

Writing Solid Code Steve Maguire

This book, first published in 2000, illustrates rules of Java code-writing with parallel examples of correct and incorrect usage. The idea of the book is to provide a comprehensive overview of computational physics methods and techniques, that are used for materials modeling on different length and time scales. Each chapter first provides an overview of the physical basic principles which are the basis for the numerical and mathematical modeling on the respective length-scale. The book includes the micro-scale, the meso-scale and the macro-scale. The chapters follow this classification. The book will explain in detail many tricks of the trade of some of the most important methods and techniques that are used to simulate materials on the perspective levels of spatial and temporal resolution. Case studies are occasionally included to further illustrate some methods or theoretical considerations. Example applications for all techniques are provided, some of which are from the author's own contributions to some of the research areas. Methods are explained, if possible, on the basis of the original publications but also references to standard text books established in the various fields are mentioned.

"This pocket manual is a work book that will present how to build strong, unbreakable bonds, and how to build rapport with anyone" -- from the author.

"One of the great things about the book is the way the authors explain concepts very simply using analogies rather than programming examples--this has been very inspiring for a product I'm working on: an audio-only introduction to OOP and software development." --Bruce Eckel "...I would expect that readers with a basic understanding of object-oriented programming and design would find this book useful, before approaching design patterns completely. Design Patterns Explained complements the existing design patterns texts and may perform a very useful role, fitting between introductory texts such as UML Distilled and the more advanced patterns books." --James Noble Leverage the quality and productivity benefits of patterns--without the complexity! Design Patterns Explained, Second Edition is the field's simplest, clearest, most practical introduction to patterns. Using dozens of updated Java examples, it shows programmers and architects exactly how to use patterns to design, develop, and deliver software far more effectively. You'll start with a complete overview of the fundamental principles of patterns, and the role of object-oriented analysis and design in contemporary software development. Then, using easy-to-understand sample code, Alan Shalloway and James Trott illuminate dozens of today's most useful patterns: their underlying concepts, advantages, tradeoffs, implementation techniques, and pitfalls to avoid. Many patterns are accompanied by UML diagrams. Building on their best-selling First Edition, Shalloway and Trott have thoroughly updated this book to reflect new software design trends, patterns, and implementation techniques. Reflecting extensive reader feedback, they have deepened and clarified coverage throughout, and reorganized content for even greater ease of understanding. New and revamped coverage in this edition includes Better ways to start "thinking in patterns" How design patterns can facilitate agile development using eXtreme Programming and other methods How to use commonality and variability analysis to design application architectures The key role of testing into a patterns-driven development process How to use factories to instantiate and manage objects more effectively The Object-Pool Pattern--a new pattern not identified by the "Gang of Four" New study/practice questions at the end of every chapter Gentle yet thorough, this book assumes no patterns experience whatsoever. It's the ideal "first book" on patterns, and a perfect complement to Gamma's classic Design Patterns. If you're a programmer or architect who wants the clearest possible understanding of design patterns--or if you've struggled to make them work for you--read this book.

"Two thumbs up" --Gregory V. Wilson, Dr. Dobbs Journal (October 2004) No one can disparage the ability to write good code. At its highest levels, it is an art. But no one can confuse writing good code with developing good software. The difference--in terms of challenges, skills, and compensation--is immense. Coder to Developer helps you excel at the many non-coding tasks entailed, from start to finish, in just about any successful development project. What's more, it equips you with the mindset and self-assurance required to pull it all together, so that you see every piece of your work as part of a coherent process. Inside, you'll find plenty of technical guidance on such topics as: Choosing and using a source code control system Code generation tools--when and why Preventing bugs with unit testing Tracking, fixing, and learning from bugs Application activity logging Streamlining and systematizing the build process Traditional installations and alternative approaches To pull all of this together, the author has provided the source code for Download Tracker, a tool for organizing your collection of downloaded code, that's used for examples throughout this book. The code is provided in various states of completion, reflecting every stage of development, so that you can dig deep into the actual process of building software. But you'll also develop "softer" skills, in areas such as team management, open source collaboration, user and developer documentation, and intellectual property protection. If you want to become someone who can deliver not just good code but also a good product, this book is the place to start. If you must build successful software projects, it's essential reading.

