

Effective Python 59 Specific Ways To Write Better Python

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. 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

Build software that combines Python's expressivity with the performance and control of C (and C++). It's possible with Cython, the compiler and hybrid programming language used by foundational packages such as NumPy, and prominent in projects including Pandas, h5py, and scikits-learn. In this practical guide, you'll learn how to use Cython to improve Python's performance—up to 3000x— and to wrap C and C++ libraries in Python with ease. Author Kurt Smith takes you through Cython's capabilities, with sample code and in-depth practice exercises. If you're just starting with Cython, or want to go deeper, you'll learn how this language is an essential part of any performance-oriented Python programmer's arsenal. Use Cython's static typing to speed up Python code Gain hands-on experience using Cython features to boost your numeric-heavy Python Create new types with Cython—and see how fast object-oriented programming in Python can be Effectively organize Cython code into separate modules and packages without sacrificing performance Use Cython to give Pythonic interfaces to C and C++ libraries Optimize code with Cython's runtime and compile-time profiling tools Use Cython's prange function to parallelize loops transparently with OpenMP

If you're an experienced Ruby programmer, Effective Ruby will help you harness Ruby's full power to write more robust, efficient, maintainable, and well-performing code. Drawing on nearly a decade of Ruby experience, Peter J. Jones brings together 48 Ruby best practices, expert tips, and shortcuts—all supported by realistic code examples. Jones offers practical advice for each major area of Ruby development, from modules to memory to metaprogramming. Throughout, he uncovers little-known idioms, quirks, pitfalls, and intricacies that powerfully impact code behavior and performance. Each item contains specific, actionable, clearly organized guidelines; careful advice; detailed technical arguments; and illuminating code examples. When multiple options exist, Jones shows you how to choose the one that will work best in your situation. Effective Ruby will help you systematically improve your code—not by blindly following rules, but by thoroughly understanding Ruby programming techniques. Key features of this concise guide include How to avoid pitfalls associated with Ruby's sometimes surprising idiosyncrasies What you should know about inheritance hierarchies to successfully use Rails (and other large frameworks) How to use misunderstood methods to do amazingly useful things with collections Better ways to use exceptions to improve code reliability Powerful metaprogramming approaches (and techniques to avoid) Practical, efficient testing solutions, including MiniTest Unit and Spec Testing How to reliably manage RubyGem dependencies How to make the most of Ruby's memory management and profiling tools How to improve code efficiency by understanding the Ruby interpreter's internals

Harness the power of multiple computers using Python through this fast-paced informative guide About This Book You'll learn to write data processing programs in Python that are highly available, reliable, and fault tolerant Make use of Amazon Web Services along with Python to establish a powerful remote computation system Train Python to handle data-intensive and resource hungry applications Who This Book Is For This book is for Python developers who have developed Python programs for data processing and now want to learn how to write fast, efficient programs that perform CPU-intensive data processing tasks. What You Will Learn Get an introduction to parallel and distributed computing See synchronous and asynchronous programming Explore parallelism in Python Distributed application with Celery Python in the Cloud Python on an HPC cluster Test and debug distributed applications In Detail CPU-intensive data processing tasks have become crucial considering the complexity of the various big data applications that are used today. Reducing the CPU utilization per process is very important to improve the overall speed of applications. This book will teach you how to perform parallel execution of computations by distributing them across multiple processors in a single machine, thus improving the overall performance of a big data processing task. We will cover synchronous and asynchronous models, shared memory and file systems, communication between various processes, synchronization, and more. Style and Approach This example based, step-by-step guide will show you how to make the best of your hardware configuration using Python for distributing applications.

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!

Violent Python shows you how to move from a theoretical understanding of offensive computing concepts to a practical implementation. Instead of relying on another attacker's tools, this book will teach you to forge your own weapons using the Python programming language. This book demonstrates how to write Python scripts to automate large-scale network attacks, extract metadata, and investigate forensic artifacts. It also shows how to write code to intercept and analyze network traffic using Python, craft and spoof wireless frames to attack

wireless and Bluetooth devices, and how to data-mine popular social media websites and evade modern anti-virus. Demonstrates how to write Python scripts to automate large-scale network attacks, extract metadata, and investigate forensic artifacts Write code to intercept and analyze network traffic using Python. Craft and spoof wireless frames to attack wireless and Bluetooth devices Data-mine popular social media websites and evade modern anti-virus

