

Python Testing With Pytest

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Python for DevOps - Noah Gift 2019-12-12
Much has changed in technology over the past decade. Data is hot, the cloud is ubiquitous, and many organizations need some form of automation. Throughout these transformations, Python has become one of the most popular languages in the world. This practical resource shows you how to use Python for everyday Linux

systems administration tasks with today's most useful DevOps tools, including Docker, Kubernetes, and Terraform. Learning how to interact and automate with Linux is essential for millions of professionals. Python makes it much easier. With this book, you'll learn how to develop software and solve problems using containers, as well as how to monitor,

instrument, load-test, and operationalize your software. Looking for effective ways to "get stuff done" in Python? This is your guide. Python foundations, including a brief introduction to the language How to automate text, write command-line tools, and automate the filesystem Linux utilities, package management, build systems, monitoring and instrumentation, and automated testing Cloud computing, infrastructure as code, Kubernetes, and serverless Machine learning operations and data engineering from a DevOps perspective Building, deploying, and operationalizing a machine learning project *The Hitchhiker's Guide to Python* - Kenneth Reitz 2016-08-30

The Hitchhiker's Guide to Python takes the journeyman Pythonista to true expertise. More than any other language, Python was created with the philosophy of simplicity and parsimony. Now 25 years old, Python has become the primary or secondary language (after SQL) for many business users. With popularity comes

diversity—and possibly dilution. This guide, collaboratively written by over a hundred members of the Python community, describes best practices currently used by package and application developers. Unlike other books for this audience, *The Hitchhiker's Guide* is light on reusable code and heavier on design philosophy, directing the reader to excellent sources that already exist.

Hands-On RESTful Python Web Services - Gaston C. Hillar 2018-12-26

Explore the best tools and techniques to create lightweight, maintainable, and scalable Python web services Key FeaturesCombine Python with different data sources to build complex RESTful APIs from scratchConfigure and fine-tune your APIs using the best tools and techniques availableUse command-line and GUI tools to test CRUD operations performed by RESTful Web Services or APIsBook Description Python is the language of choice for millions of developers worldwide that builds great web services in

RESTful architecture. This second edition of Hands-On RESTful Python Web Services will cover the best tools you can use to build engaging web services. This book shows you how to develop RESTful APIs using the most popular Python frameworks and all the necessary stacks with Python, combined with related libraries and tools. You'll learn to incorporate all new features of Python 3.7, Flask 1.0.2, Django 2.1, Tornado 5.1, and also a new framework, Pyramid. As you advance through the chapters, you will get to grips with each of these frameworks to build various web services, and be shown use cases and best practices covering when to use a particular framework. You'll then successfully develop RESTful APIs with all frameworks and understand how each framework processes HTTP requests and routes URLs. You'll also discover best practices for validation, serialization, and deserialization. In the concluding chapters, you will take advantage of specific features available in certain

frameworks such as integrated ORMs, built-in authorization and authentication, and work with asynchronous code. At the end of each framework, you will write tests for RESTful APIs and improve code coverage. By the end of the book, you will have gained a deep understanding of the stacks needed to build RESTful web services. What you will learn

Select the most appropriate framework based on requirements

Develop complex RESTful APIs from scratch using Python

Use requests handlers, URL patterns, serialization, and validations

Add authentication, authorization, and interaction with ORMs and databases

Debug, test, and improve RESTful APIs with four frameworks

Design RESTful APIs with frameworks and create automated tests

Who this book is for This book is for web developers who have a working knowledge of Python and would like to build amazing web services by taking advantage of the various frameworks of Python. You should have some knowledge of RESTful

APIs.

Crafting Test-Driven Software with Python -

Alessandro Molina 2021-02-18

Get to grips with essential concepts and step-by-step explanations to apply TDD practices to your Python projects while keeping your test suite under control

Key Features

- Build robust Python applications using TDD and BDD methodologies
- Test Python web applications using WebTest and web frameworks
- Leverage PyTest to implement stringent testing mechanisms to ensure fault-tolerant applications

Book Description

Test-driven development (TDD) is a set of best practices that helps developers to build more scalable software and is used to increase the robustness of software by using automatic tests. This book shows you how to apply TDD practices effectively in Python projects. You'll begin by learning about built-in unit tests and Mocks before covering rich frameworks like PyTest and web-based libraries such as WebTest and Robot

Framework, discovering how Python allows you to embrace all modern testing practices with ease. Moving on, you'll find out how to design tests and balance them with new feature development and learn how to create a complete test suite with PyTest. The book helps you adopt a hands-on approach to implementing TDD and associated methodologies that will have you up and running and make you more productive in no time. With the help of step-by-step explanations of essential concepts and practical examples, you'll explore automatic tests and TDD best practices and get to grips with the methodologies and tools available in Python for creating effective and robust applications. By the end of this Python book, you will be able to write reliable test suites in Python to ensure the long-term resilience of your application using the range of libraries offered by Python for testing and development. What you will learn

Find out how tests can make your life easier as a developer and discover related best

practicesExplore PyTest, the most widespread testing framework for PythonGet to grips with the most common PyTest plugins, including coverage, flaky, xdist, and pickedWrite functional tests for WSGI web applications with WebTestRun end-to-end tests for web applications using Robot FrameworkUnderstand what test-driven development means and why it is importantDiscover how to use the range of tools available in PythonBuild reliable and robust applicationsWho this book is for This book is for Python developers looking to get started with test-driven development and developers who want to learn about the testing tools available in Python. Developers who want to create web applications with Python and plan to implement TDD methodology with PyTest will find this book useful. Basic knowledge of Python programming is required.