A guide to writing computer code covers such topics as variable naming, presentation style, error handling, and security. How to make sure your next important project isn't your last. Equip yourself with SOFTWARE PROJECT SURVIVAL GUIDE. It's for everyone with a stake in the outcome of a development project--and especially for those without formal software project management training. That includes top managers, executives, clients, investors, end-user representatives, project managers, and technical leads. Here you'll find guidance from the acclaimed author of the classics CODE COMPLETE and RAPID DEVELOPMENT. Steve McConnell draws on solid research and a career's worth of hard-won experience to map the surest path to your goal--what he calls one specific approach to software development that works pretty well most of the time for most projects. Nineteen chapters in four sections cover the concepts and strategies you need for mastering the development process, including planning, design, management, quality assurance, testing, and archiving. For newcomers and seasoned project managers alike, SOFTWARE PROJECT SURVIVAL GUIDE draws on a vast store of techniques to create an elegantly simplified and reliable framework for project management success. So don't worry about wandering among complex sets of project management techniques that require years to sort out and master. SOFTWARE PROJECT SURVIVAL GUIDE goes straight to the heart of the matter to help your projects succeed. And that makes it a required addition to every professional's bookshelf.

"This is Effective C++ volume three - it's really that good." - Herb Sutter, independent consultant and secretary of the ISO/ANSI C++ standards committee "There are very few books which all C++ programmers must have. Add Effective STL to that list." - Thomas Becker, Senior Software Engineer, Zephyr Associates, Inc., and columnist, C/C++ Users Journal C++'s Standard Template Library is revolutionary, but learning to use it well has always been a challenge. Until now. In this book, best-selling author Scott Meyers (Effective C++ , and More Effective C++) reveals the critical rules of thumb employed by the experts - the

things they almost always do or almost always avoid doing - to get the most out of the library. Other books describe what's in the STL. Effective STL shows you how to use it. Each of the book's 50 guidelines is backed by Meyers' legendary analysis and incisive examples, so you'll learn not only what to do, but also when to do it - and why. Highlights of Effective STL include: Advice on choosing among standard STL containers (like vector and list), nonstandard STL containers (like hash_set and hash_map), and non-STL containers (like bitset). Techniques to maximize the efficiency of the STL and the programs that use it. Insights into the behavior of iterators, function objects, and allocators, including things you should not do. Guidance for the proper use of algorithms and member functions whose names are the same (e.g., find), but whose actions differ in subtle (but important) ways. Discussions of potential portability problems, including straightforward ways to avoid them. Like Meyers' previous books, Effective STL is filled with proven wisdom that comes only from experience. Its clear, concise, penetrating style makes it an essential resource for every STL programmer.

Create, optimize, and deploy stunning cross-browser web maps with the OpenLayers JavaScript web mapping library.

A new addition to the Best Practices series presents an incisive reflection on and look at the future of software engineering, offering a collection of original essays on critical trends that will shape the industry. Original. (Beginner).

When programmers list their favorite books, Jon Bentley's collection of programming pearls is commonly included among the classics. Just as natural pearls grow from grains of sand that irritate oysters, programming pearls have grown from real problems that have irritated real programmers. With origins beyond solid engineering, in the realm of insight and creativity, Bentley's pearls offer unique and clever solutions to those nagging problems. Illustrated by programs designed as much for fun as for instruction, the book is filled with lucid and witty descriptions of practical programming techniques and fundamental design principles. It is not at all surprising that Programming Pearls has been so highly valued by programmers at every level of experience. In this revision, the first in 14 years, Bentley has substantially updated his essays to reflect current programming methods and environments. In addition, there are three new essays on testing, debugging, and timing set representations string problems All the original programs have been rewritten, and an equal amount of new code has been generated. Implementations of all the programs, in C or C++, are now available on the Web. What remains the same in this new edition is Bentley's focus on the hard core of programming problems and his delivery of workable solutions to those problems. Whether you are new to Bentley's classic or are revisiting his work for some fresh insight, the book is sure to make your own list of favorites.

