Working Effectively With Unit Tests

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. Longtime 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 iOSspecific guide to TDD and unit testing, Test-Driven iOS Development covers both essential concepts and practical implementation.

Widely considered one of the best practical guides to programming, Steve McConnell®s original CODE COMPLETE has been helping developers write better software for more than a decade. Now this classic

book has been fully updated and revised with leading-edge practices and hundreds of new code samples lillustrating the art and science of software construction. Capturing the body of knowledge available from research, academia, and everyday commercial practice, McConnell synthesizes the most effective techniques and must-know principles into clear, pragmatic guidance. No matter what your experience level, development environment, or project size, this book will inform and stimulate your thinking and help you build the highest quality code. Discover the timeless techniques and strategies that help you: Design for minimum complexity and maximum creativity Reap the benefits of

collaborative development Apply defensive programming techniques to reduce and flush out errors Exploit opportunities to refactor or evolve ode, and do it safely Use construction practices that are right-weight for your project Debug problems quickly and effectively Resolve critical construction issues early and correctly Build quality into the beginning, middle, and end of your project

A single dramatic software failure can cost a company millions of dollars - but can be avoided with simple changes to design and architecture. This new edition of the best-selling industry standard shows you how to create systems that run longer, with fewer failures, and recover better when bad

things happen. New coverage includes DevOps, microservices, and cloudnative architecture. Stability antipatterns have grown to include systemic problems in large-scale systems. This is a must-have pragmatic guide to engineering for production systems. If you're a software developer, and you don't want to get alerts every night for the rest of your life, help is here. With a combination of case studies about huge losses - lost revenue, lost reputation, lost time, lost opportunity - and practical, down-toearth advice that was all gained through painful experience, this book helps you avoid the pitfalls that cost companies millions of dollars in downtime and reputation. Eighty percent of project life-cycle cost is in

production, yet few books address this topic. This updated edition deals with the production of today's systems larger, more complex, and heavily virtualized - and includes information on chaos engineering, the discipline of applying randomness and deliberate stress to reveal systematic problems. Build systems that survive the real world, avoid downtime, implement zero-downtime upgrades and continuous delivery, and make cloudnative applications resilient. Examine ways to architect, design, and build software - particularly distributed systems - that stands up to the typhoon winds of a flash mob, a Slashdotting, or a link on Reddit. Take a hard look at software that failed the test and find ways to make sure your software

survives. To skip the pain and get the experience...get this book. Users can dramatically improve the design, performance, and manageability of object-oriented code without altering its interfaces or behavior. "Refactoring" shows users exactly how to spot the best opportunities for refactoring and exactly how to do it, step by step. Get more out of your legacy systems: more performance, functionality, reliability, and manageability Is your code easy to change? Can you get nearly instantaneous feedback when you do change it? Do you understand it? If the answer to any of these questions is no, you have legacy code, and it is draining time and money away from your development efforts. In this

book. Michael Feathers offers start-tofinish strategies for working more effectively with large, untested legacy code bases. This book draws on material Michael created for his renowned Object Mentor seminars: techniques Michael has used in mentoring to help hundreds of developers, technical managers, and testers bring their legacy systems under control. The topics covered include Understanding the mechanics of software change: adding features, fixing bugs, improving design, optimizing performance Getting legacy code into a test harness Writing tests that protect you against introducing new problems Techniques that can be used with any language or platform[with examples in Java, C++,

C, and C# Accurately identifying where code changes need to be made Coping with legacy systems that aren't object-oriented Handling applications that don't seem to have any structure This book also includes a catalog of twenty-four dependency-breaking techniques that help you work with program elements in isolation and make safer changes. The Art of Unit Testing Refactoring Test Code Working Effectively with Legacy Code A Practical Approach Our Common Agenda - Report of the Secretary-General **Effective Unit Testing** For those considering Extreme Programming, this book provides nononsense advice on agile planning,

development, delivery, and management taken from the authors' many years of experience. While plenty of books address the what and why of agile development, very few offer the information users can apply directly.

