Test Driven Development With Python Obey The Testing Goat Using Django Selenium And Javascript

With Acceptance Test-Driven Development (ATDD), business customers, testers, and developers can collaborate to produce testable requirements that help them build higher quality software more rapidly. However, ATDD is still widely misunderstood by many practitioners. ATDD by Example is the first practical, entry-level, hands-on guide to implementing and successfully applying it. ATDD pioneer Markus G ä rtner walks readers step by step through deriving the right systems from business users, and then implementing fully automated, functional tests that accurately reflect business requirements, are intelligible to stakeholders, and promote more effective development. Through two end-to-end case studies, G ä rtner demonstrates how ATDD can be applied using diverse frameworks and languages. Each case study is accompanied by an extensive set of artifacts, including test automation classes, step definitions, and full sample implementations. These realistic examples illuminate ATDD ' s fundamental principles, show how ATDD fits into the broader development process, highlight tips from G ä rtner ' s extensive experience, and identify crucial pitfalls to avoid. Readers will learn to Master the thought processes associated with successful ATDD implementation Use ATDD with Cucumber to describe software in ways businesspeople can understand Test web pages using ATDD tools Bring ATDD to Java with the FitNesse wiki-based acceptance test framework Use examples more effectively in Behavior-Driven Development (BDD) Specify software collaboratively through innovative workshops Implement more user-friendly and collaborative test automation Test more cleanly, listen to test results, and refactor tests for greater value If you ' re a tester, analyst, developer, or project manager, this book offers a concrete foundation for achieving real benefits with ATDD now – and it will help you reap even more value as you gain experience.

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 ForPython developers, software testers, open source enthusiasts, and contributors to the Python community.

The book begins with the very foundations of automated testing, and expands on them until the best-practice tools and techniques are fully covered. New concepts are illustrated with step-by-step hands-on exercises. Testing will be easier and more enjoyable with this beginner's guide. If you are a Python developer and want to write tests for your applications, this book will get you started and show you the easiest way to learn testing. You need to have sound Python programming knowledge to follow along. An awareness of software testing would be good, but no formal knowledge of testing is expected nor do you need to have any knowledge of the libraries discussed in the book.

Test-Driven Infrastructure with Chef demonstrates a radical approach to developing web infrastructure that combines the powerful Chef configuration management framework with Cucumber, the leading Behavior-driven development (BDD) tool. Learn how to deliver real business value by developing infrastructure code test-first. Infrastructure consultant Stephen Nelson-Smith shows you how this unique approach allows you to make significant changes without the fear of unexpected side effects—a great benefit when you ' re developing code to control your production infrastructures. By using the test-first approach introduced in this book, you gain increased security, code quality, and peace of mind. Learn the core principles behind the infrastructure-as-code approach, including modularity, cooperation, extensibility, and flexibility Take a high-level tour of the Chef framework, tool, and API, as well as the community behind the project Set up a workstation to interact with the Chef API Get an overview of Cucumber and learn the principles of BDD Start using Cucumber-Chef, the open source infrastructure testing platform Explore test-driven infrastructure development with a hands-on tutorial

"In this video tutorial, you'll learn about the PyTest testing library and how it's used to write unit tests in Python. You'll also set up some common Python development environments to use PyTest. You'll create isolated test environments with Test Doubles and learn how to implement and use them with unittest.mock. Moving on, you'll get to know some of the best practices in Unit Testing and TDD and get some hands-on experience with programming by implementing unit tests using TDD in Python. By the end of this course, you'll be able to apply the practices of Unit Testing and TDD on a daily basis to radically increase the quality of your code and help you and your company achieve your goals faster than ever before."--Resource description page.

