Software Estimation Demystifying The Black Art Steve Mcconnell

The first edition of "Extreme Programming Explained" is a classic. It won awards for its then-radical ideas for improving small-team development, such as having developers write automated tests for their own code and having the whole team plan weekly. Much has changed in five years. This completely rewritten second edition expands the scope of XP to teams of any size by suggesting a program of continuous improvement based on: five core values consistent with excellence in software development; eleven principles for putting those values into action; and, thirteen primary and eleven corollary practices to help you push development past its current business and technical limitations. Whether you have a small team that is already closely aligned with your customers or a large team in a gigantic or multinational organization, you will find in these pages a wealth of ideas to challenge, inspire, and encourage you and your team members to substantially improve your software development.

Designing Software Architectures will teach you how to design any software architecture in a systematic, predictable, repeatable, and cost-effective way. This book introduces a practical methodology for architecture design that any professional software engineer can use, provides structured methods supported by reusable chunks of design knowledge, and includes rich case studies that demonstrate how to use the methods. Using realistic examples, you'll master the powerful new version of the proven Attribute-Driven Design (ADD) 3.0 method and will learn how to use it to address key drivers, including quality attributes, such as modifiability, usability, and availability, along with functional requirements and architectural concerns. Drawing on their extensive experience, Humberto Cervantes and Rick Kazman guide you through crafting practical designs that support the full software life cycle, from requirements to maintenance and evolution. You'll learn how to successfully integrate design in your organizational context, and how to design systems that will be built with agile methods. Comprehensive coverage includes Understanding what architecture design involves, and where it fits in the full software development life cycle Mastering core design concepts, principles, and processes Understanding how to perform the steps of the ADD method Scaling design and analysis up or down, including design for pre-sale processes or lightweight architecture reviews Recognizing and optimizing critical relationships between analysis and design Utilizing proven, reusable design primitives and adapting them to specific problems and contexts Solving design problems in new domains, such as cloud, mobile, or big data

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).

Product verifiable, defensible, and achievable software estimates Based on data collected by the International Software Benchmarking Standards Group (ISBSG), Practical Software Project Estimation explains how to accurately forecast the size, cost, and schedule of software projects. Get expert advice on generating accurate estimates, minimizing risks, and planning and managing projects. Valuable appendixes provide estimation equations, delivery rate tables, and the ISBSG Repository demographics. Verify project objectives and requirements Determine, validate, and refine software functional size Produce indicative estimates using regression equations Predict effect and duration through comparison and analogy Build estimation frameworks Perform benchmarks using the ISBSG Repository Compare IFPUG, COSMIC, and FiSMA sizing methods Peter Hill is the chief executive officer and a director of the ISBSG. He has been in the information services industry for more than 40 years and has compiled and edited five books for the ISBSG.

Second Edition of the UML video course based on the book Applying UML and Patterns. This VTC will focus on object-oriented analysis and design, not just drawing UML.

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. Discover the timeless techniques and strategies that help you: 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

If you have trouble estimating cost or schedule for your projects, you are not alone. The question is this: who wants the estimate and why? The definition of estimate is to guess. But too often, the people who want estimates want commitments. Instead of a commitment, you can apply practical and pragmatic approaches to developing estimates and then meet your commitments. You can provide your managers with the information they want and that you can live with. Learn how to use different words for your estimates and how to report an estimate that includes uncertainty. Learn who should and should not estimate. Learn how to update your estimate when you know more about your project. Regain estimation sanity. Learn practical and pragmatic ways to estimate schedule or cost for your projects.

Why a new approach is needed in the quest for general artificial intelligence. Since the inception of artificial intelligence, we have been warned about the imminent arrival of computational systems that can replicate human thought processes. Before we know it, computers will become so intelligent that humans will be lucky to kept as pets. And yet, although artificial intelligence has become increasingly sophisticated—with such achievements as driverless cars and humanless chess-playing—computer science has not yet created general artificial intelligence. In Algorithms Are Not Enough, Herbert Roitblat explains how artificial general intelligence may be possible and why a robopocalypse is neither imminent, nor likely. Existing artificial intelligence, Roitblat shows, has been limited to solving path problems, in which the entire problem consists of navigating a path of choices—finding specific solutions to well-structured problems. Human problem-solving, on the other hand, includes problems that consist of ill-structured situations, including the design of problem-solving paths themselves. These are insight problems, and insight is an essential part of intelligence that has not been addressed by computer science. Roitblat draws on cognitive science, including psychology, philosophy, and history, to identify the essential features of intelligence needed to achieve general artificial intelligence. Roitblat describes current computational approaches to intelligence, including the Turing Test, machine learning, and neural networks. He identifies building blocks of natural intelligence, including perception, analogy, ambiguity, common sense, and creativity. General intelligence can create new representations to solve new problems, but current computational intelligence cannot. The human brain, like the computer, uses algorithms; but general intelligence, he argues, is more than algorithmic processes. Today success comes from building products people love, creating loyal customers and serving the broader stakeholder community. In this thoughtful exploration on the future of work, the authors explore the past, present and future of the "project." And why, in today's fast changing & hyper-competitive world, running a temporary endeavour is the wrong approach to building sustainable products and how #noprojects is fundamentally changing the way companies work. The metrics by which we have historically defined success are no longer applicable and we need to re-examine the way value is delivered in the new economy. This book starts from the premise that our goal is to create value, for the customer, for the organisation and for society as a whole and shows how to empower and optimise our teams to achieve this. The authors draw on modern management approaches to provide proven techniques and tools for producing, and sustaining, creative products that go beyond "meeting requirements."