One skill that's essential for any professional JavaScript developer is the ability to write testable code. This book shows you what writing and maintaining testable JavaScript for the client- or server-side actually entails, whether you're creating a new application or rewriting legacy code. From methods to reduce code complexity to unit testing, code coverage, debugging, and automation, you'll learn a holistic approach for writing JavaScript code that you and

your colleagues can easily fix and maintain going forward. Testing JavaScript code is complicated. This book helps experienced JavaScript developers simply the process considerably. Get an overview of Agile, test-driven development, and behavior-driven development Use patterns from static languages and standards-based JavaScript to reduce code complexity Learn the advantages of event-based architectures. including modularity, loose coupling, and reusability Explore tools for writing and running unit tests at the functional and application level Generate code coverage to measure the scope and effectiveness of your tests Conduct integration, performance, and load testing, using

Selenium or CasperJS Use tools for inbrowser, Node.js, mobile, and production debugging Understand what, when, and how to automate your development processes Master high quality software development driven by unit tests About This Book Design and implement robust system components by means of the de facto unit testing standard in Java Reduce defect rate and maintenance effort, plus simultaneously increase code quality and development pace Follow a stepby-step tutorial imparting the essential techniques based on real-world scenarios and code walkthroughs Who This Book Is For No matter what your specific background as a Java developer, whether you're simply

interested in building up a safety net to reduce regressions of your desktop application or in improving your server-side reliability based on robust and reusable components, unit testing is the way to go. This book provides you with a comprehensive but concise entrance advancing your knowledge step-wise to a professional level. What You Will Learn Organize your test infrastructure and resources reasonably Understand and write well structured tests Decompose your requirements into small and independently testable units Increase your testing efficiency with on-the-fly generated stand-in components and deal with the particularities of exceptional flow Employ runners to adjust to specific test demands Use

rules to increase testing safety and reduce boilerplate Use third party supplements to improve the expressiveness of your verification statements In Detail JUnit has matured to become the most important tool when it comes to automated developer tests in Java. Supported by all IDEs and build systems, it empowers programmers to deliver software features reliably and efficiently. However, writing good unit tests is a skill that needs to be learned otherwise it's all too easy to end up in gridlocked development due to messed up production and testing code. Acquiring the best practices for unit testing will help you to prevent such problems and lead your projects to success with respect to quality and

costs. This book explains JUnit concepts and best practices applied to the test first approach, a foundation for high quality Java components delivered in time and budget. From the beginning you'll be guided continuously through a practically relevant example and pick up background knowledge and development techniques step by step. Starting with the basics of tests organization you'll soon comprehend the necessity of well structured tests and delve into the relationship of requirement decomposition and the many-faceted world of test double usage. In conjunction with third-party tools you'll be trained in writing your tests efficiently, adapt your test case environment to particular demands

and increase the expressiveness of your verification statements. Finally, you'll experience continuous integration as the perfect complement to support short feedback cycles and quality related reports for your whole team. The tutorial gives a profound entry point in the essentials of unit testing with JUnit and prepares you for test-related daily work challenges. Style and approach This is an intelligible tutorial based on an ongoing and non-trivial development example. Profound introductions of concepts and techniques are provided stepwise as the programming challenges evolve. This allows you to reproduce and practice the individual skills thoroughly.

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 "mockiststyle" 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 wellbalanced and effective testing strategies suitable for agile teams 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. with examples in C# Learning Test-Driven Development Release ItI

A Practical and Incremental Approach An Essay on the Pain of Playing Video Games Building Quality into Software Increase Your Productivity - Write Better Code

An exploration of why we play video games despite the fact that we are almost certain to feel unhappy when we fail at them. We may think of video games as being "fun," but in The Art of Failure, Jesper Juul claims that this is almost entirely mistaken. When we play video games, our facial expressions are

rarely those of happiness or bliss. Instead, we frown, grimace, and shout in frustration as we lose, or die, or fail to advance to the next level. Humans may have a fundamental desire to succeed and feel competent, but game players choose to engage in an activity in which they are nearly certain to fail and feel incompetent. So why do we play video games even though they make us unhappy? Juul examines this paradox. In video games, as in tragic works of art, literature, theater, and cinema, it

seems that we want to experience unpleasantness even if we also dislike it. Reader or audience reaction to tragedy is often explained as catharsis, as a purging of negative emotions. But, Juul points out, this doesn't seem to be the case for video game players. Games do not purge us of unpleasant emotions; they produce them in the first place. What, then, does failure in video game playing do? Juul argues that failure in a game is unique in that when you fail in a

game, you (not a character) are in some way inadequate. Yet games also motivate us to play more, in order to escape that inadequacy, and the feeling of escaping failure (often by improving skills) is a central enjoyment of games. Games, writes Juul, are the art of failure: the singular art form that sets us up for failure and allows us to experience it and experiment with it. The Art of Failure is essential reading for anyone interested in video games, whether as

entertainment, art, or education.