Writing Solid Code Microsoft's Techniques for Developing Bug-free C Programs

As programmers, we've all seen source code that's so ugly and buggy it makes our brain ache. Over the past five years, authors Dustin Boswell and Trevor Foucher have analyzed hundreds of examples of "bad code" (much of it their own) to determine why they're bad and how they could be improved. Their conclusion? You need to write code that minimizes the time it would take someone else to understand it—even if that someone else is you. This book focuses on basic principles and practical techniques you can apply every time you write code. Using easy-to-digest code examples from different languages, each chapter dives into a different aspect of coding, and demonstrates how you can make your code easy to understand. Simplify naming, commenting, and formatting with tips that apply to every line of code Refine your program's loops, logic, and variables to reduce complexity and confusion Attack problems at the function level, such as reorganizing blocks of code to do one task at a time Write effective test code that is thorough and concise—as well as readable "Being aware of how the code you create affects those who look at it later is an important part of developing software. The authors did a great job in taking you through the different aspects of this challenge, explaining the details with instructive examples." —Michael Hunger, passionate Software Developer Presents information about the history of Apple, the development of the Macintosh computer, major software applications, and the alliance with IBM

Get your development schedules under control and on track! Corporate and commercial software-development teams all want solutions for one important problem--how to get their high-pressure development schedules under control. In RAPID DEVELOPMENT, author Steve McConnell addresses that concern head-on with overall strategies, specific best practices, and valuable tips that help shrink and control development schedules and keep projects moving.

Making a Game Demo: From Concept to Demo Gold provides a detailed and comprehensive guide to getting started in the computer game industry. Written by professional game designers and developers, this book combines the fields of design, art, scripting, and programming in one book to help you take your first steps toward creating a game demo. Discover how the use of documentation can help you organize the game design process; understand how to model and animate a variety of objects, including human characters; explore the basics of scripting with Lua; learn about texturing, vertex lighting, light mapping, motion capture, and collision checking. The companion CD contains all the code and other files needed for the tutorials, the Ka3D game engine, the Zax demo, all the images in the book, demo software, and more!

Keep black-hat hackers at bay with the tips and techniques in this entertaining, eye-opening book! Developers will learn how to padlock their applications throughout the entire development process—from designing secure applications to writing robust code that can withstand repeated attacks to testing applications for security flaws. Easily digested chapters reveal proven principles, strategies, and coding techniques. The authors—two battle-scarred veterans who have solved some of the industry's toughest security problems—provide sample code in several languages. This edition includes updated information about threat modeling, designing a security process, international issues, file-system issues, adding privacy to applications, and performing security code reviews. It also includes enhanced coverage of buffer overruns, Microsoft .NET security, and Microsoft ActiveX development, plus practical checklists for developers, testers, and program managers.

"One of the most significant books in my life." —Obie Fernandez, Author, The Rails Way "Twenty years ago, the first edition of The Pragmatic Programmer completely changed the trajectory of my career. This new edition could do the same for yours." —Mike Cohn, Author of Succeeding with Agile, Agile Estimating and Planning, and User Stories Applied ". . . filled with practical advice, both technical and professional, that will serve you and your projects well for years to come." —Andrea Goulet, CEO, Corgibytes, Founder, LegacyCode.Rocks ". . . lightning does strike twice, and this book is proof." —VM (Vicky) Brasseur, Director of Open Source Strategy, Juniper Networks The Pragmatic Programmer is one of those rare tech books you'll read, re-read, and read again over the years. Whether you're new to the field or an experienced practitioner, you'll come away with fresh insights each and every time. Dave Thomas and Andy Hunt wrote the first edition of this influential book in 1999 to help their clients create better software and rediscover the joy of coding. These lessons have helped a generation of programmers examine the very essence of software development, independent of any particular language, framework, or methodology, and the Pragmatic philosophy has spawned hundreds of books, screencasts, and audio books, as well as thousands of careers and success stories. Now, twenty years later, this new edition re-examines what it means to be a modern programmer. Topics range from personal responsibility and career development to architectural techniques for keeping your code flexible and easy to adapt and reuse. Read this book, and you'll learn how to: Fight software rot Learn continuously Avoid the trap of duplicating knowledge Write flexible, dynamic, and adaptable code Harness the power of basic tools Avoid programming by coincidence Learn real requirements Solve the underlying problems of concurrent code Guard against security vulnerabilities Build teams of Pragmatic Programmers Take responsibility for your work and career Test ruthlessly and effectively, including property-based testing Implement the Pragmatic Starter Kit Delight your users Written as a series of self-contained sections and filled with classic and fresh anecdotes, thoughtful examples, and interesting analogies, The Pragmatic