Architecture Patterns with Python - Harry Percival 2020-03-05

As Python continues to grow in popularity,

projects are becoming larger and more complex. Many Python developers are now taking an interest in high-level software design patterns such as hexagonal/clean architecture, event-driven architecture, and the strategic patterns prescribed by domain-driven design (DDD). But translating those patterns into Python isn't always straightforward. With this hands-on guide, Harry Percival and Bob Gregory from MADE.com introduce proven architectural design patterns to help Python developers manage application complexity—and get the most value out of their test suites. Each pattern is illustrated with concrete examples in beautiful, idiomatic Python, avoiding some of the verbosity of Java and C# syntax. Patterns include: Dependency inversion and its links to ports and adapters (hexagonal/clean architecture) Domain-driven design's distinction between entities, value objects, and aggregates Repository and Unit of Work patterns for persistent storage Events, commands, and the

message bus Command-query responsibility segregation (CQRS) Event-driven architecture and reactive microservices

Mastering Machine Learning with Python in Six Steps - Manohar Swamynathan 2019-10-01

Explore fundamental to advanced Python 3 topics in six steps, all designed to make you a worthy practitioner. This updated version's approach is based on the "six degrees of separation" theory, which states that everyone and everything is a maximum of six steps away and presents each topic in two parts: theoretical concepts and practical implementation using suitable Python 3 packages. You'll start with the fundamentals of Python 3 programming language, machine learning history, evolution, and the system development frameworks. Key data mining/analysis concepts, such as exploratory analysis, feature dimension reduction, regressions, time series forecasting and their efficient implementation in Scikit-learn are covered as well. You'll also learn commonly

used model diagnostic and tuning techniques. These include optimal probability cutoff point for class creation, variance, bias, bagging, boosting, ensemble voting, grid search, random search, Bayesian optimization, and the noise reduction technique for IoT data. Finally, you'll review advanced text mining techniques, recommender systems, neural networks, deep learning, reinforcement learning techniques and their implementation. All the code presented in the book will be available in the form of iPython notebooks to enable you to try out these examples and extend them to your advantage. What You'll Learn Understand machine learning development and frameworks Assess model diagnosis and tuning in machine learning Examine text mining, natural language processing (NLP), and recommender systems Review reinforcement learning and CNN Who This Book Is For Python developers, data engineers, and machine learning engineers looking to expand their knowledge or career into

machine learning area.

Django RESTful Web Services - Gaston C.

Hillar 2018-01-25

Design, build and test RESTful web services with the Django framework and Python Key Features Create efficient real-world RESTful web services with the latest Django framework Authenticate, secure, and integrate third-party packages efficiently in your Web Services Leverage the power of Python for faster Web Service development Book Description Django is a Python web framework that makes the web development process very easy. It reduces the amount of trivial code, which simplifies the creation of web applications and results in faster development. It is very powerful and a great choice for creating RESTful web services. If you are a Python developer and want to efficiently create RESTful web services with Django for your apps, then this is the right book for you. The book starts off by showing you how to install and configure the environment, required

software, and tools to create RESTful web services with Django and the Django REST framework. We then move on to working with advanced serialization and migrations to interact with SQLite and non-SQL data sources. We will use the features included in the Django REST framework to improve our simple web service. Further, we will create API views to process diverse HTTP requests on objects, go through relationships and hyperlinked API management, and then discover the necessary steps to include security and permissions related to data models and APIs. We will also apply throttling rules and run tests to check that versioning works as expected. Next we will run automated tests to improve code coverage. By the end of the book, you will be able to build RESTful web services with Django. What you will learn The best way to build a RESTful Web Service or API with Django and the Django REST Framework Develop complex RESTful APIs from scratch with Django and the Django REST Framework Work with

either SQL or NoSQL data sources Design RESTful Web Services based on application requirements Use third-party packages and extensions to perform common tasks Create automated tests for RESTful web services Debug, test, and profile RESTful web services with Django and the Django REST Framework Who this book is for This book is for Python developers who want to create RESTful web services with Django; you need to have a basic working knowledge of Django but no previous experience with RESTful web services is required.

Advanced Guide to Python 3 Programming - John Hunt 2019-09-18

Advanced Guide to Python 3 Programming delves deeply into a host of subjects that you need to understand if you are to develop sophisticated real-world programs. Each topic is preceded by an introduction followed by more advanced topics, along with numerous examples, that take you to an advanced level. There are

nine different sections within the book covering Computer Graphics (including GUIs), Games, Testing, File Input and Output, Databases Access, Logging, Concurrency and Parallelism, Reactive programming, and Networking. Each section is self-contained and can either be read on its own or as part of the book as a whole. This book is aimed at the those who have learnt the basics of the Python 3 language but want to delve deeper into Python's eco system of additional libraries and modules, to explore concurrency and parallelism, to create impressive looking graphical interfaces, to work with databases and files and to provide professional logging facilities.

Practices of the Python Pro - Dane Hillard 2019-12-22

Summary Professional developers know the many benefits of writing application code that's clean, well-organized, and easy to maintain. By learning and following established patterns and best practices, you can take your code and your

career to a new level. With *Practices of the Python Pro*, you'll learn to design professional-level, clean, easily maintainable software at scale using the incredibly popular programming language, Python. You'll find easy-to-grok examples that use pseudocode and Python to introduce software development best practices, along with dozens of instantly useful techniques that will help you code like a pro. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Professional-quality code does more than just run without bugs. It's clean, readable, and easy to maintain. To step up from a capable Python coder to a professional developer, you need to learn industry standards for coding style, application design, and development process. That's where this book is indispensable. About the book *Practices of the Python Pro* teaches you to design and write professional-quality software that's understandable, maintainable, and