Unit Testing and Test Driven Development in Python

The Art of Unit Testing

The Rust Programming Language (Covers Rust 2018)

Enabling Test-Driven Development, Domain-Driven Design, and Event-Driven Microservices

Test-Driven Development in Swift

Test-driven Development with Python

Compile Better Code with XCTest and TDD

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

Another day without Test-Driven Development means more time wasted chasing bugs and watching your code deteriorate. You thought TDD was for someone else, but it's not! It's for you, the embedded C programmer. TDD helps you prevent defects and build software with a long useful life. This is the first book to teach the hows and whys of TDD for C programmers. TDD is a modern programming practice C developers need to know. It's a different way to program---unit tests are written in a tight feedback loop with the production code, assuring your code does what you think. You get valuable feedback every few minutes. You find mistakes before they become bugs. You get early warning of design problems. You get immediate notification of side effect defects. You get to spend more time adding valuable features to your product. James is one of the few experts in applying TDD to embedded C. With his 1.5 decades of training,coaching, and practicing TDD in C, C++, Java, and C# he will lead you from being a novice in TDD to using the techniques that few have mastered. This book is full of code written for embedded C programmers. You don't just see the end product, you see code and tests evolve. James leads you through the thought process and decisions made each step of the way. You'll learn techniques for test-driving code right nextto the hardware, and you'll learn design principles and how to apply them to C to keep your code clean and flexible. To run the examples in this book, you will need a C/C++ development environment on your machine, and the GNU GCC tool chain or Microsoft Visual Studio for C++ (some project conversion may be needed).

Discover how to develop reliable, high-quality Python code with unit testing and test-driven development.

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

Leverage Swift to practice effective and efficient test-driven development (TDD) methodology. Software testing and TDD are evergreen programming concepts—yet Swift developers haven't widely adopted them. What's needed is a clear roadmap to learn and adopt TDD in the Swift world. Over the past years, Apple has invested in XCTest and Xcode's testing infrastructure, making testing a new top priority in their ecosystem. Open-source libraries such as Quick and Nimble have also reached maturity. The tools are there. This book will show you how to wield them. TDD has much more to offer than catching bugs. With this book, you'll learn a philosophy for building software. TDD enables engineers to solve problems incrementally, writing only as much code as necessary. By decomposing big problems into small steps, you can move along at a fast pace, always making visible progress. Participate in the test-driven development journey by building a real iOS application and incorporating new concepts through each chapter. The book's concepts will emerge as you figure out ways to use tests to drive the solutions to the problems of each chapter. Through the TDD of a single application, you'll be introduced to all the staples and advanced concepts of the craft, understand the trade offs each technique offers, and review an iterative process of software development. Test-Driven Development in Swift provides the path for a highly efficient way to make amazing apps. What You'll Learn Write tests that are easy to maintain Look after an ever-growing test suite Build a testing vocabulary that can be applied outside the Swift world See how Swift programming enhances the TDD flow seen in dynamic languages Discover how compiler errors can provide the same helpful guidance as failing tests do Who This Book Is For Mid-level developers keen to write higher quality code and improve their workflows. Also, developers that have already been writing tests but feel they are not getting the most out of them.

A Practical Guide

Modern C++ Programming with Test-Driven Development

Thoughtful Machine Learning with Python

Essential Test-Driven Development

iOS Code Testing

A Test-Driven Approach

ATDD by Example

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

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

Write clean code that works with the help of this groundbreaking software method. Example-driven teaching is the basis of Beck's step-by-step instruction that will have readers using TDD to further their projects.

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

Put into motion practical examples to master Test-Driven Development (TDD) and acceptance testing in Swift. This book uses a pragmatic approach to writing well-tested code and provides techniques that can be used to retrofit tests to legacy code bases. You'll be introduced to basic principles of TDD, such as Test First, Red-Green-Refactor, Remove Duplicate code, Dependency Injection, and Single Responsibility. Approaches covered include TDD, behavior-driven development (BDD), UI, and acceptance testing with common standard/open source frameworks. iOS Code Testing offers helpful instruction to teach iOS developers to retrospectively fit tests to legacy code, refactor legacy code so as to make the code more testable, install and configure a popular Swift BDD framework, practice BDD with Xcode, and create automated UI tests with Xcode. Additionally, many projects have legacy code bases. Legacy code is often seen as a blocker when it comes to implementing any kind of testing. What You Will Learn Fit test to legacy code retrospectively Install and configure popular Swift BDD frameworks Practice BDD with Xcode Who This Book Is For Software practitioners, such as Swift developers and mobile app testers.

Practices of the Python Pro

Test-Driven Java Development

Easy Solutions to Test Your Python Projects Using Test-Driven Development and Selenium, 2nd Edition

Test-Driven Infrastructure with Chef

Python Testing Cookbook

Crafting Test-Driven Software with Python

This book is intended for Python developers who want to use the principles of test-driven development (TDD) to create efficient and robust applications. In order to get the best out of this book, you should have development experience with Python.

