

## Python Tricks A Buffet Of Awesome Python Features

Treading on Python is designed to bring developers and others who are anxious to learn Python up to speed quickly. Not only does it teach the basics of syntax, but it condenses years of experience. You will learn warts, gotchas, best practices and hints that have been gleaned through the years in days. You will hit the ground running and running in the right way.

Become a Python programmer—and have fun doing it! Start writing software that solves real problems, even if you have absolutely no programming experience! This friendly, easy, full-color book puts you in total control of your own learning, empowering you to build unique and useful programs. Microsoft has completely reinvented the beginning programmer's tutorial, reflecting deep research into how today's beginners learn, and why other books fall short. *Begin to Code with Python* is packed with innovations, from its "Snaps" prebuilt operations to its "Make Something Happen" projects. Whether you're a total beginner or you've tried before, this guide will put the power, excitement, and fun of programming where it belongs: in your hands! Easy, friendly, and you're in control! Learn how to... Get, install, and use powerful free tools to create modern Python programs Learn key concepts from 170 sample programs, and use them to jumpstart your own Discover exactly what happens when a program runs Approach program development with a professional perspective Learn the core elements of the Python language Build more complex software with classes, methods, and objects Organize programs so they're easy to build and improve Capture and respond to user input Store and manipulate many types of real-world data Define custom data types to solve specific problems Create interactive games that are fun to play Build modern web and cloud-based applications Use pre-built libraries to quickly create powerful software Get code samples, including complete apps, at: <https://aka.ms/BegintoCodePython/downloads> About This Book For absolute beginners who've never written a line of code For anyone who's been frustrated with other beginning programming books or courses For people who've started out with other languages and now want to learn Python Works with Windows PC, Apple Mac, Linux PC, or Raspberry Pi Includes mapping of MTA exam objectives that are covered in this book, as well as an appendix with further explanation of some of the topics on the exam

*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 palindromes - 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*.

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*.

The Hands-On, Example-Rich *Introduction to Pandas Data Analysis in Python Today*, analysts must manage data characterized by extraordinary variety, velocity, and volume. Using the open source Pandas library, you can use Python to rapidly automate and perform virtually any data analysis task, no matter how large or complex. Pandas can help you ensure the veracity of your data, visualize it for effective decision-making, and reliably reproduce analyses across multiple datasets. *Pandas for Everyone* brings together practical knowledge and insight for solving real problems with Pandas, even if you're new to Python data analysis. Daniel Y. Chen introduces key concepts through simple but practical examples, incrementally building on them to solve more difficult, real-world problems. Chen gives you a jumpstart on using Pandas with a realistic dataset and covers combining datasets, handling missing data, and structuring datasets for easier analysis and visualization. He demonstrates powerful data cleaning techniques, from basic string manipulation to applying functions simultaneously across dataframes. Once your data is ready, Chen guides you through fitting models for prediction, clustering, inference, and exploration. He provides tips on performance and scalability, and introduces you to the wider Python data analysis ecosystem. Work with DataFrames and Series, and import or export data Create plots with matplotlib, seaborn, and pandas Combine datasets and handle missing data Reshape, tidy, and clean datasets so they're easier to work with Convert data types and manipulate text strings Apply functions to scale data manipulations Aggregate, transform, and filter large datasets with groupby Leverage Pandas' advanced date and time capabilities Fit linear models using statsmodels and scikit-learn libraries Use generalized linear modeling to fit models with different response variables Compare multiple models to select the "best" Regularize to overcome overfitting and improve performance Use clustering in unsupervised

machine learning

If you need help writing programs in Python 3, or want to update older Python 2 code, this book is just the ticket. Packed with practical recipes written and tested with Python 3.3, this unique cookbook is for experienced Python programmers who want to focus on modern tools and idioms. Inside, you'll find complete recipes for more than a dozen topics, covering the core Python language as well as tasks common to a wide variety of application domains. Each recipe contains code samples you can use in your projects right away, along with a discussion about how and why the solution works. Topics include: Data Structures and Algorithms Strings and Text Numbers, Dates, and Times Iterators and Generators Files and I/O Data Encoding and Processing Functions Classes and Objects Metaprogramming Modules and Packages Network and Web Programming Concurrency Utility Scripting and System Administration Testing, Debugging, and Exceptions C Extensions

"I don't even feel like I've scratched the surface of what I can do with Python" With Python Tricks: The Book you'll discover Python's best practices and the power of beautiful & Pythonic code with simple examples and a step-by-step narrative. You'll get one step closer to mastering Python, so you can write beautiful and idiomatic code that comes to you naturally. Learning the ins and outs of Python is difficult-and with this book you'll be able to focus on the practical skills that really matter. Discover the "hidden gold" in Python's standard library and start writing clean and Pythonic code today. Who Should Read This Book: If you're wondering which lesser known parts in Python you should know about, you'll get a roadmap with this book. Discover cool (yet practical!) Python tricks and blow your coworkers' minds in your next code review. If you've got experience with legacy versions of Python, the book will get you up to speed with modern patterns and features introduced in Python 3 and backported to Python 2. If you've worked with other programming languages and you want to get up to speed with Python, you'll pick up the idioms and practical tips you need to become a confident and effective Pythonista. If you want to make Python your own and learn how to write clean and Pythonic code, you'll discover best practices and little-known tricks to round out your knowledge. What Python Developers Say About The Book: "I kept thinking that I wished I had access to a book like this when I started learning Python many years ago." - Mariatta Wijaya, Python Core Developer "This book makes you write better Python code!" - Bob Belderbos, Software Developer at Oracle "Far from being just a shallow collection of snippets, this book will leave the attentive reader with a deeper understanding of the inner workings of Python as well as an appreciation for its beauty." - Ben Felder, Pythonista "It's like having a seasoned tutor explaining, well, tricks!" - Daniel Meyer, Sr. Desktop Administrator at Tesla Inc.