extensible. Dane Hillard is a Python pro who has helped many dozens of developers make this step, and he knows what it takes. With helpful examples and exercises, he teaches you when, why, and how to modularize your code, how to improve quality by reducing complexity, and much more. Embrace these core principles, and your code will become easier for you and others to read, maintain, and reuse. What's inside
Organizing large Python projects
Achieving the right levels of abstraction
Writing clean, reusable code
Inheritance and composition
Considerations for testing and performance
About the reader For readers familiar with the basics of Python, or another OO language. About the author Dane Hillard has spent the majority of his development career using Python to build web applications. Table of Contents: PART 1 WHY IT ALL MATTERS 1 | The bigger picture PART 2 FOUNDATIONS OF DESIGN 2 | Separation of concerns 3 | Abstraction and encapsulation 4 | Designing for high

performance 5 | Testing your software PART 3
NAILING DOWN LARGE SYSTEMS 6 |
Separation of concerns in practice 7 |
Extensibility and flexibility 8 | The rules (and
exceptions) of inheritance 9 | Keeping things
lightweight 10 | Achieving loose coupling PART
4 WHAT'S NEXT? 11 | Onward and upward
Mission Python - Sean McManus 2018-10-16
Program a graphical adventure game in this
hands-on, beginner-friendly introduction to
coding in the Python language. Launch into
coding with Mission Python, a space-themed
guide to building a complete computer game in
Python. You'll learn programming fundamentals
like loops, strings, and lists as you build Escape!,
an exciting game with a map to explore, items to
collect, and tricky logic puzzles to solve. As you
work through the book, you'll build exercises
and mini-projects, like making a spacewalk
simulator and creating an astronaut's safety
checklist that will put your new Python skills to
the test. You'll learn how to use Pygame Zero, a

free resource that lets you add graphics and
sound effects to your creations, and you'll get
useful game-making tips, such as how to design
fun puzzles and intriguing maps. Before you
know it, you'll have a working, awesome game to
stump your friends with (and some nifty coding
skills, too!). You can follow this book using a
Raspberry Pi or a Microsoft Windows PC, and
the 3D graphics and sound effects you need are
provided as a download.

Python Unit Test Automation - Ashwin
Pajankar 2021-12-04

Learn how to automate unit tests of Python 3
with automation libraries, such as doctest,
unittest, nose, nose2, pytest, and selenium. This
book explores important concepts in software
test automation and demonstrates how to
automate, organize, and execute unit tests with
Python. It also introduces readers to the
concepts of web browser automation and
logging. This new edition starts with an
introduction to Python 3. Next, it covers doctest

and pydoc. This is followed by a discussion on unittest, a framework that comes packaged with Python 3 itself. There is a dedicated section on creating test suites, followed by an explanation of how nose2 provides automatic test module discovery. Moving forward, you will learn about pytest, the most popular third-party library and testrunner for Python. You will see how to write and execute tests with pytest. You'll also learn to discover tests automatically with pytest. This edition features two brand new chapters, the first of which focuses on the basics of web browser automation with Selenium. You'll learn how to use Selenium with unittest to write test cases for browser automation and use the Selenium IDE with web browsers such as Chrome and Firefox. You'll then explore logging frameworks such as Python's built-in logger and the third-party framework loguru. The book concludes with an exploration of test-driven development with pytest, during which you will execute a small project using TDD methodology.

What You Will Learn Start testing with doctest and unittest Understand the idea of unit testing Get started with nose 2 and pytest Learn how to use logger and loguru Work with Selenium and test driven development Who This Book Is For Python developers, software testers, open source enthusiasts, and contributors to the Python community.

Python Object-Oriented Programming - Steven F. Lott 2021-07-02

Being familiar with object-oriented design is an essential part of programming in Python. This new edition includes all the topics that made Python Object-Oriented Programming an instant Packt classic. Moreover, it's packed with updated content to reflect more recent changes in the core Python libraries and cover modern third-party packages.

Serious Python - Julien Danjou 2018-12-31
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!

Python Unit Test Automation - Ashwin Pajankar 2017-02-23

Quickly learn how to automate unit testing of

Python 3 code with Python 3 automation libraries, such as doctest, unittest, nose, nose2, and pytest. This book explores the important concepts in software testing and their implementation in Python 3 and shows you how to automate, organize, and execute unit tests for this language. This knowledge is often acquired by reading source code, manuals, and posting questions on community forums, which tends to be a slow and painful process. Python Unit Test Automation will allow you to quickly ramp up your understanding of unit test libraries for Python 3 through the practical use of code examples and exercises. All of which makes this book a great resource for software developers and testers who want to get started with unit test automation in Python 3 and compare the differences with Python 2. This short work is your must-have quick start guide to mastering the essential concepts of software testing in Python. What You'll Learn: Essential concepts in software testing Various test automation

libraries for Python, such as doctest, unittest, nose, nose2, and pytest Test-driven development and best practices for test automation in Python Code examples and exercises Who This Book Is For: Python developers, software testers, open source enthusiasts, and contributors to the Python community

[The Pragmatic Programmer](#) - Andrew Hunt
1999-10-20

What others in the trenches say about The Pragmatic Programmer... “The cool thing about this book is that it’s great for keeping the programming process fresh. The book helps you to continue to grow and clearly comes from people who have been there.” —Kent Beck, author of Extreme Programming Explained: Embrace Change “I found this book to be a great mix of solid advice and wonderful analogies!” —Martin Fowler, author of Refactoring and UML Distilled “I would buy a copy, read it twice, then tell all my colleagues to run out and grab a copy. This is a book I would never loan because I

would worry about it being lost.” —Kevin Ruland, Management Science, MSG-Logistics “The wisdom and practical experience of the authors is obvious. The topics presented are relevant and useful.... By far its greatest strength for me has been the outstanding analogies—tracer bullets, broken windows, and the fabulous helicopter-based explanation of the need for orthogonality, especially in a crisis situation. I have little doubt that this book will eventually become an excellent source of useful information for journeymen programmers and expert mentors alike.” —John Lakos, author of *Large-Scale C++ Software Design* “This is the sort of book I will buy a dozen copies of when it comes out so I can give it to my clients.” —Eric Vought, Software Engineer “Most modern books on software development fail to cover the basics of what makes a great software developer, instead spending their time on syntax or technology where in reality the greatest leverage possible for any software team is in

