

Mastering Unit Testing Using Mockito And Junit Acharya Sujoy

This book is a hands-on guide, full of practical examples to illustrate the concepts of Test Driven Development. If you are a developer who wants to develop software following Test Driven Development using Mockito and leveraging various Mockito features, this book is ideal for you. You don't need prior knowledge of TDD, Mockito, or JUnit. It is ideal for developers, who have some experience in Java application development as well as a basic knowledge of unit testing, but it covers the basic fundamentals of TDD and JUnit testing to get you acquainted with these concepts before delving into them.

Summary SonarQube in Action shows developers how to use the SonarQube platform to help them continuously improve their source code. The book presents SonarQube's core Seven Axes of Quality: design/architecture, duplications, comments, unit tests, complexity, potential bugs, and coding rules. You'll find simple, easy-to-follow discussion and examples as you learn to integrate SonarQube into your development process. **About the Technology** SonarQube is a powerful open source tool for continuous inspection, a process that makes code quality analysis and reporting an integral part of the development lifecycle. Its unique dashboards, rule-based defect analysis, and tight build integration result in improved code quality without disruption to developer workflow. It supports many languages, including Java, C, C++, C#, PHP, and JavaScript. **About the Book** SonarQube in Action teaches you how to effectively use SonarQube following the continuous inspection model. This practical book systematically explores SonarQube's core Seven Axes of Quality (design, duplications, comments, unit tests, complexity, potential bugs, and coding rules). With well-chosen examples, it helps you learn to use SonarQube's review functionality and IDE integration to implement continuous inspection best practices in your own quality management process. The book's Java-based examples translate easily to other development languages. No prior experience with SonarQube or continuous delivery practice is assumed. **Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.** **What's Inside** Gather meaningful quality metrics Integrate with Ant, Maven, and Jenkins Write your own plugins Master the art of continuous inspection **About the Authors** Ann Campbell and Patroklos Papapetrou are experienced developers and team leaders. Both actively contribute to the SonarQube community. **Table of Contents** PART 1 WHAT THE NUMBERS ARE TELLING YOU An introduction to SonarQube Issues and coding standards Ensuring that your code is doing things right Working with duplicate code Optimizing source code documentation Keeping your source code files elegant Improving your application design PART 2 SETTling IN WITH SONARQUBE Planning a strategy and expanding your insight Continuous Inspection with SonarQube Letting SonarQube drive code reviews IDE integration PART 3 ADMINISTERING AND EXTENDING Security: users, groups, and roles Rule profile administration Making SonarQube fit your needs Managing your projects Writing your own plugins

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 behavior-driven 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 well-crafted 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 unit tests that are concise, expressive, useful, and maintainable. Offering crisp explanations and easy-to-absorb 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 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-of-breed 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

From lambda expressions and JavaFX 8 to new support for network programming and mobile development, Java 8 brings a wealth of changes. This cookbook helps you get up to speed right away with hundreds of hands-on recipes across a broad range of Java topics. You'll learn useful techniques for everything from debugging and data structures to GUI development and functional programming. Each recipe includes self-contained code solutions that you can freely use, along with a discussion of how and why they work. If you are familiar with Java basics, this cookbook will bolster your knowledge of the language in general and Java 8's main APIs in particular. **Recipes include:** Methods for compiling, running, and debugging Manipulating, comparing, and rearranging text Regular expressions for string- and pattern-matching Handling numbers, dates, and times Structuring data with collections, arrays, and other types Object-oriented and functional programming techniques Directory and filesystem operations Working with graphics, audio, and video GUI development, including JavaFX and handlers Network programming on both client and server Database access, using JPA, Hibernate, and JDBC Processing JSON and XML for data storage Multithreading and concurrency

Mastering Unit Testing Using Mockito and JunitPackt Pub Limited

If you are a GIS professional who intends to explore advanced techniques and get more out of GeoServer deployment rather than simply delivering good looking maps, then this book is for you.

Learn how to build, test, secure, deploy, and efficiently consume services across distributed systems. Key Features - Explore the wealth of options provided by Spring Cloud for wiring service dependencies in microservice systems. - Create microservices utilizing Spring Cloud's Netflix OSS - Architect your cloud-native data using Spring Cloud. Book Description Developing, deploying, and operating cloud applications should be as easy as local applications. This should be the governing principle behind any cloud platform, library, or tool. Spring Cloud—an open-source library—makes it easy to develop JVM applications for the cloud. In this book, you will be introduced to Spring Cloud and will master its features from the application developer's point of view. This book begins by introducing you to microservices for Spring and the available feature set in Spring Cloud. You will learn to configure the Spring Cloud server and run the Eureka server to enable service registration and discovery. Then you will learn about techniques related to load balancing and circuit breaking and utilize all features of the Feign client. The book now delves into advanced topics where you will learn to implement distributed tracing solutions for Spring Cloud and build message-driven microservice architectures. Before running an application on Docker containers, you will master testing and securing techniques with Spring Cloud. What you will learn - Abstract Spring Cloud's feature set - Create microservices utilizing Spring Cloud's Netflix OSS - Create synchronous API microservices based on a message-driven architecture. - Explore advanced topics such as distributed tracing, security, and contract testing. - Manage and deploy applications on the production environment Who this book is for This book appeals to developers keen to take advantage of Spring cloud, an open source library which helps developers quickly build distributed systems. Knowledge of Java and Spring Framework will be helpful, but no prior exposure to Spring Cloud is required.

