

IMPROVING THE DESIGN OF EXISTING CODE

MARTIN FOWLER

With contributions by Kent Beck, John Brant, William Opdyke, and Don Roberts

Foreword by Erich Gamma
Object Technology International, Inc.



Refactoring Improving The Design Of Existing Code

Ken Henderson

Refactoring Improving The Design Of Existing Code:

Refactoring Martin Fowler, Kent Beck, John Brant, William Opdyke, Don Roberts, 2012-03-09 As the application of object technology particularly the Java programming language has become commonplace a new problem has emerged to confront the software development community Significant numbers of poorly designed programs have been created by less experienced developers resulting in applications that are inefficient and hard to maintain and extend Increasingly software system professionals are discovering just how difficult it is to work with these inherited non optimal applications For several years expert level object programmers have employed a growing collection of techniques to improve the structural integrity and performance of such existing software programs Referred to as refactoring these practices have remained in the domain of experts because no attempt has been made to transcribe the lore into a form that all developers could use until now In Refactoring Improving the Design of Existing Code renowned object technology mentor Martin Fowler breaks new ground demystifying these master practices and demonstrating how software practitioners can realize the significant benefits of this new process With proper training a skilled system designer can take a bad design and rework it into well designed robust code In this book Martin Fowler shows you where opportunities for refactoring typically can be found and how to go about reworking a bad design into a good one Each refactoring step is simple seemingly too simple to be worth doing Refactoring may involve moving a field from one class to another or pulling some code out of a method to turn it into its own method or even pushing some code up or down a hierarchy While these individual steps may seem elementary the cumulative effect of such small changes can radically improve the design Refactoring is a proven way to prevent software decay In addition to discussing the various techniques of refactoring the author provides a detailed catalog of more than seventy proven refactorings with helpful pointers that teach you when to apply them step by step instructions for applying each refactoring and an example illustrating how the refactoring works The illustrative examples are written in Java but the ideas are applicable to any object oriented programming language Refactoring Martin Fowler, Kent Beck, 1999 Refactoring is gaining momentum amongst the object oriented programming community It can transform the internal dynamics of applications and has the capacity to transform bad code into good code This book offers an introduction to refactoring

Refactoring Martin Fowler,2018-11-20 Martin Fowler's guide to reworking bad code into well structured code Refactoring improves the design of existing code and enhances software maintainability as well as making existing code easier to understand Original Agile Manifesto signer and software development thought leader Martin Fowler provides a catalog of refactorings that explains why you should refactor how to recognize code that needs refactoring and how to actually do it successfully no matter what language you use Refactoring principles understand the process and general principles of refactoring Code smells recognize bad smells in code that signal opportunities to refactor Application improvement quickly apply useful refactorings to make a program easier to comprehend and change Building tests writing

good tests increases a programmer s effectiveness Moving features an important part of refactoring is moving elements between contexts Data structures a collection of refactorings to organize data an important role in programs Conditional Logic use refactorings to make conditional sections easier to understand APIs modules and their functions are the building blocks of our software and APIs are the joints that we use to plug them together Inheritance it is both very useful and easy to misuse and it s often hard to see the misuse until it s in the rear view mirror refactorings can fix the misuse Examples are written in JavaScript but you shouldn t find it difficult to adapt the refactorings to whatever language you are currently using as they look mostly the same in different languages Whenever you read Refactoring it s time to read it again And if you haven t read it yet please do before writing another line of code David Heinemeier Hansson Creator of Ruby on Rails Founder CTO at Basecamp Any fool can write code that a computer can understand Good programmers write code that humans can understand M Fowler 1999

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Refactoring .2002 **Refactoring** Martin Fowler, 2009 Extreme Programming and Agile Methods - XP/Agile <u>Universe 2002</u> Don Wells, Lauris Williams, 2003-08-02 The second XP Universe and rst Agile Universe brought together many p ple interested in building software in a new way Held in Chicago August 4 7 2002 it attracted software experts educators and developers Unlike most c ferences the venue was very dynamic Many activities were not even well de ned in advance All discussions were encouraged to be spontaneous Even so there were some written words available and you are holding all of them now We have collected as much material as possible together into this small volume It is just the tip of the iceberg of course A reminder to us of what we learned the people we met and the ideas we expressed The conference papers including research and experience papers are rep duced in these proceedings Forty one 41 papers were submitted Each subm ted paper received three reviews by program committee members The program committee consisted of 40 members Papers submitted by program committee members were referred separately. This ensured that reviewers could provide an honest feedback not seen by the paper submitters In many cases the program committee shepherded authors to signi cantly improve their initial submission prior to completing the version contained in these proceedings In the end the program committee Innovations in Computer Science and Engineering H. S. Saini, Rishi chose 25 papers for publication 60% acceptance Sayal, A. Govardhan, Rajkumar Buyya, 2018-05-25 The book is a collection of high quality peer reviewed research papers presented at the Fifth International Conference on Innovations in Computer Science and Engineering ICICSE 2017 held at Guru Nanak Institutions Hyderabad India during 18 19 August 2017 The book discusses a wide variety of industrial engineering and scientific applications of the engineering techniques Researchers from academic and industry present their original work and exchange ideas information techniques and applications in the field of Communication Computing and Data Science and Analytics Object-oriented Reengineering Patterns Serge Demeyer, Stéphane Ducasse, Oscar Nierstrasz, 2009 Object Oriented Reengineering Patterns collects and distills successful techniques in planning a

