Working Effectively With Legacy Code Pearsoncmg

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.
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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.
A guide to applying software design principles and coding practices to VHDL to improve the readability, maintainability, and quality of VHDL code. This book addresses an often-neglected aspect of the creation of VHDL designs. A VHDL description is also source code, and VHDL designers can use the best practices of software development to write high-quality code and to organize it in a design. This book presents this unique set of skills, teaching VHDL designers of all experience levels how to apply the best design principles and coding practices from the software world to the world of hardware. The concepts introduced here will help readers write code that is easier to understand and more likely to be correct, with improved readability, maintainability, and overall quality. After a brief review of VHDL, the book presents fundamental design principles for writing code, discussing such topics as design, quality, architecture, modularity, abstraction, and hierarchy. Building on these concepts, the book then introduces and provides recommendations for each basic element of VHDL code, including statements, design units, types, data objects, and subprograms. The book covers naming data objects and functions, commenting the source code, and visually presenting the code on the screen. All recommendations are supported by detailed rationales. Finally, the book explores two uses of VHDL: synthesis and testbenches. It examines the key characteristics of code intended for synthesis (distinguishing it from code meant for simulation) and then demonstrates the design and implementation of testbenches with a series of examples that verify different kinds of models, including combinational, sequential, and FSM code. Examples from the book are also available on a companion website, enabling the reader to experiment with the complete source code.
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Describes Agile Modeling Driven Design (AMDD) and Test-Driven Design (TDD) approaches, database refactoring, database encapsulation strategies, and tools that support evolutionary techniques Agile software developers often use object and relational database (RDB) technology together and as a result must overcome the impedance mismatch The author covers techniques for mapping objects to RDBs and for implementing concurrency control, referential integrity, shared business logic, security access control, reports, and XML An agile foundation describes fundamental skills that all agile software developers require, particularly Agile DBAs Includes object modeling, UML data modeling, data normalization, class normalization, and how to deal with legacy databases Scott W. Ambler is author of Agile Modeling (0471202827), a contributing editor with Software Development (www.sdmagazine.com), and a featured speaker at software conferences worldwide

Test Driven .NET Development with FitNesse takes you on a journey through the wonderful world of FitNesse, a great web-based tool for software acceptance testing. FitNesse enables software developers and business people to build a shared understanding of the domain and helps produce software that is genuinely fit for purpose.

Write maintainable, extensible, and durable software with modern C++. This book is a must for every developer, software architect, or team leader who is interested in good C++ code, and thus also wants to save development costs. If you want to teach yourself about writing clean C++, Clean C++ is exactly what you need. It is written to help C++ developers of all skill levels and shows by example how to write understandable, flexible, maintainable, and efficient C++ code. Even if you are a seasoned C++ developer, there are nuggets and data points in this book that you will find useful in your work. If you don't take care with your code, you can produce a large, messy, and unmaintainable beast in any programming language. However, C++ projects in particular are prone to be messy and tend to slip into bad habits. Lots of C++ code that is written today looks as if it was written in the 1980s. It seems that C++ developers have been forgotten by those who preach Software Craftsmanship and Clean Code principles. The Web is full of bad, but apparently very fast and highly optimized C++ code examples, with cruel syntax that completely ignores elementary principles of good design and well-written code. This book will explain how to avoid this scenario and how to get the most out of your C++ code. You'll find your coding becomes more efficient and, importantly, more fun. What You'll Learn Gain sound principles and rules for clean coding in C++ Carry out test driven development (TDD) Discover C++ design patterns and idioms Apply these design patterns Who This Book Is For Any C++ developer and software engineer with an interest in producing better code.

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.

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

This handbook is a collection of concrete ideas for how you can get started with a Coding Dojo, where a group of programmers can focus on improving their practical coding skills.

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transition to microservices, rather than rebuild Helps companies determine whether to migrate, when to migrate, and where to begin Addresses communication, integration, and the migration of legacy systems Discusses multiple migration patterns and where they apply Provides database migration examples, along with synchronization strategies Explores application decomposition, including several architectural refactoring patterns Delves into details of database decomposition, including the impact of breaking referential and transactional integrity, new failure modes, and more

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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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 Lean 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 you'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

Conquer complex and interesting programming challenges by building robust and concurrent applications with caches, cryptography, and parallel programming. Key Features Understand how to use .NET frameworks like the Task Parallel Library (TPL)and CryptoAPI Develop a containerized application based on microservices architecture Gain insights into memory management techniques in .NET Core Book Description This Learning Path shows you how to create high performing applications and solve programming challenges using a wide range of C# features. You'll begin by learning how to identify the bottlenecks in writing programs, highlight common performance pitfalls, and apply strategies to detect and resolve these issues early. You'll also study the importance of micro-services architecture for building fast applications and implementing resiliency and security in .NET Core. Then, you'll study the importance of defining and testing boundaries, abstracting away third-party code, and working with different types of test double, such as spies, mocks, and fakes. In addition to describing programming trade-offs, this Learning Path will also help you build a useful toolkit of techniques, including value caching, statistical analysis, and geometric algorithms. This Learning Path includes content from the following Packt products: C# 7 and .NET Core 2.0 High Performance by Ovais Mehboob Ahmed Khan Practical Test-Driven Development using C# 7 by John Callaway, Clayton Hunt The Modern C# Challenge by Rod Stephens What you will learn Measure application performance using BenchmarkDotNet Leverage the Task Parallel Library (TPL) and Parallel Language Integrated Query (PLINQ)library to perform asynchronous operations Modify a legacy application to make it testable Use LINQ and PLINQ to search directories for files matching patterns Find areas of polygons using geometric operations Randomize arrays and lists with extension methods Use cryptographic techniques to encrypt and decrypt strings and files Who this book is for If you want to improve the speed of your code and optimize the performance of your applications, or are simply looking for a practical resource on test driven development, this is the ideal Learning Path for you. Some familiarity with C# and .NET will be beneficial.

Does it seem like your Python projects are getting bigger and bigger? Are you feeling the pain as your codebase expands and gets tougher to debug and maintain? Python is an easy language to learn and use, but that also means systems can quickly grow beyond comprehension. Thankfully, Python has features to help developers overcome maintainability woes. In this practical book, author Patrick Viafore shows you how to use Python's type system to the max. You'll look at user-defined types, such as classes and enums, and Python's type hinting system. You'll also learn how to make Python extensible and how to use a comprehensive testing strategy as a safety net. With these tips and techniques, you'll write clearer and more maintainable code. Learn why types are essential in modern development ecosystems Understand how type choices such as classes, dictionaries, and enums reflect specific intents Make Python extensible for the future without adding bloat Use popular Python tools to increase the safety and robustness of your codebase Evaluate current code to detect common maintainability gotchas Build a safety net around your codebase with linters and tests

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