’s feedback, we selected 15 folks who’ve been kind enough to agree to be interviewed: Frances Allen: Pioneer in optimizing compilers, first woman to win the Turing Award (2006) and first female IBM fellow Joe Armstrong: Inventor of Erlang Joshua Bloch: Author of the Java collections framework, now at Google Bernie Cosell: One of the main software guys behind the original ARPANET IMPs and a master debugger Douglas Crockford: JSON founder, JavaScript architect at Yahoo! L. Peter Deutsch: Author of Ghostscript, implementer of Smalltalk-80 at Xerox PARC and Lisp 1.5 on PDP-1 Brendan Eich: Inventor of JavaScript, CTO of the Mozilla Corporation Brad Fitzpatrick: Writer of LiveJournal, OpenID, memcached, and Perlbal Dan Ingalls: Smalltalk implementor and designer Simon Peyton Jones: Coinventor of Haskell and lead designer of Glasgow Haskell Compiler Donald Knuth: Author of The Art of Computer Programming and creator of TeX Peter Norvig: Director of Research at Google and author of the standard text on AI Guy Steele: Coinventor of Scheme and part of the Common Lisp Gang of Five, currently working on Fortress Ken Thompson: Inventor of UNIX Jamie Zawinski: Author of XEmacs and early Netscape/Mozilla hacker

Coding Concepts for Kids

The Power of Computational Thinking shows that learning to think can be fascinating fun. Yes, and this book shows you how. Computational thinking has changed the way we all live, work and play. It has changed the way science is done too; won wars, created whole new industries and saved lives. It is at the heart of computer programming and is a powerful approach to problem solving, with or without computers. It is so important that many countries now require that primary school children learn the skills. Professors Paul Curzon and Peter McOwan of Queen Mary University of London have written a unique and enjoyable introduction. They describe the elements of computational thinking — algorithmic thinking, decomposition, abstraction and pattern matching — in an entertaining and accessible way, using magic tricks, games and puzzles, as well as through real and challenging problems that computer scientists work on. This book gives you a head start in learning the skills needed for coding, and will improve
your real life problem solving skills. It will help you design and evaluate new technologies, as well as understand both your own brain and the digital world in a deeper way.

Classic Computer Science Problems in Java

Mobile technologies combined with an interdisciplinary approach to knowledge and organization of learning experiences that are meaningful to children could create a creative and interactive learning environment different from that of traditional teaching. Making good use of mobile learning with appropriate devices will increase the learning motivations of the students and help them bring about positive performance. Mobile Learning Applications in Early Childhood Education is a collection of innovative research on the methods and applications of mobile learning techniques and strategies within diversified teaching settings. While highlighting topics including computational thinking, ubiquitous learning, and social development, this book is ideally designed for researchers, teachers, parents, curriculum developers, instructional designers, academicians, students, and practitioners seeking current research on the application of mobile technology within child education.

Guide to Competitive Programming

This is a unique puzzle book where puzzles solution and its coding both are given. This puzzle book is perfect for kids and computer programming beginners. Kids can solve the puzzles via thinking while programming beginners can solve the puzzles using coding. - A great way to keep your brain engaged- Entertainment for family- Boosts cognitive and mathematical skills- Coding solutions written in Python- Practice to improve your basic programming skillsThis book is recommended for kids who loves to solve the puzzle as well as adult and computer programming beginners who wants to practice coding.

Puzzles with Coding

The previous version was a great collection of funny puzzles and it proved its value. Since the previous book is already quite thick, instead of keeping adding more puzzles into it, I decide to write a new edition with all the new puzzles inside. If you are preparing the programming interview for a software engineer position, you might want to look at this book. Make sure you have basic knowledge of data structure and algorithm, because this book is mostly focus on how to resolve the coding puzzles with existing data structure and algorithm. If you need some refresh of data structure and algorithm, there is a good book you might want to take a look first, by Thomas H. Cormen. In this new version, there are 53 new puzzles. Again and again, this book is used to present how to analysis a problem and solve the challenge with some existing algirithms. Improving your ability of solving the problem is much more important than writing the code..