Programmer illustrates the best approaches and major pitfalls of many different aspects of software development. Whether you're a new coder, an experienced programmer, or a manager responsible for software projects, use these lessons daily, and you'll quickly see improvements in personal productivity, accuracy, and job satisfaction. You'll learn skills and develop habits and attitudes that form the foundation for long-term success in your career. You'll become a Pragmatic Programmer. Register your book for convenient access to downloads, updates, and/or corrections as they become available. See inside book for details.

A practical guide to software design discusses the art and science of constructing software and provides examples in C, Pascal, BASIC, Fortran, and Ada, with a focus on successful programming techniques. Original.

Read about the Japanese pilot who led the attack on Pearl Harbor, the German pastor who was prepared to suffer imprisonment and death for the sake of his faith, the British general given the task of defending Malta against invasion by Hitler and Mussolini, the American airman who was converted while a prisoner of the Japanese and who later returned to Japan as a missionary, the Jewish girl who came to know Christ as her Saviour while in hiding from the Nazis, the American chaplain who witnessed to leading Nazi war criminals on trial at Nuremberg, and the British secret agent who was the inspiration for Q in the James Bond 007 stories. What did these people, and the others whose lives are told in this book, have in common? During the turbulent events of those momentous years, God was at work in their lives. He brought these thirteen people to trust, know, love and serve the Lord Jesus Christ, and therefore to give themselves to the service of others. Cognetics and the locus of attention - Meanings, modes, monotony, and myths - Quantification - Unification - Navigation and other aspects of humane interfaces - Interface issues outside the user interface.

This is the first introductory textbook on Spin, the only requirement is a background in programming. Spin models are written in the Promela language which is easily learned by students and programmers. Spin is easy to install and use. The Spin model checker is not only a widely used professional tool but it is also a superb tool for teaching important concepts of computer science such as verification, concurrency and nondeterminism. The book introduces Spin-based software that the author has developed for teaching. Complete programs demonstrate each construct and concept and these programs are available on a companion website.

Hailed as a "must-have textbook" (CHOICE, January 2010), the first edition of Game Engine Architecture provided readers with a complete guide to the theory and practice of game engine software development. Updating the content to match today's landscape of game engine architecture, this second edition continues to thoroughly cover the major components that make up a typical commercial game engine. New to the Second Edition Information on new topics, including the latest variant of the C++ programming language, C++11, and the architecture of the eighth generation of gaming consoles, the Xbox One and PlayStation 4 New chapter on audio technology covering the fundamentals of the physics, mathematics, and technology that go into creating an AAA game audio engine Updated sections on multicore programming, pipelined CPU architecture and optimization, localization, pseudovectors and Grassman algebra, dual quaternions, SIMD vector math, memory alignment, and anti-aliasing Insight into the making of Naughty Dog's latest hit, The Last of Us The book presents the theory underlying various subsystems that comprise a commercial game engine as well as the data structures, algorithms, and software interfaces that are typically used to implement them. It primarily focuses on the engine itself, including a host of low-level foundation systems, the rendering engine, the collision system, the physics simulation, character animation, and audio. An in-depth discussion on the "gameplay foundation layer" delves into the game's object model, world editor, event system, and scripting system. The text also touches on some aspects of gameplay programming, including player mechanics, cameras, and AI. An awareness-building tool and a jumping-off point for further learning, Game Engine Architecture, Second Edition gives readers a solid understanding of both the theory and common practices employed within each of the engineering disciplines covered. The book will help readers on their journey through this fascinating and multifaceted field.