Summary Go Web Programming teaches you how to build scalable, high-performance web applications in Go using modern design principles. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology The Go language handles the demands of scalable, highperformance web applications by providing clean and fast compiled code, garbage collection, a simple concurrency

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model, and a fantastic standard library. It's perfect for writing microservices or building scalable, maintainable systems. About the Book Go Web Programming teaches you how to build web applications in Go using modern design principles. You'll learn how to implement the dependency injection design pattern for writing test doubles, use concurrency in web applications, and create and consume JSON and XML in web services. Along the way, you'll discover how to minimize your

dependence on external frameworks, and you'll pick up valuable productivity techniques for testing and deploying your applications. What's Inside Basics Testing and benchmarking Using concurrency Deploying to standalone servers, PaaS, and Docker Dozens of tips, tricks, and techniques About the Reader This book assumes you're familiar with Go language basics and the general concepts of web development. About the Author Sau Sheong Chang is Managing Director of Digital Technology at

Singapore Power and an active contributor to the Ruby and Go communities. Table of Contents PART 1 GO AND WEB APPLICATIONS GO and web applications Go ChitChat PART 2 BASIC WEB APPLICATIONS Handling requests Processing requests Displaying content Storing data PART 3 BEING REAL Go web services Testing your application Leveraging Go concurrency Deploying Go 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 freelyavailable 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.

Test Driven brings under one cover practical TDD techniques distilled from several years of community experience. With examples in Java and the Java EE environment, it explores both the techniques and the mindset of TDD and ATDD.

Unit testing. You've heard the term. Probably a lot. You know you should probably figure out how it works, since everyone's always talking about it and a lot of companies require developers to know

it. But you don't really know it and you're worried that you'll look uninformed if you cop to not knowing it. Well, relax. This book assumes you have absolutely no idea how it works and walks you through the practice from the very beginning. You'll learn the basics, but more importantly, you'll learn the business value, the path to walk not to get frustrated, what's testable and what isn't, and, and everything else that a practical unit testing newbie could

possibly want to know. Building Microservices with .NET Core Coders at Work Tools for High-Quality Software Development Applying Unit Testing, TDD, BDD and Acceptance Testing Dependency Injection Principles, Practices, and Patterns Ruby Best Practices Testing with JUnit This book explains in detail how to implement unit tests using two very popular open source Java technologies: JUnit and Mockito. It presents a range of techniques necessary to write high quality unit tests - e.g. mocks, parametrized tests

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and matchers. It also discusses tradeoffs related to the choices we have to make when dealing with some reallife code issues. The book stresses the importance of writing readable and maintainable unit tests, and puts a lot of stress on code quality. It shows how to achieve testable code and to eliminate common mistakes by following the Test Driven Development approach. Every topic discussed in the book is illustrated with code examples, and each chapter is accompanied by some exercises. By reading this book you will: Grasp the role and purpose of unit tests Write high-quality, readable and maintainable unit tests Learn how to use JUnit and Mockito (but also other useful tools) Avoid common pitfalls when writing unit tests Recognize bad unit tests, and

fix them in no time Develop code following the Test Driven Development (TDD) approach Use mocks, stubs and test-spies intelligently Measure the quality of your tests using code coverage and mutation testing Learn how to improve your tests' code so it is an asset and not a burden Test collections, expected exceptions, time-dependent methods and much more Customize test reports so that they show you what you really need to know Master tools and techniques your team members have never even heard of (priceless!):) Nowadays every developer is expected to write unit tests. While simple in theory, in practice writing high-quality unit tests can turn out to be a real challenge. This book will help. Working Effectively with Unit

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TestsCreatespace Independent Publishing Platform 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 Mog, 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, Page 40/107

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 Mog, 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 Page 41/107

lava 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)

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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 Summary Dependency Injection Principles, Practices, and Patterns teaches you to use DI to reduce hardcoded dependencies between application components. You'll start by learning what DI is and what types of applications will benefit from it. Then, you'll work through concrete scenarios using C# and the .NET framework to implement DI in your own projects. As you dive into the thoroughly-explained examples, you'll develop a foundation you can apply to any of the many DI libraries for