having talented developers who really know their craft well. An excellent book.” —Pete McBreen, Independent Consultant “Since reading this book, I have implemented many of the practical suggestions and tips it contains. Across the board, they have saved my company time and money while helping me get my job done quicker! This should be a desktop reference for everyone who works with code for a living.” —Jared Richardson, Senior Software Developer, iRenaissance, Inc. “I would like to see this issued to every new employee at my company....” —Chris Cleeland, Senior Software Engineer, Object Computing, Inc. “If I’m putting together a project, it’s the authors of this book that I want. . . . And failing that I’d settle for people who’ve read their book.” —Ward Cunningham Straight from the programming trenches, *The Pragmatic Programmer* cuts through the increasing specialization and technicalities of modern software development to examine the core process—taking a

requirement and producing working, maintainable code that delights its users. It covers topics ranging from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to Fight software rot; Avoid the trap of duplicating knowledge; Write flexible, dynamic, and adaptable code; Avoid programming by coincidence; Bullet-proof your code with contracts, assertions, and exceptions; Capture real requirements; Test ruthlessly and effectively; Delight your users; Build teams of pragmatic programmers; and Make your developments more precise with automation. Written as a series of self-contained sections and filled with entertaining anecdotes, thoughtful examples, and interesting analogies, The Pragmatic Programmer illustrates the best practices and major pitfalls of many different aspects of software development. Whether you're a new coder, an experienced

programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer.

Data Science Essentials in Python - Dmitry Zinoviev 2016-08-10

Go from messy, unstructured artifacts stored in SQL and NoSQL databases to a neat, well-organized dataset with this quick reference for the busy data scientist. Understand text mining, machine learning, and network analysis; process numeric data with the NumPy and Pandas modules; describe and analyze data using statistical and network-theoretical methods; and see actual examples of data analysis at work. This one-stop solution covers the essential data science you need in Python. Data science is one of the fastest-growing disciplines in terms of

academic research, student enrollment, and employment. Python, with its flexibility and scalability, is quickly overtaking the R language for data-scientific projects. Keep Python data-science concepts at your fingertips with this modular, quick reference to the tools used to acquire, clean, analyze, and store data. This one-stop solution covers essential Python, databases, network analysis, natural language processing, elements of machine learning, and visualization. Access structured and unstructured text and numeric data from local files, databases, and the Internet. Arrange, rearrange, and clean the data. Work with relational and non-relational databases, data visualization, and simple predictive analysis (regressions, clustering, and decision trees). See how typical data analysis problems are handled. And try your hand at your own solutions to a variety of medium-scale projects that are fun to work on and look good on your resume. Keep this handy quick guide at your side whether you're a student, an entry-

level data science professional converting from R to Python, or a seasoned Python developer who doesn't want to memorize every function and option. What You Need: You need a decent distribution of Python 3.3 or above that includes at least NLTK, Pandas, NumPy, Matplotlib, Networkx, SciKit-Learn, and BeautifulSoup. A great distribution that meets the requirements is Anaconda, available for free from www.continuum.io. If you plan to set up your own database servers, you also need MySQL (www.mysql.com) and MongoDB (www.mongodb.com). Both packages are free and run on Windows, Linux, and Mac OS. *Unit Testing Principles, Practices, and Patterns* - Vladimir Khorikov 2020-01-06 Radically improve your testing practice and software quality with new testing styles, good patterns, and reliable automation. Key Features A practical and results-driven approach to unit testing Refine your existing unit tests by implementing modern best practices Learn the

four pillars of a good unit test Safely automate your testing process to save time and money Spot which tests need refactoring, and which need to be deleted entirely Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Great testing practices maximize your project quality and delivery speed by identifying bad code early in the development process. Wrong tests will break your code, multiply bugs, and increase time and costs. You owe it to yourself—and your projects—to learn how to do excellent unit testing. Unit Testing Principles, Patterns and Practices teaches you to design and write tests that target key areas of your code including the domain model. In this clearly written guide, you learn to develop professional-quality tests and test suites and integrate testing throughout the application life cycle. As you adopt a testing mindset, you'll be amazed at how better tests cause you to write better code. What You Will Learn Universal guidelines to assess

any unit test Testing to identify and avoid anti-patterns Refactoring tests along with the production code Using integration tests to verify the whole system This Book Is Written For For readers who know the basics of unit testing. Examples are written in C# and can easily be applied to any language. About the Author Vladimir Khorikov is an author, blogger, and Microsoft MVP. He has mentored numerous teams on the ins and outs of unit testing. Table of Contents: PART 1 THE BIGGER PICTURE 1 | The goal of unit testing 2 | What is a unit test? 3 | The anatomy of a unit test PART 2 MAKING YOUR TESTS WORK FOR YOU 4 | The four pillars of a good unit test 5 | Mocks and test fragility 6 | Styles of unit testing 7 | Refactoring toward valuable unit tests PART 3 INTEGRATION TESTING 8 | Why integration testing? 9 | Mocking best practices 10 | Testing the database PART 4 UNIT TESTING ANTI-PATTERNS 11 | Unit testing anti-patterns **HT THINK LIKE A COMPUTER SCIEN -**

Jeffrey Elkner 2016-10-04

The goal of this book is to teach you to think like a computer scientist. This way of thinking combines some of the best features of mathematics, engineering, and natural science. Like mathematicians, computer scientists use formal languages to denote ideas (specifically computations). Like engineers, they design things, assembling components into systems and evaluating tradeoffs among alternatives. Like scientists, they observe the behavior of complex systems, form hypotheses, and test predictions. The single most important skill for a computer scientist is problem solving. Problem solving means the ability to formulate problems, think creatively about solutions, and express a solution clearly and accurately. As it turns out, the process of learning to program is an excellent opportunity to practice problem-solving skills. That's why this chapter is called, The way of the program. On one level, you will be learning to program, a useful skill by itself.