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

You Will Learn Python 3! Zed Shaw has perfected the world's best system for learning Python 3. Follow it and you will succeed—just like the millions of beginners Zed has taught to date! You bring the discipline, commitment, and persistence; the author supplies everything else. In Learn Python 3 the Hard Way, you'll learn Python by working through 52 brilliantly crafted exercises. Read them. Type their code precisely. (No copying and pasting!) Fix your mistakes. Watch the programs run. As you do, you'll learn how a computer works; what good programs look like; and how to read, write, and think about code. Zed then teaches you even more in 5+ hours of video where he shows you how to break, fix, and debug your code—live, as he's doing the exercises. Install a complete Python environment Organize and write code Fix and break code Basic mathematics Variables Strings and text Interact with users Work with files Looping and logic Data structures using lists and dictionaries Program design Object-oriented programming Inheritance and composition Modules, classes, and objects Python packaging Automated testing Basic game development Basic web development It'll be hard at first. But soon, you'll just get it—and that will feel great! This course will reward you for every minute you put into it. Soon, you'll know one of the world's most powerful, popular programming languages. You'll be a Python programmer. This Book Is Perfect For Total beginners with zero programming experience Junior developers who know one or two languages Returning professionals who haven't written code in years Seasoned professionals looking for a fast, simple, crash course in Python 3

An encyclopedic handbook on audio programming for students and professionals, with many cross-platform open source examples and a DVD covering advanced topics. This comprehensive handbook of mathematical and programming techniques for audio signal processing will be an essential reference for all computer musicians, computer scientists, engineers, and anyone interested in audio. Designed to be used by readers with varying levels of programming expertise, it not only provides the foundations for music and audio development but also tackles issues that sometimes remain mysterious even to experienced software designers. Exercises and copious examples (all cross-platform and based on free or open source software) make the book ideal for classroom use. Fifteen chapters and eight appendixes cover such topics as programming basics for C and C++ (with music-oriented examples), audio programming basics and more advanced topics, spectral audio programming; programming Csound opcodes, and algorithmic synthesis and music programming. Appendixes cover topics in compiling, audio and MIDI, computing, and math. An accompanying DVD provides an additional 40 chapters, covering musical and audio programs with micro-controllers, alternate MIDI controllers, video controllers, developing Apple Audio Unit plug-ins from Csound opcodes, and audio programming for the iPhone. The sections and chapters of the book are arranged progressively and topics can be followed from chapter to chapter and from section to section. At the same time, each section can stand alone as a self-contained unit. Readers will find The Audio Programming Book a trustworthy companion on their journey through making music and programming audio on modern computers.

A guide to the programming language describes how to build Python-enabled Web servers and applications, write mobile apps on the Android platform, develop sophisticated games, build GUI-based programs, and write Python scripts to automate tasks.

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

For many researchers, Python is a first-class tool mainly because of its libraries for storing, manipulating, and gaining insight from data. Several resources exist for individual pieces of this data science stack, but only with the Python Data Science Handbook do you get them all—IPython, NumPy, Pandas, Matplotlib, Scikit-Learn, and other related tools. Working scientists and data crunchers familiar with reading and writing Python code will find this comprehensive desk reference ideal for tackling day-to-day issues: manipulating, transforming, and cleaning data; visualizing different types of data; and using data to build statistical or machine learning models. Quite simply, this is the must-have reference for scientific computing in Python. With this handbook, you'll learn how to use: IPython and Jupyter: provide computational environments for data scientists using Python NumPy: includes the ndarray for efficient storage and manipulation of dense data arrays in Python Pandas: features the DataFrame for efficient storage and manipulation of labeled/columnar data in Python Matplotlib: includes capabilities for a flexible range of data visualizations in Python Scikit-Learn: for efficient and clean Python implementations of the most important and established machine learning algorithms

