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CRACKING CODES WITH PYTHON

AN INTRODUCTION TO BUILDING AND BREAKING CIPHERS

No Starch Press Learn how to program in Python while making and breaking ciphers—algorithms used to create and send secret messages! After a crash course in Python programming basics, you'll learn to make, test, and hack programs that encrypt text with classical ciphers like the transposition cipher and Vigenère cipher. You'll begin with simple programs for the reverse and Caesar ciphers and then work your way up to public key cryptography, the type of encryption used to secure today's online transactions, including digital signatures, email, and Bitcoin. Each program includes the full code and a line-by-line explanation of how things work. By the end of the book, you'll have learned how to code in Python and you'll have the clever programs to prove it! You'll also learn how to: - Combine loops, variables, and flow control statements into real working programs - Use dictionary files to instantly detect whether decrypted messages are valid English or gibberish - Create test programs to make sure that your code encrypts and decrypts correctly - Code (and hack!) a working example of the affine cipher, which uses modular arithmetic to encrypt a message - Break ciphers with techniques such as brute-force and frequency analysis There's no better way to learn to code than to play with real programs. Cracking Codes with Python makes the learning fun!

HACKING SECRET CIPHERS WITH PYTHON

Createspace Independent Pub Hacking Secret Ciphers with Python not only teaches you how to write in secret ciphers with paper and pencil. This book teaches you how to write your own cipher programs and also the hacking programs that can break the encrypted messages from these ciphers. Unfortunately, the programs in this book won't get the reader in trouble with the law (or rather, fortunately) but it is a guide on the basics of both cryptography and the Python programming language. Instead of presenting a dull laundry list of concepts, this book provides the source code to several fun programming projects for adults and young adults.

INVENT YOUR OWN COMPUTER GAMES WITH PYTHON, 4TH EDITION

No Starch Press Invent Your Own Computer Games with Python will teach you how to make computer games using the popular Python programming language—even if you've never programmed before! Begin by building classic games like Hangman, Guess the Number, and Tic-Tac-Toe, and then work your way up to more advanced games, like a text-based treasure hunting game and an animated collision-dodging game with sound effects. Along the way, you'll learn key programming and math concepts that will help you take your game programming to the next level. Learn how to: -Combine loops, variables, and flow control statements into real working programs -Choose the right data structures for the job, such as lists, dictionaries, and tuples -Add graphics and animation to your games with the pygame module -Handle keyboard and mouse input -Program simple artificial intelligence so you can play against the computer -Use cryptography to convert text messages into secret code -Debug your programs and find common errors As you work through each game, you'll build a solid foundation in Python and an understanding of computer science fundamentals. What new game will you create with the power of Python? The projects in this book are compatible with Python 3.

AUTOMATE THE BORING STUFF WITH PYTHON, 2ND EDITION

PRACTICAL PROGRAMMING FOR TOTAL BEGINNERS

No Starch Press The second edition of this best-selling Python book (over 500,000 copies sold!) uses Python 3 to teach even the technically uninclined how to write programs that do in minutes what would take hours to do by hand. There is no prior programming experience required and the book is loved by liberal arts majors and geeks alike. If you've ever spent hours renaming files or updating hundreds of spreadsheet cells, you know how tedious tasks like these can be. But what if you could have your computer do them for you? In this fully revised second edition of the best-selling

classic Automate the Boring Stuff with Python, you'll learn how to use Python to write programs that do in minutes what would take you hours to do by hand--no prior programming experience required. You'll learn the basics of Python and explore Python's rich library of modules for performing specific tasks, like scraping data off websites, reading PDF and Word documents, and automating clicking and typing tasks. The second edition of this international fan favorite includes a brand-new chapter on input validation, as well as tutorials on automating Gmail and Google Sheets, plus tips on automatically updating CSV files. You'll learn how to create programs that effortlessly perform useful feats of automation to:

- Search for text in a file or across multiple files
- Create, update, move, and rename files and folders
- Search the Web and download online content
- Update and format data in Excel spreadsheets of any size
- Split, merge, watermark, and encrypt PDFs
- Send email responses and text notifications
- Fill out online forms

Step-by-step instructions walk you through each program, and updated practice projects at the end of each chapter challenge you to improve those programs and use your newfound skills to automate similar tasks. Don't spend your time doing work a well-trained monkey could do. Even if you've never written a line of code, you can make your computer do the grunt work. Learn how in Automate the Boring Stuff with Python, 2nd Edition.

CRACKING THE PYTHON - AN INTRODUCTION TO COMPUTER PROGRAMMING

Createspace Independent Publishing Platform This book is well designed for learners at all ages ranged from middle or high school students to adults who want to learn coding as it does not assume any prior background in computer programming. Python is chosen as the programming language used in this book as I believe it is suitable and convenient for all beginners to start learning computer programming. If you are an absolute beginner, this book is the right choice for you to step into the world of Computer Science. If you are an experienced learner, this book brings you to an interesting journey to Python discovery.