"It's easy to start writing code with Python: that's why the language is so immensely popular. However, Python has unique strengths, charms, and expressivity that can be hard to grasp at first -- as well as hidden pitfalls that can easily trip you up if you aren't aware of them. Effective Python will help you harness the full power of Python to write exceptionally robust, efficient, maintainable, and well-performing code. Utilizing the concise, scenario-driven style pioneered in Scott Meyers's best-selling Effective C++, Brett Slatkin brings together 53 Python best practices, tips, shortcuts, and realistic code examples from expert programmers. Through realistic examples, Slatkin uncovers little-known Python quirks, intricacies, and idioms that powerfully impact code behavior and performance. You'll learn how to choose the most efficient and effective way to accomplish key tasks when multiple options exist, and how to write code that's easier to understand, maintain, and improve. Drawing on his deep understanding of Python's capabilities, Slatkin offers practical advice for each major area of development with both Python 3.x and Python 2.x. Coverage includes: \* Algorithms \* Objects \* Concurrency \* Collaboration \* Built-in modules \* Production techniques \* And more Each section contains specific, actionable guidelines organized into items, each with carefully worded advice supported by detailed technical arguments and illuminating examples. Using Effective Python, you can systematically improve all the Python code you write: not by blindly following rules or mimicking incomprehensible idioms, but by gaining a deep understanding of the technical reasons why they make sense."--[Source inconnue].

The second edition of the best-selling Python book in the world (over 1 million copies sold!). A fast-paced, no-nonsense guide to programming in Python. Updated and thoroughly revised to reflect the latest in Python code and practices. Python Crash Course is the world's best-selling guide to the Python programming language. This fast-paced, thorough introduction to programming with Python will have you writing programs, solving problems, and making things that work in no time. In the first half of the book, you'll learn basic programming concepts, such as variables, lists, classes, and loops, and practice writing clean code with exercises for each topic. You'll also learn how to make your programs interactive and test your code safely before adding it to a project. In the second half, you'll put your new knowledge into practice with three substantial projects: a Space Invaders-inspired arcade game, a set of data visualizations with Python's handy libraries, and a simple web app you can deploy online. As you work through the book, you'll learn how to:

- Use powerful Python libraries and tools, including Pygame, Matplotlib, Plotly, and Django
- Make 2D games that respond to keypresses and mouse clicks, and that increase in difficulty
- Use data to generate interactive visualizations
- Create and customize web apps and deploy them safely online
- Deal with mistakes and errors so you can solve your own programming problems

If you've been thinking about digging into programming, Python Crash Course will get you writing real programs fast. Why wait any longer? Start your engines and code!

Get your guided tour through the Python 3.9 interpreter: Unlock the inner workings of the Python language, compile the Python interpreter from source code, and participate in the development of CPython. Are there certain parts of Python that just seem like magic? This book explains the concepts, ideas, and technicalities of the Python interpreter in an approachable and hands-on fashion. Once you see how Python works at the interpreter level, you can optimize your applications and fully leverage the power of Python. By the End of the Book You'll Be Able To: Read and navigate the CPython 3.9 interpreter source code. You'll deeply comprehend and appreciate the inner workings of concepts like lists, dictionaries, and generators. Make changes to the Python syntax and compile your own version of CPython, from scratch. You'll customize the Python core data types with new functionality and run CPython's automated test suite. Master Python's memory management capabilities and scale your Python code with parallelism and concurrency. Debug C and Python code like a true professional. Profile and benchmark the performance of your Python code and the runtime. Participate in the development of CPython and know how to contribute to future versions of the Python interpreter and standard library. How great would it feel to give back to the community as a "Python Core Developer?" With this book

you'll cover the critical concepts behind the internals of CPython and how they work with visual explanations as you go along. Each page in the book has been carefully laid out with beautiful typography, syntax highlighting for code examples. What Python Developers Say About The Book: "It's the book that I wish existed years ago when I started my Python journey. [...] After reading this book your skills will grow and you will be able solve even more complex problems that can improve our world." - Carol Willing, CPython Core Developer & Member of the CPython Steering Council "CPython Internals is a great (and unique) resource for anybody looking to take their knowledge of Python to a deeper level." - Dan Bader, Author of Python Tricks "There are a ton of books on Python which teach the language, but I haven't really come across anything that would go about explaining the internals to those curious minded." - Milan Patel, Vice President at (a major investment bank)