Software effort estimation is a key element of software project planning and management. Yet, in industrial practice, the important role of effort estimation is often underestimated and/or misunderstood. In this book, Adam Trendowicz presents the CoBRA method (an abbreviation for Cost Estimation, Benchmarking, and Risk Assessment) for estimating the effort required to successfully complete a software development project, which uniquely combines human judgment and measurement data in order

to systematically create a custom-specific effort estimation model. CoBRA goes far beyond simply predicting the development effort; it supports project decision-makers in negotiating the project scope, managing project risks, benchmarking productivity; and directing improvement activities. To illustrate the method's practical use, the book reports several real-world cases where CoBRA was applied in various industrial contexts. These cases represent different estimation contexts in terms of software project environment, estimation objectives, and estimation constraints. This book is the result of a successful collaboration between the process management division of Fraunhofer IESE and many software companies in the field of software engineering technology transfer. It mainly addresses software practitioners who deal with planning and managing software development projects as part of their daily work, and is also of interest for students or courses specializing in software engineering or software project management.

"For software developers of all experience levels looking to improve their results, and design and implement domain-driven enterprise applications consistently with the best current state of professional practice, Implementing Domain-Driven Design will impart a treasure trove of knowledge hard won within the DDD and enterprise application architecture communities over the last couple decades." –Randy Stafford, Architect At-Large, Oracle Coherence Product Development "This book is a must-read for anybody looking to put DDD into practice." –Udi Dahan, Founder of NServiceBus Implementing Domain-Driven Design presents a top-down approach to understanding domain-driven design (DDD) in a way that fluently connects strategic patterns to fundamental tactical programming tools. Vaughn Vernon couples guided approaches to implementation with modern architectures, highlighting the importance and value of focusing on the business domain while balancing technical considerations. Building on Eric Evans' seminal book, Domain-Driven Design, the author presents practical DDD techniques through examples from familiar domains. Each principle is backed up by realistic Java examples–all applicable to C# developers–and all content is tied together by a single case study: the delivery of a large-scale Scrum-based SaaS system for a multitenant environment. The author takes you far beyond "DDD-lite" approaches that embrace DDD solely as a technical toolset, and shows you how to fully leverage DDD's "strategic design patterns" using Bounded Context, Context Maps, and the Ubiquitous Language. Using these techniques and examples, you can reduce time to market and improve quality, as you build software that is more flexible, more scalable, and more tightly aligned to business goals. Coverage includes Getting started the right way with DDD, so you can rapidly gain value from it Using DDD within diverse architectures, including Hexagonal, SOA, REST, CQRS, Event-Driven, and Fabric/Grid-Based Appropriately designing and applying Entities–and learning when to use Value Objects instead Mastering DDD's powerful new Domain Events technique Designing Repositories for ORM, NoSQL, and other databases

Zero in on key project-initiation tasks—and build a solid foundation for successful software development. In this concise guide, critically-acclaimed author Karl E. Wiegers fills a void in project management literature by focusing on the activities that are essential—but often overlooked—for launching any project. Drawing on his extensive experience, Karl shares lessons learned, proven practices, and tools for getting your project off to the right start—and steering it to ultimate success. Lay a foundation for

project success—discover how to: Effectively charter a project Define meaningful criteria for project success and product releases Negotiate achievable commitments for project teams and stakeholders Identify and document potential barriers to success—and manage project risks Apply the Wideband Delphi method for more accurate estimation Measure project performance and avoid common metrics traps Systematically apply lessons learned to future projects Companion Web site includes: Worksheets from inside the book Project document templates Resources for project initiation and process improvement