Unleash the power of Android Studio 3 to develop mobile applications faster and efficiently. About This Book Use Android Studio not just as an IDE but as a complete testing and build solution Produce customized APKs with Gradle to suit various versions of an app, such as test versions and free versions of an otherwise paid app. Explore all aspects of UI development and testing using working XML and Java examples. Learn seamless migration from Eclipse and other development platforms to Android Studio. Who This Book Is For This book targets developers, with experience of developing for Android, who are new to Android Studio or wish to migrate from another IDE such as Eclipse. This book will show you how to get the utmost from this powerful tool. What You Will Learn Create styles, themes, and material designs Set up, configure, and run virtual devices using the AVD manager Improve the design of your application using support libraries Learn about GitHub libraries Use emulators to design layouts for a wide variety of devices, including wearables. Improve application performance in terms of memory, speed, and power usage In Detail Android Studio is an Integrated Development Environment (IDE) designed for developing Android apps. As with most development processes, Android keeps resources and logic nicely separated, and so this book covers the management of imagery and other resources, and the development and testing tools provided by the IDE. After introducing the software, the book moves straight into UI development using the sophisticated, WYSIWYG layout editor and XML code to design and test complex interfaces for a wide variety of screen configurations. With activity design covered, the book continues to guide the reader through application logic development, exploring the latest APIs provided by the SDK. Each topic will be demonstrated by working code samples that can be run on a device or emulator. One of Android Studio's greatest features is the large number of third-party plugins available for it, and throughout the book we will be exploring the most useful of these, along with samples and libraries that can be found on GitHub. The final module of the book deals with the final stages of development: building and distribution. The book concludes by taking the reader through the registration and publication processes required by Google. By the time you have finished the book, you will be able to build faster, smoother, and error-free Android applications, in less time and with fewer complications than you ever thought possible. Style and approach This is a step-by-step guide with examples demonstrating how Android Studio can be used as a complete solution for developing, testing, and deploying apps from start to finish.

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 and matchers. It also discusses trade-offs related to the choices we have to make when dealing with some real-life 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.

This book will equip you to create high-quality, visually appealing Android 11 apps from scratch with Kotlin. You'll discover a wide range of real-world development challenges faced by developers and explore various techniques to overcome them.

If you are an application developer with some experience in software testing and want to learn more about testing frameworks, then this technology and book is for you. Mockito for Spring will be perfect as your next step towards becoming a competent software tester with Spring and Mockito.

Develop a fully functional and dynamic Android application using the latest features of Firebase Key Features Explore all the latest tools in Firebase—Firebase Firestore, ML-Kit, and Firebase Predictions

Master Firebase cloud messaging, remote configuration, and work with a real-time database Make your app a global success with the help of Google Analytics and AdMob Book Description Firebase offers a wide spectrum of tools and services to help you develop high-quality apps in a short period of time. It also allows you to build web and mobile apps quickly without managing the infrastructure. Mastering Firebase for Android Development takes you through the complete toolchain of Firebase, including the latest tools announced in Google IO 2018 such as Firebase ML-Kit, Firestore, and Firebase Predictions. The book begins by teaching you to configure your development environment with Firebase and set up a different structure for a Firebase real-time database. As you make your way through the chapters, you'll establish the authentication feature in Android and explore email and phone authentication for managing the on-boarding of users. You'll be taken through topics on Firebase crash reporting, Firebase functions, Firebase Cloud, Firebase Hosting, and Cloud Messaging for push notifications and explore other key areas in depth. In the concluding chapters, you will learn to use Firebase Test Lab to test your application before using Firebase Performance Monitoring to trace performance setbacks. By the end of the book, you will be well equipped with the Firebase ecosystem, which will help you find solutions to your common application development challenges. What you will learn Learn about Firebase push notifications and write backend functionalities Identify the root cause of an application crash and diagnose and fix bugs Store different Multipurpose Internet Mail Extension(MIME) type files Explore web hosting and connect the Firebase functions to the host website Send push notifications and understand the deep integration of analytics tools and cohorts Market and monetize your application using Firebase Adwords and Admob Build a secure authentication framework while enhancing the sign-in and on-boarding experience for end users Who this book is for Mastering Firebase for Android Development is for individuals looking to extend their skills with Firebase and build faster, scalable, and real-time mobile applications. Basic understanding of Android programming is necessary. In all, this in-depth guide is an accessible pathway to mastering Firebase.