On another level, you will use programming as a means to an end. As we go along, that end will become clearer.

Robust Python - Patrick Viafore 2021-07-12

Does it seem like your Python projects are getting bigger and bigger? Are you feeling the pain as your codebase expands and gets tougher to debug and maintain? Python is an easy language to learn and use, but that also means systems can quickly grow beyond comprehension. Thankfully, Python has features to help developers overcome maintainability woes. In this practical book, author Patrick Viafore shows you how to use Python's type system to the max. You'll look at user-defined types, such as classes and enums, and Python's type hinting system. You'll also learn how to make Python extensible and how to use a comprehensive testing strategy as a safety net. With these tips and techniques, you'll write clearer and more maintainable code. Learn why types are essential in modern development

ecosystems Understand how type choices such as classes, dictionaries, and enums reflect specific intents Make Python extensible for the future without adding bloat Use popular Python tools to increase the safety and robustness of your codebase Evaluate current code to detect common maintainability gotchas Build a safety net around your codebase with linters and tests [Perl Testing](#) - Ian Langworth 2005

Looks at the Perl test tools and offers a series of exercises that cover such topics as bundling test suites, testing databases, and testing Web sites and projects.

The Art of Application Performance Testing
- Ian Molyneux 2014-12-15

Because performance is paramount today, this thoroughly updated guide shows you how to test mission-critical applications for scalability and performance before you deploy them—whether it's to the cloud or a mobile device. You'll learn the complete testing process lifecycle step-by-step, along with best practices to plan,

coordinate, and conduct performance tests on your applications. Set realistic performance testing goals Implement an effective application performance testing strategy Interpret performance test results Cope with different application technologies and architectures Understand the importance of End User Monitoring (EUM) Use automated performance testing tools Test traditional local applications, web applications, and web services Recognize and resolves issues often overlooked in performance tests Written by a consultant with over 15 years' experience with performance testing, **The Art of Application Performance Testing** thoroughly explains the pitfalls of an inadequate testing strategy and offers a robust, structured approach for ensuring that your applications perform well and scale effectively when the need arises.

Test-Driven Development with Python - Harry Percival 2017-08-02

By taking you through the development of a real

web application from beginning to end, the second edition of this hands-on guide demonstrates the practical advantages of test-driven development (TDD) with Python. You'll learn how to write and run tests before building each part of your app, and then develop the minimum amount of code required to pass those tests. The result? Clean code that works. In the process, you'll learn the basics of Django, Selenium, Git, jQuery, and Mock, along with current web development techniques. If you're ready to take your Python skills to the next level, this book—updated for Python 3.6—clearly demonstrates how TDD encourages simple designs and inspires confidence. Dive into the TDD workflow, including the unit test/code cycle and refactoring Use unit tests for classes and functions, and functional tests for user interactions within the browser Learn when and how to use mock objects, and the pros and cons of isolated vs. integrated tests Test and automate your deployments with a staging

server Apply tests to the third-party plugins you integrate into your site Run tests automatically by using a Continuous Integration environment Use TDD to build a REST API with a front-end Ajax interface

The Art of Unit Testing - Roy Osherove
2013-11-24

Summary The Art of Unit Testing, Second Edition guides you step by step from writing your first simple tests to developing robust test sets that are maintainable, readable, and trustworthy. You'll master the foundational ideas and quickly move to high-value subjects like mocks, stubs, and isolation, including frameworks such as Moq, FakeItEasy, and Typemock Isolator. You'll explore test patterns and organization, working with legacy code, and even "untestable" code. Along the way, you'll learn about integration testing and techniques and tools for testing databases and other technologies. About this Book You know you should be unit testing, so why aren't you doing

it? If you're new to unit testing, if you find unit testing tedious, or if you're just not getting enough payoff for the effort you put into it, keep reading. *The Art of Unit Testing, Second Edition* guides you step by step from writing your first simple unit tests to building complete test sets that are maintainable, readable, and trustworthy. You'll move quickly to more complicated subjects like mocks and stubs, while learning to use isolation (mocking) frameworks like Moq, FakeItEasy, and Typemock Isolator. You'll explore test patterns and organization, refactor code applications, and learn how to test "untestable" code. Along the way, you'll learn about integration testing and techniques for testing with databases. The examples in the book use C#, but will benefit anyone using a statically typed language such as Java or C++. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. What's Inside Create readable, maintainable, trustworthy tests Fakes, stubs,

mock objects, and isolation (mocking) frameworks Simple dependency injection techniques Refactoring legacy code About the Author Roy Osherove has been coding for over 15 years, and he consults and trains teams worldwide on the gentle art of unit testing and test-driven development. His blog is at ArtOfUnitTesting.com. Table of Contents PART 1 GETTING STARTED The basics of unit testing A first unit test PART 2 CORE TECHNIQUES Using stubs to break dependencies Interaction testing using mock objects Isolation (mocking) frameworks Digging deeper into isolation frameworks PART 3 THE TEST CODE Test hierarchies and organization The pillars of good unit tests PART 4 DESIGN AND PROCESS Integrating unit testing into the organization Working with legacy code Design and testability **Learn Python 3 the Hard Way** - Zed A. Shaw 2017-06-26 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

Test-Driving JavaScript Applications - Venkat Subramaniam 2016-10-07

Debunk the myth that JavaScript is not easily testable. Whether you use Node.js, Express, MongoDB, jQuery, AngularJS, or directly manipulate the DOM, you can test-drive JavaScript. Learn the craft of writing meaningful, deterministic automated tests with Karma, Mocha, and Chai. Test asynchronous