Information Technology for Management: Towards Business Excellence

Empower tomorrow’s tech innovators Our students are avid users and consumers of technology. Isn’t it time that they see themselves as the next technological innovators, too? Computational Thinking and Coding for Every Student is the beginner’s guide for K-12 educators who want to learn to integrate the basics of computer science into their curriculum. Readers will find Strategies and activities for teaching computational thinking and coding inside and outside of school, at any grade level, across disciplines Instruction-ready lessons for every grade A discussion guide and companion website with videos, activities, and other resources.
Learning Algorithms Through Programming and Puzzle Solving

There are many distinct pleasures associated with computer programming. Craftsmanship has its quiet rewards, the satisfaction that comes from building a useful object and making it work. Excitement arrives with the flash of insight that cracks a previously intractable problem. The spiritual quest for elegance can turn the hacker into an artist. There are pleasures in parsimony, in squeezing the last drop of performance out of clever algorithms and tight coding. The games, puzzles, and challenges of problems from international programming competitions are a great way to experience these pleasures while improving your algorithmic and coding skills. This book contains over 100 problems that have appeared in previous programming contests, along with discussions of the theory and ideas necessary to attack them. Instant online grading for all of these problems is available from two WWW robot judging sites. Combining this book with a judge gives an exciting new way to challenge and improve your programming skills. This book can be used for self-study, for teaching innovative courses in algorithms and programming, and in training for international competition. The problems in this book have been selected from over 1,000 programming problems at the Universidad de Valladolid online judge. The judge has ruled on well over one million submissions from 27,000 registered users around the world to date. We have taken only the best of the best, the most fun, exciting, and interesting problems available.

Programming for the Puzzled

Teach kids as young as 5 years old the basic programming skills necessary to code, including sequencing and loops, without a computer. It's never too early to learn computer coding. My First Coding Book is a playful introduction to offline coding and programming that will give young children a head start. Filled with puzzles, mazes, and games to teach the basic concepts of sequences, algorithms, and debugging, this book will help children develop critical thinking, logic, and other skills to cement lifelong computer literacy, which is extremely valuable and sought-after in today's world. With its unique approach and colorful and creative imagery, My First Coding Book makes learning and fun one and the same and will have children playing their way to programming proficiency. Supporting STEM education initiatives, computer coding teaches kids how to think creatively, work collaboratively, and reason systematically, and is quickly becoming a necessary and sought-after skill. DK's computer coding books are full of fun exercises with step-by-step guidance, making them the perfect introductory tools for building vital skills in computer programming.

Boredom Busters for Adults and Kids - the Code Breaker Game Book - Logic Quizzes Memory Training Games Code Cryptograms Puzzle Book for Adults and Teens | Anti Boring Book

Learn to Code by Solving Problems is a practical introduction to programming using Python. It uses coding-competition challenges to teach you the mechanics of coding and how to think like a savvy programmer. Computers are capable of solving almost any problem when given the right instructions. That's where programming comes in. This beginner's book will have you writing Python programs right away. You'll solve interesting problems drawn from real coding competitions and build your programming skills as you go. Every chapter presents problems from coding challenge websites, where online judges test your solutions and provide targeted feedback. As you practice using core Python features, functions, and techniques, you'll develop a clear understanding of data structures, algorithms, and other programming basics. Bonus exercises invite you to explore new concepts on your own, and multiple-choice questions encourage you to think about how each piece of code works. You'll learn how to: [] Run Python code, work with strings, and use variables [] Write programs that make decisions [] Make code more efficient with while and for loops [] Use Python sets, lists, and dictionaries to organize, sort, and search data [] Design programs using functions and top-down design [] Create complete-search algorithms and use Big O notation to design more efficient code By the end of the book, you'll not only be proficient in Python, but you'll also understand how to think through problems and tackle them with code. Programming languages come and go, but this book gives you the lasting foundation you need to start thinking like a programmer.
Coding for kids without a computer--an offline skill-building book for ages 5 to 7. Coding helps kids develop analytical thinking, problem-solving abilities, and beyond! In this exciting guide to coding for kids, your child will discover the core concepts of coding through colorful games and activities--without using a computer. These fun challenges can be done right inside the book or with everyday objects to help kids practice the same skills coders use, like writing clear instructions, recognizing patterns, and working efficiently. There's even a place for your beginner to invent their own codes! This coding for kids book features: Coding fundamentals--Practice algorithms, loops, conditionals, optimization, debugging, and variables with games that help kids think like a computer programmer. Meet the coder crew--Explore coding for kids with a whole cast of characters, including AI the helper, Pixel the creative expert, Lo the problem-solver, Bug the pattern-spotter, and their robot dog Spot the Bot! On and off the page--Sharpen skills with fun on-the-page puzzles and off-the-page activities that give kids a chance to practice in different ways. Set your little ones up for success with coding for kids that only requires a pencil, paper, and their imagination.