This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Master the Powerful Python 3 Standard Library through Real Code Examples “The genius of Doug's approach is that with 15 minutes per week, any motivated programmer can learn the Python Standard Library. Doug's guided tour will help you flip the switch to fully power-up Python's batteries.” —Raymond Hettinger, Distinguished Python Core Developer The Python 3 Standard Library contains hundreds of modules for interacting with the operating system, interpreter, and Internet—all extensively tested and ready to jump-start application development. Now, Python expert Doug Hellmann introduces every major area of the Python 3.x library through concise source code and output examples. Hellmann's examples fully demonstrate each feature and are designed for easy learning and reuse. You'll find practical code for working with text, data structures, algorithms, dates/times, math, the file system, persistence, data exchange, compression, archiving, crypto, processes/threads, networking, Internet capabilities, email, developer and language tools, the runtime, packages, and more. Each section fully covers one module, with links to additional resources, making this book an ideal tutorial and reference. The Python 3 Standard Library by Example introduces Python 3.x's new libraries, significant functionality changes, and new layout and naming conventions. Hellmann also provides expert porting guidance for moving code from 2.x Python standard library modules to their Python 3.x

equivalents. Manipulate text with `string`, `textwrap`, `re` (regular expressions), and `diff` Use data structures: `enum`, `collections`, `array`, `heapq`, `queue`, `struct`, `copy`, and more Implement algorithms elegantly and concisely with `functools`, `itertools`, and `contextlib` Handle dates/times and advanced mathematical tasks Archive and data compression Understand data exchange and persistence, including `json`, `dbm`, and `sqlite` Sign and verify messages cryptographically Manage concurrent operations with processes and threads Test, debug, compile, profile, language, import, and package tools Control interaction at runtime with interpreters or the environment

"This is a warm and reassuring book that will equip you to read, understand, and update legacy code in any language." --Kate Gregory "It is easy to forget that outside the world of software development, the word legacy has another meaning. A positive meaning, a gift of wealth from the past to the present for the future. This book will help you reclaim the word." --Kevlin Henney If you're like most software developers, you have to deal with legacy code. But working with legacy code is challenging! This book will teach you how to be happy, efficient and successful when working with legacy code. Here are the skills that The Legacy Code Programmer's Toolbox will teach you: - how to deal with legacy code efficiently and with a positive approach, - 10 techniques how to understand legacy code, - 5 ways to reduce the size of long functions, - a technique to turn legacy code to your advantage to improve your programming skills, - how to be in a motivated mindset, - the power of knowledge of your codebase, how to acquire it and make every person in your team acquire it too, - how to find the source of a bug quickly in a large and unfamiliar codebase, - where to focus your refactoring efforts so that they make your life easier, - and many more things to be efficient and happy when working with legacy code!

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

Python programmers will improve their computer science skills with these useful one-liners. Python One-Liners will teach you how to read and write "one-liners": concise statements of useful functionality packed into a single line of code. You'll learn how to systematically unpack and understand any line of Python code, and write eloquent, powerfully compressed Python like an expert. The book's five chapters cover tips and tricks, regular expressions, machine learning, core data science topics, and useful algorithms. Detailed explanations of one-liners introduce key computer science concepts and boost your coding and analytical skills. You'll learn about advanced Python features such as list comprehension, slicing, lambda functions, regular expressions, map and reduce functions, and slice assignments. You'll also learn how to:

- Leverage data structures to solve real-world problems, like using Boolean indexing to find cities with above-average pollution
- Use NumPy basics such as array, shape, axis, type, broadcasting, advanced indexing, slicing, sorting, searching, aggregating, and statistics
- Calculate basic statistics of multidimensional data arrays and the K-Means algorithms for unsupervised learning
- Create more advanced regular expressions using grouping and named groups, negative lookaheads, escaped characters, whitespaces, character sets (and negative characters sets), and greedy/nongreedy operators
- Understand a wide range of computer science topics, including anagrams, palindromes, supersets, permutations, factorials, prime numbers, Fibonacci numbers, obfuscation, searching, and algorithmic sorting

By the end of the book, you'll know how to write Python at its most refined, and create concise, beautiful pieces of "Python art" in merely a single line. CD-ROM contains cross-referenced code.

You Will Learn Python! Zed Shaw has perfected the world's best system for learning Python. Follow it and you will succeed—just like the hundreds of thousands of beginners Zed has taught to date! You bring the discipline, commitment, and persistence; the author supplies everything else. In *Learn Python the Hard Way, Third Edition*, you'll learn Python by working through 52 brilliantly crafted exercises. Read them. Type their code precisely. (No copying and pasting!) Fix your mistakes. Watch the programs run. As you do, you'll learn how software works; what good programs look like; how to read, write, and think about code; and how to find and fix your mistakes using tricks professional programmers use. Most importantly, you'll learn the following, which you need to start writing excellent Python software of your own: Installing a complete Python environment Organizing and writing code Basic mathematics Variables Strings and text Interacting with users Working with files Looping and logic Data structures using lists and dictionaries Program design Object-oriented programming Inheritance and composition Modules, classes, and objects Python packaging Debugging Automated testing Basic game development Basic web development It'll be hard at first. But soon, you'll just get it—and that will feel great! This tutorial will reward you for every minute you put into it. Soon, you'll know one of the world's most powerful, popular programming languages. You'll be a Python programmer. Watch Zed, too! The accompanying DVD contains 5+ hours of passionate, powerful teaching: a complete Python video course!