Make the Leap From Beginner to Intermediate in Python... Python Basics: A Practical Introduction to Python 3 Your Complete Python Curriculum-With Exercises, Interactive Quizzes, and Sample Projects What should you learn about Python in the beginning to get a strong foundation? With Python Basics, you'll not only cover the core concepts you really need to know, but you'll also learn them in the most efficient order with the help of practical exercises and interactive quizzes. You'll know enough to be dangerous with Python, fast! Who Should Read This Book If you're new to Python, you'll get a practical, step-by-step roadmap on developing your foundational skills. You'll be introduced to each concept and language feature in a logical order. Every step in this curriculum is explained and illustrated with short, clear code samples. Our goal with this book is to educate, not to impress or intimidate. If you're familiar with some basic programming concepts, you'll get a clear and well-tested introduction to Python. This is a practical introduction to Python that jumps right into the meat and potatoes without sacrificing substance. If you have prior experience with languages like VBA, PowerShell, R, Perl, C, C++, C#, Java, or Swift the numerous exercises within each chapter will fast-track your progress. If you're a seasoned developer, you'll get a Python 3 crash course that brings you up to speed with modern Python programming. Mix and match the chapters that interest you the most and use the interactive quizzes and review exercises to check your learning progress as you go along. If you're a self-starter completely new to coding, you'll get practical and motivating examples. You'll begin by installing Python and setting up a coding environment on your computer from scratch, and then continue from there. We'll get you coding right away so that you become competent and knowledgeable enough to solve real-world problems, fast. Develop a passion for programming by solving interesting problems with Python every day! If you're looking to break into a coding or data-science career, you'll pick up the practical foundations with this book. We won't just dump a boat load of theoretical information on you so you can "sink or swim"-instead you'll learn from hands-on, practical examples one step at a time. Each concept is broken down for you so you'll always know what you can do with it in practical terms. If you're interested in teaching others "how to Python," this will be your guidebook. If you're looking to stoke the coding flame in your coworkers, kids, or relatives-use our material to teach them. All the sequencing has been done for you so you'll always know what to cover next and how to explain it. What Python Developers Say About The Book: "Go forth and learn this amazing language using this great book." - Michael Kennedy, Talk Python "The wording is casual, easy to understand, and makes the information flow well." - Thomas Wong, Pythonista "I floundered for a long time trying to teach myself. I slogged through dozens of incomplete online tutorials. I snoozed through hours of boring screencasts. I gave up on countless cruffy books from big-time publishers. And then I found Real Python. The easy-to-follow, step-by-step instructions break the big concepts down into bite-sized chunks written in plain English. The authors never forget their audience and are consistently thorough and detailed in their explanations. I'm up and running now, but I constantly refer to the material for guidance." - Jared Nielsen, Pythonista

Python is a general purpose programming used by many start-ups. Its design emphasizes code readability, notably using significant whitespace. Did you know Mozilla Firefox, PBS, Reddit, and even NASA! All use Python programming for their websites? Providing constructs whether small or large scale Python is versatile and can be used in a variety of ways. Winner of the 2014 Jolt Award for "Best Book" "Whether you are an experienced programmer or are starting your career, Python in Practice is full of valuable advice and example to help you improve your craft by thinking about problems from different perspectives, introducing tools, and detailing techniques to create more effective solutions." --Doug Hellmann, Senior Developer, DreamHost If you're an experienced Python programmer, Python in Practice will help you improve the quality, reliability, speed, maintainability, and usability of all your Python programs. Mark Summerfield focuses on four key themes: design patterns for coding elegance, faster processing through concurrency and compiled Python (Cython), high-level networking, and graphics. He identifies well-proven design patterns that are useful in Python, illuminates them with expert-quality code, and explains why some object-oriented design patterns are irrelevant to Python. He also explodes several counterproductive myths about Python programming--showing, for example, how Python can take full advantage of multicore hardware. All examples, including three complete case studies, have been tested with Python 3.3 (and, where possible, Python 3.2 and 3.1) and crafted to maintain compatibility with future Python 3.x versions. All code has been tested on Linux, and most code has also been tested on OS X and Windows. All code may be downloaded at [www.qtrac.eu/pipbook.html](http://www.qtrac.eu/pipbook.html). Coverage includes Leveraging Python's most effective creational, structural, and behavioral design patterns Supporting concurrency with Python's multiprocessing, threading, and concurrent.futures modules Avoiding concurrency problems using thread-safe queues and futures rather than fragile locks Simplifying networking with high-level modules, including xmlrpclib and RPyC Accelerating Python code with Cython, C-based Python modules, profiling, and other techniques Creating modern-looking GUI applications with Tkinter Leveraging today's powerful graphics hardware via the OpenGL API using pyglet and PyOpenGL

There are many books for those new to Python, new to programming, or both. Powerful Python is different. Written for experienced developers like you, its carefully crafted chapters teach intermediate and advanced strategies, patterns, and

