

Robert C. Martin Series



**WORKING  
EFFECTIVELY  
WITH  
LEGACY CODE**

Michael C. Feathers

# Working Effectively With Legacy Code

**A Gutmann**



## **Working Effectively With Legacy Code :**

**Working Effectively with Legacy Code** Michael Feathers, 2004-09-22 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 to finish 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

Working Effectively with Legacy Code, First Edition Michael Feathers, 2004 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 to finish 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 Copyright Pearson Education All rights reserved **Working Effectively with Legacy Code** ,2009

Working Effectively with Legacy Code Michael C. Feathers, 2004 Michael Feathers offers start to finish strategies for working more effectively with large untested legacy code bases This book draws on material Michael created for his own 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 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 **WORKING EFFECTIVELY WITH LEGACY CODE.** MICHAEL. FEATHERS,2020 **Brutal Refactoring** Michael Feathers,2013-01-01

Mastering Unit Testing Using Mockito and JUnit Sujoy Acharya,2014-07-15 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 Modernizing Legacy Applications in PHP Paul M. Jones,2016-08-31 Get your code under control in a series of small specific steps About This Book Learn to extract and replace legacy artifacts Improve your application from the ground up while keeping your codebase fully operational Improve the quality of your legacy applications Who This Book Is For PHP developers from all skill levels will be able to get value from this book and will be able to transform their spaghetti code applications to clean modular applications If you are in the midst of a legacy refactor or you find yourself in a state of despair caused by the code you have inherited this is the book for you All you need is to have PHP 5.0 installed and you're all set to change the way you maintain and deploy your code What You Will Learn Replace global and new with dependency injection Extract SQL statements to gateways Convert action logic to controllers Remove repeated logic in page scripts Create maintainable PHP code from crufty legacy PHP In Detail Have you noticed that your legacy PHP application is composed of page scripts placed directly in the document root of the web server Or do your page scripts along with any other classes and functions combine the concerns of model view and controller into the same scope Is the majority of the logical flow incorporated as include files and global functions rather than class methods Working with such a legacy application feels like dragging your feet through mud doesn't it This book will show you how to modernize your application in terms of practice and technique rather than in terms of using tools like frameworks and libraries by extracting and replacing its legacy artifacts We will use a step by step approach moving slowly and methodically to improve your application from the ground up We'll show you how dependency injection can replace both the new and global dependencies We'll also show you how to change the presentation logic to view files and the action logic to a controller Moreover we'll keep your application running the whole time Each completed step in the process will keep your codebase fully operational with higher quality When we are done you will be able to breeze through your code like the wind Your code will be autoloaded dependency injected unit tested layer separated and front controlled Most of the very limited code we will add to your application is specific to this book We will be improving ourselves as programmers as well as improving the quality of our legacy application Style and approach This book gives developers an easy to follow practical and powerful process to bring their applications up to a modern baseline Each step in the book is practical self contained and moves you closer to the end goal

you seek maintainable code As you follow the exercises in the book the author almost anticipates your questions and you will have the answers ready to be implemented on your project

**Mockito Essentials** Sujoy Acharya,2014-10-24 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

**The Art of Unit Testing, Third Edition** Roy Osherove,2024-03-26 Unit testing is more than just a collection of tools and practices it s a state of mind This bestseller reveals the master s secrets for delivering robust maintainable and trustworthy code Thousands of developers have learned to hone their code quality under the tutelage of The Art of Unit Testing This revised third edition updates an international bestseller to reflect modern development tools and practices as well as to cover JavaScript Inside The Art of Unit Testing Third Edition you will learn how to Create readable maintainable and trustworthy tests Work with fakes stubs mock objects and isolation frameworks Apply simple dependency injection techniques Refactor legacy code with confidence Test both frontend and backend code Effective unit tests streamline your software development process and ensure you deliver consistent high quality code every time With practical examples in JavaScript and Node this hands on guide takes you from your very first unit tests all the way to comprehensive test suites naming standards and refactoring techniques You ll explore test patterns and organization working with legacy code and even untestable code The many tool agnostic examples are presented in JavaScript and carefully designed so that they apply to code written in any language About the technology The art of unit testing is more than just learning the right collection of tools and practices It s about understanding what makes great tests tick finding the right strategy for each unique situation and knowing what to do when the testing process gets messy This book delivers insights and advice that will transform the way you test your software About the book The Art of Unit Testing Third Edition shows you how to create readable and maintainable tests It goes well beyond basic test creation into organization wide test strategies troubleshooting working with legacy code and merciless refactoring You ll love the practical examples and familiar scenarios that make testing come alive as you read This third edition has been updated with techniques specific to object oriented functional and modular coding styles The examples use JavaScript What s inside Deciding on test types and strategies Test Entry Exit Points Refactoring legacy code Fakes stubs mock objects and isolation frameworks Object Oriented Functional and Modular testing styles About the reader Examples use JavaScript TypeScript and Node js About the author Roy Osherove is an internationally recognized expert in unit testing and agile software methodology Vladimir Khorikov is the author of Manning s Unit Testing Principles Practices and Patterns a Pluralsight author and a Microsoft MVP