Take your Python machine learning ideas and create serverless web applications accessible by anyone with an Internet connection. Some of the most popular serverless cloud providers are covered in this book—Amazon, Microsoft, Google, and PythonAnywhere. You will work through a series of common Python data science problems in an increasing order of complexity. The practical projects presented in this book are simple, clear, and can be used as templates to jump-start many other types of projects. You will learn to create a web application around numerical or categorical predictions, understand the analysis of text, create powerful and interactive presentations, serve restricted access to data, and leverage web plugins to accept credit card payments and donations. You will get your projects into the hands of the world in no time. Each chapter follows three steps: modeling the right way, designing and developing a local web application, and deploying onto a popular and reliable serverless cloud provider. You can easily jump to or skip particular topics in the book. You also will have access to Jupyter notebooks and code repositories for complete versions of the code covered in the book. What You'll Learn Extend your machine learning models using simple techniques to create compelling and interactive web dashboards Leverage the Flask web framework for rapid prototyping of your Python models and ideas Create dynamic content powered by regression coefficients, logistic regressions, gradient boosting machines, Bayesian classifications, and more Harness the power of TensorFlow by exporting saved models into web applications Create rich web dashboards to handle complex real-time user input with JavaScript and Ajax to yield interactive and tailored content Create dashboards with paywalls to offer subscription-based access Access API data such as Google Maps, OpenWeather, etc. Apply different approaches to make sense of text data and return customized intelligence Build an intuitive and useful recommendation site to add value to users and entice them to keep coming back Utilize the freemium offerings of Google Analytics and analyze the results Take your ideas all the way to your customer's plate using the top serverless cloud providers Who This Book Is For Those with some programming experience with Python, code editing, and access to an interpreter in working order. The book is geared toward entrepreneurs who want to get their ideas onto the web without breaking the bank, small companies without an IT staff, students wanting exposure and training, and for all data science professionals ready to take things to the next level.

"It's uncommon to have a programming language wonk who can speak in such comfortable and friendly language as David does. His walk through the syntax and semantics of JavaScript is both charming and hugely insightful; reminders of gotchas complement realistic use cases,

paced at a comfortable curve. You'll find when you finish the book that you've gained a strong and comprehensive sense of mastery." —Paul Irish, developer advocate, Google Chrome "This is not a book for those looking for shortcuts; rather it is hard-won experience distilled into a guided tour. It's one of the few books on JS that I'll recommend without hesitation." —Alex Russell, TC39 member, software engineer, Google In order to truly master JavaScript, you need to learn how to work effectively with the language's flexible, expressive features and how to avoid its pitfalls. No matter how long you've been writing JavaScript code, Effective JavaScript will help deepen your understanding of this powerful language, so you can build more predictable, reliable, and maintainable programs. Author David Herman, with his years of experience on Ecma's JavaScript standardization committee, illuminates the language's inner workings as never before—helping you take full advantage of JavaScript's expressiveness. Reflecting the latest versions of the JavaScript standard, the book offers well-proven techniques and best practices you'll rely on for years to come. Effective JavaScript is organized around 68 proven approaches for writing better JavaScript, backed by concrete examples. You'll learn how to choose the right programming style for each project, manage unanticipated problems, and work more successfully with every facet of JavaScript programming from data structures to concurrency. Key features include Better ways to use prototype-based object-oriented programming Subtleties and solutions for working with arrays and dictionary objects Precise and practical explanations of JavaScript's functions and variable scoping semantics Useful JavaScript programming patterns and idioms, such as options objects and method chaining In-depth guidance on using JavaScript's unique "run-to-completion" approach to concurrency

Demonstrates the programming language's strength as a Web development tool, covering syntax, data types, built-ins, the Python standard module library, and real world examples.