The Pragmatic Programmer

This book constitutes revised selected and extended papers presented at track 4 of the Conference on Computer Science and Intelligence Systems, FedCSIS 2020, which took place in Sofia, Bulgaria, during September 6-9, 2020. The FedCSIS Information Systems and Technologies Track included AIST 2020, DSH 2020, ISM 2020, and KAM 2020. For this track, a total of 29 submissions was received from which a total of 5 full and 3 short papers was accepted for publication in this volume. The papers were organized in topical sections named: improving project management methods; numerical methods of solving management problems; and technological infrastructure for business excellence.

Data Structure and Algorithmic Thinking with Python

Sharpen your coding skills by exploring established computer science problems! Classic Computer Science Problems in Java challenges you with time-tested scenarios and algorithms. You'll work through a series of exercises based in computer science fundamentals that are designed to improve your software development abilities, improve your understanding of artificial intelligence, and even prepare you to ace an interview. As you work through examples in search, clustering, graphs, and more, you'll remember important things you've forgotten and discover classic solutions to your "new" problems! Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Whatever software development problem you're facing, odds are someone has already uncovered a solution. This book collects the most useful solutions devised, guiding you through a variety of challenges and tried-and-true problem-solving techniques. The principles and algorithms presented here are guaranteed to save you countless hours in project after project. About the book Classic Computer Science Problems in Java is a master class in computer programming designed around 55 exercises that have been used in computer science classrooms for years. You'll work through hands-on examples as you explore core algorithms, constraint problems, AI applications, and much more. What's inside? Recursion, memoization, and bit manipulation Search, graph, and genetic algorithms Constraint-satisfaction problems K-means clustering, neural networks, and adversarial search About the reader For intermediate Java programmers. About the author David Kopec is an assistant professor of Computer Science and Innovation at Champlain College in Burlington, Vermont. Table of Contents 1 Small problems 2 Search problems 3 Constraint-satisfaction problems 4 Graph problems 5 Genetic algorithms 6 K-means clustering 7 Fairly simple neural networks 8 Adversarial search 9 Miscellaneous problems 10 Interview with Brian Goetz

Learn to Code by Solving Problems
In this entertaining and challenging collection of logic puzzles, Raymond Smullyan - author of Forever Undecided - continues to delight and astonish us with his gift for making available, in the thoroughly pleasurable form of puzzles, some of the most important mathematical thinking of our time. In the first part of the book, he transports us once again to that wonderful realm where knights, knaves, twin sisters, quadruplet brothers, gods, demons, and mortals either always tell the truth or always lie, and where truth-seekers are set a variety of fascinating problems. The section culminates in an enchanting and profound metapuzzle in which Inspector Craig of Scotland Yard gets involved in a search for the Fountain of Youth on the Island of Knights and Knaves. In the second part of To Mock a Mockingbird, we accompany the Inspector on a summer-long adventure into the field of combinatorial logic (a branch of logic that plays an important role in computer science and artificial intelligence). His adventure, which includes enchanted forests, talking birds, bird sociologists, and a classic quest, provides for us along the way the pleasure of solving puzzles of increasing complexity until we reach the Master Forest and - thanks to Godel's famous theorem - the final revelation.

Coding Puzzles, 3rd Edition

Sixth-grader Emmy tries to find her place in a new school and to figure out how she can create her own kind of music using a computer.

Algorithmic Puzzles

The real challenge of programming isn't learning a language's syntax—it's learning to creatively solve problems so you can build something great. In this one-of-a-kind text, author V. Anton Spraul breaks down the ways that programmers solve problems and teaches you what other introductory books often ignore: how to Think Like a Programmer. Each chapter tackles a single programming concept, like classes, pointers, and recursion, and open-ended exercises throughout challenge you to apply your knowledge. You'll also learn how to: -Split problems into discrete components to make them easier to solve -Make the most of code reuse with functions, classes, and libraries -Pick the perfect data structure for a particular job -Master more advanced programming tools like recursion and dynamic memory -Organize your thoughts and develop strategies to tackle particular types of problems Although the book's examples are written in C++, the creative problem-solving concepts they illustrate go beyond any particular language; in fact, they often reach outside the realm of computer science. As the most skillful programmers know, writing great code is a creative art—and the first step in creating your masterpiece is learning to Think Like a Programmer.