Table of Contents PART 1 1 The basics of unit testing 2 A first unit test PART 2 3 Breaking dependencies with stubs 4 Interaction testing using mock objects 5 Isolation frameworks 6 Unit testing asynchronous code PART 3 7 Trustworthy tests 8 Maintainability PART 4 9 Readability 10 Developing a testing strategy 11 Integrating unit

testing into the organization 12 Working with legacy code Appendix Monkey patching functions and modules *Mockito Cookbook* Marcin Grzeszczak,2014-06-24 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 [The Robert C. Martin Clean Code Collection \(Collection\)](#) Robert C. Martin,2011-11-10 The Robert C Martin Clean Code Collection consists of two bestselling eBooks Clean Code A Handbook of Agile Software Craftmanship The Clean Coder A Code of Conduct for Professional Programmers In Clean Code legendary software expert Robert C Martin has teamed up with his colleagues from Object Mentor to distill their best agile practice of cleaning code on the fly into a book that will instill within you the values of a software craftsman and make you a better programmer but only if you work at it You will be challenged to think about what s right about that code and what s wrong with it More important you will be challenged to reassess your professional values and your commitment to your craft In The Clean Coder Martin introduces the disciplines techniques tools and practices of true software craftsmanship This book is packed with practical advice about everything from estimating and coding to refactoring and testing It covers much more than technique It is about attitude Martin shows how to approach software development with honor self respect and pride work well and work clean communicate and estimate faithfully face difficult decisions with clarity and honesty and understand that deep knowledge comes with a responsibility to act Readers of this collection will come away understanding How to tell the difference between good and bad code How to write good code and how to transform bad code into good code How to create good names good functions good objects and good classes How to format code for maximum readability How to implement complete error handling without obscuring code logic How to unit test and practice test driven development What it means to behave as a true software craftsman How to deal with conflict tight schedules and unreasonable managers How to get into the flow of coding and get past writer s block How to handle unrelenting pressure and avoid burnout How to combine enduring attitudes with new development paradigms How to manage your time and avoid blind alleys marshes bogs and swamps How to foster environments where programmers and teams can thrive When to say No and how to say it When to say Yes and what yes really means [Brownfield Application Development in .NET](#) Kyle Baley,Donald Belcham,2010 This guide shows developers how to approach legacy applications with the state of the art concepts patterns and tools developers apply to new projects [If I Only Changed the Software. Why is the Phone on Fire?: Embedded Debugging Methods Revealed](#) Lisa K. Simone,2007-03-22 If I Only Changed the Software Why is the Phone on Fire Embedded Debugging Methods Revealed manages the unthinkable it conveys crucial technical information to engineers without boring them to tears In this unique reference expert embedded designer Lisa

Simone provides the solutions to typical embedded software debugging problems from a fresh new perspective She introduces a team of engineers who readers will recognize from their own workplaces and then confronts them with real world debugging scenarios of progressive complexity drawing the reader into the mysteries with their new fictional colleagues and guiding them step by step toward successful solutions Unique format casts the reader as technical detective by presenting a new mystery in every chapter Not another dry technical book Conversational tone and intriguing quandaries draw the reader into the action while teaching crucial debugging skills The final chapter a summary of the smart debugging techniques introduced throughout the book is a quick reference to help solve future problems

### **No Fluff, Just Stuff**

**Anthology** Neal Ford,2006 A traveling conference series for software developers that visits 27 cities a year staging over 75 symposia throughout the U S and Canada No Fluff Just Stuff now makes the seminar s high quality technical presentations available in print for the first time

### **Leading Lean Software Development** Mary Poppendieck, Tom Poppendieck,2010

Building on their breakthrough bestseller Implementing Lean Software Development the authors show software leaders how to quickly identify the biggest opportunities for improvement in their development organizations