.NFT and .NFT Core. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Dependency Injection (DI) is a great way to reduce tight coupling between software components. Instead of hard-coding dependencies, such as specifying a database driver, you make those connections through a third party. Central to application frameworks like ASP.NET Core, DI enables you to better manage changes and other complexity in your software. About the Book Dependency Injection Principles, Practices, and Patterns is a revised and expanded edition of the bestselling classic Dependency Injection in .NET. It teaches you DI from the ground up, featuring relevant examples, patterns, and anti-Page 44/107

patterns for creating loosely coupled, well-structured applications. The wellannotated code and diagrams use C# examples to illustrate principles that work flawlessly with modern objectoriented languages and DI libraries. What's Inside Refactoring existing code into loosely coupled code DI techniques that work with statically typed OO languages Integration with common .NET frameworks Updated examples illustrating DI in .NET Core About the Reader For intermediate OO developers. About the Authors Mark Seemann is a programmer, software architect, and speaker who has been working with software since 1995, including six years with Microsoft, Steven van Deursen is a seasoned .NET developer and architect, and the author and maintainer of the Simple Injector DI Page 45/107

library. Table of Contents PART 1 Putting Dependency Injection on the map The basics of Dependency Injection: What, why, and how Writing tightly coupled code Writing loosely coupled code PART 2 Catalog DI patterns DI anti-patterns Code smells PART 3 Pure DI Application composition Object lifetime Interception Aspect-Oriented Programming by design Tool-based Aspect-Oriented Programming PART 4 DI Containers DI Container introduction The Autofac DI Container The Simple Injector DI Container The Microsoft.Extensions.DependencyInje ction DI Container The Definitive Refactoring Guide, Fully Revamped for Ruby With refactoring, programmers can transform even the most chaotic software into well-designed systems Page 46/107

that are far easier to evolve and maintain. What's more, they can do it one step at a time, through a series of simple, proven steps. Now, there's an authoritative and extensively updated version of Martin Fowler's classic refactoring book that utilizes Ruby examples and idioms throughout-not code adapted from Java or any other environment. The authors introduce a detailed catalog of more than 70 proven Ruby refactorings, with specific guidance on when to apply each of them, stepby-step instructions for using them, and example code illustrating how they work. Many of the authors' refactorings use powerful Rubyspecific features, and all code samples are available for download. Leveraging Fowler's original concepts, the authors show how to Page 47/107

perform refactoring in a controlled, efficient, incremental manner, so you methodically improve your code's structure without introducing new bugs. Whatever your role in writing or maintaining Ruby code, this book will be an indispensable resource. This book will help you * Understand the core principles of refactoring and the reasons for doing it * Recognize "bad smells" in your Ruby code * Rework bad designs into well-designed code, one step at a time * Build tests to make sure your refactorings work properly * Understand the challenges of refactoring and how they can be overcome * Compose methods to package code properly * Move features between objects to place responsibilities where they fit best * Organize data to make it easier to work with * Simplify conditional Page 48/107

expressions and make more effective use of polymorphism * Create interfaces that are easier to understand and use * Generalize more effectively * Perform larger refactorings that transform entire software systems and may take months or years * Successfully refactor Ruby on Rails code Practical Unit Testing with JUnit and Mockito Test-Driven iOS Development Reflections on the Craft of **Programming** WORK EFFECT LEG CODE p1 The Art of Lean Software Development xUnit Test Patterns Go Web Programming Architect your .NET applications by breaking them into really small

pieces—microservices—using this practical, example-based guide About This Book Start your microservices journey and understand a broader perspective of microservices development Build, deploy, and test microservices using ASP.Net MVC, Web API, and Microsoft Azure Cloud Get started with reactive microservices and understand the fundamentals behind it Who This Book Is For This book is for .NET Core developers who want to learn and understand microservices architecture and implement it in their .NET Core applications. It's ideal for developers who are completely new to microservices or

have just a theoretical understanding of this architectural approach and want to gain a practical perspective in order to better manage application complexity. What You Will Learn Compare microservices with monolithic applications and SOA Identify the appropriate service boundaries by mapping them to the relevant bounded contexts Define the service interface and implement the APIs using ASP.NET Web API Integrate the services via synchronous and asynchronous mechanisms Implement microservices security using Azure Active Directory, OpenID Connect, and OAuth 2.0 Understand the

operations and scaling of microservices in NET Core Understand the testing pyramid and implement consumer-driven contract using pact net core Understand what the key features of reactive microservices are and implement them using reactive extension In Detail Microservices is an architectural style that promotes the development of complex applications as a suite of small services based on business capabilities. This book will help you identify the appropriate service boundaries within the business. We'll start by looking at what microservices are, and what the main characteristics are. Moving