*Just months after the introduction of the new generation of 32-bit PIC microcontrollers, a Microchip insider and acclaimed author takes you by hand at the exploration of the PIC32 *Includes handy checklists to help readers perform the most common programming and debugging tasks The new 32-bit microcontrollers bring the promise of more speed and more performance while offering an unprecedented level of compatibility with existing 8 and 16-bit PIC microcontrollers. In sixteen engaging chapters, using a parallel track to his previous title dedicated to 16-bit programming, the author puts all these claims to test while offering a gradual introduction to the development and debugging of embedded control applications in C. Author Lucio Di Jasio, a PIC and embedded control expert, offers unique insight into the new 32-bit architecture while developing a number of projects of growing complexity. Experienced PIC users and newcomers to the field alike will benefit from the text's many thorough examples which demonstrate how to nimbly side-step common obstacles, solve real-world design problems efficiently and optimize code using the new PIC32 features and peripheral set. You will learn about: *basic timing and I/O operation *debugging methods with the MPLAB SIM *simulator and ICD tools *multitasking using the PIC32 interrupts *all the new hardware peripherals *how to control LCD displays *experimenting with the Explorer16 board and *the PIC32 Starter Kit *accessing mass-storage media *generating audio and video signals *and more! TABLE OF CONTENTS Day 1 And the adventure begins Day 2 Walking in circles Day 3 Message in a Bottle Day 4 NUMB3RS Day 5 Interrupts Day 6 Memory Part 2 Experimenting Day 7 Running Day 8 Communication Day 9 Links Day 10 Glass = Bliss Day 11 It's an analog world Part 3 Expansion Day 12 Capturing User Inputs Day 13 UTube Day 14 Mass Storage Day 15 File I/O Day 16 Musica Maestro! 32-bit microcontrollers are becoming the technology of choice for high performance embedded control applications including portable media players, cell phones, and GPS receivers. Learn to use the C programming language for advanced embedded control designs and/or learn to migrate your applications from previous 8 and 16-bit architectures.

The rules and practices for Scrum—a simple process for managing complex projects—are few, straightforward, and easy to learn. But Scrum's simplicity itself—its lack of prescription—can be disarming, and new practitioners often find themselves reverting to old project management habits and tools and yielding lesser results. In this illuminating series of case studies, Scrum co-creator and evangelist Ken Schwaber identifies the real-world lessons—the successes and failures—culled from his years of experience coaching companies in agile project management. Through them, you'll understand how to use Scrum to solve complex problems and drive better results—delivering more valuable software faster. Gain the foundation in Scrum theory—and practice—you need to: Rein in even the most complex, unwieldy projects Effectively manage unknown or changing product requirements Simplify the

chain of command with self-managing development teams Receive clearer specifications—and feedback—from customers Greatly reduce project planning time and required tools Build—and release—products in 30-day cycles so clients get deliverables earlier Avoid missteps by regularly inspecting, reporting on, and fine-tuning projects Support multiple teams working on a large-scale project from many geographic locations Maximize return on investment!

Controlling Software Projects shows managers how to organize software projects so they are objectively measurable, and prescribes techniques for making early and accurate projections of time and cost to deliver.

Estimating software development often produces more angst than value, but it doesn't have to. Identify the needs behind estimate requests and determine how to meet those needs simply and easily. Choose estimation techniques based on current needs and available information, gaining benefit while reducing cost and effort. Detect bad assumptions that might sink your project if you don't adjust your plans. Discover what to do when an estimate is wrong, how to recover, and how to use that knowledge for future planning. Learn to communicate about estimates in a healthy and productive way, maximizing advantage to the organization and minimizing damage to the people. In a world where most developers hate estimation and most managers fear disappointment with the results, there is hope for both. It requires giving up some widely held misconceptions. Let go of the notion that "an estimate is an estimate" and estimate for the particular need you, and your organization, have. Realize that estimates have a limited shelf-life, and reestimate frequently if it's important. When reality differs from your estimate, don't lament; mine that disappointment for the gold that can be the longer-term jackpot. Estimate in comparison to past experience, by modeling the work mathematically, or a hybrid of both. Learn strategies for effective decomposition of work and aspects of the work that likely affect your estimates. Hedge your bets by comparing the results of different approaches. Find out what to do when an estimate proves wrong. And they will. They're estimates, after all. You'll discover that you can use estimates to warn you of danger so you can take appropriate action in time. Learn some crucial techniques to understand and communicate with those who need to understand. Address both the technical and sociological aspects of estimation, and you'll help your organization achieve its desired goals with less drama and more benefit. What You Need: No software needed, just your past experience and concern for the outcomes.

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.