Python Essential Reference is the definitive reference guide to the Python programming language — the one authoritative handbook that reliably untangles and explains both the core Python language and the most essential parts of the Python library. Designed for the professional programmer, the book is concise, to the point, and highly accessible. It also includes detailed information on the Python library and many advanced subjects that is not available in either the official Python documentation or any other single reference source. Thoroughly updated to reflect the significant new programming language features and library modules that have been introduced in Python 2.6 and Python 3, the fourth edition of Python Essential Reference is the definitive guide for programmers who need to modernize existing Python code or who are planning an eventual migration to Python 3. Programmers starting a new Python project will find detailed coverage of contemporary Python programming idioms. This fourth edition of Python Essential Reference features numerous improvements, additions, and updates: Coverage of new language features, libraries, and modules Practical coverage of Python's more advanced features including generators, coroutines, closures, metaclasses, and decorators Expanded coverage of library modules related to concurrent programming including threads, subprocesses, and the new multiprocessing module Up-to-the-minute coverage of how to use Python 2.6's forward compatibility mode to evaluate code for Python 3 compatibility Improved organization for even faster answers and better usability Updates to reflect modern Python programming style and idioms Updated and improved example code Deep coverage of low-level system and networking library modules — including options not covered in the standard documentation

Write Truly Great iOS and OS X Code with Objective-C 2.0! Effective Objective-C 2.0 will help you harness all of Objective-C's expressive power to write OS X or iOS code that works superbly well in production environments. Using the concise, scenario-driven style pioneered in Scott Meyers' best-selling Effective C++, Matt Galloway brings together 52 Objective-C best practices, tips, shortcuts, and realistic code examples that are available nowhere else. Through real-world examples, Galloway uncovers little-known Objective-C quirks, pitfalls, and intricacies 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. Galloway goes far beyond the core language, helping you integrate and leverage key Foundation framework classes and modern system libraries, such as Grand Central Dispatch. Coverage includes Optimizing interactions and relationships between Objective-C objects Mastering interface and API design: writing classes that feel "right at home" Using protocols and categories to write maintainable, bug-resistant code Avoiding memory leaks that can still occur even with Automatic Reference Counting (ARC) Writing modular, powerful code with Blocks and Grand Central Dispatch Leveraging differences between Objective-C protocols and multiple inheritance in other languages Improving code by more effectively using arrays, dictionaries, and sets Uncovering surprising power in the Cocoa and Cocoa Touch frameworks

This book primarily targets Python developers who want to learn and use Python's machine learning capabilities and gain valuable insights from data to develop effective solutions for business problems.

"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.

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

The book serves as a first introduction to computer programming of scientific applications, using the high-level Python language. The exposition is example and problem-oriented, where the applications are taken from mathematics, numerical calculus, statistics, physics,

biology and finance. The book teaches "Matlab-style" and procedural programming as well as object-oriented programming. High school mathematics is a required background and it is advantageous to study classical and numerical one-variable calculus in parallel with reading this book. Besides learning how to program computers, the reader will also learn how to solve mathematical problems, arising in various branches of science and engineering, with the aid of numerical methods and programming. By blending programming, mathematics and scientific applications, the book lays a solid foundation for practicing computational science. From the reviews: Langtangen ... does an excellent job of introducing programming as a set of skills in problem solving. He guides the reader into thinking properly about producing program logic and data structures for modeling real-world problems using objects and functions and embracing the object-oriented paradigm. ... Summing Up: Highly recommended. F. H. Wild III, Choice, Vol. 47 (8), April 2010 Those of us who have learned scientific programming in Python 'on the streets' could be a little jealous of students who have the opportunity to take a course out of Langtangen's Primer." John D. Cook, The Mathematical Association of America, September 2011 This book goes through Python in particular, and programming in general, via tasks that scientists will likely perform. It contains valuable information for students new to scientific computing and would be the perfect bridge between an introduction to programming and an advanced course on numerical methods or computational science. Alex Small, IEEE, CiSE Vol. 14 (2), March /April 2012 "This fourth edition is a wonderful, inclusive textbook that covers pretty much everything one needs to know to go from zero to fairly sophisticated scientific programming in Python..." Joan Horvath, Computing Reviews, March 2015

Maya Python for Games and Film is the first book to focus exclusively on how to implement Python with Maya. Written by trusted authorities in the field, this in-depth guide will help you master Maya Python, whether you're a seasoned technical artist looking to make the transition from MEL to Python or an aspiring artist not wanting to scramble for information.