forward, you will be introduced to real-life application scenarios, and after assessing the current issues, we will begin the journey of transforming this application by splitting it into a suite of microservices. You will identify the service boundaries, split the application into multiple microservices, and define the service contracts. You will find out how to configure, deploy, and monitor microservices, and configure scaling to allow the application to quickly adapt to increased demand in the future. With an introduction to the reactive microservices, you strategically gain further value to keep your code base
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simple, focusing on what is more important rather than the messy asynchronous calls. Style and approach This guide serves as a stepping stone that helps .NET Core developers in their microservices architecture. This book provides just enough theory to understand the concepts and apply the examples.

How do you write truly elegant code with Ruby? Ruby Best Practices is for programmers who want to use Ruby as experienced Rubyists do. Written by the developer of the Ruby project Prawn, this concise book explains how to design beautiful APIs and domain-specific languages with Ruby, as well as Page 54/107

how to work with functional programming ideas and techniques that can simplify your code and make you more productive. You'll learn how to write code that's readable, expressive, and much more. Ruby Best Practices will help you: Understand the secret powers unlocked by Ruby's code blocks Learn how to bend Ruby code without breaking it, such as mixing in modules on the fly Discover the ins and outs of testing and debugging, and how to design for testability Learn to write faster code by keeping things simple Develop strategies for text processing and file management, including regular expressions Understand how and

why things can go wrong Reduce cultural barriers by leveraging Ruby's multilingual capabilities This book also offers you comprehensive chapters on driving code through tests, designing APIs, and project maintenance. Learn how to make the most of this rich, beautiful language with Ruby Best Practices.

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 of ten 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 machinelearning 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-Page 57/107

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

Presents a guide to unit testing with the NUnit library in C# along with providing information on writing code, detecting and fixing problems, testing pieces of code, and testing with a team.

Unit Testing Principles, Patterns and Practices shows you how to refine your existing unit tests by implementing modern best practices.

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You'll learn to spot which tests are performing, which need refactoring, and which need to be deleted entirely! Upgrade your testing suite with new testing styles, good patterns, and reliable automated testing. Unit Testing Principles, Practices and Patterns is a practical guide to modern unit testing best practices. Microsoft MVP Vladimir Khorikov takes you hands-on with examples of the ideal unit test and unit testing practices, building your skills step by step on a solid foundation. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. Refactoring

Test-driven Development **Developer Testing** Starting to Unit Test Thoughtful Machine Learning A guide for Java developers Code Better, Sleep Better The Pragmatic Programmers classic is back! Freshly updated for modern software development, Pragmatic Unit Testing in Java 8 With JUnit teaches you how to write and run easily maintained unit tests in JUnit with confidence. You'll learn mnemonics to help you know what tests to write, how to remember all the boundary conditions, and what the qualities of a good test are. You'll see how

unit tests can pay off by allowing you to keep your system code clean, and you'll learn how to handle the stuff that seems too tough to test. Pragmatic Unit Testing in Java 8 With JUnit steps you through all the important unit testing topics. If vou've never written a unit test. you'll see screen shots from Eclipse, IntelliJ IDEA, and NetBeans that will help you get past the hard part--getting set up and started. Once past the basics, you'll learn why you want to write unit tests and how to effectively use JUnit. But the meaty part of the book is its collected unit testing wisdom

from people who've been there, done that on production systems for at least 15 years: veteran author and developer Jeff Langr, building on the wisdom of Pragmatic Programmers Andy Hunt and Dave Thomas, You'll learn: How to craft your unit tests to minimize your effort in maintaining them. How to use unit tests to help keep your system clean. How to test the tough stuff. Memorable mnemonics to help you remember what's important when writing unit tests. How to help your team reap and sustain the benefits of unit testing. You won't just learn about unit testing in

theory--you'll work through numerous code examples. When it comes to programming, handson is the only way to learn! 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, vou'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. Peter Seibel interviews 15 of the most interesting computer programmers alive today in Coders at Work, offering a companion volume to Apress's highly acclaimed best-seller Founders at Work by Jessica Livingston. As the words "at work" suggest, Peter Seibel focuses on how his interviewees tackle the day-to-day work of programming, while revealing much more, like how they became great programmers, how they recognize programming talent in others, and what kinds of problems they find most