tools for modern Python. Focused on Python 3, with full support for 2.7. DRM-free digital upgrade: [powerfulpython.com/book-upgrade](http://powerfulpython.com/book-upgrade) "Feels like Neo learning Jiu jitsu in the Matrix." - John Beauford (@johnbeauford) "I just wanted to let you know what an excellent book this is... I keep going back to your book to learn Python." - Fahad Qazi, London, UK "Thanks. Keep up the good work. Your chapter on decorators is the best I have seen on that topic." - Leon Tietz, Minnesota, USA "Powerful Python is already helping me get huge optimization gains." - Timothy Dobbins (@TmthyDobbins) "What have I found good and valuable about the book so far? Everything honestly. The clear explanations, solid code examples have really helped me advance as a Python coder... Thank you! It has really helped me grasp some advanced concepts that I felt were beyond my abilities." - Nick S., Colorado, USA For data scientists, back-end engineers, web developers, sysadmins, devops, QA testers and more. What's included: An unrelenting selective spotlight on what's most valuable and impactful to working, full-time, professional Python developers Well-researched, detailed, realistic code on almost every page, powerfully illustrating key points. Very little "toy code" How to use decorators to add rich features to functions and classes; untangle distinct, frustratingly intertwined concerns in your code; and build powerful, extensible software frameworks How to use Python in ways that incentivize other developers to use and re-use your code, again and again... amplifying the impact of the code you write, and boosting your reputation among your peers Powerfully and easily weave iterators and generators throughout your applications, making them massively scalable, highly performant, and far more readable and maintainable How to fully leverage Python's exception and error model... giving you a detailed understanding even experienced Pythonistas often lack, and putting some of the most powerfully Pythonic exception-handling patterns in your toolbox How "magic methods" imbue natural, readable, expressive syntax into your classes and objects... and how to "break the rules" to craft stunningly intuitive, compellingly reusable library interfaces Valuable and powerful design patterns, and how Python's special language features give you uniquely powerful implementations not possible in other languages Deep and detailed instruction on how to write practical, realistic unit tests... using test-driven development to easily get into a state of flow... where you find yourself implementing feature after feature, keeping your focus with ease for long periods of time How to rapidly set up effective logging for scripts, sprawling Python applications, and everything in between An enthusiastic and unapologetic focus on Python 3, and what makes it great... with full explanation and support for getting the same results with Python 2.7 More at [PowerfulPython.com](http://PowerfulPython.com).

Python Crash Course is a fast-paced, thorough introduction to Python that will have you writing programs, solving problems, and making things that work in no time. In the first half of the book, you'll learn about basic programming concepts, such as lists, dictionaries, classes, and loops, and practice writing clean and readable code with exercises for each topic. You'll also learn how to make your programs interactive and how to test your code safely before adding it to a project. In the second half of the book, you'll put your new knowledge into practice with three substantial projects: a Space Invaders–inspired arcade game, data visualizations with Python's super-handly libraries, and a simple web app you can deploy online. As you work through Python Crash Course you'll learn how to: –Use powerful Python libraries and tools, including matplotlib, NumPy, and Pygal –Make 2D games that respond to keypresses and mouse clicks, and that grow more difficult as the game progresses –Work with data to generate interactive visualizations –Create and customize Web apps and deploy them safely online –Deal with mistakes and errors so you can solve your own programming problems If you've been thinking seriously about digging into programming, Python Crash Course will get you up to speed and have you writing real programs fast. Why wait any longer? Start your engines and code! Uses Python 2 and 3

Python for Software Design is a concise introduction to software design using the Python programming language. The focus is on the programming process, with special emphasis on debugging. The book includes a wide range of exercises, from short examples to substantial projects, so that students have ample opportunity to practice each new concept.

Thoroughly revised for the latest version of Python, this book explains basic concepts in a clear and explicit way that takes very seriously one thing for granted—that the reader knows nothing about computer programming. Addressed to anyone who has no prior programming knowledge or experience, but a desire to learn programming with Python, it teaches the first thing that every novice programmer needs to learn, which is Algorithmic Thinking. Algorithmic Thinking involves more than just learning code. It is a problem-solving process that involves learning how to code. This edition contains all the popular features of the previous edition and adds a significant number of exercises, as well as extensive revisions and updates. Apart from Python's lists, it now also covers dictionaries, while a brand new section provides an effective introduction to the next field that a programmer needs to work with, which is Object Oriented Programming (OOP). This book has a class course structure with questions and exercises at the end of each chapter so you can test what you have learned right away and improve your comprehension. With 250 solved and 450 unsolved exercises, 475 true/false, about 150 multiple choice, and 200 review questions and crosswords (the solutions and the answers to which can be found on the Internet), this book is ideal for novices or average programmers, for self-study high school students first-year college or university students teachers professors anyone who wants to start learning or teaching computer programming using the proper conventions and techniques

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*  
A collection of progressively more complex Python programming challenges to help students learn to code in a naturally engaging way. 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*!

The "Writing Idiomatic Python" book is finally here! Chock full of code samples, you'll learn the "Pythonic" way to accomplish common tasks. Each idiom comes with a detailed description, example code showing the "wrong" way to do it, and code for the idiomatic, "Pythonic" alternative. \*This version of the book is for Python 3.3+. There is also a Python 2.7.3+ version available.\* "Writing Idiomatic Python" contains the most common and important Python idioms in a format that maximizes identification and understanding. Each idiom is presented as a recommendation to write some commonly used piece of code. It is followed by an explanation of why the idiom is important. It also contains two code samples: the "Harmful" way to write it and the "Idiomatic" way. \* The "Harmful" way helps you identify the idiom in your own code. \* The "Idiomatic" way shows you how to easily translate that code into idiomatic Python. This book is perfect for you: \*

- \* If you're coming to Python from another programming language
- \* If you're learning Python as a first programming language
- \* If you're looking to increase the readability, maintainability, and correctness of your Python code

What is "Idiomatic" Python? Every programming language has its own idioms. Programming language idioms are nothing more than the generally accepted way of writing a certain piece of code. Consistently writing idiomatic code has a number of important benefits: \*

- \* Others can read and understand your code easily
- \* Others can maintain and enhance your code with minimal effort
- \* Your code will contain fewer bugs
- \* Your code will teach others to write correct code without any effort on your part

This book is written with the programming beginner in mind. The book is designed to get you up to speed with Python as quickly as possible. It covers everything you need to know to become proficient in Python. The book begins with the simplest programming concepts and builds with each chapter. Working examples have been carefully selected to demonstrate the concept being explored. There is an explanation for every line of code, so you are never left in the dark. Once you have mastered the key concepts of the language, you will be presented with some of the most important use cases for Python. For experienced programmers, you will learn how to use Python to manage files on your computer, connect to and query relational databases and how to script cloud architecture on Amazon Web services (AWS). The best way to get the most out of this book is to play around with the examples. Try to rewrite them from memory. Once you can write them, you are ready for Python in business. Remember to ignore line numbers in the examples. The line numbers were manually inserted as annotations to help describe the Python scripts.