Widely considered one of the best practical guides to programming, Steve McConnell's original CODE COMPLETE has been helping developers write better software for more than a decade. Now this classic book has been fully updated and revised with leading-edge practices—and hundreds of new code samples—illustrating the art and science of software construction. Capturing the body of knowledge available from research, academia, and everyday commercial practice, McConnell synthesizes the most effective techniques and must-know principles into clear, pragmatic guidance. No matter what your experience level, development environment, or project size, this book will inform and stimulate your thinking—and help you build the highest quality code.

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

In Debugging the Development Process, Maguire describes the sometimes controversial but always effective practices that enabled his software teams at Microsoft to develop high-quality software - on schedule. With the refreshing candor reviewers admired in Writing Solid Code, Maguire talks about what did and what didn't work at Microsoft and tells you how to energize software teams to work effectively - and to enjoy their work; why you might want to kick your star programmer off your team; how to avoid corporate snares and overblown corporate processes; which tiny changes produce major results; how to deliver on schedule and without overwork; how to pull twice the value out of everything you do; how to get your team going on a creative roll; and how to raise the average programmer level at your company.

Chapter 5. Knowing What to Comment; What NOT to Comment; Don't Comment Just for the Sake of Commenting; Don't Comment Bad Names--Fix the Names Instead; Recording Your Thoughts; Include "Director Commentary"; Comment the Flaws in Your Code; Comment on Your Constants; Put Yourself in the Reader's Shoes; Anticipating Likely Questions; Advertising Likely Pitfalls; "Big Picture" Comments; Summary Comments; Final Thoughts--Getting Over Writer's Block; Summary; Chapter 6. Making Comments Precise and Compact; Keep Comments Compact; Avoid Ambiguous Pronouns; Polish Sloppy Sentences.

Brian Kernighan and Rob Pike have written The Practice of Programming to help make individual programmers more effective and productive. The practice of programming is more than just writing code. Programmers must also assess

tradeoffs, choose among design alternatives, debug and test, improve performance, and maintain software written by themselves and others. At the same time, they must be concerned with issues like compatibility, robustness, and reliability, while meeting specifications. The Practice of Programming covers all these topics, and more. This book is full of practical advice and real-world examples in C, C++, Java, and a variety of special-purpose languages.

The author explains how he organized and supervised effective software development teams at the Microsoft company to come up with timely and high-quality commercial applications, offering a candid look at the group dynamics of software development. Original. (Advanced).

Get best-in-class engineering practices to help you write more-robust, bug-free code. Two Microsoft .NET development experts share real-world examples and proven methods for optimizing the software development life cycle—from avoiding costly programming pitfalls to making your development team more efficient. Managed code developers at all levels will find design, prototyping, implementation, debugging, and testing tips to boost the quality of their code—today. Optimize each stage of the development process—from design to testing—and produce higher-quality applications. Use metaprogramming to reduce code complexity, while increasing flexibility and maintainability Treat performance as a feature—and manage it throughout the development life cycle Apply best practices for application scalability Employ preventative security measures to ward off malicious attacks Practice defensive programming to catch bugs before run time Incorporate automated builds, code analysis, and testing into the daily engineering process Implement better source-control management and check-in procedures Establish a quality-driven, milestone-based project rhythm—and improve your results!

Based on decades of real-life software development experience, this book will help you produce best-of-breed, world class software. Set up both as a manual and reference, this book will help both novice and experienced software developers to take their skills to the next level. Learn how to produce lean, mean, structured code; how to keep bugs out of your programs; to make your software more user-friendly; to improve maintainability; to troubleshoot your projects; and to guarantee software quality.