interesting. Hundreds of people have suggested names of programmers to interview on the Coders at Work web site: www.codersatwork.com. The complete list was 284 names. Having digested everyone's feedback, we selected 15 folks who've been kind enough to agree to be interviewed: Frances Allen: Pioneer in optimizing compilers, first woman to win the Turing Award (2006) and first female IBM fellow Joe Armstrong: Inventor of Erlang Joshua Bloch: Author of the Java collections framework, now at Google Bernie Cosell: One of the main software guys behind the

original ARPANET IMPs and a master debugger Douglas Crockford: JSON founder. JavaScript architect at Yahoo! L. Peter Deutsch: Author of Ghostscript, implementer of Smalltalk-80 at Xerox PARC and Lisp 1.5 on PDP-1 Brendan Eich: Inventor of JavaScript, CTO of the Mozilla Corporation Brad Fitzpatrick: Writer of LiveJournal, OpenID, memcached, and Perlbal Dan Ingalls: Smalltalk implementor and designer Simon Peyton Jones: Coinventor of Haskell and lead designer of Glasgow Haskell Compiler Donald Knuth: Author of The Art of Computer Programming and

creator of TeX Peter Norvig: Director of Research at Google and author of the standard text on AI Guy Steele: Coinventor of Scheme and part of the Common Lisp Gang of Five, currently working on Fortress Ken Thompson: Inventor of UNIX Jamie Zawinski: Author of XEmacs and early Netscape/Mozilla hacker Software testing is indispensable and is one of the most discussed topics in software development today. Many companies address this issue by assigning a dedicated software testing phase towards the end of their development cycle. However,

quality cannot be tested into a buggy application. Early and continuous unit testing has been shown to be crucial for high quality software and low defect rates. Yet current books on testing ignore the developer's point of view and give little guidance on how to bring the overwhelming amount of testing theory into practice. Unit Testing in Java represents a practical introduction to unit testing for software developers. It introduces the basic test-first approach and then discusses a large number of special issues and problem cases. The book instructs developers through

each step and motivates them to explore further. Shows how the discovery and avoidance of software errors is a demanding and creative activity in its own right and can build confidence early in a project. Demonstrates how automated tests can detect the unwanted effects of small changes in code within the entire system. Discusses how testing works with persistency, concurrency, distribution, and web applications. Includes a discussion of testing with C++ and Smalltalk 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 mustread text foranyone who wants to develop expertise in Python programming. Unit Testing in Java How Tests Drive the Code Testable JavaScript

Improving the Design of Existing Code Java Unit Testing with JUnit 5 By Example Design and Deploy Production-Ready Software On the seventy-fifth anniversary of the United Nations, the world has faced its biggest shared test since the Second World War in the coronavirus disease (COVID-19) pandemic. Yet while our welfare, and indeed the permanence of human life, depend on us working together, international cooperation has never been harder to achieve. This report answers a call from UN Member States to provide recommendations to advance our common agenda and to respond to

current and future challenges. Its proposals are grounded in a renewal of the social contract. adapted to the challenges of this century, taking into account younger and future generations, complemented by a new global deal to better protect the global commons and deliver global public goods. Through a deepening of solidarity—at the national level, between generations, and in the multilateral system—Our Common Agenda provides a path forward to a greener, safer and better future. 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 This book details Jay Fields' strong opinions on the best way to test, while acknowledging alternative styles and various contexts in which tests are written. Whether you prefer Jay Fields' style or not, this book

will help you write better Unit Tests. From the Preface: Over a dozen vears ago I read Refactoring for the first time; it immediately became my bible. While Refactoring isn't about testing, it explicitly states: If you want to refactor, the essential precondition is having solid tests. At that time, if Refactoring deemed it necessary, I unquestionably complied. That was the beginning of my quest to create productive unit tests. Throughout the 12+ years that followed reading Refactoring I made many mistakes, learned countless lessons, and developed a set of guidelines that I believe make unit testing a productive use of programmer time. This book provides a single place to examine

those mistakes, pass on the lessons learned, and provide direction for those that want to test in a way that I've found to be the most productive. The book does touch on some theory and definition, but the main purpose is to show you how to take tests that are causing you pain and turn them into tests that you're happy to work with.