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

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 Ever wished you could learn Python from a book? Head First Python is a complete learning experience for Python that helps you learn the language through a unique method that goes beyond syntax and how-to manuals, helping you understand how to be a great Python programmer. You'll quickly learn the language's fundamentals, then move onto persistence, exception handling, web development, SQLite, data wrangling, and Google App Engine. You'll also learn how to write mobile apps for Android, all thanks to the power that Python gives you. We think your time is too valuable to waste struggling with new.

Python is one of the most popular programming languages, with numerous libraries and frameworks that facilitate high-performance computing. Concurrency and parallelism in Python are essential when it comes to multiprocessing and multithreading; they behave differently, but their common aim is to reduce the execution time. This book serves as a ...

"Each item in Slatkin's Effective Python teaches a self-contained lesson with its own source code. This makes the book random-access: Items are easy to browse and study in whatever order the reader needs. I will be recommending Effective Python to students as an admirably compact source of mainstream advice on a very broad range of topics for the intermediate Python programmer." —Brandon Rhodes, software engineer at Dropbox and chair of PyCon 2016-2017 It's easy to start coding with Python, which is why the language is so popular. However, Python's unique strengths, charms, and expressiveness can be hard to grasp, and there are hidden pitfalls that can easily trip you up. Effective Python will help you master a truly "Pythonic" approach to programming, harnessing Python's full power to write exceptionally robust and well-performing code. Using the concise, scenario-driven style pioneered in Scott Meyers' best-selling Effective C++, Brett Slatkin brings together 59 Python best practices, tips, and shortcuts, and explains them with realistic code examples. Drawing on years of experience building Python infrastructure at Google, Slatkin uncovers little-known quirks and idioms that powerfully impact code behavior and performance. You'll learn the best way to accomplish key tasks, so you can write code that's easier to understand, maintain, and improve. Key features include Actionable guidelines for all major areas of Python 3.x and 2.x development, with detailed explanations and examples Best practices for writing functions that clarify intention, promote reuse, and avoid bugs Coverage of how to accurately express behaviors with classes and objects Guidance on how to avoid pitfalls with metaclasses and dynamic attributes More efficient approaches to concurrency and parallelism Better techniques and idioms for using Python's built-in modules Tools and best practices for collaborative development Solutions for debugging, testing, and optimization in order to improve quality and performance

Effective Python 59 Specific Ways to Write Better Python Addison-Wesley Professional

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

Python is a wonderful programming language that allows writing applications quickly. But how do you make those applications scale for thousands of users and requests? It takes years of practice, research, trial and errors to build experience and knowledge along the way.

Simple questions such as "How do I make my code faster?" or "How do I make sure there is no bottleneck?" cost hours to find good answers. Without enough background on the topic, you'll never be sure that any answer you'll come up with will be correct. The Hacker's Guide to Scaling Python will help you solve that by providing guidelines, tips and best practice. Adding a few interviews of experts on the subject, you will learn how you can distribute your Python application so it is able to process thousands of requests.

Like sysadmins before them, network engineers are finding that they cannot do their work manually anymore. As the field faces new protocols, technologies, delivery models, and a pressing need for businesses to be more agile and flexible, network automation is becoming essential. This practical guide shows network engineers how to use a range of technologies and tools—including Linux, Python, JSON, and XML—to automate their systems through code. Network programming and automation will help you simplify tasks involved in configuring, managing, and operating network equipment, topologies, services, and connectivity. Through the course of the book, you'll learn the basic skills and tools you need to make this critical transition. This book covers: Python programming basics: data types, conditionals, loops, functions, classes, and modules Linux fundamentals to provide the foundation you need on your network automation journey Data formats and models: JSON, XML, YAML, and YANG for networking Jinja templating and its applicability for creating network device configurations The role of application programming interfaces (APIs) in network automation Source control with Git to manage code changes during the automation process How Ansible, Salt, and StackStorm open source automation tools can be used to automate network devices Key tools and technologies required for a Continuous Integration (CI) pipeline in network operations

Meyers provides 50 short, specific, easy-to-remember guidelines that experienced C++ programmers either almost always do or almost always avoid. These rules are each followed by an explanation of the rule's important advice on how to implement it, and are supported by actual programming examples.

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