Cracking the Coding Interview

Now in the 5th edition, Cracking the Coding Interview gives you the interview preparation you need to get the top software developer jobs. This book provides: 150 Programming Interview Questions and Solutions: From binary trees to binary search, this list of 150 questions includes the most common and most useful questions in data structures, algorithms, and knowledge based questions. 5 Algorithm Approaches: Stop being blind-sided by tough algorithm questions, and learn these five approaches to tackle the trickiest problems. Behind the Scenes of the interview processes at Google, Amazon, Microsoft, Facebook, Yahoo, and Apple: Learn what really goes on during your interview day and how decisions get made. Ten Mistakes Candidates Make -- And How to Avoid Them: Don't lose your dream job by making these common mistakes. Learn what many candidates do wrong, and how to avoid these issues. Steps to Prepare for Behavioral and Technical Questions: Stop meandering through an endless set of questions, while missing some of the most important preparation techniques. Follow these steps to more thoroughly prepare in less time.

How to Solve It
If you are preparing the programming interview for a software engineer position, you might want to look at this book. Make sure you have basic knowledge of data structure and algorithm, because this book is mostly focus on how to resolve the coding puzzles with existing data structure and algorithm. If you need some refresh of data structure and algorithm, there is a good book you might want to take a look first, by Thomas H. Cormen. This book has 105 puzzles. Every puzzle contains a detailed explanation and some implementations.

Programming Challenges

Algorithmic puzzles are puzzles involving well-defined procedures for solving problems. This book will provide an enjoyable and accessible introduction to algorithmic puzzles that will develop the reader's algorithmic thinking. The first part of this book is a tutorial on algorithm design strategies and analysis techniques. Algorithm design strategies — exhaustive search, backtracking, divide-and-conquer and a few others — are general approaches to designing step-by-step instructions for solving problems. Analysis techniques are methods for investigating such procedures to answer questions about the ultimate result of the procedure or how many steps are executed before the procedure stops. The discussion is an elementary level, with puzzle examples, and requires neither programming nor mathematics beyond a secondary school level. Thus, the tutorial provides a gentle and entertaining introduction to main ideas in high-level algorithmic problem solving. The second and main part of the book contains 150 puzzles, from centuries-old classics to newcomers often asked during job interviews at computing, engineering, and financial companies. The puzzles are divided into three groups by their difficulty levels. The first fifty puzzles in the Easier Puzzles section require only middle school mathematics. The sixty puzzle of average difficulty and forty harder puzzles require just high school mathematics plus a few topics such as binary numbers and simple recurrences, which are reviewed in the tutorial. All the puzzles are provided with hints, detailed solutions, and brief comments. The comments deal with the puzzle origins and design or analysis techniques used in the solution. The book should be of interest to puzzle lovers, students and teachers of algorithm courses, and persons expecting to be given puzzles during job interviews.

How To Be a Coder

NEW YORK TIMES BESTSELLER! Part how-to, part girl-empowerment, and all fun, from the leader of the movement championed by Sheryl Sandberg, Malala Yousafzai, and John Legend. Since 2012, the organization Girls Who Code has taught computing skills to and inspired over 40,000 girls across America. Now its founder, and author Brave Not Perfect, Reshma Saujani, wants to inspire you to be a girl who codes! Bursting with dynamic artwork, down-to-earth explanations of coding principles, and real-life stories of girls and women working at places like Pixar and NASA, this graphically animated book shows what a huge role computer science plays in our lives and how much fun it can be. No matter your interest—sports, the arts, baking, student government, social justice—coding can help you do what you love and make your dreams come true. Whether you’re a girl who’s never coded before, a girl who codes, or a parent raising one, this entertaining book, printed in bold two-color and featuring art on every page, will have you itching to create your own apps, games, and robots to make the world a better place.

Think Like a Programmer

A perennial bestseller by eminent mathematician G. Polya, How to Solve It will show anyone in any field how to think straight. In lucid and appealing prose, Polya reveals how the mathematical method of demonstrating a proof or finding an unknown can be of help in attacking any problem that can be "reasoned" out—from building a bridge to winning a game of anagrams. Generations of readers have relished Polya's deft—indeed, brilliant—instructions on stripping away irrelevancies and going straight to the heart of the problem.