This succinct book explains how you can apply the practices of Lean software development to dramatically increase productivity and quality. Based on techniques that revolutionized Japanese manufacturing, Lean principles are being applied successfully to product design, engineering, the supply chain, and now software

development. With The Art of Lean Software Development, you'll learn how to adopt Lean practices one at a time rather than taking on the entire methodology at once. As you master each practice, you'll see significant, measurable results. With this book, you will: Understand Lean's origins from Japanese industries and how it applies to software development Learn the Lean software development principles and the five most important practices in detail Distinguish between the Lean and Agile methodologies and understand their similarities and differences Determine which I ean principles you should adopt first, and how you can gradually

incorporate more of the methodology into your process Review hands-on practices, including descriptions, benefits, trade-offs, and roadblocks Learn how to sell these principles to management The Art of Lean Software Development is ideal for busy people who want to improve the development process but can't afford the disruption of a sudden and complete transformation. The Lean approach has been yielding dramatic results for decades, and with this book, you can make incremental changes that will produce immediate benefits. "This book presents Lean practices in a clear and concise manner so readers are motivated to make their

software more reliable and less costly to maintain. I recommend it to anyone looking for an easy-to-follow guide to transform how the developer views the process of writing good software."-- Bryan Wells, Boeing Intelligence & Security Sytems Mission System "If vou're new to Lean software development and you're not quite sure where to start, this book will help get your development process going in the right direction, one step at a time."-- John McClenning, software development lead, Aclara Test-Driven Development (TDD) is now an established technique for delivering better software faster. TDD is based on a simple idea: Write tests for your code before you

write the code itself. However, this "simple" idea takes skill and judgment to do well. Now there's a practical guide to TDD that takes you beyond the basic concepts. Drawing on a decade of experience building real-world systems, two TDD pioneers show how to let tests guide your development and "grow" software that is coherent, reliable. and maintainable. Steve Freeman and Nat Pryce describe the processes they use, the design principles they strive to achieve, and some of the tools that help them get the job done. Through an extended worked example, you'll learn how TDD works at multiple levels, using tests to drive the features and the object-oriented

structure of the code, and using Mock Objects to discover and then describe relationships between objects. Along the way, the book systematically addresses challenges that development teams encounter with TDD-from integrating TDD into your processes to testing your most difficult features. Coverage includes Implementing TDD effectively: getting started, and maintaining your momentum throughout the project Creating cleaner, more expressive, more sustainable code Using tests to stay relentlessly focused on sustaining quality Understanding how TDD, Mock Objects, and Object-Oriented Design come together in the context

of a real software development project Using Mock Objects to quide object-oriented designs Succeeding where TDD is difficult: managing complex test data, and testing persistence and concurrency Growing Object-Oriented Software, Guided by Tests Code Complete Learn Ruthlessly Effective **Automation** Pragmatic Unit Testing in C# with NI Init A Test-Driven Approach Modern C++ Programming with Test-Driven Development Working Effectively with Unit Tests Write automated unit tests for the ABAP language. This book teaches programmers using

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simple examples and metaphors and explains the underlying concepts of writing effective automated unit tests. Many, if not most, ABAP programmers learned their programming and testing skills before the ABAP development environment provided an automated unit testing facility. Automated Unit Testing with ABAP: A Practical Approach offers hope and salvation to ABAP programmers who continue to toil with antiquated manual unit testing processes, taking them by the hand and lifting them out of that dungeon of

despair with a modern and proven alternative. It begins by explaining how the xUnit family of automated testing frameworks provides a quick and effective means of insuring high-quality software. It then focuses on the ABAP Unit Testing Facility, the xUnit framework applicable specifically to the ABAP language, showing how it can be used to bring ABAP applications under automated testing control, from old legacy applications to those newly written. Whereas xUnit testing has been widely accepted with developers

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writing in many other programming languages, it is an unfortunate fact in the ABAP community that many programmers still are unfamiliar with xUnit concepts and do not know how to begin implementing automated unit testing into their development process. This book demonstrates how to refactor programs so they become designed for testability, showing how to use process encapsulation and test isolation to facilitate automated testing, including a thorough explanation of testdriven development and the

use of test doubles. The book: Shows how to write automated unit tests for ABAP Instills ABAP programmers with the confidence to refactor poorly written code Explains how an automated testing harness facilitates rapid software development Teaches how to utilize test-driven development (TDD) with ABAP Offers advice and tips on the best ways to write automated unit tests What You Will Learn Become familiar with the xUnit approach to testing Know the ABAP statements that interfere with running automated unit tests and how to