Learn Android Test-Driven Development! Writing apps is hard. Writing testable apps is even harder, but it doesn't have to be. Reading and understanding all the official Google documentation on testing can be time-consuming - and confusing. This is where Android Test-Driven Development comes to the rescue! In this book, you'll learn about Android Test-Driven Development the quick and easy way: by following fun and easy-to-read tutorials. Who This Book Is For This book is for the intermediate Android developers who already know the basics of Android and Kotlin development but want to learn Android Test-Driven Development. Topics Covered in Android Test-Driven Development - Getting Started with Testing: Learn the core concepts involved in testing including what is a test, why should you test, what should you test and what you should not test. - Test-Driven Development (TDD): Discover the Red-Green-Refactor steps and how to apply them. - The Testing Pyramid: Learn about the different types of tests and how to organize them. - Unit Tests: Learn how to start writing unit tests with TDD using JUnit and Mockito. - Integration Tests: Writing tests with different subsystems is a must in today's complex application world. Learn how to test with different subsystems including the persistence and network layers. - Architecting for Testing: Explore how to architect your app for testing and why it matters. - TDD on Legacy Projects: Take your TDD to the next level by learning how to apply it to existing legacy projects. And much more, including Espresso tests, UI tests, code coverage and refactoring. One thing you can count on: after reading this book, you'll be prepared to take advantage of Android Test-Driven Development in your own apps!

Design and Deploy High-Performance JavaFX Controls Deliver state-of-the-art applications with visually stunning UIs. Mastering JavaFX 8 Controls provides clear instructions, detailed examples, and ready-to-use code samples. Find out how to work with the latest JavaFX APIs, configure UI components, automatically generate FXML, build cutting-edge controls, and effectively apply CSS styling.

Troubleshooting, tuning, and deployment are also covered in this Oracle Press guide. Understand the properties of JavaFX 8 controls and APIs Create custom controls, transformations, and layouts Work from JavaFX Scene Graph and Scene Builder Visualize data models using advanced control types Use ListView, TableView, and TreeView APIs Handle audio and video content using JavaFX media classes Maximize separation between UI and application logic using FXML Style controls and applications using CSS Extend functionality of Swing and SWT applications with JavaFX Code examples in the book are available for download.

Build efficient, high-performance & scalable systems to process large volumes of data with Apache Ignite Key Features Understand Apache Ignite's in-memory technology Create High-Performance app components with Ignite Build a real-time data streaming and complex event processing system Book Description Apache Ignite is a distributed in-memory platform designed to scale and process large volume of data. It can be integrated with microservices as well as monolithic systems, and can be used as a scalable, highly available and performant deployment platform for microservices. This book will teach you to use Apache Ignite for building a high-performance, scalable, highly available system architecture with data integrity. The book takes you through the basics of Apache Ignite and in-memory technologies. You will learn about installation and clustering Ignite nodes, caching topologies, and various caching strategies, such as cache aside, read and write through, and write behind. Next, you will delve into detailed aspects of Ignite's data grid: web session clustering and querying data. You will learn how to process large volumes of data using compute grid and Ignite's map-reduce and executor service. You will learn about the memory architecture of Apache Ignite and monitoring memory and caches. You will use Ignite for complex event processing, event streaming, and the time-series predictions of opportunities and threats. Additionally, you will go through off-heap and on-heap caching, swapping, and native and Spring framework integration with Apache Ignite. By the end of this book, you will be confident with all the features of Apache Ignite 2.x that can be used to build a high-performance system architecture. What you will learn Use Apache Ignite's data grid and implement web session clustering Gain high performance and linear scalability with in-memory distributed data processing Create a microservice on top of Apache Ignite that can scale and perform Perform ACID-compliant CRUD operations on an Ignite cache Retrieve data from Apache Ignite's data grid using SQL, Scan and Lucene Text query Explore complex event processing concepts and event streaming Integrate your Ignite app with the Spring framework Who this book is for The book is for Big Data professionals who want to learn the essentials of Apache Ignite. Prior experience in Java is necessary.

This book is intended for those developers who are keen to master the internal workings of Play Framework to effectively build and deploy web-related apps.

Radically improve your testing practice and software quality with new testing styles, good patterns, and reliable automation. Key Features A practical and results-driven approach to unit testing Refine your existing unit tests by implementing modern best practices Learn the four pillars of a good unit test Safely automate your testing process to save time and money Spot which tests need refactoring, and which need to be deleted entirely Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About The Book Great testing practices maximize your project quality and delivery speed by identifying bad code early in the development process. Wrong tests will break your code, multiply bugs, and increase time and costs. You owe it to yourself—and your projects—to learn how to do excellent unit testing. Unit Testing Principles, Patterns and Practices teaches you to design and write tests that target key areas of your code including the domain model. In this clearly written guide, you learn to develop professional-quality tests and test suites and integrate testing throughout the application life cycle. As you adopt a testing mindset, you'll be amazed at how better tests cause you to write better code. What You Will Learn Universal guidelines to assess any unit test Testing to identify and avoid anti-patterns Refactoring tests along with the production code Using integration tests to verify the whole system This Book Is Written For For readers who know the basics of unit testing. Examples are written in C# and can easily be applied to any language. About the Author Vladimir Khorikov is an author, blogger, and Microsoft MVP. He has mentored numerous teams on the ins and outs of unit testing. Table of Contents: PART 1 THE BIGGER PICTURE 1 | The goal of unit testing 2 | What is a unit test? 3 | The anatomy of a unit test PART 2 MAKING YOUR TESTS WORK FOR YOU 4 | The four pillars of a good unit test 5 | Mocks and test fragility 6 | Styles of unit testing 7 | Refactoring toward valuable

unit tests PART 3 INTEGRATION TESTING 8 | Why integration testing? 9 | Mocking best practices 10 | Testing the database PART 4 UNIT TESTING ANTI-PATTERNS 11 | Unit testing anti-patterns

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 you'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, hands-on is the only way to learn!