My First Coding Book
This book is specially put in an easy way to be suitable for any age group and to fill the much-needed gap especially for: ---- Who is unaware of any approach to build programming logic?---- Who had a hard time learning to write a program?---- Who are teachers/trainers and looking for a reliable resource to create interest in the subject of programming for their students.---- Who had some experience in programming and not having confidence enough?---- Who carries the false notion that coding is only for super smart people---- Who are looking for a 1st solid move to become a self-taught programmer?---- Who had some experience in programming with pattern and looking for a STANDARD APPROACH to get their LOGIC RIGHT for any pattern.-- Who is a victim of discouragement comments, similar to the following: { Actually, you aren't interested. } { You lack patience and determination. } { Your IQ is well below average. } Programming is NOT about memorizing programming logic or downloading standard college/university level algorithms by practice in our mind, rather we need to understand the approach to solve a problem. Many novice programmers and many frustrated programmers do ask similar kind of questions which are as follows: "How to learn to program?" "How to develop logic building skill?" "How to learn to code?" "How to improve program logic?" The Right Approach: ~~~~~~~~~~~~~~~~~~~To improve program logic quickly, practice on patterns. The logic building skill must be the first and foremost activity which beginners of programming language should focus on. In order to become confident in any programming language, the first step should be to gain some level of proficiency to self-hack programming logic. I strongly recommend to novice learners, please initially pay more attention to developing programming logic skills rather than concentrating more on the features of programming language. This book is totally focused on installing programming logic skills to improve the visualization of program logic. This technical manual is totally dedicated to the beginner to intermediate students who are just tired of hitting hard on many places in order to become confident in programming. Additionally, if you are among those who got limited time to learn to program, this is the guide that can serve you well too. So the rule of the thumb is, in order to learn programming language fast and properly, first learn tactics of programming logic sufficiently. This book is the launching pad to learn programming logic from the very minimal. Will you? HAPPY LEARNING!!!

Coding Puzzles, 2nd Edition

Ensure every student can become fluent in Python with this highly practical guide that will help them understand the theory and logic behind coding. Written for 14-16-year olds by a leading Python specialist and teacher, and aligned to curriculum requirements, this essential Student Book provides numerous practice questions and coding problems that can be completed as homework or during class - plus answers can be found online at www.hoddereducation.co.uk/pythonextras How to Code in Python will:

* Provide hundreds of coding examples, puzzles and problem-solving tasks to strengthen computational thinking skills required for GCSE, iGCSE and National 4 / 5 success
* Help students become proficient in computational thinking and problem-solving using Python
* Feature plenty of opportunities for self-assessment with solutions to coding problems available online

This unique book can be broken down into three key features:

**Code theory and explanations**
Greg Reid is a very experienced Computer Science teacher in Scotland, who has written How to Pass Higher Computer Science and Higher Computing Science Practice Papers for Hodder Gibson.

**What others in the trenches say about The Pragmatic Programmer**

“The cool thing about this book is that it’s great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there.” —Kent Beck, author of Extreme Programming Explained: Embrace Change

“I found this book to be a great mix of solid advice and wonderful analogies!” —Martin Fowler, author of Refactoring and UML Distilled

“I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I would worry about it being lost.” —Kevin Ruland, Management Science, MSG-Logistics

“The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful. By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little
doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike.” —John Lakos, author of Large-Scale C++ Software Design “This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients.” —Eric Vought, Software Engineer “Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in having talented developers who really know their craft well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company.” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham

The Power of Computational Thinking

Learning programming with one of “the coolest applications around”: algorithmic puzzles ranging from scheduling selfie time to verifying the six degrees of separation hypothesis. This book builds a bridge between the recreational world of algorithmic puzzles (puzzles that can be solved by algorithms) and the pragmatic world of computer programming, teaching readers to program while solving puzzles. Few introductory students want to program for programming's sake. Puzzles are real-world applications that are attention grabbing, intriguing, and easy to describe. Each lesson starts with the description of a puzzle. After a failed attempt or two at solving the puzzle, the reader arrives at an Aha! moment—a search strategy, data structure, or mathematical fact—and the solution presents itself. The solution to the puzzle becomes the specification of the code to be written. Readers will thus know what the code is supposed to do before seeing the code itself. This represents a pedagogical philosophy that decouples understanding the functionality of the code from understanding programming language syntax and semantics. Python syntax and semantics required to understand the code are explained as needed for each puzzle. Readers need only the rudimentary grasp of programming concepts that can be obtained from introductory or AP computer science classes in high school. The book includes more than twenty puzzles and more than seventy programming exercises that vary in difficulty. Many of the puzzles are well known and have appeared in publications and on websites in many variations. They range from scheduling selfie time with celebrities to solving Sudoku problems in seconds to verifying the six degrees of separation hypothesis. The code for selected puzzle solutions is downloadable from the book's website; the code for all puzzle solutions is available to instructors.