As iOS apps become increasingly complex and business-critical, iOS developers must ensure consistently superior code quality. This means adopting best practices for creating and testing iOS apps. Test-Driven Development (TDD) is one of the most powerful of these best practices. Test-Driven iOS Development is the first book 100% focused on helping you successfully implement TDD and unit testing in an iOS environment. Long-time iOS/Mac developer Graham Lee helps you rapidly integrate TDD into your existing processes using Apple's Xcode 4 and the OCUnit unit testing framework. He guides you through constructing an entire Objective-C iOS app in a test-driven manner, from initial specification to functional product. Lee also introduces powerful patterns for applying TDD in iOS development, and previews powerful automated testing capabilities that will soon arrive on the iOS platform. Coverage includes Understanding the purpose, benefits, and costs of unit testing in iOS environments Mastering the principles of TDD, and applying them in areas from app design to refactoring Writing usable, readable, and repeatable iOS unit tests Using OCUnit to set up your Xcode project for TDD Using domain analysis to identify the classes and interactions your app needs, and designing it accordingly Considering third-party tools for iOS unit testing Building networking code in a test-driven manner Automating testing of view controller code that interacts with users Designing to interfaces, not implementations Testing concurrent code that typically runs in the background Applying TDD to existing apps Preparing for Behavior Driven Development (BDD) The only iOS-specific guide to TDD and unit testing, Test-Driven iOS Development covers both essential concepts and practical implementation.

Discover the Django web application framework and get started building Python-based web applications. This book takes you from the basics of Django all the way through to cutting-edge topics such as creating RESTful applications. Beginning Django also covers ancillary, but essential, development topics, including configuration settings, static resource management, logging, debugging, and email. Along with material on data access with SQL queries, you'll have all you need to get up and running with Django 1.11 LTS, which is compatible with Python 2 and Python 3. Once you've built your web application, you'll need to be the admin, so the next part of the book covers how to enforce permission management with users and groups. This technique allows you to restrict access to URLs and content, giving you total control of your data. In addition, you'll work with and customize the Django admin site, which provides access to a Django project's data. After reading and using this book, you'll be able to build a Django application top to bottom and be ready to move on to more advanced or complex Django application development. What You'll Learn Get started with the Django framework Use Django views, class-based views, URLs, middleware, forms, templates, and Jinja templates Take advantage of Django models, including model relationships, migrations, queries, and forms Leverage the Django admin site to get access to the database used by a Django project Deploy Django REST services to serve as the data backbone for mobile, IoT, and SaaS systems Who This Book Is For Python developers new to the Django web application development framework and web developers new to Python and Django.

Learn how to apply test-driven development (TDD) to machine-learning algorithms—and catch mistakes that could sink your analysis. In this practical guide, author Matthew Kirk takes you through the principles of TDD and machine learning, and shows you how to apply TDD to several machine-learning algorithms, including Naive Bayesian classifiers and Neural Networks. Machine-learning algorithms often have tests baked in, but they can't account for human errors in coding. Rather than blindly rely on machine-learning results as many researchers have, you can mitigate the risk of errors with TDD and write clean, stable machine-learning code. If you're familiar with Ruby 2.1, you're ready to start. Apply TDD to write and run tests before you start coding Learn the best uses and tradeoffs of eight machine learning algorithms Use real-world examples to test each algorithm through engaging, hands-on exercises Understand the similarities between TDD and the scientific method for validating solutions Be aware of the risks of machine learning, such as underfitting and overfitting data Explore techniques for improving your machine-learning models or data extraction

This guide for programmers teaches how to practice Test Driven Development (TDD), also called Test First Development. Contrary to the accepted approach to testing, when you practice TDD you write tests for code before you write the code being tested. This text provides examples in Java.