This is a focused guide with lots of practical recipes with presentations of business issues and presentation of the whole test of the system. This book shows the use of Mockito's popular unit testing frameworks such as JUnit, PowerMock, TestNG, and so on. If you are a software developer with no testing experience (especially with Mockito) and you want to start using Mockito in the most efficient way then this book is for you. This book assumes that you have a good knowledge level and understanding of Java-based unit testing frameworks.

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.

Learn how to make Android development much faster using a variety of Kotlin features, from basics to advanced, to write better quality code. About This Book Leverage specific features of Kotlin to ease Android application development Write code based on both object oriented and functional programming to build robust applications Filled with various practical examples so you can easily apply your knowledge to real world scenarios Identify the improved way of dealing with common Java patterns Who This Book Is For This book is for developers who have a basic understanding of Java language and have 6-12 months of experience with Android development and developers who feel comfortable with OOP concepts. What You Will Learn Run a Kotlin application and understand the integration with Android Studio Incorporate Kotlin into new/existing Android Java based project Learn about Kotlin type system to deal with null safety and immutability Define various types of classes and deal with properties Define collections and transform them in functional way Define extensions, new behaviours to existing libraries and Android framework classes Use generic type variance modifiers to define subtyping relationship between generic types Build a sample application In Detail Nowadays, improved application development does not just mean building better performing applications. It has become crucial to find improved ways of writing code. Kotlin is a language that helps developers build amazing Android applications easily and effectively. This book discusses Kotlin features in context of Android development. It demonstrates how common examples that are typical for Android development, can be simplified using Kotlin. It also shows all the benefits, improvements and new possibilities provided by this language. The book is divided in three modules that show the power of Kotlin and teach you how to use it properly. Each module present features in different levels of advancement. The first module covers Kotlin basics. This module will lay a firm foundation for the rest of the chapters so you are able to read and understand most of the Kotlin code. The next module dives deeper into the building blocks of Kotlin, such as functions, classes, and function types. You will learn how Kotlin brings many improvements to the table by improving common Java concepts and decreasing code verbosity. The last module presents features that are not present in Java. You will learn how certain tasks can be achieved in simpler ways thanks to Kotlin. Through the book, you will learn how to use Kotlin for Android development. You will get to know and understand most important Kotlin features, and how they can be used. You will be ready to start your own adventure with Android development with Kotlin.

A comprehensive, hands-on guide on unit testing framework for Java programming language About This Book* In-depth coverage of Jupiter, the new programming and extension model provided by JUnit 5* Integration of JUnit 5 with other frameworks such as Mockito, Spring, Selenium, Cucumber, and Docker* Best practices for writing meaningful Jupiter test cases Who This Book Is For This book is for Java software engineers and testers. If you are a Java developer who is keen on improving the quality of your code and building world class applications then this book is for you. Prior experience of the concepts of automated testing will be helpful. What You Will Learn* The importance of software testing and its impact on software quality* The options available for testing Java applications* The architecture, features and extension model of JUnit 5* Writing test cases using the Jupiter programming model* How to use the latest and advanced features of JUnit 5* Integrating JUnit 5 with existing third-party frameworks* Best practices for writing meaningful JUnit 5 test cases* Managing software testing activities in a living software project In Detail When building an application it is of utmost importance to have clean code, a productive environment and efficient systems in place. Having automated unit testing in place helps developers to achieve these goals. The JUnit testing framework is a popular choice among Java developers and has recently released a major version update with JUnit 5. This book shows you how to make use of the power of JUnit 5 to write better software. The book begins with an introduction to software quality and software testing. After that, you will see an in-depth analysis of all the features of Jupiter, the new programming and extension model provided by JUnit 5. You will learn how to integrate JUnit 5 with other frameworks such as Mockito, Spring, Selenium, Cucumber, and Docker. After the technical features of JUnit 5, the final part of this book will train you for the daily work of a software tester. You will learn best practices for writing meaningful tests. Finally, you will learn how software testing fits into the overall software development process, and sits alongside continuous integration, defect tracking, and test reporting. Style and approach The book offers definitive and comprehensive coverage of all the Unit testing concepts with JUnit and its features using several real world examples so that readers can put their learning to practice almost immediately. This book is structured in three parts: 1. Software testing foundations (software quality and Java testing) 2. JUnit 5 in depth (programming and extension model of JUnit 5) 3. Software testing in practice (how to write and manage JUnit 5 tests)