Embrace the mobile gaming revolution by creating popular iOS games with Swift 4.2 Key Features Learn to create games for iPhone and iPad with the latest Swift Programming language Understand the fundamental concepts of game development like game physics, camera action, sprites, controls, among others Build Augmented reality games using ARKit for true performance Book Description Swift is the perfect choice for game development. Developers are intrigued by Swift and want to make use of new features to develop their best games yet. Packed with best practices and easy-to-use examples, this book leads you step by step through the development of your first Swift game. The book starts by introducing Swift's best features – including its new ones for game development. Using SpriteKit, you will learn how to animate sprites and textures. Along the way, you will master physics, animations, and collision effects and how to build the UI aspects of a game. You will then work on creating a 3D game using the SceneKit framework. Further, we will look at how to add monetization and integrate Game Center. With iOS 12, we see the introduction of ARKit 2.0. This new version allows us to integrate shared experiences such as multiplayer augmented reality and persistent AR that is tied to a specific location so that the same information can be replicated on all connected devices. In the next section, we will dive into creating Augmented Reality games using SpriteKit and SceneKit. Then, finally, we will see how to create a Multipeer AR project to connect two devices, and send and receive data back and forth between those devices in real time. By the end of this book, you will be able to create your own iOS games using Swift and publish them on the iOS App Store. What you will learn

- Deliver powerful graphics, physics, and sound in your game by using SpriteKit and SceneKit
- Set up a scene using the new capabilities of the scene editor and custom classes
- Maximize gameplay with little-known tips and strategies for fun, repeatable action
- Make use of animations, graphics, and particles to polish your game
- Understand the current mobile monetization landscape
- Integrate your game with Game Center
- Develop 2D and 3D Augmented Reality games using Apple's new ARKit framework
- Publish your game to the App Store

Who this book is for If you wish to create and publish iOS games using Swift, then this book is for you. No prior game development or experience with Apple ecosystem is needed.

Python's simplicity lets you become productive quickly, but this often means you aren't using everything it has to offer. With this hands-on guide, you'll learn how to write effective, idiomatic Python code by leveraging its best—and possibly most neglected—features. Author Luciano Ramalho takes you through Python's core language features and libraries, and shows you how to make your code shorter, faster, and more readable at the same time. Many experienced programmers try to bend Python to fit patterns they learned from other languages, and never discover Python features outside of their experience. With this book, those Python programmers will thoroughly learn how to become proficient in Python 3. This book covers:

- Python data model: understand how special methods are the key to the consistent behavior of objects
- Data structures: take full advantage of built-in types, and understand the text vs bytes duality in the Unicode age
- Functions as objects: view Python functions as first-class objects, and understand how this affects popular design patterns
- Object-oriented idioms: build classes by learning about references, mutability, interfaces, operator overloading, and multiple inheritance
- Control flow: leverage context managers, generators, coroutines, and concurrency with the concurrent.futures and asyncio packages
- Metaprogramming: understand how properties, attribute descriptors, class decorators, and metaclasses work

This is a full course in python and with the latest updated codes to fit your needs. It doesn't matter whether you are a beginner, intermediate or expert because this book is a step by step course that guarantees mastery in python programming. Your Python code may run correctly, but you need it to run faster. Updated for Python 3, this expanded edition shows you how to locate performance bottlenecks and significantly speed up your code in high-data-volume programs. By exploring the fundamental theory behind design choices, High Performance Python helps you gain a deeper understanding of Python's implementation. How do you take advantage of multicore architectures or clusters? Or build a system that scales up and down without losing reliability? Experienced Python programmers will learn concrete solutions to many issues, along with war stories from companies that use high-performance Python for social media analytics, productionized machine learning, and more. Get a better grasp of NumPy, Cython, and profilers. Learn how Python abstracts the underlying computer architecture. Use profiling to find bottlenecks in CPU time and memory usage. Write efficient programs by choosing appropriate data structures. Speed up matrix and vector computations. Use tools to compile Python down to machine code. Manage multiple I/O and computational operations concurrently. Convert multiprocessing code to run on local or remote clusters. Deploy code faster using tools like Docker.

"Have you always wanted to learn computer programming but are afraid it'll be too difficult for you? Or perhaps you know other programming languages but are interested in learning the Python language fast? This book is for you"--Page 4 of cover.

Want to learn the Python language without slogging your way through how-to manuals? With Head First Python, you'll quickly grasp Python's fundamentals, working with the built-in data structures and functions. Then you'll move on to building your very own webapp, exploring database management, exception handling, and data wrangling. If you're intrigued by what you can do with context managers, decorators, comprehensions, and generators, it's all here. This second edition is a complete learning experience that will help you become a bonafide Python programmer in no time. Why does this book look so different? Based on the latest research in cognitive science and learning theory, Head First Python 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.