Covers Expression, Structure, Common Blunders, Documentation, & Structured Programming Techniques

Few books in computing have had as profound an influence on software management as Peopleware . The unique insight of this longtime best seller is that the major issues of software development are human, not technical. They're not easy issues; but solve them, and you'll maximize your chances of success. "Peopleware has long been one of my two favorite books on software engineering. Its underlying strength is its base of immense real experience, much of it quantified. Many, many varied projects have been reflected on and distilled; but what we are given is not just lifeless distillate, but vivid examples from which we share the authors' inductions. Their premise is right: most software project problems are sociological, not technological. The insights on team jelling and work environment have changed my thinking and teaching. The third edition adds strength to strength." — Frederick P. Brooks, Jr., Kenan Professor of Computer Science, University of North Carolina at Chapel Hill, Author of The Mythical Man-Month and The Design of Design "Peopleware is the one book that everyone who runs a software team needs to read and reread once a year. In the quarter century since the first edition appeared, it has become more important, not less, to think about the social and human issues in software development. This is the only way we're going to make more humane, productive workplaces. Buy it, read it, and keep a stock on hand in the office supply closet." —Joel Spolsky, Co-founder, Stack Overflow "When a book about a field as volatile as software design and use extends to a third edition, you can be sure that the authors write of deep principle, of the fundamental causes for what we readers experience, and not of the surface that everyone recognizes. And to bring people, actual human beings, into the mix! How excellent. How rare. The authors have made this third edition, with its additions, entirely terrific." —Lee Devin and Rob Austin, Co-authors of The Soul of Design and Artful Making For this third edition, the authors have added six new chapters and updated the text throughout, bringing it in line with today's development environments and challenges. For example, the book now discusses pathologies of leadership that hadn't previously been judged to be pathological; an evolving culture of meetings; hybrid teams made up of people from seemingly incompatible generations; and a growing awareness that some of our most common tools are more like anchors than propellers. Anyone who needs to manage a software project or software organization will find invaluable advice throughout the book.

Despite their myriad manifestations and different targets, nearly all attacks on computer systems have one fundamental cause: the code used to run far too many systems today is not secure. Flaws in its design, implementation, testing, and operations allow attackers all-too-easy access. "Secure Coding, by Mark G. Graff and Ken vanWyk, looks at the problem of bad code in a new way. Packed with advice based on the authors' decades of experience in the computer security field, this concise and highly readable book explains why so much code today is filled with vulnerabilities, and tells readers what they must do to avoid writing code that can be exploited by attackers. Beyond the technical, "Secure Coding sheds new light on the economic, psychological, and sheer practical reasons why security vulnerabilities are so ubiquitous today. It presents a new way of thinking about these vulnerabilities and ways that developers can compensate for the factors that have produced such unsecured software in the past. It issues a challenge to all those concerned about computer security to finally make a commitment to building code the right way.

This report provides an overview of the current state of knowledge about why some people hear voices, experience paranoia or have other experiences seen as 'psychosis'. It also describes what can help. In clinical language, the report concerns the 'causes and treatment of schizophrenia and other psychoses'. In recent years we have made huge progress in understanding the psychology of what had previously often been thought of as a largely biological problem, an illness. Much has been written about the biological aspects: this report aims to redress the balance by concentrating on the psychological and social aspects, both in terms of how we understand these experiences and also what can help when they become distressing. We hope that this report will contribute to a fundamental change that is already underway in how we as a society think about and offer help for 'psychosis' and 'schizophrenia'. For example, we hope that in future services will no longer insist that service users accept one particular view of their problem, namely the traditional view that they have an illness which needs to be treated primarily by medication. The report is intended as a resource for people who work in mental health services, people who use them and their friends and relatives, to help ensure that their conversations are as well informed and as useful as possible. It also contains vital information for those responsible for commissioning and designing both services and professional training, as well as for journalists and policy-makers.