Test-Driven Development with Python

Python Unit Test Automation

Web Application Development and Deployment with Python

Test-Driven Development and Behavior-Driven Development with Swift

A Practical Guide to Acceptance Test-Driven Development

Practical Techniques for Python Developers and Testers

Test Driven Development for Embedded C

Fix everyday testing problems in Python with the help of this solution-based guide Key Features Use powerful tools such as doctest and unittest to make testing convenient Apply automation testing to an existing legacy system that isn't test oriented A practical guide to ease testing in Python using real-world examples Book Description Automated testing is the best way to increase efficiency while reducing the defects of software testing. It helps find bugs in code easily and at an early stage so that they can be tackled efficiently. This book delves into essential testing concepts used in Python to help you build robust and maintainable code. Python Testing Cookbook begins with a brief introduction to Python's unit testing framework to help you write automated test cases. You will learn how to write suitable test sets for your software and run automated test suites with Nose. You will then work with the unittest.mock library, which allows you to replace the parts of your system that are being tested with mock objects and make assertions about how they have been used. You will also see how to apply Test-driven Development (TDD) and Behavior-driven Development (BDD) and how to eliminate issues caused by TDD. The book explains how to integrate automated tests using Continuous Integration and perform smoke/load testing. It also covers best practices and will help you solve persistent testing issues in Python. The book concludes by helping you understand how doctest works and how Selenium can be used to test code efficiently. What you will learn Run test cases from the command line with increased verbosity Write a Nose extension to pick tests based on regular expressions Create testable documentation using doctest Use Selenium to test the Web User Interface Write a testable story with Voidspace Mock and Nose Configure TeamCity to run Python tests on commit Update project-level scripts to provide coverage reports Who this book is for If you're a Python developer who wants to take testing to the next level and would like to expand your testing skills, this book is for you. It is assumed that you have some Python programming knowledge.

The official book on the Rust programming language, written by the Rust development team at the Mozilla Foundation, fully updated for Rust 2018. The Rust Programming Language is the official book on Rust: an open source systems programming language that helps you write faster, more reliable software. Rust offers control over low-level details (such as memory usage) in combination with high-level ergonomics, eliminating the hassle traditionally associated with low-level languages. The authors of The Rust Programming Language, members of the Rust Core Team, share their knowledge and experience to show you how to take full advantage of Rust's features--from installation to creating robust and scalable programs. You'll begin with basics like creating functions, choosing data types, and binding variables and then move on to more advanced concepts, such as: • Ownership and borrowing, lifetimes, and traits • Using Rust's memory safety guarantees to build fast, safe programs • Testing, error handling, and effective refactoring • Generics, smart pointers, multithreading, trait objects, and advanced pattern matching • Using Cargo, Rust's built-in package manager, to build, test, and document your code and manage dependencies • How best to use Rust's advanced compiler with compiler-led programming techniques You'll find plenty of code examples throughout the book, as well as three chapters dedicated to building complete projects to test your learning: a number guessing game, a Rust implementation of a command line tool, and a multithreaded server. New to this edition: An extended section on Rust macros, an expanded chapter on modules, and appendixes on Rust development tools and editions.

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

For JavaScript developers working on increasingly large and complex projects, effective automated testing is crucial to success. Test-Driven JavaScript Development is a complete, best-practice guide to agile JavaScript testing and quality assurance with the test-driven development (TDD) methodology. Leading agile JavaScript developer Christian Johansen covers all aspects of applying state-of-the-art automated testing in JavaScript environments, walking readers through the entire development lifecycle, from project launch to application deployment, and beyond. Using real-life examples driven by unit tests, Johansen shows how to use TDD to gain greater confidence in your code base, so you can fearlessly refactor and build more robust, maintainable, and reliable JavaScript code at lower cost. Throughout, he addresses crucial issues ranging from code design to performance optimization, offering realistic solutions for developers, QA specialists, and testers. Coverage includes • Understanding automated testing and TDD • Building effective automated testing workflows • Testing code for both browsers and servers (using Node.js) • Using TDD to build cleaner APIs, better modularized code, and more robust software • Writing testable code • Using test stubs and mocks to test units in isolation • Continuously improving code through refactoring • Walking through the construction and automated testing of fully functional software The accompanying Web site, tddjs.com, contains all of the book's code listings and additional resources.

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 FeaturesBuild robust Python applications using TDD and BDD methodologiesTest Python web applications using WebTest and web frameworksLeverage PyTest to implement stringent testing mechanisms to ensure fault-tolerant applicationsBook 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 learnFind 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.