Mike Driscoll takes you on a journey talking to a hall-of-fame list of truly remarkable Python experts. You'll be inspired every time by their passion for the Python language, as they share with you their experiences, contributions, and careers in Python. Key Features Hear from these key Python thinkers about the current status of Python, and where it's heading in the future. Listen to their close thoughts on significant Python topics, such as Python's role in scientific computing, and machine learning. Understand the direction of Python, and what needs to change for Python 4. Book Description Each of these twenty Python Interviews can inspire and refresh your relationship with Python and the people who make Python what it is today. Let these interviews spark your own creativity, and discover how you also have the ability to make your mark on a thriving tech community. This book invites you to immerse in the Python landscape, and let these remarkable programmers show you how you too can connect and share with Python programmers around the world. Learn from their opinions, enjoy their stories, and use their tech tips. \* Brett Cannon - former director of the PSF, Python core developer, led the migration to Python 3. \* Steve Holden - tireless Python promoter and former chairman and director of the PSF. \* Carol Willing - former director of the PSF and Python core developer, Project Jupyter Steering Council member. \* Nick Coghlan - founding member of the PSF's Packaging Working Group and Python core developer. \* Jessica McKellar - former director of the PSF and Python activist. \* Marc-André Lemburg - Python core developer and founding member of the PSF. \* Glyph Lefkowitz - founder of Twisted and fellow of the PSF. \* Doug Hellmann - fellow of the PSF, creator of the Python Module of the Week blog, Python community member since 1998. \* Massimo Di Pierro - fellow of the PSF, data scientist and the inventor of web2py. \* Alex Martelli - fellow of the PSF and co-author of Python in a Nutshell. \* Barry Warsaw - fellow of the PSF, Python core developer since 1995, and original member of PythonLabs. \* Tarek Ziadé - founder of Afpy and author of Expert Python Programming. \* Sebastian Raschka - data scientist and author of Python Machine Learning. \* Wesley Chun - fellow of the PSF and author of the Core Python Programming books. \* Steven Lott - Python blogger and author of Python for Secret Agents. \* Oliver Schoenborn - author of Pypubsub and wxPython mailing list contributor. \* Al Sweigart - bestselling author of Automate the Boring Stuff with Python and creator of the Python modules Pyperclip and PyAutoGUI. \* Luciano Ramalho - fellow of the PSF and the author of Fluent Python. \* Mike Bayer - fellow of the PSF, creator of open source libraries including SQLAlchemy. \* Jake Vanderplas - data scientist and author of Python Data Science Handbook. What you will learn How successful programmers think The history of Python Insights into the minds of the Python core team Trends in Python programming Who this book is for Python programmers and students interested in the way that Python is used - past and present - with useful anecdotes. It will also be of interest to those looking to gain insights from top programmers.

The programming language Python was conceived in the late 1980s, [1] and its implementation was started in December 1989 [2] by Guido van Rossum at CWI in the Netherlands as a successor to the ABC (programming language) capable of exception handling and interfacing with the Amoeba operating system. [3] Van Rossum is Python's principal author, and his continuing central role in deciding the direction of Python is reflected in the title given to him by the Python community, Benevolent Dictator for Life (BDFL). [4] [5] Python was named for the BBC TV show Monty Python's Flying Circus. [6] Python 2.0 was released on October 16, 2000, with many major new features, including a cycle-detecting garbage collector (in addition to reference counting) for memory management and support for Unicode. However, the most important change was to the development process itself, with a shift to a more transparent and community-backed process. [7] Python 3.0, a major, backwards-incompatible release, was released on December 3, 2008 [8] after a long period of testing. Many of its major features have also been backported to the backwards-compatible Python 2.6 and 2.7. [9] In February 1991, van Rossum published the code (labeled version 0.9.0) to alt.sources. [10] Already present at this stage in development were classes with inheritance, exception handling, functions, and the core datatypes of list, dict, str and so on. Also in this initial release was a module system borrowed from Modula-3; Van Rossum describes the module as "one of Python's major programming units." [1] Python's exception model also resembles Modula-3's, with the addition of an else clause. [3] In 1994 comp.lang.python, the primary discussion forum for Python, was formed, marking a milestone in the growth of Python's userbase. [1] Python reached version 1.0 in January 1994. The major new features included in this release were the functional programming tools lambda, map, filter and reduce. Van Rossum stated that "Python acquired lambda, reduce(), filter() and map(), courtesy of a Lisp hacker who missed them and submitted working patches." [11] The last version released while Van Rossum was at CWI was Python 1.2. In 1995, Van Rossum continued his work on Python at the Corporation for National Research Initiatives (CNRI) in Reston, Virginia whence he released several versions. By version 1.4, Python had acquired several new features. Notable among these are the Modula-3 inspired keyword arguments (which are also similar to Common Lisp's

keyword arguments) and built-in support for complex numbers. Also included is a basic form of data hiding by name mangling, though this is easily bypassed.[12] During Van Rossum's stay at CNRI, he launched the Computer Programming for Everybody (CP4E) initiative, intending to make programming more accessible to more people, with a basic "literacy" in programming languages, similar to the basic English literacy and mathematics skills required by most employers. Python served a central role in this: because of its focus on clean syntax, it was already suitable, and CP4E's goals bore similarities to its predecessor, ABC. The project was funded by DARPA.[13] As of 2007, the CP4E project is inactive, and while Python attempts to be easily learnable and not too arcane in its syntax and semantics, reaching out to non-programmers is not an active concern.[14] Here are what people are saying about the book: This is the best beginner's tutorial I've ever seen! Thank you for your effort. -- Walt Michalik The best thing i found was "A Byte of Python," which is simply a brilliant book for a beginner. It's well written, the concepts are well explained with self evident examples. -- Joshua Robin Excellent gentle introduction to programming #Python for beginners -- Shan Rajasekaran Best newbie guide to python -- Nickson Kaigi start to love python with every single page read -- Herbert Feutl perfect beginners guide for python, will give u key to unlock magical world of python