THE BIG BOOK OF SMALL PYTHON PROJECTS

81 EASY PRACTICE PROGRAMS

No Starch Press Best-selling author Al Sweigart shows you how to easily build over 80 fun programs with minimal code and maximum creativity. If you've mastered basic Python syntax and you're ready to start writing programs, you'll find The Big Book of Small Python Projects both enlightening and fun. This collection of 81 Python projects will have you making digital art, games, animations, counting programs, and more right away. Once you see how the code works, you'll practice re-creating the programs and experiment by adding your own custom touches. These simple, text-based programs are 256 lines of code or less. And whether it's a vintage screensaver, a snail-racing game, a clickbait headline generator, or animated strands of DNA, each project is designed to be self-contained so you can easily share it online. You'll create:

- Hangman, Blackjack, and other games to play against your friends or the computer
- Simulations of a forest fire, a million dice rolls, and a Japanese abacus
- Animations like a virtual fish tank, a rotating cube, and a bouncing DVD logo screensaver
- A first-person 3D maze game
- Encryption programs that use ciphers like ROT13 and Vigenère to conceal text

If you're tired of standard step-by-step tutorials, you'll love the learn-by-doing approach of The Big Book of Small Python Projects. It's proof that good things come in small programs!

BEYOND THE BASIC STUFF WITH PYTHON

BEST PRACTICES FOR WRITING CLEAN CODE

No Starch Press BRIDGE THE GAP BETWEEN NOVICE AND PROFESSIONAL You've completed a basic Python programming tutorial or finished Al Sweigart's bestseller, Automate the Boring Stuff with Python. What's the next step toward becoming a capable, confident software developer? Welcome to Beyond the Basic Stuff with Python. More than a mere collection of advanced syntax and masterful tips for writing clean code, you'll learn how to advance your Python programming skills by using the command line and other professional tools like code formatters, type checkers, linters, and version control. Sweigart takes you through best practices for setting up your development environment, naming variables, and improving readability, then tackles documentation, organization and performance measurement, as well as object-oriented design and the Big-O algorithm analysis commonly used in coding interviews. The skills you learn will boost your ability to program--not just in Python but in any language. You'll learn: Coding style, and how to use Python's Black auto-formatting tool for cleaner code Common sources of bugs, and how to detect them with static analyzers How to structure the files in your code projects with the Cookiecutter template tool Functional programming techniques like lambda and higher-order functions How to profile the speed of your code with Python's built-in timeit and cProfile modules The computer science behind Big-O algorithm analysis How to make your comments and docstrings informative, and how often to write them How to create classes in object-oriented programming, and why they're used to organize code Toward the end of the book you'll read a detailed source-code breakdown of two classic command-line games, the Tower of Hanoi (a logic puzzle) and Four-in-a-Row (a two-player tile-dropping game), and a breakdown of how their code follows the book's best practices. You'll test your skills by implementing the program yourself. Of course, no single book can make you a professional software developer. But Beyond the Basic Stuff with Python will get you further down that path and make you a better programmer, as you learn to write readable code that's easy to debug and perfectly Pythonic Requirements: Covers Python 3.6 and higher

THE CODE BOOK

HOW TO MAKE IT, BREAK IT, HACK IT, CRACK IT

Ember Provides a review of cryptography, its evolution over time, and its purpose throughout history from the era of Julius Caesar to the modern day.

IMPLEMENTING CRYPTOGRAPHY USING PYTHON

John Wiley & Sons Learn to deploy proven cryptographic tools in your applications and services Cryptography is, quite simply, what makes security and privacy in the digital world possible. Tech professionals, including programmers, IT admins, and security analysts, need to understand how cryptography works to protect users, data, and assets. Implementing Cryptography Using Python will teach you the essentials, so you can apply proven cryptographic tools to secure your applications and systems. Because this book uses Python, an easily accessible language that has become one of the standards for cryptography implementation, you'll be able to quickly learn how to secure applications and data of all kinds. In this easy-to-read guide, well-known cybersecurity expert Shannon Bray walks you through creating secure communications in public channels using public-key cryptography. You'll also explore methods of authenticating messages to ensure that they haven't been tampered with in transit. Finally, you'll learn how to use digital signatures to let others verify the messages sent through your services. Learn how to implement proven cryptographic tools, using easy-to-understand examples written in Python Discover the history of cryptography and understand its critical importance in today's digital communication systems Work through real-world examples to understand the pros and cons of various authentication methods Protect your end-users and ensure that your applications and systems are using up-to-date cryptography

PRACTICAL CRYPTOGRAPHY IN PYTHON

LEARNING CORRECT CRYPTOGRAPHY BY EXAMPLE

Apress Develop a greater intuition for the proper use of cryptography. This book teaches the basics of writing cryptographic algorithms in Python, demystifies cryptographic internals, and demonstrates common ways cryptography is used incorrectly. Cryptography is the lifeblood of the digital world's security infrastructure. From governments around the world to the average consumer, most communications are protected in some form or another by cryptography. These days, even Google searches are encrypted. Despite its ubiquity, cryptography is easy to misconfigure, misuse, and misunderstand. Developers building cryptographic operations into their applications are not typically experts in the subject, and may not fully grasp the implication of different algorithms, modes, and other parameters. The concepts in this book are largely taught by example, including incorrect uses of cryptography and how "bad" cryptography can be broken. By digging into the guts of cryptography, you can experience what works, what doesn't, and why. What You'll Learn Understand where cryptography is used, why, and how it gets misused Know what secure hashing is used for and its basic properties Get up to speed on algorithms and modes for block ciphers such as AES, and see how bad configurations break Use message integrity and/or digital signatures to protect messages Utilize modern symmetric ciphers such as AES-GCM and CHACHA Practice the basics of public key cryptography, including ECDSA signatures Discover how RSA encryption can be broken if insecure padding is used Employ TLS connections for secure communications Find out how certificates work and modern improvements such as certificate pinning and certificate transparency (CT) logs Who This Book Is For IT administrators and software developers familiar with Python. Although readers may have some knowledge of cryptography, the book assumes that the reader is starting from scratch.