Learn coding and testing with puzzles and games

Write test suites that scale with your applications' needs and complexity using Python and PyTest

Hands-on Test Driven Development with Python

Applying Unit Testing, TDD, BDD and Acceptance Testing

The Hitchhiker's Guide to Python

Learn Ruthlessly Effective Automation

Thoughtful Machine Learning

Test-Driven Development (TDD) is at the heart of low-defect agile software development, enabling incremental development and emergent design without degrading quality. By allowing software teams to create comprehensive regression tests that immediately pinpoint tiny errors, it gives them confidence to enhance functionality with incredible speed. Essential Test-Driven Development will help you discover how TDD helps developers take back the joy of software development, as you glimpse of the future of TDD and software development as a profession. Leading TDD coach and instructor Rob Myers shares his experiences, suggestions, and stories, plus focused and fun self-directed Java, C#, C++, and JavaScript lab work from his acclaimed TDD course. Throughout, this guide reflects the author's unsurpassed experience practicing TDD on real production code and helping hundreds of teams adopt TDD practices. Myers addresses both human motivations and technical challenges, and stresses benefits to individual programmers, not just companies. He also offers exceptional coverage of massive refactoring and legacy code, reflecting the actual realities most developers face."

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.

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

Test-driven Development with PythonObey the Testing Goat: Using Django, Selenium, and JavaScript

Invoke TDD principles for end-to-end application development with Java About This Book Explore the most popular TDD tools and frameworks and become more proficient in building applications Create applications with better code design, fewer bugs, and higher test coverage, enabling you to get them to market quickly Implement test-driven programming methods into your development workflows Who This Book Is For If you're an experienced Java developer and want to implement more effective methods of programming systems and applications, then this book is for you. What You Will Learn Explore the tools and frameworks required for effective TDD development Perform the Red-Green-Refactor process efficiently, the pillar around which all other TDD procedures are based Master effective unit testing in isolation from the rest of your code Design simple and easily maintainable codes by implementing different techniques Use mocking frameworks and techniques to easily write and quickly execute tests Develop an application to implement behaviour-driven development in conjunction with unit testing Enable and disable features using Feature Toggles In Detail Test-driven development (TDD) is a development approach that relies on a test-first procedure that emphasises writing a test before writing the necessary code, and then refactoring the code to optimize it. The value of performing TDD with Java, one of the most established programming languages, is to improve the productivity of programmers, the maintainability and performance of code, and develop a deeper understanding of the language and how to employ it effectively. Starting with the basics of TDD and reasons why its adoption is beneficial, this book will take you from the first steps of TDD with Java until you are confident enough to embrace the practice in your day-to-day routine. You'll be guided through setting up tools, frameworks, and the environment you need, and will dive right in to hands-on exercises with the goal of mastering one practice, tool, or framework at a time. You'll learn about the Red-Green-Refactor procedure, how to write unit tests, and how to use them as executable documentation. With this book you'll also discover how to design simple and easily maintainable code, work with mocks, utilise behaviour-driven development, refactor old legacy code, and release a half-finished feature to production with feature toggles. You will finish this book with a deep understanding of the test-driven development methodology and the confidence to apply it to application programming with Java. Style and approach An easy-to-follow, hands-on guide to building applications through effective coding practices. This book covers practical examples by introducing different problems, each one designed as a learning exercise to help you understand each aspect of TDD.

Hands-On Reactive Programming with Python

Python for DevOps

Foundations of Agile Python Development

Simple, Rapid, Effective, and Scalable

Automate, Organize, and Execute Unit Tests in Python

Test-Driven Python Development

Beginning Django

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.