Summary Java Testing with Spock teaches you how to use Spock for a wide range of testing use cases in Java. Readers new to Groovy will appreciate the succinct language tutorial that'll give you just enough Groovy to use Spock effectively. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Spock combines the features of tools like JUnit, Mockito, and JBehave into a single powerful Java testing library. With Spock, you use Groovy to write more readable and concise tests. Spock enables seamless integration testing, and with

the intuitive Geb library, you can even handle functional testing of web applications. About the Book Java Testing with Spock teaches you how to use Spock for a wide range of testing use cases in Java. You'll start with a quick overview of Spock and work through writing unit tests using the Groovy language. You'll discover best practices for test design as you learn to write mocks, implement integration tests, use Spock's built-in BDD testing tools, and do functional web testing using Geb. Readers new to Groovy will appreciate the succinct language tutorial in chapter 2 that gives you just enough Groovy to use Spock effectively. What's Inside Testing with Spock from the ground up Write mocks without an external library BDD tests your business analyst can read Just enough Groovy to use Spock About the Reader Written for Java developers. Knowledge of Groovy and JUnit is helpful but not required. About the Author Konstantinos Kapelonis is a software engineer who works with Java daily. Table of Contents PART 1 FOUNDATIONS AND BRIEF TOUR OF SPOCK Introducing the Spock testing framework Groovy knowledge for Spock testing A tour of Spock functionality PART 2 STRUCTURING SPOCK TESTS Writing unit tests with Spock Parameterized tests Mocking and stubbing PART 3 SPOCK IN THE ENTERPRISE Integration and functional testing with Spock Spock features for enterprise testing A comprehensive, hands-on guide on unit testing framework for Java programming language About This Book In-depth coverage of Jupiter, the new programming and extension model provided by JUnit 5 Integration of JUnit 5 with other frameworks such as Mockito, Spring, Selenium, Cucumber, and Docker Best practices for writing meaningful Jupiter test cases Who This Book Is For This book is for Java software engineers and testers. If you are a Java developer who is keen on improving the quality of your code and building world class applications then this book is for you. Prior experience of the concepts of automated testing will be helpful. What You Will Learn The importance of software testing and its impact on software quality The options available for testing Java applications The architecture, features and extension model of JUnit 5 Writing test cases using the Jupiter programming model How to use the latest and advanced features of JUnit 5 Integrating JUnit 5 with existing third-party frameworks Best practices for writing meaningful JUnit 5 test cases Managing software testing activities in a living software project In Detail When building an application it is of utmost importance to have clean code, a productive environment and efficient systems in place. Having automated unit testing in place helps developers to achieve these goals. The JUnit testing framework is a popular choice among Java developers and has recently released a major version update with JUnit 5. This book shows you how to make use of the power of JUnit 5 to write better software. The book begins with an introduction to software quality and software testing. After that, you will see an in-depth analysis of all the features of Jupiter, the new programming and extension model provided by JUnit 5. You will learn how to integrate JUnit 5 with other frameworks such as Mockito, Spring, Selenium, Cucumber, and Docker. After the technical features of JUnit 5, the final part of this book will train you for the daily work of a software tester. You will learn best practices for writing meaningful tests. Finally, you will learn how software testing fits into the overall software development process, and sits alongside continuous integration, defect tracking, and test reporting. Style and approach The book offers definitive and comprehensive coverage of all the Unit testing concepts with JUnit and its features using several real world examples so that readers can put their learning to practice almost immediately. This book is structured in three parts: Software testing foundations (software quality and Java testing) JUnit 5 in depth (programming and extension model of JUnit 5) Software testing in practice (how to write and manage JUnit 5 tests)

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.

A practical and easy-to-follow, yet comprehensive, guide to learning advanced JUnit testing. Each topic is explained and placed in context, and for the more inquisitive, there are more details of the concepts used. This book is for you if you are a developer with some experience in Java application development as well as a basic knowledge of JUnit testing. But for those whose skill set is void of any prior experience with JUnit testing, the book also covers basic fundamentals to get you acquainted with the concepts before putting them into practise.

This book is for you if you are a developer with some experience in Java application development as well as a basic knowledge of JUnit testing. But for those whose skill set is void of any prior experience with JUnit testing, the book also covers basic fundamentals to get you acquainted with the concepts before putting them into practise. It is insanity to keep doing things the same way and expect them to improve. Any program is useful only when it is functional; hence, before applying complex tools, patterns, or APIs to your production code, checking software functionality is must. Automated JUnit tests help you verify your assumptions continuously, detect side effects quickly, and also help you save time.

Learn to develop, test, and deploy your Spring Boot distributed application and explore various best practices. Key Features Build and deploy your microservices architecture in the cloud Build event-driven resilient systems using Hystrix and Turbine Explore API management tools such as KONG and API documentation tools such as Swagger Book Description Spring is one of the best frameworks on the market for developing web, enterprise, and cloud ready software. Spring Boot simplifies the building of complex software dramatically by reducing the amount of boilerplate code, and by providing production-ready features and a simple deployment model. This book will address the challenges related to power that come with Spring Boot's great configurability and flexibility. You will understand how Spring Boot configuration works under the hood, how to overwrite default configurations, and how to use advanced techniques to prepare Spring Boot applications to work in production. This book will also introduce readers to a relatively new topic in the Spring ecosystem – cloud native patterns, reactive programming, and applications. Get up to speed with microservices with Spring Boot and Spring Cloud. Each chapter aims to solve a specific problem or teach you a useful skillset. By the end of this book, you will be proficient in building and deploying your Spring Boot application. What you will learn Build logically structured

and highly maintainable Spring Boot applications Configure RESTful microservices using Spring Boot Make the application production and operation-friendly with Spring Actuator Build modern, high-performance distributed applications using cloud patterns Manage and deploy your Spring Boot application to the cloud (AWS) Monitor distributed applications using log aggregation and ELK Who this book is for The book is targeted at experienced Spring and Java developers who have a basic knowledge of working with Spring Boot. The reader should be familiar with Spring Boot basics, and aware of its benefits over traditional Spring Framework-based applications.