CODING WITH MINECRAFT

BUILD TALLER, FARM FASTER, MINE DEEPER, AND AUTOMATE THE BORING STUFF

No Starch Press A hands-on introduction to coding that teaches you how to program bots to do cool things in the game you love--Minecraft! This book takes the robotic "turtle" method, and extends it to the 3D, interactive world of Minecraft. You've mined for diamonds, crafted dozens of tools, and built all sorts of structures--but what if you could program robots to do all of that for you in a fraction of the time? In Coding with Minecraft®, you'll create a virtual robot army with Lua, a programming language used by professional game developers. Step-by-step coding projects will show you how to write programs that automatically dig mines, collect materials, craft items, and build anything that you can imagine. Along the way, you'll explore key computer science concepts like data types, functions, variables, and more. Learn how to: - Program robots that make smart decisions with flow control - Reuse code so that your robots can farm any crop you want, including wheat, sugar cane, and even cacti! - Program a factory that generates infinite building supplies - Design an algorithm for creating walls and buildings of any size - Code yourself a pickaxe-swinging robotic lumberjack! - Create a robot that digs mine shafts with stairs so you can explore safely Bonus activities in each chapter will help you take your coding skills to the next level. By the end of the book, you'll understand how powerful coding can be and have plenty of robots at your beck and call.

SERIOUS PYTHON

BLACK-BELT ADVICE ON DEPLOYMENT, SCALABILITY, TESTING, AND MORE

No Starch Press An indispensable collection of practical tips and real-world advice for tackling common Python problems and taking your code to the next level. Features interviews with high-profile Python developers who share

their tips, tricks, best practices, and real-world advice gleaned from years of experience. Sharpen your Python skills as you dive deep into the Python programming language with *Serious Python*. You'll cover a range of advanced topics like multithreading and memorization, get advice from experts on things like designing APIs and dealing with databases, and learn Python internals to help you gain a deeper understanding of the language itself. Written for developers and experienced programmers, *Serious Python* brings together over 15 years of Python experience to teach you how to avoid common mistakes, write code more efficiently, and build better programs in less time. As you make your way through the book's extensive tutorials, you'll learn how to start a project and tackle topics like versioning, layouts, coding style, and automated checks. You'll learn how to package your software for distribution, optimize performance, use the right data structures, define functions efficiently, pick the right libraries, build future-proof programs, and optimize your programs down to the bytecode. You'll also learn how to:

- Make and use effective decorators and methods, including abstract, static, and class methods
- Employ Python for functional programming using generators, pure functions, and functional functions
- Extend flake8 to work with the abstract syntax tree (AST) to introduce more sophisticated automatic checks into your programs
- Apply dynamic performance analysis to identify bottlenecks in your code
- Work with relational databases and effectively manage and stream data with PostgreSQL

If you've been looking for a way to take your Python skills from good to great, *Serious Python* will help you get there. Learn from the experts and get seriously good at Python with *Serious Python*!

SCRATCH 3 PROGRAMMING PLAYGROUND

LEARN TO PROGRAM BY MAKING COOL GAMES

No Starch Press *A* project-filled introduction to coding that shows kids how to build programs by making cool games. Scratch, the colorful drag-and-drop programming language, is used by millions of first-time learners worldwide. Scratch 3 features an updated interface, new programming blocks, and the ability to run on tablets and smartphones, so you can learn how to code on the go. In *Scratch 3 Programming Playground*, you'll learn to code by making cool games. Get ready to destroy asteroids, shoot hoops, and slice and dice fruit! Each game includes easy-to-follow instructions with full-color images, review questions, and creative coding challenges to make the game your own. Want to add more levels or a cheat code? No problem, just write some code. You'll learn to make games like:

- Maze Runner: escape the maze!
- Snaaaaaake: gobble apples and avoid your own tail
- Asteroid Breaker: smash space rocks
- Fruit Slicer: a Fruit Ninja clone
- Brick Breaker: a remake of Breakout, the brick-breaking classic
- Platformer: a game inspired by Super Mario Bros

Learning how to program shouldn't be dry and dreary. With *Scratch 3 Programming Playground*, you'll make a game of it! Covers: Scratch 3

LEARN TO CODE BY SOLVING PROBLEMS

A PYTHON PROGRAMMING PRIMER

No Starch Press *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.

IMPRACTICAL PYTHON PROJECTS

PLAYFUL PROGRAMMING ACTIVITIES TO MAKE YOU SMARTER

No Starch Press *Impractical Python Projects* is a collection of fun and educational projects designed to entertain programmers while enhancing their Python skills. It picks up where the complete beginner books leave off, expanding on existing concepts and introducing new tools that you'll use every day. And to keep things interesting, each project includes a zany twist featuring historical incidents, pop culture references, and literary allusions. You'll flex your problem-solving skills and employ Python's many useful libraries to do things like:

- Help James Bond crack a high-tech safe with a hill-climbing algorithm
- Write haiku poems using Markov Chain Analysis
- Use genetic algorithms to breed a race of gigantic rats
- Crack the world's most successful military cipher using cryptanalysis
- Derive the anagram, "I am Lord Voldemort" using linguistical sieves
- Plan your parents' secure retirement with Monte Carlo simulation
- Save the sorceress Zatanna from a stabby death using paligrams
- Model the Milky Way and calculate our odds of detecting alien civilizations
- Help the world's smartest woman win the Monty Hall problem argument
- Reveal Jupiter's Great Red Spot using optical stacking
- Save the head of Mary, Queen of Scots with steganography
- Foil corporate security with

invisible electronic ink Simulate volcanoes, map Mars, and more, all while gaining valuable experience using free modules like Tkinter, matplotlib, Cprofile, Pylint, Pygame, Pillow, and Python-Docx. Whether you're looking to pick up some new Python skills or just need a pick-me-up, you'll find endless educational, geeky fun with Impractical Python Projects.