A comprehensive guide to help you understand the principles of Reactive and asynchronous programming and its benefits Key FeaturesExplore the advantages of Reactive programmingUse concurrency and parallelism in RxPY to build powerful reactive applicationsDeploy and scale your reactive applications using DockerBook Description Reactive programming is central to many concurrent systems, but it's famous for its steep learning curve, which makes most developers feel like they're hitting a wall. With this book, you will get to grips with reactive programming by steadily exploring various concepts This hands-on guide gets you started with Reactive Programming (RP) in Python. You will learn abouta the principles and benefits of using RP, which can be leveraged to build powerful concurrent applications. As you progress through the chapters, you will be introduced to the paradigm of Functional and Reactive Programming (FaRP), observables and observers, and concurrency and parallelism. The book will then take you through the implementation of an audio transcoding server and introduce you to a library that helps in the writing of FaRP code. You will understand how to use third-party services and dynamically reconfigure an application. By the end of the book, you will also have learned how to deploy and scale your applications with Docker and Traefik and explore the significant potential behind the reactive streams concept, and you'll have got to grips with a comprehensive set of best practices. What you will learnStructure Python code for better readability, testing, and performanceExplore the world of event-based programmingGrasp the use of the most common operators in RxUnderstand reactive extensions beyond simple examplesMaster the art of writing reusable componentsDeploy an application on a cloud platform with Docker and TraefikWho this book is for If you are a Python developer who wants to learn Reactive programming to build powerful concurrent and asynchronous applications, this book is for you. Basic understanding of the Python language is all you need to understand the concepts covered in this book.

This book is for Django developers with little or no knowledge of test-driven development or testing in general. Familiarity with the command line, setting up a Python virtual environment, and starting a Django project are assumed.

If you program in C++ you've been neglected. Test-driven development (TDD) is a modern software development practice that can dramatically reduce the number of defects in systems, produce more maintainable code, and give you the confidence to change your software to meet changing needs. But C++ programmers have been ignored by those promoting TDD--until now. In this book, Jeff Langr gives you hands-on lessons in the challenges and rewards of doing TDD in C++. Modern C++ Programming With Test-Driven Development, the only comprehensive treatment on TDD in C++ provides you with everything you need to know about TDD, and the challenges and benefits of implementing it in your C++ systems. Its many detailed code examples take you step-by-step from TDD basics to advanced concepts. As a veteran C++ programmer, you're already writing high-quality code, and you work hard to maintain code quality. It doesn't have to be that hard. In this book, you'll learn: how to use TDD to improve legacy C++ systems how to identify and deal with troublesome system dependencies how to do dependency injection, which is particularly tricky in C++ how to use testing tools for C++ that aid TDD new C++11 features that facilitate TDD As you grow in TDD mastery, you'll discover how to keep a massive C++ system from becoming a design mess over time, as well as particular C++ trouble spots to avoid. You'll find out how to prevent your tests from being a maintenance burden and how to think in TDD without giving up your hard-won C++ skills. Finally, you'll see how to grow and sustain TDD in your team. Whether you're a complete unit-testing novice or an experienced tester, this book will lead you to mastery of test-driven development in C++. What You Need A C++ compiler running under Windows or Linux, preferably one that supports C++11. Examples presented in the book were built under gcc 4.7.2. Google Mock 1.6 (downloadable for free; it contains Google Test as well) or an alternate C++ unit testing tool. Most examples in the book are written for Google Mock, but it isn't difficult to translate them to your tool of choice. A good programmer's editor or IDE. cmake, preferably. Of course, you can use your own preferred make too. CMakeLists.txt files are provided for each project. Examples provided were built using cmake version 2.8.9. Various freely-available third-party libraries are used as the basis for examples in the book. These include: cURL JsonCpp Boost (filesystem, date_time/gregorian, algorithm, assign) Several examples use the boost headers/libraries. Only one example uses cURL and JsonCpp.

Explore the new way of building and maintaining test cases with Java test driven development (TDD) using JUnit 5. This book doesn't just talk about the new concepts, it shows you ways of applying them in TDD and Java 8 to continuously deliver code that excels in all metrics. Unit testing and test driven development have now become part of every developer's skill set. For Java developers, the most popular testing tool has been JUnit, and JUnit 5 is built using the latest features of Java. With Java Unit Testing with JUnit 5, you'll master these new features, including method parameters, extensions, assertions and assumptions, and dynamic tests. You'll also see how to write clean tests with less code. This book is a departure from using older practices and presents new ways of performing tests, building assertions, and injecting dependencies. What You Will Learn Write tests the JUnit 5 way Run your tests from within your IDE Integrate tests with your build and static analysis tools Migrate from JUnit 4 to JUnit 5 Who This Book Is For Java developers both with and without any prior unit testing experience.