### **The Software**

**Craftsman** Sandro Mancuso,2014-12-12 Be a Better Developer and Deliver Better Code Despite advanced tools and methodologies software projects continue to fail Why Too many organizations still view software development as just another production line Too many developers feel that way too and they behave accordingly In The Software Craftsman Professionalism Pragmatism Pride Sandro Mancuso offers a better and more fulfilling path If you want to develop software with pride and professionalism love what you do and do it with excellence and build a career with autonomy mastery and purpose it starts with the recognition that you are a craftsman Once you embrace this powerful mindset you can achieve unprecedented levels of technical excellence and customer satisfaction Mancuso helped found the world s largest organization of software craftsmen now he shares what he s learned through inspiring examples and pragmatic advice you can use in your company your projects and your career You will learn Why agile processes aren t enough and why craftsmanship is crucial to making them work How craftsmanship helps you build software right and helps clients in ways that go beyond code How and when to say No and how to provide creative alternatives when you do Why bad code happens to good developers and how to stop creating and justifying it How to make working with legacy code less painful and more productive How to be pragmatic not dogmatic about your practices and tools How to lead software craftsmen and attract them to your organization What to avoid when advertising positions interviewing candidates and hiring developers How developers and their managers can create a true culture of learning How to drive true technical change and overcome deep patterns of skepticism Sandro Mancuso has coded for startups software houses product companies international consultancies and investment banks In October 2013 he cofounded Codurance a consultancy based on Software Craftsmanship principles and values His involvement with Software Craftsmanship began in 2010 when he founded the

London Software Craftmanship Community LSCC now the world s largest and most active Software Craftmanship community with more than two thousand craftsmen For the past four years he has inspired and helped developers to organize Software Craftmanship communities throughout Europe the United States and the rest of the world *C/C++ Users Journal* ,2005 *Code Quality* Diomidis Spinellis,2006 Page 26 How can I avoid off by one errors Page 143 Are Trojan Horse attacks for real Page 158 Where should I look when my application can t handle its workload Page 256 How can I detect memory leaks Page 309 How do I target my application to international markets Page 394 How should I name my code s identifiers Page 441 How can I find and improve the code coverage of my tests Diomidis Spinellis first book *Code Reading* showed programmers how to understand and modify key functional properties of software *Code Quality* focuses on non functional properties demonstrating how to meet such critical requirements as reliability security portability and maintainability as well as efficiency in time and space Spinellis draws on hundreds of examples from open source projects such as the Apache web and application servers the BSD Unix systems and the HSQLDB Java database to illustrate concepts and techniques that every professional software developer will be able to appreciate and apply immediately Complete files for the open source code illustrated in this book are available on the *Code Reading* CD ROM and online at <http://www.spinellis.gr/codequality>

**Managing Agile Projects** Sanjiv Augustine,2005 *Your Hands On In the Trenches Guide to Successfully Leading AgileProjects* Agile methods promise to infuse development with unprecedented flexibility speed and valueand these promises are attracting IT organizations worldwide However agile methods often fail to clearly define the manager s role and many managers have been reluctant to buy in Now expert project manager Sanjiv Augustine introduces agility from the manager s point of view offering a proven management framework that addresses everything from team building to project control Augustine bridges the disconnect between the assumptions and techniques of traditional and agile management demonstrating why agility is better aligned with today s project realities and how to simplify your transition Using a detailed case study he shows how agile methods can scale to succeed in even the largest projects Defining a high value role for the manager in agile project environments Refocusing on outcomes not rigid plans processes or controls Structuring and building adaptive self organizing organic teams Forming a guiding vision that aligns your team behind a common purpose Empowering your team with the information it needs to succeed Managing the flow of customer value from one creative stage to the next Leveraging your team members strengths as whole persons Implementing full life cycle agility from planning and coding to maintenance and knowledge transfer Customizing agile methods to your unique environment Becoming an adaptive leader who can inspire and energize agile teams Whether you re a technical or business manager *Managing Agile Projects* gives you all the tools you need to implement agility in your environmentand reap its full benefits *Managing Agile Projects* is part of the Robert C Martin series c Copyright Pearson Education All rights reserved

The book delves into Working Effectively With Legacy Code . Working Effectively With Legacy Code is an essential topic that must be grasped by everyone, ranging from students and scholars to the general public. This book will furnish comprehensive and in-depth insights into Working Effectively With Legacy Code , encompassing both the fundamentals and more intricate discussions.