LEARN PYTHON VISUALLY

CREATIVE CODING WITH PROCESSING.PY

No Starch Press An accessible, visual, and creative approach to teaching core coding concepts using Python's Processing.py, an open-source graphical development environment. This beginners book introduces non-programmers to the fundamentals of computer coding within a visual, arts-focused context. Tristan Bunn's remarkably effective teaching approach is designed to help you visualize core programming concepts while you make cool pictures, animations, and simulations using Python Mode for the open-source Processing development environment. Right from the first chapter, you'll produce and manipulate colorful drawings, shapes and patterns as Bunn walks you through a series of easy-to-follow graphical coding projects that grow increasingly complex. You'll go from drawing with code to animating a bouncing DVD screensaver and practicing data-visualization techniques. Along the way, you'll encounter creative-yet-practical skill-building challenges that relate to everything from video games, cars, and coffee, to fine art, amoebas, and Pink Floyd. As you grow more fluent in both Python and programming in general, topics shift toward the mastery of algorithmic thinking, as you explore periodic motion, Lissajous curves, and using classes to create objects. You'll learn about: Basic coding theories and concepts, like variables, data types, pixel coordinates, control flow and algorithms Writing code that produces drawings, patterns, animations, data visualizations, user interfaces, and simulations Using conditional statements, iteration, randomness, lists and dictionaries Defining functions, reducing repetition, and making your code more modular How to write classes, and create objects to structure code more efficiently In addition to giving you a good grounding in general programming, the skills and knowledge you'll gain in this book are your entry point to coding for an ever-expanding horizon of creative technologies.

REAL-WORLD PYTHON

A HACKER'S GUIDE TO SOLVING PROBLEMS WITH CODE

No Starch Press A project-based approach to learning Python programming for beginners. Intriguing projects teach you how to tackle challenging problems with code. You've mastered the basics. Now you're ready to explore some of Python's more powerful tools. Real-World Python will show you how. Through a series of hands-on projects, you'll investigate and solve real-world problems using sophisticated computer vision, machine learning, data analysis, and language processing tools. You'll be introduced to important modules like OpenCV, NumPy, Pandas, NLTK, Bokeh, Beautiful Soup, Requests, HoloViews, Tkinter, turtle, matplotlib, and more. You'll create complete, working programs and think through intriguing projects that show you how to:

- Save shipwrecked sailors with an algorithm designed to prove the existence of God
- Detect asteroids and comets moving against a starfield
- Program a sentry gun to shoot your enemies and spare your friends
- Select landing sites for a Mars probe using real NASA maps
- Send unbreakable messages based on a book code
- Survive a zombie outbreak using data science
- Discover exoplanets and alien megastructures orbiting distant stars
- Test the hypothesis that we're all living in a computer simulation
- And more!

If you're tired of learning the bare essentials of Python Programming with isolated snippets of code, you'll relish the relevant and geeky fun of Real-World Python!

HACKING WITH PYTHON

THE ULTIMATE BEGINNERS GUIDE

Createspace Independent Publishing Platform Hacking with Python: The Ultimate Beginners Guide This book will show you how to use Python, create your own hacking tools, and make the most out of available resources that are made using this programming language. If you do not have experience in programming, don't worry - this book will show guide you through understanding the basic concepts of programming and navigating Python codes. This book will also serve as your guide in understanding common hacking methodologies and in learning how different hackers use them for exploiting vulnerabilities or improving security. You will also be able to create your own hacking scripts using Python, use modules and libraries that are available from third-party sources, and learn how to tweak existing hacking scripts to address your own computing needs. Order your copy now!

CRACKING THE CODING INTERVIEW

150 PROGRAMMING INTERVIEW QUESTIONS AND SOLUTIONS

CreateSpace 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.

PYTHON PROGRAMMING

AN INTRODUCTION TO COMPUTER SCIENCE

Franklin, Beedle & Associates, Inc. This book is suitable for use in a university-level first course in computing (CS1), as well as the increasingly popular course known as CS0. It is difficult for many students to master basic concepts in computer science and programming. A large portion of the confusion can be blamed on the complexity of the tools and materials that are traditionally used to teach CS1 and CS2. This textbook was written with a single overarching goal: to present the core concepts of computer science as simply as possible without being simplistic.