JavaScript, decouple and properly mock out dependencies, measure code coverage, and create lightweight modular designs of both server-side and client-side code. Your investment in writing tests will pay high dividends as you create code that's predictable and cost-effective to change. Design and code JavaScript applications with automated tests. Writing meaningful tests is a skill that takes learning, some unlearning, and a lot of practice, and with this book, you'll hone that skill. Fire up the editor and get hands-on through practical exercises for effective automated testing and designing maintainable, modular code. Start by learning when and why to do manual testing vs. automated verification. Focus tests on the important things, like the pre-conditions, the invariants, complex logic, and gnarly edge cases. Then begin to design asynchronous functions using automated tests. Carefully decouple and mock out intricate dependencies such as the DOM, geolocation API, file and database access,

and Ajax calls to remote servers. Step by step, test code that uses Node.js, Express, MongoDB, jQuery, and AngularJS. Know when and how to use tools such as Chai, Istanbul, Karma, Mocha, Protractor, and Sinon. Create tests with minimum effort and run them fast without having to spin up web servers or manually edit HTML pages to run in browsers. Then explore end-to-end testing to ensure all parts are wired and working well together. Don't just imagine creating testable code, write it. What You Need: A computer with a text editor and your favorite browser. The book provides instructions to install the necessary automated testing-related tools.

Testing in Python - Alfredo Deza 2020-02-27
Getting started with testing can be hard, and this book aims make it all very easy by using examples and explaining the process in a straightforward way. Testing is a core principle of robust software implementations and should be a prime skill to master that can be applied to

any project.

Tiny Python Projects - Ken Youens-Clark

2020-07-21

“Tiny Python Projects is a gentle and amusing introduction to Python that will firm up key programming concepts while also making you giggle.”—Amanda Debler, Schaeffler Key Features Learn new programming concepts through 21-bitesize programs Build an insult generator, a Tic-Tac-Toe AI, a talk-like-a-pirate program, and more Discover testing techniques that will make you a better programmer Code-along with free accompanying videos on YouTube Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book The 21 fun-but-powerful activities in Tiny Python Projects teach Python fundamentals through puzzles and games. You’ll be engaged and entertained with every exercise, as you learn about text manipulation, basic algorithms, and lists and dictionaries, and other foundational

programming skills. Gain confidence and experience while you create each satisfying project. Instead of going quickly through a wide range of concepts, this book concentrates on the most useful skills, like text manipulation, data structures, collections, and program logic with projects that include a password creator, a word rhymmer, and a Shakespearean insult generator. Author Ken Youens-Clark also teaches you good programming practice, including writing tests for your code as you go. What You Will Learn Write command-line Python programs Manipulate Python data structures Use and control randomness Write and run tests for programs and functions Download testing suites for each project This Book Is Written For For readers familiar with the basics of Python programming. About The Author Ken Youens-Clark is a Senior Scientific Programmer at the University of Arizona. He has an MS in Biosystems Engineering and has been programming for over 20 years. Table of

Contents 1 How to write and test a Python program 2 The crow's nest: Working with strings 3 Going on a picnic: Working with lists 4 Jump the Five: Working with dictionaries 5 Howler: Working with files and STDOUT 6 Words count: Reading files and STDIN, iterating lists, formatting strings 7 Gashlycrumb: Looking items up in a dictionary 8 Apples and Bananas: Find and replace 9 Dial-a-Curse: Generating random insults from lists of words 10 Telephone: Randomly mutating strings 11 Bottles of Beer Song: Writing and testing functions 12 Ransom: Randomly capitalizing text 13 Twelve Days of Christmas: Algorithm design 14 Rhymer: Using regular expressions to create rhyming words 15 The Kentucky Friar: More regular expressions 16 The Scrambler: Randomly reordering the middles of words 17 Mad Libs: Using regular expressions 18 Gematria: Numeric encoding of text using ASCII values 19 Workout of the Day: Parsing CSV files, creating text table output 20 Password strength: Generating a secure and

memorable password 21 Tic-Tac-Toe: Exploring state 22 Tic-Tac-Toe redux: An interactive version with type hints

Python Testing with pytest - Brian Okken
2022-02-21

Test applications, packages, and libraries large and small with pytest, Python's most powerful testing framework. pytest helps you write tests quickly and keep them readable and maintainable. In this fully revised edition, explore pytest's superpowers - simple asserts, fixtures, parametrization, markers, and plugins - while creating simple tests and test suites against a small database application. Using a robust yet simple fixture model, it's just as easy to write small tests with pytest as it is to scale up to complex functional testing. This book shows you how. pytest is undeniably the best choice for testing Python projects. It's a full-featured, flexible, and extensible testing framework. pytest's fixture model allows you to share test data and setup procedures across

multiple layers of tests. The pytest framework gives you powerful features such as assert rewriting, parametrization, markers, plugins, parallel test execution, and clear test failure reporting - with no boilerplate code. With simple step-by-step instructions and sample code, this book gets you up to speed quickly on this easy-to-learn yet powerful tool. Write short, maintainable tests that elegantly express what you're testing. Speed up test times by distributing tests across multiple processors and running tests in parallel. Use Python's builtin assert statements instead of awkward assert helper functions to make your tests more readable. Move setup code out of tests and into fixtures to separate setup failures from test failures. Test error conditions and corner cases with expected exception testing, and use one test to run many test cases with parameterized testing. Extend pytest with plugins, connect it to continuous integration systems, and use it in tandem with tox, mock, coverage, and even

existing unittest tests. Write simple, maintainable tests quickly with pytest. What You Need: The examples in this book were written using Python 3.10 and pytest 7. pytest 7 supports Python 3.5 and above.