Computational Fairy Tales
This invaluable textbook presents a comprehensive introduction to modern competitive programming. The text highlights how competitive programming has proven to be an excellent way to learn algorithms, by encouraging the design of algorithms that actually work, stimulating the improvement of programming and debugging skills, and reinforcing the type of thinking required to solve problems in a competitive setting. The book contains many “folklore” algorithm design tricks that are known by experienced competitive programmers, yet which have previously only been formally discussed in online forums and blog posts. Topics and features: reviews the features of the C++ programming language, and describes how to create efficient algorithms that can quickly process large data sets; discusses sorting algorithms and binary search, and examines a selection of data structures of the C++ standard library; introduces the algorithm design technique of dynamic programming, and investigates elementary graph algorithms; covers such advanced algorithm design topics as bit-parallelism and amortized analysis, and presents a focus on efficiently processing array range queries; surveys specialized algorithms for trees, and discusses the mathematical topics that are relevant in competitive programming; examines advanced graph techniques, geometric algorithms, and string techniques; describes a selection of more advanced topics, including square root algorithms and dynamic programming optimization. This easy-to-follow guide is an ideal reference for all students wishing to learn algorithms, and practice for programming contests. Knowledge of the basics of programming is assumed, but previous background in algorithm design or programming contests is not necessary. Due to the broad range of topics covered at various levels of difficulty, this book is suitable for both beginners and more experienced readers.

Learn to Code by Solving Problems

"Data Structure and Algorithmic Thinking with Go" is designed to give a jump-start to programmers, job hunters, and those who are appearing for exams. All the code in this book is written in GoLang. It contains many programming puzzles that not only encourage analytical thinking but also prepare readers for interviews.

Data Structures and Algorithmic Thinking with Go

Unlock the secrets to creating random mazes! Whether you're a game developer, an algorithm connoisseur, or simply in search of a new puzzle, you're about to level up. Learn algorithms to randomly generate mazes in a variety of shapes, sizes, and dimensions. Bend them into Moebius strips, fold them into cubes, and wrap them around spheres. Stretch them into other dimensions, squeeze them into arbitrary outlines, and tile them in a dizzying variety of ways. From twelve little algorithms, you'll discover a vast reservoir of ideas and inspiration. From video games to movies, mazes are ubiquitous. Explore a dozen algorithms for generating these puzzles randomly, from Binary Tree to Eller's, each copiously illustrated and accompanied by working implementations in Ruby. You'll learn their pros and cons, and how to choose the right one for the job. You'll start by learning six maze algorithms and transition from making mazes on paper to writing programs that generate and draw them. You'll be introduced to Dijkstra's algorithm and see how it can help solve, analyze, and visualize mazes. Part 2 shows you how to constrain your mazes to different shapes and outlines, such as text, circles, hex and triangle grids, and more. You'll learn techniques for culling dead-ends, and for making your passages weave over and under each other. Part 3 looks at six more algorithms, taking it all to the next level. You'll learn how to build your mazes in multiple dimensions, and even on curved surfaces. Through it all, you'll discover yourself brimming with ideas, the best medicine for programmer's block, burn-out, and the grayest of days. By the time you're done, you'll be energized and full of maze-related possibilities! What You Need: The example code requires version 2 of the Ruby programming language. Some examples depend on the ChunkyPNG library to generate PNG images, and one chapter uses POV-Ray version 3.7 to render 3D graphics.

Coders at Work
Algorithmic Thinking will teach you how to solve challenging programming problems and design your own algorithms. Daniel Zingaro, a master teacher, draws his examples from world-class programming competitions like USACO and IOI. You'll learn how to classify problems, choose data structures, and identify appropriate algorithms. You'll also learn how your choice of data structure, whether a hash table, heap, or tree, can affect runtime and speed up your algorithms, and how to adopt powerful strategies like recursion, dynamic programming, and binary search to solve challenging problems. Line-by-line breakdowns of the code will teach you how to use algorithms and data structures like: The breadth-first search algorithm to find the optimal way to play a board game or find the best way to translate a book. Dijkstra's algorithm to determine how many mice can exit a maze or the number of fastest routes between two locations. The union-find data structure to answer questions about connections in a social network or determine who are friends or enemies. The heap data structure to determine the amount of money given away in a promotion. The hash-table data structure to determine whether snowflakes are unique or identify compound words in a dictionary.

NOTE: Each problem in this book is available on a programming-judge website. You'll find the site's URL and problem ID in the description. What's better than a free correctness check?

Mobile Learning Applications in Early Childhood Education

Choice puzzles by one of America's most ingenious creators of mathematical entertainments, ranging from simple exercises in arithmetic to complex calculus problems.