MATH ADVENTURES WITH PYTHON

AN ILLUSTRATED GUIDE TO EXPLORING MATH WITH CODE

No Starch Press Learn math by getting creative with code! Use the Python programming language to transform learning high school-level math topics like algebra, geometry, trigonometry, and calculus! Math Adventures with Python will show you how to harness the power of programming to keep math relevant and fun. With the aid of the Python programming language, you'll learn how to visualize solutions to a range of math problems as you use code to explore key mathematical concepts like algebra, trigonometry, matrices, and cellular automata. Once you've learned the programming basics like loops and variables, you'll write your own programs to solve equations quickly, make cool things like an interactive rainbow grid, and automate tedious tasks like factoring numbers and finding square roots. You'll learn how to write functions to draw and manipulate shapes, create oscillating sine waves, and solve equations graphically. You'll also learn how to: - Draw and transform 2D and 3D graphics with matrices - Make colorful designs like the Mandelbrot and Julia sets with complex numbers - Use recursion to create fractals like the Koch snowflake and the Sierpinski triangle - Generate virtual sheep that graze on grass and multiply autonomously - Crack secret codes using genetic algorithms As you work through the book's numerous examples and increasingly challenging exercises, you'll code your own solutions, create beautiful visualizations, and see just how much more fun math can be!

TEACH YOUR KIDS TO CODE

A PARENT-FRIENDLY GUIDE TO PYTHON PROGRAMMING

No Starch Press Teach Your Kids to Code is a parent's and teacher's guide to teaching kids basic programming and problem solving using Python, the powerful language used in college courses and by tech companies like Google and IBM. Step-by-step explanations will have kids learning computational thinking right away, while visual and game-oriented examples hold their attention. Friendly introductions to fundamental programming concepts such as variables, loops, and functions will help even the youngest programmers build the skills they need to make their own cool games and applications. Whether you've been coding for years or have never programmed anything at all, Teach Your Kids to Code will help you show your young programmer how to: -Explore geometry by drawing colorful shapes with Turtle graphics -Write programs to encode and decode messages, play Rock-Paper-Scissors, and calculate how tall someone is in Ping-Pong balls -Create fun, playable games like War, Yahtzee, and Pong -Add interactivity, animation, and sound to their apps Teach Your Kids to Code is the perfect companion to any introductory programming class or after-school meet-up, or simply your educational efforts at home. Spend some fun, productive afternoons at the computer with your kids—you can all learn something!

LEARN ETHICAL HACKING FROM SCRATCH

YOUR STEPPING STONE TO PENETRATION TESTING

Packt Publishing Ltd Learn how to hack systems like black hat hackers and secure them like security experts **Key Features** Understand how computer systems work and their vulnerabilities Exploit weaknesses and hack into machines to test their security Learn how to secure systems from hackers **Book Description** This book starts with the basics of ethical hacking, how to practice hacking safely and legally, and how to install and interact with Kali Linux and the Linux terminal. You will explore network hacking, where you will see how to test the security of wired and wireless networks. You'll also learn how to crack the password for any Wi-Fi network (whether it uses WEP, WPA, or WPA2) and spy on the connected devices. Moving on, you will discover how to gain access to remote computer systems using client-side and server-side attacks. You will also get the hang of post-exploitation techniques, including remotely controlling and interacting with the systems that you compromised. Towards the end of the book, you will be able to pick up web application hacking techniques. You'll see how to discover, exploit, and prevent a number of website vulnerabilities, such as XSS and SQL injections. The attacks covered are practical techniques that work against real systems and are purely for educational purposes. At the end of each section, you will learn how to detect, prevent, and secure systems from these attacks. What you will learn **Understand ethical hacking and the different fields and types of hackers Set up a penetration testing lab to practice safe and legal hacking Explore Linux basics, commands, and how to interact with the terminal Access password-protected networks and spy on connected clients Use server and**

client-side attacks to hack and control remote computers Control a hacked system remotely and use it to hack other systems Discover, exploit, and prevent a number of web application vulnerabilities such as XSS and SQL injections Who this book is for Learning Ethical Hacking from Scratch is for anyone interested in learning how to hack and test the security of systems like professional hackers and security experts.

INTRODUCTION TO MODERN CRYPTOGRAPHY

CRC Press Now the most used textbook for introductory cryptography courses in both mathematics and computer science, the Third Edition builds upon previous editions by offering several new sections, topics, and exercises. The authors present the core principles of modern cryptography, with emphasis on formal definitions, rigorous proofs of security.

CODES, CIPHERS, SECRETS AND CRYPTIC COMMUNICATION

MAKING AND BREAKING SECRET MESSAGES FROM HIEROGLYPHOS TO THE INTERNET

Black Dog & Leventhal Pub Covert communications have won or lost wars, exposed political intrigue, disguised secret religions and societies, and secured financial transactions. This immensely readable world history of clandestine communication—finally in paperback—includes illustrations, diagrams, and puzzles that instruct readers how to become amateur cryptographers. It's the last word on secret languages!

DOING MATH WITH PYTHON

USE PROGRAMMING TO EXPLORE ALGEBRA, STATISTICS, CALCULUS, AND MORE!

No Starch Press Doing Math with Python shows you how to use Python to delve into high school-level math topics like statistics, geometry, probability, and calculus. You'll start with simple projects, like a factoring program and a quadratic-equation solver, and then create more complex projects once you've gotten the hang of things. Along the way, you'll discover new ways to explore math and gain valuable programming skills that you'll use throughout your study of math and computer science. Learn how to: -Describe your data with statistics, and visualize it with line graphs, bar charts, and scatter plots -Explore set theory and probability with programs for coin flips, dicing, and other games of chance -Solve algebra problems using Python's symbolic math functions -Draw geometric shapes and explore fractals like the Barnsley fern, the Sierpinski triangle, and the Mandelbrot set -Write programs to find derivatives and integrate functions Creative coding challenges and applied examples help you see how you can put your new math and coding skills into practice. You'll write an inequality solver, plot gravity's effect on how far a bullet will travel, shuffle a deck of cards, estimate the area of a circle by throwing 100,000 "darts" at a board, explore the relationship between the Fibonacci sequence and the golden ratio, and more. Whether you're interested in math but have yet to dip into programming or you're a teacher looking to bring programming into the classroom, you'll find that Python makes programming easy and practical. Let Python handle the grunt work while you focus on the math. Uses Python 3