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sustain its survival and hopefully raise that life to a state of thriving Design quality manifests throughout the cycles of design as a verb rather than as a product of it Such is the mindset in which the designer must indwell and that design education must nurture While all artefacts are systems the domain of artefact design of which I am most experienced is computing systems Therefore I will rest upon that domain to explore a theory and practice of design as a verb designing thriving Encyclopedia of Software Engineering Three-Volume Set (Print) Phillip A. Laplante, 2010-11-22 Software engineering requires specialized knowledge of a broad spectrum of topics including the construction of software and the platforms applications and environments in which the software operates as well as an understanding of the people who build and use the software Offering an authoritative perspective the two volumes of the Encyclopedia of Software Engineering cover the entire multidisciplinary scope of this important field More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy to read entries that cover software requirements design construction testing maintenance configuration management quality control and software engineering management tools and methods Editor Phillip A Laplante uses the most universally recognized definition of the areas of relevance to software engineering the Software Engineering Body of Knowledge SWEBOK as a template for organizing the material Also available in an electronic format this encyclopedia supplies software engineering students IT professionals researchers managers and scholars with unrivaled coverage of the topics that encompass this ever changing field Also Available Online This Taylor E mail e reference taylorandfrancis com International Tel 44 0 20 7017 6062 E mail online sales tandf co uk The Art of Agile Development James Shore, Shane Warden, 2021-10-12 Most companies developing software employ something they call Agile But there s widespread misunderstanding of what Agile is and how to use it If you want to improve your software development team s agility this comprehensive guidebook s clear concrete and detailed guidance explains what to do and why and when to make trade offs In this thorough update of the classic Agile how to guide James Shore provides no nonsense advice on Agile adoption planning development delivery and management taken from over two decades of Agile experience He brings the latest ideas from Extreme Programming Scrum Lean DevOps and more into a cohesive whole Learn how to successfully bring Agile development to your team and organization or discover why Agile might not be for you This book explains how to Improve agility create the conditions necessary for Agile to succeed and scale in your organization Focus on value work as a team understand priorities provide visibility and improve continuously Deliver software reliably share ownership decrease development costs evolve designs and deploy continuously Optimize value take ownership of product plans budgets and experiments and produce market leading software Clean Code with C# Jason Alls,2023-12-22 Enhance your programming skills through code reviews TDD and BDD implementation and API design to overcome code inefficiency redundancy and other issues arising from bad code Key Features Write code that seamlessly integrates with other systems while maintaining well defined software boundaries Understand how coding principles and standards elevate software

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celebrated for its focus on customer satisfaction dynamic teamwork and the production of high quality software This comprehensive guide delves deeply into XP s foundational practices values and principles providing both novice and seasoned developers with an extensive understanding of both its basic and sophisticated techniques Covering essential topics such as Test Driven Development Refactoring Pair Programming Continuous Integration and Deployment this book equips readers with the skills and insights needed to implement XP efficiently in their projects It also tackles the challenges of adopting coding standards using system metaphors practicing collective code ownership and scaling XP for larger projects ensuring a thorough exploration of the methodology Whether you re looking to enhance your existing XP practices or fully embrace the methodology for the first time Extreme Programming Mastery An In Depth Exploration and Practical Guide is an invaluable resource Discover how to nurture a collaborative team atmosphere seamlessly adapt to evolving requirements and deliver software that exceeds customer expectations Embark on your journey to mastering Extreme Programming and transform your software development processes to achieve unparalleled project quality The Guru's Guide to **Transact-SQL** Ken Henderson, 2000-02-23 Since its introduction over a decade ago the Microsoft SQL Server query language Transact SQL has become increasingly popular and more powerful The current version sports such advanced features as OLE Automation support cross platform querying facilities and full text search management This book is the consummate guide to Microsoft Transact SQL From data type nuances to complex statistical computations to the bevy of undocumented features in the language The Guru s Guide to Transact SQL imparts the knowledge you need to become a virtuoso of the language as guickly as possible In this book you will find the information explanations and advice you need to master Transact SQL and develop the best possible Transact SQL code Some 600 code examples not only illustrate important concepts and best practices but also provide working Transact SQL code that can be incorporated into your own real world DBMS applications Your journey begins with an introduction explaining language fundamentals such as database and table creation inserting and updating data queries joins data presentation and managing transactions Moving on to more advanced topics the journey continues with in depth coverage of Transact SQL performance tuning using tools such as Query Analyzer and Performance Monitor Nuances of the various T SQL data types Complex statistical calculations such as medians modes and sliding aggregates Run sequence and series identification and interrogation Advanced Data Definition Language DDL and Data Management Language DML techniques Stored procedure and trigger best practices and coding methods Transaction management Optimal cursor use and caveats to look out for Full text search Hierarchies and arrays Administrative Transact SQL OLE Automation More than 100 undocumented commands and language features including numerous unpublished DBCC command verbs trace flags stored procedures and functions Comprehensive written in understandable terms and full of practical information and examples The Guru s Guide to Transact SQL is an indispensable reference for anyone working with this database development language The accompanying CD ROM includes the complete

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