Super Lateral Thinking Puzzles

If you are preparing the programming interview for a software engineer position, you might want to look at this book. Make sure you have basic knowledge of data structure and algorithm, because this book is mostly focused on how to resolve the coding puzzles with existing data structure and algorithm. If you need some refresh of data structure and algorithm, there is a good book you might want to take a look first, by Thomas H. Cormen. What the 2nd edition brings to you: 1 136 problems in Recursion, Divide and Conquer, Binary Search, Tree Traversal, Graph Traversal, Dynamic Programming, String Search etc., which is more than enough for preparing a software engineer interview. Every puzzle contains a detailed explanation and some implementations. 2. An Appendix in the end of this book for designing question preparation. This appendix includes some selected papers, books I had read in the past two years. And I think this is the most important change in the second edition. Learning what current industry does and keeping improving the design skill will help yourself in a long-term career. Again, this book is used to present how to analysis a problem and link the inside the challenge with some existing algorithms. The goal of this book is to improve the problem solving ability, not to be a collection of latest interview questions from Facebook, Google etc. Hope this book can help you get your desired offer.

Algorithmic Thinking

Boredom Busters for Adults and Kids - the Code Breaker Game Book This book will help you to overcome boredom. It will provide you with mental training through logical thinking and solving coded content. Topics "did you know" will ensure that you will spend your time nicely. Cryptograms but in a different variety. In this puzzle you don't replace letters, in this brain game you replace characters with whole words and sentences. And solving coded phrases will help to condition your brain. Many hours of fun with 118 puzzles is a perfect idea for an evening boredom but also for a gift. It's a game for children to develop logical thinking and thanks to the theme "do you know that" to learn new things. It is a book for adults to kill boredom, relax and have a good time. This puzzle is great for seniors, after all, they also need to take care of the state of memory and mind. Features of this book: GUESS THE CODED FUNNY AND INTERESTING PHRASES TWO TYPES OF CODING LARGE PRINT FIND OUT DIFFERENT SURPRISING FACTS SOLVE THE WORD PUZZLE TRAIN YOUR MEMORY BY MEMORIZING DIFFERENT CODE STRAIN YOUR MIND THINK LOGICALLY ANTI BORING BOOK AND MORE.
Solve the code, take care of your mind and think logically by training your memory. Think no more and buy this book.

Mathematical Puzzles

Writing code is the easy part of your work as a software developer. This practical book lets you explore the other 90%—everything from requirements discovery and rapid prototyping to business analysis and designing for maintainability. Instead of providing neatly packaged advice from on high, author Gregory Brown presents detailed examples of the many problems developers encounter, including the thought process it takes to solve them. He does this in an unusual and entertaining fashion by making you the main character in a series of chapter-length stories. As these stories progress, the examples become more complex, and your responsibilities increase. Together, these stories take you on a journey that will make you question and refine the way you think about, and work on, software projects. Steps in this unique journey include: Using prototypes to explore project ideas Spotting hidden dependencies in incremental changes Identifying the pain points of service integrations Developing a rigorous approach towards problem-solving Designing software from the bottom up Data modeling in an imperfect world Gradual process improvement as an antidote for over-commitment The future of software development

To Mock a Mockingbird

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Girls Who Code

Learn to Code by Solving Problems is a practical introduction to programming using Python. It uses coding-competition challenges to teach you the mechanics of coding and how to think like a savvy programmer. Computers are capable of solving almost any problem when given the right instructions. That’s where programming comes in. This beginner’s book will have you writing Python programs right away. You’ll solve interesting problems drawn from real coding competitions and build your programming skills as you go. Every chapter presents problems from coding challenge websites, where online judges test your solutions and provide targeted feedback. As you practice using core Python features, functions, and techniques, you’ll develop a clear understanding of data structures, algorithms, and other programming basics. Bonus exercises invite you to explore new concepts on your own, and multiple-choice questions encourage you to think about how each piece of code works. You’ll learn how to: Write Python code, work with strings, and use variables Write programs that make decisions Make code more efficient with while and for loops Use Python sets, lists, and dictionaries to organize, sort, and search data Design programs using functions and top-down design Search algorithms and use Big O notation to design more efficient code By the end of the book, you’ll not only be proficient in Python, but you’ll also understand how to think through problems and tackle them with code. Programming languages come and go, but this book gives you the lasting foundation you need to start thinking like a programmer.