HASH CRACK

PASSWORD CRACKING MANUAL

Independently Published The Hash Crack: Password Cracking Manual v3 is an expanded reference guide for password recovery (cracking) methods, tools, and analysis techniques. A compilation of basic and advanced techniques to assist penetration testers and network security professionals evaluate their organization's posture. The Hash Crack manual contains syntax and examples for the most popular cracking and analysis tools and will save you hours of research looking up tool usage. It also includes basic cracking knowledge and methodologies every security professional should know when dealing with password attack capabilities. Hash Crack contains all the tables, commands, online resources, and more to complete your cracking security kit. This version expands on techniques to extract hashes from a myriad of operating systems, devices, data, files, and images. Lastly, it contains updated tool usage and syntax for the most popular cracking tools.

LEARNING PYTHON

POWERFUL OBJECT-ORIENTED PROGRAMMING

"O'Reilly Media, Inc." Get a comprehensive, in-depth introduction to the core Python language with this hands-on book. Based on author Mark Lutz's popular training course, this updated fifth edition will help you quickly write efficient, high-quality code with Python. It's an ideal way to begin, whether you're new to programming or a professional developer versed in other languages. Complete with quizzes, exercises, and helpful illustrations, this easy-to-follow, self-paced tutorial gets you started with both Python 2.7 and 3.3— the latest releases in the 3.X and 2.X lines—plus all other releases in common use today. You'll also learn some advanced language features that recently have become more common in Python code. Explore Python's major built-in object types such as numbers, lists, and dictionaries Create and process objects with Python statements, and learn Python's general syntax model Use functions to avoid code redundancy and package code for reuse Organize statements, functions, and other tools into larger components with modules Dive into classes: Python's object-oriented programming tool for structuring code Write large programs with Python's exception-handling model and development tools Learn advanced Python tools, including decorators, descriptors, metaclasses, and Unicode processing

CODE-CRACKING FOR BEGINNERS

Twinkl “Mum says it’s for our own protection. London’s just getting too dangerous.” It’s 1941. Hitler’s ruthless Luftwaffe has already started its deadly bombing raids across London. So, when cousins Sam and Lily are evacuated north to a sleepy seaside hamlet, they hope that they’ll find safety. Instead, the two children encounter local hostility, a shifty character sending messages in a secretive code, and a treacherous plot. Can Sam, Lily and their new friends crack the code before hundreds are killed? Download the full eBook and explore supporting teaching materials at www.twinkl.com/originals Join Twinkl Book Club to receive printed story books every half-term at www.twinkl.co.uk/book-club (UK only).

HISTORY OF CRYPTOGRAPHY AND CRYPTANALYSIS

CODES, CIPHERS, AND THEIR ALGORITHMS

Springer This accessible textbook presents a fascinating review of cryptography and cryptanalysis across history. The text relates the earliest use of the monoalphabetic cipher in the ancient world, the development of the “unbreakable” Vigenère cipher, and an account of how cryptology entered the arsenal of military intelligence during the American Revolutionary War. Moving on to the American Civil War, the book explains how the Union solved the Vigenère ciphers used by the Confederates, before investigating the development of cipher machines throughout World War I and II. This is then followed by an exploration of cryptology in the computer age, from public-key cryptography and web security, to criminal cyber-attacks and cyber-warfare. Looking to the future, the role of cryptography in the Internet of Things is also discussed, along with the potential impact of quantum computing. Topics and features: presents a history of cryptology from ancient Rome to the present day, with a focus on cryptology in the 20th and 21st centuries; reviews the different types of cryptographic algorithms used to create secret messages, and the various methods for breaking such secret messages; provides engaging examples throughout the book illustrating the use of cryptographic algorithms in different historical periods; describes the notable contributions to cryptology of Herbert Yardley, William and Elizebeth Smith Friedman, Lester Hill, Agnes Meyer Driscoll, and Claude Shannon; concludes with a review of tantalizing unsolved mysteries in cryptology, such as the Voynich Manuscript, the Beale Ciphers, and the Kryptos sculpture. This engaging work is ideal as both a primary text for courses on the history of cryptology, and as a supplementary text for advanced undergraduate courses on computer security. No prior background in mathematics is assumed, beyond what would be encountered in an introductory course on discrete mathematics.

PYTHON PLAYGROUND

GEEKY PROJECTS FOR THE CURIOUS PROGRAMMER

No Starch Press Python is a powerful programming language that’s easy to learn and fun to play with. But once you’ve gotten a handle on the basics, what do you do next? Python Playground is a collection of imaginative programming projects that will inspire you to use Python to make art and music, build simulations of real-world phenomena, and interact with hardware like the Arduino and Raspberry Pi. You’ll learn to use common Python tools and libraries like numpy, matplotlib, and pygame to do things like: -Generate Spirograph-like patterns using parametric equations and the turtle module -Create music on your computer by simulating frequency overtones -Translate graphical images into ASCII art -Write an autostereogram program that produces 3D images hidden beneath random patterns -Make realistic animations with OpenGL shaders by exploring particle systems, transparency, and billboard techniques -Construct 3D visualizations using data from CT and MRI scans -Build a laser show that responds to music by hooking up your computer to an Arduino Programming shouldn’t be a chore. Have some solid, geeky fun with Python Playground. The projects in this book are compatible with both Python 2 and 3.