Python Testing with pytest - Brian Okken
2017-09-15

Do less work when testing your Python code, but be just as expressive, just as elegant, and just as readable. The pytest testing framework helps you write tests quickly and keep them readable and maintainable - with no boilerplate code. Using a robust yet simple fixture model, it's just as easy to write small tests with pytest as it is to scale up to complex functional testing for applications, packages, and libraries. This book shows you how. For Python-based projects, pytest is the undeniable choice to test your code if you're looking for a full-featured, API-independent, flexible, and extensible testing framework. With a full-bodied fixture model that is unmatched in any other tool, the pytest

framework gives you powerful features such as assert rewriting and plug-in capability - with no boilerplate code. With simple step-by-step instructions and sample code, this book gets you up to speed quickly on this easy-to-learn and robust tool. Write short, maintainable tests that elegantly express what you're testing. Add powerful testing features and still speed up test times by distributing tests across multiple processors and running tests in parallel. Use the built-in assert statements to reduce false test failures by separating setup and test failures. Test error conditions and corner cases with expected exception testing, and use one test to run many test cases with parameterized testing. Extend pytest with plugins, connect it to continuous integration systems, and use it in tandem with tox, mock, coverage, unittest, and doctest. Write simple, maintainable tests that elegantly express what you're testing and why. What You Need: The examples in this book are written using Python 3.6 and pytest 3.0.

However, pytest 3.0 supports Python 2.6, 2.7, and Python 3.3-3.6.

Effective Python - Brett Slatkin 2020

Test-Driven React - Trevor Burnham
2019-07-29

You work in a loop: write code, get feedback, iterate. The faster you get feedback, the faster you can learn and become a more effective developer. Test-Driven React helps you refine your React workflow to give you the feedback you need as quickly as possible. Write strong tests and run them continuously as you work, split complex code up into manageable pieces, and stay focused on what's important by automating away mundane, trivial tasks. Adopt these techniques and you'll be able to avoid productivity traps and start building React components at a stunning pace!

Python Testing Cookbook - Greg Lee
Turnquist 2011-05

This cookbook is written as a collection of code

recipes containing step-by-step directions on how to install or build different types of Python test tools to solve different problems. Each recipe contains explanations of how it works along with answers to common questions and cross references to other relevant recipes. The easy-to-understand recipe names make this a handy test reference book. Python developers and programmers with a basic understanding of Python and Python testing will find this cookbook beneficial. It will build on that basic knowledge equipping you with the intermediate and advanced skills required to fully utilize the Python testing tools. Broken up into lots of small code recipes, you can read this book at your own pace, whatever your experience. No prior experience of automated testing is required.

Developer Testing - Alexander Tarlinder
2016-09-07

How do successful agile teams deliver bug-free, maintainable software—iteration after iteration? The answer is: By seamlessly combining

development and testing. On such teams, the developers write testable code that enables them to verify it using various types of automated tests. This approach keeps regressions at bay and prevents “testing crunches”—which otherwise may occur near the end of an iteration—from ever happening. Writing testable code, however, is often difficult, because it requires knowledge and skills that cut across multiple disciplines. In *Developer Testing*, leading test expert and mentor Alexander Tarlinder presents concise, focused guidance for making new and legacy code far more testable. Tarlinder helps you answer questions like: When have I tested this enough? How many tests do I need to write? What should my tests verify? You’ll learn how to design for testability and utilize techniques like refactoring, dependency breaking, unit testing, data-driven testing, and test-driven development to achieve the highest possible confidence in your software. Through practical examples in Java, C#, Groovy, and

Ruby, you'll discover what works—and what doesn't. You can quickly begin using Tarlinder's technology-agnostic insights with most languages and toolsets while not getting buried in specialist details. The author helps you adapt your current programming style for testability, make a testing mindset "second nature," improve your code, and enrich your day-to-day experience as a software professional. With this guide, you will Understand the discipline and vocabulary of testing from the developer's standpoint Base developer tests on well-established testing techniques and best practices Recognize code constructs that impact testability Effectively name, organize, and execute unit tests Master the essentials of classic and "mockist-style" TDD Leverage test doubles with or without mocking frameworks Capture the benefits of programming by contract, even without runtime support for contracts Take control of dependencies between classes, components, layers, and tiers Handle

combinatorial explosions of test cases, or scenarios requiring many similar tests Manage code duplication when it can't be eliminated Actively maintain and improve your test suites Perform more advanced tests at the integration, system, and end-to-end levels Develop an understanding for how the organizational context influences quality assurance Establish well-balanced and effective testing strategies suitable for agile teams

IPython Interactive Computing and Visualization Cookbook - Cyrille Rossant
2014-09-25

Intended to anyone interested in numerical computing and data science: students, researchers, teachers, engineers, analysts, hobbyists... Basic knowledge of Python/NumPy is recommended. Some skills in mathematics will help you understand the theory behind the computational methods.

[Python Tutorial](#) - Guido Rossum 2018-06-19
Python is an easy to learn, powerful

programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms. The Python interpreter and the extensive standard library are freely available in source or binary form for all major platforms from the Python Web site, <https://www.python.org/>, and may be freely distributed. The same site also contains distributions of and pointers to many free third party Python modules, programs and tools, and additional documentation. The Python interpreter is easily extended with new functions and data types implemented in C or C++ (or other languages callable from C). Python is also suitable as an extension language for customizable applications. This tutorial introduces the reader informally to the basic

concepts and features of the python language and system. It helps to have a Python interpreter handy for hands-on experience, but all examples are self contained, so the tutorial can be read off-line as well. For a description of standard objects and modules, see [library-index](#). [reference-index](#) gives a more formal definition of the language. To write extensions in C or C++, read [extending-index](#) and [c-api-index](#). There are also several books covering Python in depth. This tutorial does not attempt to be comprehensive and cover every single feature, or even every commonly used feature. Instead, it introduces many of Python's most noteworthy features, and will give you a good idea of the language's flavor and style. After reading it, you will be able to read and write Python modules and programs, and you will be ready to learn more about the various Python library modules described in [library-index](#). The Glossary is also worth going through.