How do successful agile teams deliver bug-free, maintainable software—iteration after iteration? The answer is: By seamlessly combining development and testing. On such teams, the developers write testable code that enables them to verify it using various types of automated tests. This approach keeps regressions at bay and prevents “testing crunches”—which otherwise may occur near the end of an iteration—from ever happening. Writing testable code, however, is often difficult, because it requires knowledge and skills that cut across multiple disciplines. In *Developer Testing*, leading test expert and mentor Alexander Tarlinder presents concise, focused guidance for making new and legacy code far more testable. Tarlinder helps you answer questions like: When have I tested this enough? How many tests do I need to write? What should my tests verify? You’ll learn how to design for testability and utilize techniques like refactoring, dependency breaking, unit testing, data-driven testing, and test-driven development to achieve the highest possible confidence in your software. Through practical examples in Java, C#, Groovy, and Ruby, you’ll discover what works—and what doesn’t. You can quickly begin using Tarlinder’s technology-agnostic insights with most languages and toolsets while not getting buried in specialist details. The author helps you adapt your current programming style for testability, make a testing mindset “second nature,” improve your code, and enrich your day-to-day experience as a software professional. With this guide, you will Understand the discipline and vocabulary of testing from the developer’s standpoint Base developer tests on well-established testing techniques and best practices Recognize code constructs that impact testability Effectively name, organize, and execute unit tests Master the essentials of classic and “mockist-style” TDD Leverage test doubles with or without mocking frameworks Capture the benefits of programming by contract, even without runtime support for contracts Take control of dependencies between classes, components, layers, and tiers Handle combinatorial explosions of test cases, or scenarios requiring many similar tests Manage code duplication when it can’t be eliminated Actively maintain and improve your test suites Perform more advanced tests at the integration, system, and end-to-end levels Develop an understanding for how the organizational context influences quality assurance Establish well-balanced and effective testing strategies suitable for agile teams

Summary *Spring Roo in Action* is a unique book that teaches you how to code Java in Roo, with a particular focus on Spring-based applications. Through hands-on examples, you'll learn how Roo creates well-formed application structures and supports best practices and tools. Plus, you'll get a quick-and-dirty guide to setting up Roo effectively in your environment. About the Technology Roo is a lightweight Java console shell that simplifies compile-time tasks. It improves productivity by enforcing correct coding practices and patterns and integrates with mainstream Java technologies, including ActiveMQ, GWT, JPA, and OSGi. And, when you finish coding, it gets out of the way so there's no runtime impact. About the Book *Spring Roo in Action* teaches you to code Java more efficiently using Roo. With the help of many examples, it shows you how to build application components from the database layer to the user interface. The book takes a test-first approach and points out how Roo can help automate many of the mundane details of coding Java apps. Along the way, you'll address important topics like security, messaging, and cloud computing. This book is for Java developers who want to get more productive by using Roo. 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 book. What's Inside Learn Roo from the ground up Integrate with existing projects Create custom add-ons Use Roo with Spring =====?===== Table of Contents PART 1 STARTING SPRING APPS RAPIDLY WITH ROO What is Spring Roo? Getting started with Roo PART 2 DATABASES AND ENTITIES Database persistence with entities Relationships, JPA, and advanced persistence PART 3 WEB DEVELOPMENT Rapid web applications with Roo Advanced web applications RIA and other web frameworks Configuring security PART 4 INTEGRATION Testing your application Enterprise services—email and messaging Roo add-ons Advanced add-ons and deployment PART 5 ROO IN THE CLOUD Cloud computing Workflow applications using Spring Integration

Continuous delivery adds enormous value to the business and the entire software delivery lifecycle, but adopting this practice means mastering new skills typically outside of a developer’s comfort zone. In this practical book, Daniel Bryant and Abraham Marín-Pérez provide guidance to help experienced Java developers master skills such as architectural design, automated quality assurance, and application packaging and deployment on a variety of platforms. Not only will you learn how to create a comprehensive build pipeline for continually delivering effective software, but you’ll also explore how Java application architecture and deployment platforms have affected the way we rapidly and safely deliver new software to production environments. Get advice for beginning or completing your migration to continuous delivery Design architecture to enable the continuous delivery of Java applications Build application artifacts including fat JARs, virtual machine images, and operating system container (Docker) images Use continuous integration tooling like Jenkins, PMD, and find-sec-bugs to automate code quality checks Create a comprehensive build pipeline and design software to separate the deploy and release processes Explore why functional and system quality attribute testing is vital from development to delivery Learn how to effectively build and test applications locally and observe your system while it runs in production

This book is for you if you have some experience with Java and web development (not necessarily in Java) and want to become proficient quickly with Spring.