An Introduction to Formal Logic

Learn to think like a coder without a computer! Each of the fun craft activities included in this book will teach you about a key concept of computer programming and can be done completely offline. Then you can put your skills into practice by trying out the simple programs provided in the online, child-friendly computer language, Scratch. This crafty coding book breaks down the principles of coding into bite-sized chunks that will get you thinking like a computer scientist in no time. Learn about loops by making a friendship bracelet, find out about programming by planning a scavenger hunt, and discover how functions work with paper fortune tellers. Children can then use their new knowledge to code for real by following
the clear instructions to build programs in Scratch 3.0. Perfect for kids aged 7-9, the various STEAM activities will help teach children the crucial skills of logical thinking that will give them a head-start for when they begin programming on a computer. Famous scientist pages teach children about coding pioneers, such as Alan Turing and Katherine Johnson, and topic pages, such as the Internet, give kids a wider understanding of the subject. Written by computer science expert Kiki Prottsman, How to be a Coder is so much fun, kids won't realize they're learning!

**Mazes for Programmers**

Offers eighty brain-twisting puzzles featuring riddles and real-life conundrums to stimulate logical thinking.

**How to code in Python: GCSE, iGCSE, National 4/5 and Higher**

Have you ever thought that computer science should include more dragons and wizards? Computational Fairy Tales introduces principles of computational thinking, illustrating high-level computer science concepts, the motivation behind them, and their application in a non-computer—fairy tale—domain. It's a quest that will take you from learning the basics of programming in a blacksmith's forge to fighting curses with recursion. Fifteen seers delivered the same prophecy, without so much as a single minstrel to lighten the mood: an unknown darkness threatens the kingdom. Suddenly, Princess Ann finds herself sent forth alone to save the kingdom. Leaving behind her home, family, and pet turtle Fido, Princess Ann must face goblin attacks, magical curses, arrogant scholars, an unpleasant oracle, and rude Boolean waiters. Along the way she must build a war chest of computational knowledge to survive the coming challenge.

**JavaScript Programming Pattern**

It is the Python version of "Data Structures and Algorithms Made Easy." Table of Contents: goo.gl/VLEUca Sample Chapter: goo.gl/8AEcYk Source Code: goo.gl/LBxXdt The sample chapter should give you a very good idea of the quality and style of our book. In particular, be sure you are comfortable with the level and with our Python coding style. This book focuses on giving solutions for complex problems in data structures and algorithm. It even provides multiple solutions for a single problem, thus familiarizing readers with different possible approaches to the same problem. "Data Structure and Algorithmic Thinking with Python" is designed to give a jump-start to programmers, job hunters and those who are appearing for exams. All the code in this book are written in Python. It contains many programming puzzles that not only encourage analytical thinking, but also prepares readers for interviews. This book, with its focused and practical approach, can help readers quickly pick up the concepts and techniques for developing efficient and effective solutions to problems. Topics covered include: Organization of Chapters Introduction Recursion and Backtracking Linked Lists Stacks Queues Trees Priority Queues 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 Hacks on Bit-wise Programming Other Programming Questions

**Emmy in the Key of Code**

Learning Algorithms Through Programming and Puzzle Solving is one of the first textbooks to emerge from the recent Massive Open Online Course (MOOC) revolution and a companion to the authors' online specialization on Coursera and MicroMasters Program on edX. The book introduces a programming-centric approach to learning algorithms and strikes a unique balance between algorithmic ideas, programming challenges, and puzzle solving. Since the launch of this project on Coursera and edX, hundreds of thousands students tried to solve programming challenges and algorithmic puzzles covered in this book. The book is also a step towards developing an Intelligent Tutoring System for learning algorithms. In a
classroom, once a student takes a wrong turn, there are limited opportunities to ask a question, resulting in a learning breakdown, or the inability to progress further without individual guidance. When a student suffers a learning breakdown, that student needs immediate help in order to proceed. Traditional textbooks do not provide such help, but the automated grading system described in this MOOC book does! The book is accompanied by additional educational materials that include the book website, video lectures, slides, FAQs, and other resources available at Coursera and EdX.

Computational Thinking and Coding for Every Student

What will you learn from this book? It's no secret the world around you is becoming more connected, more configurable, more programmable, more computational. You can remain a passive participant, or you can learn to code. With Head First Learn to Code you’ll learn how to think computationally and how to write code to make your computer, mobile device, or anything with a CPU do things for you. Using the Python programming language, you'll learn step by step the core concepts of programming as well as many fundamental topics from computer science, such as data structures, storage, abstraction, recursion, and modularity. Why does this book look so different? Based on the latest research in cognitive science and learning theory, Head First Learn to Code uses a visually rich format to engage your mind, rather than a text-heavy approach that puts you to sleep. Why waste your time struggling with new concepts? This multi-sensory learning experience is designed for the way your brain really works.

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