Complete recipes spread across 15 chapters to help you overcome commonly faced issues by Python for everybody across the globe. Each recipe takes a problem-solution approach to resolve for effective Python. Key Features Develop expressive and effective Python programs Best practices and common idioms through carefully explained recipes Discover new ways to apply Python for data-focused development Make use of Python's optional type annotations Book Description Python is the preferred choice of developers, engineers, data scientists, and hobbyists everywhere. It is a great language that can power your applications and provide great speed, safety, and scalability. It can be used for simple scripting or sophisticated web applications. By exposing Python as a series of simple recipes, this book gives you insight into specific language features in a particular context. Having a tangible context helps make the language or a given standard library feature easier to understand. This book comes with 133 recipes on the latest version of Python 3.8. The recipes will benefit everyone, from beginners just starting out with Python to experts. You'll not only learn Python programming concepts but also how to build complex applications. The recipes will touch upon all necessary Python concepts related to data structures, object oriented programming, functional programming, and statistical programming. You will get acquainted with the nuances of Python syntax and how to effectively take advantage of it. By the end of this Python book, you will be equipped with knowledge of testing, web services, configuration, and application integration tips and tricks. You will be armed with the knowledge of how to create applications with flexible logging, powerful configuration, command-line options, automated unit tests, and good documentation. What you will learn See the intricate details of the Python syntax and how to use it to your advantage Improve your coding with Python readability through functions Manipulate data effectively using built-in data structures Get acquainted with advanced programming techniques in Python Equip yourself with functional and statistical programming features Write proper tests to be sure a program works as advertised Integrate application software using Python Who this book is for The Python book is for web developers, programmers, enterprise programmers, engineers, and big data scientists. If you are a beginner, this book will get you started. If you are experienced, it will expand your knowledge base. A basic knowledge of programming would help.

Get complete instructions for manipulating, processing, cleaning, and crunching datasets in Python. Updated for Python 3.6, the second edition of this hands-on guide is packed with practical case studies that show you how to solve a broad set of data analysis problems effectively. You'll learn the latest versions of pandas, NumPy, IPython, and Jupyter in the process. Written by Wes McKinney, the creator of the Python pandas project, this book is a practical, modern introduction to data science tools in Python. It's ideal for analysts new to Python and for Python programmers new to data science and scientific computing. Data files and related material are available on GitHub. Use the IPython shell and Jupyter notebook for exploratory computing Learn basic and advanced features in NumPy (Numerical Python) Get started with data analysis tools in the pandas library Use flexible tools to load, clean, transform, merge, and reshape data Create informative visualizations with matplotlib Apply the pandas groupby facility to slice, dice, and summarize datasets Analyze and manipulate regular and irregular time series data Learn how to solve real-world data analysis problems with thorough, detailed examples

Unleash the power of Python 3 objects About This Book Stop writing scripts and start architecting programs Learn the latest Python syntax and libraries A practical, hands-on tutorial that teaches you all about abstract design patterns and how to implement them in Python 3 Who This Book Is For If you're new to object-oriented programming techniques, or if you have basic Python skills and wish to learn in depth how and when to correctly apply object-oriented programming in Python to design software, this is the book for you. What You Will Learn Implement objects in Python by creating classes and defining methods Separate related objects into a taxonomy of classes and describe the properties and behaviors of those objects via the class interface Extend class functionality using inheritance Understand when to use object-oriented features, and more importantly when not to use them Discover what design patterns are and why they are different in Python Uncover the simplicity of unit testing and why it's so important in Python Grasp common concurrency techniques and pitfalls in Python 3 Exploit object-oriented programming in key Python technologies such as Kivy and Django. Object-oriented programming concurrently with asyncio In Detail Python 3 is more versatile and easier to use than ever. It runs on all major platforms in a huge array of use cases. Coding in Python minimizes development time and increases productivity in comparison to other languages. Clean, maintainable code is easy to both read and write using Python's clear, concise syntax. Object-oriented programming is a popular design paradigm in which data and behaviors are encapsulated in such a way that they can be manipulated together. Many modern programming languages utilize the powerful concepts behind object-oriented programming and Python is no exception. Starting with a detailed analysis of object-oriented analysis and design, you will use the Python programming language to clearly grasp key concepts from the object-oriented paradigm. This book fully explains classes, data encapsulation, inheritance, polymorphism, abstraction, and exceptions with an emphasis on when you can use each principle to develop well-designed software. You'll get an in-depth analysis of many common object-oriented design patterns that are more suitable to Python's unique style. This book will not just teach Python syntax, but will also build your confidence in how to program. You will also learn how to create maintainable applications by studying higher level design patterns. Following this, you'll learn the complexities of string and file manipulation, and how Python distinguishes between binary and textual data. Not one, but two very powerful automated testing systems will be introduced in the book. After you discover the joy of unit testing and just how easy it can be, you'll study higher level libraries such as database connectors and GUI toolkits and learn how they uniquely apply object-oriented principles. You'll learn how these principles will allow you to make greater use of key members of the Python eco-system such as Django and Kivy. This new edition includes all the topics that made

Python 3 Object-oriented Programming an instant Packt classic. It's also packed with updated content to reflect recent changes in the core Python library and covers modern third-party packages that were not available on the Python 3 platform when the book was first published. Style and approach Throughout the book you will learn key object-oriented programming techniques demonstrated by comprehensive case studies in the context of a larger project.