Summary *Testing Java Microservices* teaches you to implement unit and integration tests for microservice systems running on the JVM. You'll work with a microservice environment built using Java EE, WildFly Swarm, and Docker. You'll learn how to increase your test coverage and productivity, and gain confidence that your system will work as you expect. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Microservice applications present special testing challenges. Even simple services need to handle unpredictable loads, and distributed message-based designs pose unique security and performance concerns. These challenges increase when you throw in asynchronous communication and containers. About the Book *Testing Java Microservices* teaches you to implement unit and integration tests for microservice systems running on the JVM. You'll work with a microservice environment built using Java EE, WildFly Swarm, and Docker. You'll advance from writing simple unit tests for individual services to more-advanced practices like chaos or integration tests. As you move towards a continuous-delivery pipeline, you'll also master live system testing using technologies like the Arquillian, Wiremock, and Mockito frameworks, along with techniques like contract testing and over-the-wire service virtualization. Master these microservice-specific practices and tools and you'll greatly increase your test coverage and productivity, and gain confidence that your system will work as you expect. What's Inside Test automation Integration testing microservice systems Testing container-centric systems Service virtualization About the Reader Written for Java developers familiar with Java EE, EE4J, Spring, or Spring Boot. About the Authors Alex Soto Bueno and Jason Porter are Arquillian team members. Andy Gumbrecht is an

Apache TomEE developer and PMC. They all have extensive enterprise-testing experience. Table of Contents An introduction to microservices Application under test Unit-testing microservices Component-testing microservices Integration-testing microservices Contract tests End-to-end testing Docker and testing Service virtualization Continuous delivery in microservices

Develop cloud native applications with microservices using Spring Boot, Spring Cloud, and Spring Cloud Data Flow About This Book Explore the new features and components in Spring Evolve towards micro services and cloud native applications Gain powerful insights into advanced concepts of Spring and Spring Boot to develop applications more effectively Understand the basics of Kotlin and use it to develop a quick service with Spring Boot Who This Book Is For This book is for an experienced Java developer who knows the basics of Spring, and wants to learn how to use Spring Boot to build applications and deploy them to the cloud. What You Will Learn Explore the new features in Spring Framework 5.0 Build microservices with Spring Boot Get to know the advanced features of Spring Boot in order to effectively develop and monitor applications Use Spring Cloud to deploy and manage applications on the Cloud Understand Spring Data and Spring Cloud Data Flow Understand the basics of reactive programming Get to know the best practices when developing applications with the Spring Framework Create a new project using Kotlin and implement a couple of basic services with unit and integration testing In Detail Spring 5.0 is due to arrive with a myriad of new and exciting features that will change the way we've used the framework so far. This book will show you this evolution—from solving the problems of testable applications to building distributed applications on the cloud. The book begins with an insight into the new features in Spring 5.0 and shows you how to build an application using Spring MVC. You will realize how application architectures have evolved from monoliths to those built around microservices. You will then get a thorough understanding of how to build and extend microservices using Spring Boot. You will also understand how to build and deploy Cloud-Native microservices with Spring Cloud. The advanced features of Spring Boot will be illustrated through powerful examples. We will be introduced to a JVM language that's quickly gaining popularity - Kotlin. Also, we will discuss how to set up a Kotlin project in Eclipse. By the end of the book, you will be equipped with the knowledge and best practices required to develop microservices with the Spring Framework. Style and approach This book follows an end-to-end tutorial approach with lots of examples and sample applications, covering the major building blocks of the Spring framework.

JUnit in Action, Third Edition has been completely rewritten for this release. The book is full of examples that demonstrate JUnit's modern features, including its new architecture; nested, tagged, and dynamic tests; and dependency injection. Summary JUnit is the gold standard for unit testing Java applications. Filled with powerful new features designed to automate software testing, JUnit 5 boosts your productivity and helps avoid debugging nightmares. Whether you're just starting with JUnit or you want to ramp up on the new features, JUnit in Action, Third Edition has you covered. Extensively revised with new code and new chapters, JUnit in Action, Third Edition is an up-to-date guide to smooth software testing. Dozens of hands-on examples illustrate JUnit 5's innovations for dependency injection, nested testing, parameterized tests, and more. Throughout, you'll learn how to use JUnit 5 to automate your testing, for a process that consumes less resources, and gives you more time for developing. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology The JUnit framework is the gold standard for unit testing Java applications—and knowing it is an essential skill for Java developers. The latest version, JUnit 5, is a total overhaul, now supporting modern Java features like Lambdas and Streams. About the book JUnit in Action, Third Edition has been completely rewritten for this release. The book is full of examples that demonstrate JUnit's modern features, including its new architecture; nested, tagged, and dynamic tests; and dependency injection. You'll benefit from author Catalin Tudose's unique "pyramid" testing strategy, which breaks the testing process into layers and sets you on the path to bug-free code creation. What's inside Migrating from JUnit 4 to 5 Effective test automation Test-driven development and behavior-driven development Using mocks for test isolation Connecting JUnit 5 with Maven or Gradle About the reader For intermediate Java developers. About the author Catalin Tudose has a Ph.D. in Computer Science, and over 15 years of experience as a Senior Java Developer and Technical Team Lead. Previous editions were authored by Petar Tahchiev, Felipe Leme, Gary Gregory, and Vincent Massol. Table of Contents PART 1 - JUNIT 1 JUnit jump-start 2 Exploring core JUnit 3 JUnit architecture 4 Migrating from JUnit 4 to JUnit 5 5 Software testing principles PART 2 - DIFFERENT TESTING STRATEGIES 6 Test quality 7 Coarse-grained testing with stubs 8 Testing with mock objects 9 In-container testing PART 3 - WORKING WITH JUNIT 5 AND OTHER TOOLS 10 Running JUnit tests from Maven 3 11 Running JUnit tests from Gradle 6 12 JUnit 5 IDE support 13 Continuous integration with JUnit 5 PART 4 - WORKING WITH MODERN FRAMEWORKS AND JUNIT 5 14 JUnit 5 extension model 15 Presentation-layer testing 16 Testing Spring applications 17 Testing Spring Boot applications 18 Testing a REST API 19 Testing database applications PART 5 - DEVELOPING APPLICATIONS WITH JUNIT 5 20 Test-driven development with JUnit 5 21 Behavior-driven development in JUnit 5 22 Implementing a test pyramid strategy with JUnit 5