1. The book is structured into several chapters, namely:

- Chapter 1: Introduction to Working Effectively With Legacy Code
- Chapter 2: Essential Elements of Working Effectively With Legacy Code
- Chapter 3: Working Effectively With Legacy Code in Everyday Life
- Chapter 4: Working Effectively With Legacy Code in Specific Contexts
- Chapter 5: Conclusion

2. In chapter 1, this book will provide an overview of Working Effectively With Legacy Code . This chapter will explore what Working Effectively With Legacy Code is, why Working Effectively With Legacy Code is vital, and how to effectively learn about Working Effectively With Legacy Code .

3. In chapter 2, the author will delve into the foundational concepts of Working Effectively With Legacy Code . The second chapter will elucidate the essential principles that need to be understood to grasp Working Effectively With Legacy Code in its entirety.

4. In chapter 3, this book will examine the practical applications of Working Effectively With Legacy Code in daily life. This chapter will showcase real-world examples of how Working Effectively With Legacy Code can be effectively utilized in everyday scenarios.

5. In chapter 4, the author will scrutinize the relevance of Working Effectively With Legacy Code in specific contexts. This chapter will explore how Working Effectively With Legacy Code is applied in specialized fields, such as education, business, and technology.

6. In chapter 5, the author will draw a conclusion about Working Effectively With Legacy Code . This chapter will summarize the key points that have been discussed throughout the book.

The book is crafted in an easy-to-understand language and is complemented by engaging illustrations. It is highly recommended for anyone seeking to gain a comprehensive understanding of Working Effectively With Legacy Code .

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## **Table of Contents Working Effectively With Legacy Code**

1. Understanding the eBook Working Effectively With Legacy Code
  - The Rise of Digital Reading Working Effectively With Legacy Code
  - Advantages of eBooks Over Traditional Books
2. Identifying Working Effectively With Legacy Code
  - Exploring Different Genres
  - Considering Fiction vs. Non-Fiction
  - Determining Your Reading Goals
3. Choosing the Right eBook Platform
  - Popular eBook Platforms
  - Features to Look for in an Working Effectively With Legacy Code
  - User-Friendly Interface
4. Exploring eBook Recommendations from Working Effectively With Legacy Code
  - Personalized Recommendations
  - Working Effectively With Legacy Code User Reviews and Ratings
  - Working Effectively With Legacy Code and Bestseller Lists
5. Accessing Working Effectively With Legacy Code Free and Paid eBooks
  - Working Effectively With Legacy Code Public Domain eBooks
  - Working Effectively With Legacy Code eBook Subscription Services
  - Working Effectively With Legacy Code Budget-Friendly Options
6. Navigating Working Effectively With Legacy Code eBook Formats
  - ePub, PDF, MOBI, and More
  - Working Effectively With Legacy Code Compatibility with Devices
  - Working Effectively With Legacy Code Enhanced eBook Features
7. Enhancing Your Reading Experience
  - Adjustable Fonts and Text Sizes of Working Effectively With Legacy Code
  - Highlighting and Note-Taking Working Effectively With Legacy Code
  - Interactive Elements Working Effectively With Legacy Code

8. Staying Engaged with Working Effectively With Legacy Code
  - Joining Online Reading Communities
  - Participating in Virtual Book Clubs
  - Following Authors and Publishers Working Effectively With Legacy Code
9. Balancing eBooks and Physical Books Working Effectively With Legacy Code
  - Benefits of a Digital Library
  - Creating a Diverse Reading Collection Working Effectively With Legacy Code
10. Overcoming Reading Challenges
  - Dealing with Digital Eye Strain
  - Minimizing Distractions
  - Managing Screen Time
11. Cultivating a Reading Routine Working Effectively With Legacy Code
  - Setting Reading Goals Working Effectively With Legacy Code
  - Carving Out Dedicated Reading Time
12. Sourcing Reliable Information of Working Effectively With Legacy Code
  - Fact-Checking eBook Content of Working Effectively With Legacy Code
  - Distinguishing Credible Sources
13. Promoting Lifelong Learning
  - Utilizing eBooks for Skill Development
  - Exploring Educational eBooks
14. Embracing eBook Trends
  - Integration of Multimedia Elements
  - Interactive and Gamified eBooks

### **Working Effectively With Legacy Code Introduction**

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