CRYPTO

HOW THE CODE REBELS BEAT THE GOVERNMENT--SAVING PRIVACY IN THE DIGITAL AGE

Penguin If you've ever made a secure purchase with your credit card over the Internet, then you have seen cryptography, or "crypto", in action. From Stephen Levy—the author who made "hackers" a household word—comes this account of a revolution that is already affecting every citizen in the twenty-first century. Crypto tells the inside story of how a group of "crypto rebels"—nerds and visionaries turned freedom fighters—teamed up with corporate interests to beat Big Brother and ensure our privacy on the Internet. Levy's history of one of the most controversial and important topics of the digital age reads like the best futuristic fiction.

CRACKING CODES AND CRYPTOGRAMS FOR DUMMIES

John Wiley & Sons The fast and easy way to crack codes and cryptograms Did you love Dan Brown's The Lost Symbol? Are you fascinated by secret codes and deciphering lost history? Cracking Codes and Cryptograms For Dummies shows you how to think like a symbologist to uncover mysteries and history by solving cryptograms and cracking codes that relate to Freemasonry, the Knights Templar, the Illuminati, and other secret societies and conspiracy theories. You'll get easy-to-follow instructions for solving everything from the simplest puzzles to fiendishly difficult ciphers using secret codes and lost symbols. Over 350 handcrafted cryptograms and ciphers of varying types Tips and tricks for cracking even the toughest code Sutherland is a syndicated puzzle author; Koltko-Rivera is an expert on the major symbols and ceremonies of Freemasonry With the helpful information in this friendly guide, you'll be unveiling

mysteries and shedding light on history in no time!

SUPER SCRATCH PROGRAMMING ADVENTURE! (COVERS VERSION 2)

LEARN TO PROGRAM BY MAKING COOL GAMES (COVERS VERSION 2)

No Starch Press Scratch is the wildly popular educational programming language used by millions of first-time learners in classrooms and homes worldwide. By dragging together colorful blocks of code, kids can learn computer programming concepts and make cool games and animations. The latest version, Scratch 2, brings the language right into your web browser, with no need to download software. In Super Scratch Programming Adventure!, kids learn programming fundamentals as they make their very own playable video games. They'll create projects inspired by classic arcade games that can be programmed (and played!) in an afternoon. Patient, step-by-step explanations of the code and fun programming challenges will have kids creating their own games in no time. This full-color comic book makes programming concepts like variables, flow control, and subroutines effortless to absorb. Packed with ideas for games that kids will be proud to show off, Super Scratch Programming Adventure! is the perfect first step for the budding programmer. Now Updated for Scratch 2 The free Super Scratch Educator's Guide provides commentary and advice on the book's games suitable for teachers and parents. For Ages 8 and Up

PYTHON FOR ALGORITHMIC TRADING

O'Reilly Media Algorithmic trading, once the exclusive domain of institutional players, is now open to small organizations and individual traders using online platforms. The tool of choice for many traders today is Python and its ecosystem of powerful packages. In this practical book, author Yves Hilpisch shows students, academics, and practitioners how to use Python in the fascinating field of algorithmic trading. You'll learn several ways to apply Python to different aspects of algorithmic trading, such as backtesting trading strategies and interacting with online trading platforms. Some of the biggest buy- and sell-side institutions make heavy use of Python. By exploring options for systematically building and deploying automated algorithmic trading strategies, this book will help you level the playing field. Set up a proper Python environment for algorithmic trading Learn how to retrieve financial data from public and proprietary data sources Explore vectorization for financial analytics with NumPy and pandas Master vectorized backtesting of different algorithmic trading strategies Generate market predictions by using machine learning and deep learning Tackle real-time processing of streaming data with socket programming tools Implement automated algorithmic trading strategies with the OANDA and FXCM trading platforms

TAMING PYTHON BY PROGRAMMING

KHANNA PUBLISHING HOUSE This is a great book for Python Beginner and Advanced Learner which covers Basics to Advanced Python Programming where each topic is explained with the help of Illustrations and Examples. More than 450 solved programs of this book are tested in Python 3.4.3 for windows. The range of Python Topics covered makes this book unique which can be used as a self study material or for instructor assisted teaching. This books covers Python Syllabus of all major national and international universities. Also it includes frequently asked questions for interviews and examination which are provided at the end of each chapter.