Discover the power of Drools 6 and Business Rules for developing complex scenarios in your applications About This Book Implement and model different rules using the DRL full syntax Model complex business decisions and domain models in order to automate and improve your operational decisions with the Drools framework A practical, fast-paced, hands-on guide to help you use the different components provided by the Drools Rule Engine Who This Book Is For This book is for Java developers and architects who need to have a deep understanding of how to create or integrate your applications with the Drools Rules Framework. The book assumes that you know the Java language well and also have experience with some widely used frameworks, such as Spring. You should also know the basics of Maven-based applications. What You Will Learn Automate your application's decisions, such as promotion applying, discount policies, fraud detection, and more. Quickly get started with writing your first rules using the DRL full syntax.

Discover the power of the new syntax components of the rule language. Define inferences in your business rules to simplify complex decisions. Write decision tables, templates, domain-specific languages, and scorecards, and learn how to map them to the Drools framework. Harness the full operational power of Drools through all of its configuration points. Use Drools configurations and architectures for different environments and scenarios. In Detail Mastering JBoss Drools 6 will provide you with the knowledge to develop applications involving complex scenarios. You will learn how to use KIE modules to create and execute Business Rules, and how the PHREAK algorithm internally works to drive the Rule Engine decisions. This book will also cover the relationship between Drools and jBPM, which allows you to enrich your applications by using Business Processes. You will be briefly introduced to the concept of complex event processing (Drools CEP) where you will learn how to aggregate and correlate your data based on temporal conditions. You will also learn how to define rules using domain-specific languages, such as spreadsheets, database entries, PMML, and more. Towards the end, this book will take you through the integration of Drools with the Spring and Camel frameworks for more complex applications. Style and approach Approached from a developer's perspective, the book teaches you all the advanced concepts of Business Rules applicable examples with helpful screenshots, diagrams, tutorials, and examples.

Take your C++ coding to the next level by leveraging the latest features and advanced techniques to building high performing, reliable applications. About This Book Get acquainted with the latest features in C++ 17 Take advantage of the myriad of features and possibilities that C++ offers to build real-world applications Write clear and expressive code in C++, and get insights into how to keep your code error-free Who This Book Is For This book is for experienced C++ developers. If you are a novice C++ developer, then it's highly recommended that you get a solid understanding of the C++ language before reading this book What You Will Learn Write modular C++ applications in terms of the existing and newly introduced features Identify code-smells, clean up, and refactor legacy C++ applications Leverage the possibilities provided by Cucumber and Google Test/Mock to automate test cases Test frameworks with C++ Get acquainted with the new C++17 features Develop GUI applications in C++ Build portable cross-platform applications using standard C++ features In Detail C++ has come a long way and has now been adopted in several contexts. Its key strengths are its software infrastructure and resource-constrained applications. The C++ 17 release will change the way developers write code, and this book will help you master your developing skills with C++. With real-world, practical examples explaining each concept, the book will begin by introducing you to the latest features in C++ 17. It encourages clean code practices in C++ in general, and demonstrates the GUI app-development options in C++. You'll get tips on avoiding memory leaks using smart-pointers. Next, you'll see how multi-threaded programming can help you achieve concurrency in your applications. Moving on, you'll get an in-depth understanding of the C++ Standard Template Library. We show you the concepts of implementing TDD and BDD in your C++ programs, and explore template-based generic programming, giving you the expertise to build powerful applications. Finally, we'll round up with debugging techniques and best practices. By the end of the book, you'll have an in-depth understanding of the language and its various facets. Style and approach This straightforward guide will help you level up your skills in C++ programming, be it for enterprise software or for low-latency applications like games. Filled with real-world, practical examples, this book will take you gradually up the steep learning curve that is C++.

This book is ideal for developers who have some experience in Java application development as well as some basic knowledge of test doubles and JUnit testing. This book also introduces you to the fundamentals of JUnit testing, test doubles, refactoring legacy code, and writing JUnit tests for GWT and web services.

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