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accommodate them Understand what it means to isolate code for testing and how this is achieved Gain the confidence to refactor poorly written code Make ABAP programs designed for testability Reap the benefits of spending less time manually unit testing ABAP programs Use test-driven development (TDD) with ABAP programming Use configurable test doubles in ABAP Who This Book Is For ABAP programmers who remain unfamiliar with the automated unit testing facility and those who already use it

but want to improve their skill writing and using automated tests. The book addresses the reluctance and trepidation felt by procedural ABAP programmers who need to know some object-oriented concepts to use this facility, expands their horizons, and helps them step through the doorway leading to a different approach to program design. 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
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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 professionalquality 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 I earn Universal quidelines 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 Most people who write software have at least some

experience with unit testingeven if they don't call it that. If vou have ever written a few lines of throwaway code just to try something out, you've built a unit test. On the other end of the software spectrum, many large-scale applications have huge batteries of test cases that are repeatedly run and added to throughout the development process. What are unit test frameworks and how are they used? Simply stated, they are software tools to support writing and running unit tests, including a foundation on which to build tests and the functionality to

execute the tests and report their results. They are not solely tools for testing: they can also be used as development tools on a par with preprocessors and debuggers. Unit test frameworks can contribute to almost every stage of software development and are key tools for doing Agile Development and building big-free code. Unit Test Frameworks covers the usage, philosophy, and architecture of unit test frameworks. Tutorials and example code are platformindependent and compatible with Windows, Mac OS X,

Unix, and Linux. The companion CD includes complete versions of JUnit. CppUnit, NUnit, and XMLUnit, as well as the complete set of code examples. Summary Effective Unit Testing is written to show how to write good tests—tests that are concise and to the point, expressive, useful, and maintainable. Inspired by Roy Osherove's bestselling The Art of Unit Testing, this book focuses on tools and practices specific to the Java world. It introduces you to emerging techniques like behaviordriven development and

specification by example, and shows you how to add robust practices into your toolkit. About Testing Test the components before you assemble them into a full application, and you'll get better software. For Java developers, there's now a decade of experience with wellcrafted tests that anticipate problems, identify known and unknown dependencies in the code, and allow you to test components both in isolation and in the context of a full application. About this Book Effective Unit Testing teaches Java developers how to write
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unit tests that are concise. expressive, useful, and maintainable. Offering crisp explanations and easy-toabsorb examples, it introduces emerging techniques like behavior-driven development and specification by example. Programmers who are already unit testing will learn the current state of the art. Those who are new to the game will learn practices that will serve them well for the rest of their career. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the

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book. About the Author Lasse Koskela is a coach, trainer, consultant, and programmer. He hacks on open source projects, helps companies improve their productivity, and speaks frequently at conferences around the world. Lasse is the author of Test Driven, also published by Manning. What's Inside A thorough introduction to unit testing Choosing best-ofbreed tools Writing tests using dynamic languages Efficient test automation Table of Contents PART 1 FOUNDATIONS The promise of good tests In search of good

Test doubles PART 2 CATALOG Readability Maintainability Trustworthiness PART 3 DIVERSIONS Testable design Writing tests in other JVM languages Speeding up test execution Automated testing is a cornerstone of agile development. An effective testing strategy will deliver new functionality more aggressively, accelerate user feedback, and improve quality. However, for many developers, creating effective automated tests is a unique and unfamiliar challenge.

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xUnit Test Patterns is the definitive guide to writing automated tests using xUnit. the most popular unit testing framework in use today. Agile coach and test automation expert Gerard Meszaros describes 68 proven patterns for making tests easier to write, understand, and maintain. He then shows you how to make them more robust and repeatable--and far more cost-effective. Loaded with information, this book feels like three books in one. The first part is a detailed tutorial on test automation that covers everything from test

strategy to in-depth test coding. The second part, a catalog of 18 frequently encountered "test smells," provides trouble-shooting guidelines to help you determine the root cause of problems and the most applicable patterns. The third part contains detailed descriptions of each pattern, including refactoring instructions illustrated by extensive code samples in multiple programming languages. Python for DevOps Test Driven Development with JUnit 5

The Art of Failure
The Art of Agile Development
Testing Python
Automated Unit Testing with
ABAP

Unit Test Frameworks

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 Page 105/107

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

Unit Testing Principles, Practices, and Page 106/107

Patterns
Test Driven: Practical Test Driven
Development And Acceptance Tdd For
Java Developers
Not as Hard as You Think
Pragmatic Unit Testing in Java 8 with
JUnit
Ensuring Reliable Code
Ruby Edition: Ruby Edition