Looking for a simple, complete and effective book on Python? Do you want to approach its programming language? If yes, then keep reading. Have you had a dream to learn how to work with a coding language, to handle some of the different parts of your website, your computer, or even create your own application? Have you taken a look at some of the older coding languages and felt scared to even get started because they looked too difficult? The Python language is the right option for you to choose when you want to learn a language, and you want to make sure that it is as simple as possible. This updated Python Programming book will assist you quickly write efficient and high-quality Python programs. It is the best way to begin, whether you are a newbie to programming or a professional with prior experience in other programming niches. Get an in-depth and detailed introduction to the Python programming language using this hands-on guide! It is equipped with many exercises, helpful illustrations, and quizzes easy-to-follow. This self-paced book gets you on the go with both Python - the latest releases in the 3.X and 2.X lines - and all other releases in use today. You will also learn some advanced language characteristics that nowadays have become useful in Python programs. Inside this book you will find: \* Python's built-in object types such as numbers and sets \* A detailed explanation of data structures \* An advanced explanation of clustering with example \* Object oriented programming using Python \* Functions \* Polymorphism \* Inheritance \* Lists \* Tuples \* Time and Date \* Scope and lifetime of variables \* A program for coming up with a simple calculator using Python Language ...and many more amazing and interesting topics! In a matter of a few days you will be familiar with Python's building blocks, such assets, strings, dictionaries, and tuples; and be on your way to writing any program that you have ever dreamed about! Want to know more? Scroll to the top of the page and click the "buy now" button!

The World is changing rapidly and technology is at the very center of it. Technology is affecting our present. Technology drives and shapes our future. What better way to be part of that driving force than to learn the beating heart of all these computers and application? Coding. The Coding Languages for Absolute Beginners series aims to be The go-to-guide for beginners to get started on programming and learn the coding skills you need to build the technology and drive the future you want. And the best part about it, you'll learn from scratch not just 1, 2, 3 but 6 Programming Languages! In this series, you'll learn the basics, techniques and best practices for the following coding languages: Arduino C++ C# Powershell Python SQL This comprehensive beginners guide to these 6 Programming Languages gives you everything you need to know to get started on coding, and much much more! Before you know it, you'll start seeing results on screen and your on your way to mastering any, if not all, of these programming languages! Start your coding journey now!

Introducing Your Guide to Learning Python Illustrated Guide to Learning Python is designed to bring developers and others who are anxious to learn Python up to speed quickly. Not only does it teach the basics of syntax, but it condenses years of experience. You will learn warts, gotchas, best practices and hints that have been gleaned through the years in days. You will hit the ground running and running in the right way. Learn Python Quickly Python is an incredible language. It is powerful and applicable in many areas. It is used for automation of simple or complex tasks, numerical processing, web development, interactive games and more. Whether you are a programmer coming to Python from another language, managing Python programmers or wanting to learn to program, it makes sense to cut to the chase and learn Python the right way. You could scour blogs, websites and much longer tomes if you have time. Treading on Python lets you learn the hints and tips to be Pythonic quickly. Packed with Useful Hints and Tips You'll learn the best practices without wasting time searching or trying to force Python to be like other languages. I've collected all the gems I've gleaned over years of writing and teaching Python for you. A No Nonsense Guide to Mastering Basic Python Python is a programming language that lets you work more quickly and integrate your systems more effectively. You can learn to use Python and see almost immediate gains in productivity and lower maintenance costs. What you will learn: Distilled best practices and tips How interpreted languages work Using basic types such as Strings, Integers, and Floats Best practices for using the interpreter during development The difference between mutable and immutable data Sets, Lists, and Dictionaries, and when to use each Gathering keyboard input How to define a class Looping constructs Handling Exceptions in code Slicing sequences Creating modular code Using libraries Laying out code Community prescribed conventions

More physicists today are taking on the role of software developer as part of their research, but software development isn't always easy or obvious, even for physicists. This practical book teaches essential software development skills to help you automate and accomplish nearly any aspect of research in a physics-based field. Written by two PhDs in nuclear engineering, this book includes practical examples drawn from a working knowledge of physics concepts. You'll learn how to use the Python programming language to perform everything from collecting and analyzing data to building software and publishing your results. In four parts, this book includes: Getting Started: Jump into Python, the command line, data containers, functions, flow control and logic, and classes and objects Getting It Done: Learn about regular expressions, analysis and visualization, NumPy, storing data in files and HDF5, important data structures in physics, computing in parallel, and deploying software Getting It Right: Build pipelines and software, learn to use local and remote version control, and debug and test your code Getting It Out There: Document your code, process and publish your findings, and collaborate efficiently; dive into software licenses, ownership, and copyright procedures Learn how to program with Python from beginning to end. This book is for beginners who want to get up to speed quickly and become intermediate programmers fast!

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