ETHICAL HACKING

A HANDS-ON INTRODUCTION TO BREAKING IN

No Starch Press A hands-on guide to hacking computer systems from the ground up, from capturing traffic to crafting sneaky, successful trojans. A crash course in modern hacking techniques, Ethical Hacking is already being used to prepare the next generation of offensive security experts. In its many hands-on labs, you'll explore crucial skills for any aspiring penetration tester, security researcher, or malware analyst. You'll begin with the basics: capturing a victim's network traffic with an ARP spoofing attack and then viewing it in Wireshark. From there, you'll deploy reverse shells that let you remotely run commands on a victim's computer, encrypt files by writing your own ransomware in Python, and fake emails like the ones used in phishing attacks. In advanced chapters, you'll learn how to fuzz for new vulnerabilities, craft trojans and rootkits, exploit websites with SQL injection, and escalate your privileges to extract credentials, which you'll use to traverse a private network. You'll work with a wide range of professional penetration testing tools—and learn to write your own tools in Python—as you practice tasks like: • Deploying the Metasploit framework's reverse shells and embedding them in innocent-seeming files • Capturing passwords in a corporate Windows network using Mimikatz • Scanning (almost) every device on the internet to find potential victims • Installing Linux rootkits that modify a victim's operating system • Performing advanced Cross-Site Scripting (XSS) attacks that execute sophisticated JavaScript payloads Along the way, you'll gain a foundation in the relevant computing technologies. Discover how advanced fuzzers work behind the scenes, learn how internet traffic gets encrypted, explore the inner mechanisms of nation-state malware like Drovorub, and much more. Developed with feedback from cybersecurity students, Ethical Hacking addresses contemporary issues in the field not often covered in other books and will prepare you for a career in penetration testing. Most importantly, you'll be able to think like an ethical hacker: someone who can carefully analyze systems and creatively gain access to them.

THE PYTHON BIBLE 7 IN 1

VOLUMES ONE TO SEVEN (BEGINNER, INTERMEDIATE, DATA SCIENCE, MACHINE LEARNING, FINANCE, NEURAL NETWORKS, COMPUTER VISION)

Become A Python Expert From Scratch! Python's popularity is growing tremendously and it's becoming more and more relevant economically and technologically. The fields of application of the language range from machine learning, over computer networking to business applications. In this 7 in 1 version you get a full collection of The Python Bible series. From the first volume on, you will be lead on a structured way to the mastery of Python. Besides the basics and the intermediate concepts, you will also learn how to apply it in areas like machine learning, financial analysis and neural networks. At the end you will additionally be introduced to one of the most interesting fields of computer science, which is computer vision After reading this collection, you will not only understand the programming language but you will also be able to work on projects in the stated fields. You will become a true Python expert! What You Will Learn: Beginner Level: - Basics of Programming with Python- Automation of Simple Processes- Programming of Modular Python Applications- Easy Transition to Other Languages (Java, C++ etc.) Intermediate Level: - Object-Oriented Programming- Network Programming- Penetration Testing with Python- Regular Expressions- Multithreading- XML Processing- Database Programming- Logging Data Science: - Analyzing and Processing Big Data- Statistical Calculations with Python- Visualization of Data- Working with NumPy, Matplotlib and Pandas Machine Learning: - Predicting Data with Machine Learning- Building Neural Networks with Tensorflow- Recognizing Handwritten Digits with Neural Networks- Applying Linear Models like Regression- K-Nearest-Neighbors Classification- K-Means Clustering- Support Vector Machines Finance: - Financial Analysis with Python- Analyzing and Graphing Stock Data- Plotting Trendlines- Predicting Share Prices with Machine Learning Neural Networks: - Generating Poetic d104s with Neural Networks- Predicting Sequential Data (Stocks, Weather etc.)- Processing Audio and Video Data- Recognizing Objects Like Horses, Cars and Trucks on Images- Understanding Recurrent Neural Networks- Understanding Convolutional Neural Networks Computer Vision: - Making unreadable texts readable again with thresholding- Extracting essential information out of images and videos- Edge detection- Template matching and feature matching- Movement detection in videos- Professional object recognition with OpenCV Start Your Journey And Become A Python Expert With The Python Bible!

CLOJURE FOR THE BRAVE AND TRUE

LEARN THE ULTIMATE LANGUAGE AND BECOME A BETTER PROGRAMMER

No Starch Press For weeks, months—nay!—from the very moment you were born, you've felt it calling to you. At long last you'll be united with the programming language you've been longing for: Clojure! As a Lisp-style functional programming language, Clojure lets you write robust and elegant code, and because it runs on the Java Virtual Machine, you can take advantage of the vast Java ecosystem. Clojure for the Brave and True offers a "dessert-first" approach: you'll start playing with real programs immediately, as you steadily acclimate to the abstract but powerful features of Lisp and functional programming. Inside you'll find an offbeat, practical guide to Clojure, filled with quirky sample programs that catch cheese thieves and track glittery vampires. Learn how to: -Wield Clojure's core functions -Use Emacs for Clojure development -Write macros to modify Clojure itself -Use Clojure's tools to simplify concurrency and parallel programming Clojure for the Brave and True assumes no prior experience with Clojure, the Java Virtual Machine, or functional programming. Are you ready, brave reader, to meet your true destiny? Grab your best pair of parentheses—you're about to embark on an epic journey into the world of Clojure!

HOW SOFTWARE WORKS

THE MAGIC BEHIND ENCRYPTION, CGI, SEARCH ENGINES, AND OTHER EVERYDAY TECHNOLOGIES

No Starch Press We use software every day to perform all kinds of magical, powerful tasks. It's the force behind stunning CGI graphics, safe online shopping, and speedy Google searches. Software drives the modern world, but its inner workings remain a mystery to many. How Software Works explains how computers perform common-yet-amazing tasks that we take for granted every day. Inside you'll learn: -How data is encrypted -How passwords are used and protected -How computer graphics are created -How video is compressed for streaming and storage -How data is searched (and found) in huge databases -How programs can work together on the same problem without conflict -How data travels over the Internet How Software Works breaks down these processes with patient explanations and intuitive diagrams so that anyone can understand—no technical background is required, and you won't be reading through any code. In plain English, you'll examine the intricate logic behind the technologies you constantly use but never understood. If you've ever wondered what really goes on behind your computer screen, How Software Works will give you fascinating look into the software all around you.