[Publishing Python Packages](#) - Dane Hillard

2022-03-29

Create Python packages to share your code in a scalable and maintainable way. Improve team productivity, publish helpful libraries, or even start your own open source project following the latest Python packaging standards. Publishing Python Packages teaches you how to easily share your Python code with your team and the outside world. Learn a repeatable and highly automated process for package maintenance that's based on the best practices, tools, and standards of Python packaging. Publishing Python Packages book walks you through creating a complete package, including a C extension, and guides you all the way to publishing on the Python Package Index. You'll get hands-on experience with the latest packaging tools, and learn the ins-and-outs of package testing and continuous integration. Whether you're entirely new to Python packaging or looking for optimal ways to maintain and scale your packages, this fast-

paced and engaging guide is for you. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

Pragmatic AI - Noah Gift 2018-07-12
Master Powerful Off-the-Shelf Business Solutions for AI and Machine Learning
Pragmatic AI will help you solve real-world problems with contemporary machine learning, artificial intelligence, and cloud computing tools. Noah Gift demystifies all the concepts and tools you need to get results—even if you don't have a strong background in math or data science. Gift illuminates powerful off-the-shelf cloud offerings from Amazon, Google, and Microsoft, and demonstrates proven techniques using the Python data science ecosystem. His workflows and examples help you streamline and simplify every step, from deployment to production, and build exceptionally scalable solutions. As you learn how machine language (ML) solutions work, you'll gain a more intuitive understanding

of what you can achieve with them and how to maximize their value. Building on these fundamentals, you'll walk step-by-step through building cloud-based AI/ML applications to address realistic issues in sports marketing, project management, product pricing, real estate, and beyond. Whether you're a business professional, decision-maker, student, or programmer, Gift's expert guidance and wide-ranging case studies will prepare you to solve data science problems in virtually any environment. Get and configure all the tools you'll need Quickly review all the Python you need to start building machine learning applications Master the AI and ML toolchain and project lifecycle Work with Python data science tools such as IPython, Pandas, Numpy, Jupyter Notebook, and Sklearn Incorporate a pragmatic feedback loop that continually improves the efficiency of your workflows and systems Develop cloud AI solutions with Google Cloud Platform, including TPU, Colaboratory, and

Datalab services Define Amazon Web Services cloud AI workflows, including spot instances, code pipelines, boto, and more Work with Microsoft Azure AI APIs Walk through building six real-world AI applications, from start to finish Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.
pytest Quick Start Guide - Bruno Oliveira
2018-08-29

Learn the pytest way to write simple tests which can also be used to write complex tests Key Features Become proficient with pytest from day one by solving real-world testing problems Use pytest to write tests more efficiently Scale from simple to complex and functional testing Book Description Python's standard unittest module is based on the xUnit family of frameworks, which has its origins in Smalltalk and Java, and tends to be verbose to use and not easily extensible. The pytest framework on the other hand is very simple to get started, but powerful

enough to cover complex testing integration scenarios, being considered by many the true Pythonic approach to testing in Python. In this book, you will learn how to get started right away and get the most out of pytest in your daily workflow, exploring powerful mechanisms and plugins to facilitate many common testing tasks. You will also see how to use pytest in existing unittest-based test suites and will learn some tricks to make the jump to a pytest-style test suite quickly and easily. What you will learn

- Write and run simple and complex tests
- Organize tests in files and directories
- Find out how to be more productive on the command line
- Markers and how to skip, xfail and parametrize tests
- Explore fixtures and techniques to use them effectively, such as tmpdir, pytestconfig, and monkeypatch
- Convert unittest suites to pytest using little-known techniques
- Use third-party plugins

Who this book is for This book is for Python programmers that want to learn more about testing. This book is also for QA testers,

and those who already benefit from programming with tests daily but want to improve their existing testing tools.

Python Packages - Tomas Beuzen 2022

"Python Packages introduces Python packaging at an introductory and practical level that's suitable for those with no previous packaging experience. Despite this, the text builds up to advanced topics such as automated testing, creating documentation, versioning and updating a package, and implementing continuous integration and deployment.

Covering the entire Python packaging life cycle, this essential guide takes readers from package creation all the way to effective maintenance and updating. Python Packages focuses on the use of current and best-practice packaging tools and services like poetry, cookiecutter, pytest, sphinx, GitHub, and GitHub Actions"--

Testing Python - David Sale 2014-07-03

Fundamental testing methodologies applied to the popular Python language Testing Python;

Applying Unit Testing, TDD, BDD and Acceptance Testing is the most comprehensive book available on testing for one of the top software programming languages in the world. Python is a natural choice for new and experienced developers, and this hands-on resource is a much needed guide to enterprise-level testing development methodologies. The book will show you why Unit Testing and TDD can lead to cleaner, more flexible programs. Unit Testing and Test-Driven Development (TDD) are increasingly must-have skills for software developers, no matter what language they work in. In enterprise settings, it's critical for developers to ensure they always have working code, and that's what makes testing methodologies so attractive. This book will teach

you the most widely used testing strategies and will introduce to you still others, covering performance testing, continuous testing, and more. Learn Unit Testing and TDD—important development methodologies that lie at the heart of Agile development. Enhance your ability to work with Python to develop powerful, flexible applications with clean code. Draw on the expertise of author David Sale, a leading UK developer and tech commentator. Get ahead of the crowd by mastering the underappreciated world of Python testing. Knowledge of software testing in Python could set you apart from Python developers using outmoded methodologies. Python is a natural fit for TDD and Testing. Python is a must-read text for anyone who wants to develop expertise in Python programming.