Test-Driven JavaScript Development

Obey the Testing Goat: Using Django, Selenium, and JavaScript

Event-driven development unraveled with RxPY

Test Driven Development with JUnit 5

Code Better, Sleep Better

Django Test-Driven Development

By Example

Gain the confidence you need to apply machine learning in your daily work. With this practical guide, author Matthew Kirk shows you how to integrate and test machine learning algorithms in your code, without the academic subtext. Featuring graphs and highlighted code examples throughout, the book features tests with Python's Numpy, Pandas, Scikit-Learn, and SciPy data science libraries. If you're a software engineer or business analyst interested in data science, this book will help you: Reference real-world examples to test each algorithm through engaging, hands-on exercises Apply test-driven development (TDD) to write and run tests before you start coding Explore techniques for improving your machine-learning models with data extraction and feature development Watch out for the risks of machine learning, such as underfitting or overfitting data Work with K-Nearest Neighbors, neural networks, clustering, and other algorithms Fundamental testing methodologies applied to the popular Pythonlanguage Testing Python; Applying Unit Testing, TDD, BDD andAcceptance Testing is the most comprehensive book available ontesting for one of the top software programming languages in theworld. Python is a natural choice for new and experienceddevelopers, and this hands-on resource is a much needed guide toenterprise-level testing development methodologies. The book willshow you why Unit Testing and TDD can lead to cleaner, moreflexible programs. Unit Testing and Test-Driven Development (TDD) are increasinglymust-have skills for software developers, no matter what languagethey work in. In enterprise settings, it's critical for developersto ensure they always have working code, and that's what makestesting methodologies so attractive. This book will teach you themost widely used testing strategies and will introduce to you tostill others, covering performance testing, continuous testing, andmore. Learn Unit Testing and TDD—important developmentmethodologies 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 UKdeveloper and tech commentator Get ahead of the crowd by mastering the underappreciated worldof Python testing Knowledge of software testing in Python could set you apart fromPython developers using outmoded methodologies. Python is a naturalfit for TDD and Testing Python is a must-read text foranyone who wants to develop expertise in Python programming.

The agile development movement represents the latest advances in tools and techniques intended to boost developer productivity. This is the first book to apply these sought after principles to Python developers, introducing both the tools and techniques built and supported by the Python community. Authored by Jeff Younker, who is perhaps best known for his creation of a popular Python testing framework, this book is sure to be a hit among readers who may have reached their limits of knowledge regarding the Python language, yet are seeking to improve their understanding of how sound processes can boost productivity to unparalleled heights.

By taking you through the development of a real web application from beginning to end, this hands-on guide demonstrates the practical advantages of test-driven development (TDD) with Python. You{u2019}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{u2019}ll learn the basics of Django, Selenium, Git, jQuery, and Mock, along with current web development techniques. If you{u2019}re ready to take your Python skills to the next level, this book 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 Use a Continuous Integration environment to run your tests automatically.

Your code is a testament to your skills as a developer. No matter what language you use, code should be clean, elegant, and uncluttered. By using test-driven development (TDD), you'll write code that's easy to understand, retains its elegance, and works for months, even years, to come. With this indispensable guide, you'll learn how to use TDD with three different languages: Go, JavaScript, and Python. Author Saleem Siddiqui shows you how to tackle domain complexity using a unit test-driven approach. TDD partitions requirements into small, implementable features, enabling you to solve problems irrespective of the languages and frameworks you use. With Learning Test-Driven Development at your side, you'll learn how to incorporate TDD into your regular coding practice. This book helps you: Use TDD's divide-and-conquer approach to tame domain complexity Understand how TDD works across languages, testing frameworks, and domain concepts Learn how TDD enables continuous integration Support refactoring and redesign with TDD Learn how to write a simple and effective unit test harness in JavaScript Set up a continuous integration environment with the unit tests produced during TDD Write clean, uncluttered code using TDD in Go, JavaScript, and Python

Python Testing
Testing Python
Tiny Python Projects
Python Testing with pytest
Learning Test-Driven Development
Best Practices for Development
Java Unit Testing with JUnit 5

”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 rhymer, 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

Beginner's Guide
Test-Driven iOS Development
Test-driven Development
Architecture Patterns with Python
with examples in C#