Use Kanban to maximize efficiency, predictability, quality, and value With Kanban, every minute you spend on a software project can add value for customers. One book can help you achieve this goal: Agile Project Management with Kanban. Author Eric Brechner pioneered Kanban within the Xbox engineering team at Microsoft. Now he shows you exactly how to make it work for

your team. Think of this book as "Kanban in a box": open it, read the quickstart guide, and you're up and running fast. As you gain experience, Brechner reveals powerful techniques for right-sizing teams, estimating, meeting deadlines, deploying components and services, adapting or evolving from Scrum or traditional Waterfall, and more. For every step of your journey, you'll find pragmatic advice, useful checklists, and actionable lessons. This truly is "Kanban in a box": all you need to deliver breakthrough value and quality. Use Kanban techniques to: Start delivering continuous value with your current team and project Master five quick steps for completing work backlogs Plan and staff new projects more effectively Minimize work in progress and quickly adjust to change Eliminate artificial meetings and prolonged stabilization Improve and enhance customer engagement Visualize workflow and fix revealed bottlenecks Drive quality upstream Integrate Kanban into large projects Optimize sustained engineering (contributed by James Waletzky) Expand Kanban beyond software development

bull; Renowned software expert Steve McConnell presents his latest thoughts on the condition of the software engineering profession bull; Helps software developers regain the sight of the big-picture reasons why their jobs matter bull; A thinking man's guide to the current state of software

Software legend Capers Jones reveals the tight links between software quality, ROI, and TCO, and help you optimize all three • •Strong empirical evidence that high quality generates strongly positive ROI and reduced TCO. •Practical ways to prevent defects, and remove them in pre-test, test, and postrelease. •Easy checklists for assessing and improving practice, plus insights into the costs/benefits of intervention. •By renowned software consultant Capers Jones. In this book, world-renowned software management expert Capers Jones and software quality guru Jitendra Subramanyam help development leaders and practitioners quantify and optimize the economic impact of quality throughout the software lifecycle - and then choose the highest value interventions to improve it. The authors introduce powerful empirical and field data on the ability of inspection, static analysis, and test methods to reduce up to 95% of defects, and discuss the business value of improvements of this magnitude. The Economics of Software Quality is based on proven best quality practices in IT departments and at world-leading integrators, embedded software companies, and systems software groups. Jones and Curtis bring together crucial new information on: • •Identifying and fixing the root causes of short- and long-term software cost inefficiencies. •Predicting and measuring software defects and their quality impacts. •Assessing current practices and identifying the best interventions. •Calculating the ROI of quality during development and maintenance. •Comparing and choosing methods of defect prevention. •Selecting methods of defect removal, such as inspections and static analysis. •Understanding and evaluating more than 20 kinds of software testing. •Best practices for postrelease defect reporting and repair. •Recognizing 'hazardous' metrics and their problems

In this truly unique technical book, today's leading software architects present valuable principles on key development issues that go way beyond technology. More than four dozen architects -- including Neal Ford, Michael Nygard, and Bill de hOra -- offer advice for communicating with stakeholders, eliminating complexity, empowering developers, and many more practical lessons they've learned from years of experience. Among the 97 principles in this book, you'll find useful advice such as: Don't Put Your

Resume Ahead of the Requirements (Nitin Borwankar) Chances Are, Your Biggest Problem Isn't Technical (Mark Ramm) Communication Is King; Clarity and Leadership, Its Humble Servants (Mark Richards) Simplicity Before Generality, Use Before Reuse (Kevlin Henney) For the End User, the Interface Is the System (Vinayak Hegde) It's Never Too Early to Think About Performance (Rebecca Parsons) To be successful as a software architect, you need to master both business and technology. This book tells you what top software architects think is important and how they approach a project. If you want to enhance your career, 97 Things Every Software Architect Should Know is essential reading.

The topic is of prime importance to software professionals involved in large development efforts such as databases, operating systems, compilers, and frameworks. This volume explains the process of decomposing large systems into physical (not inheritance) hierarchies of small, manageable components. Concepts and techniques are illustrated with "war stories" from the development firm, Mentor Graphics, as well as with a large-scale example comprising some 12,000 lines of code. Annotation copyright by Book News, Inc., Portland, OR

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. Inside, you'll find: A rapid-development strategy that can be applied to any project and the best practices to make that strategy work Candid discussions of great and not-so-great rapid-development practices—estimation, prototyping, forced overtime, motivation, teamwork, rapid-development languages, risk management, and many others A list of classic mistakes to avoid for rapid-development projects, including creeping requirements, shortchanged quality, and silver-bullet syndrome Case studies that vividly illustrate what can go wrong, what can go right, and how to tell which direction your project is going RAPID DEVELOPMENT is the real-world guide to more efficient applications development.

Agile Estimating and Planning is the definitive, practical guide to estimating and planning agile projects. In this book, Agile Alliance cofounder Mike Cohn discusses the philosophy of agile estimating and planning and shows you exactly how to get the job done, with real-world examples and case studies. Concepts are clearly illustrated and readers are guided, step by step, toward how to answer the following questions: What will we build? How big will it be? When must it be done? How much can I really complete by then? You will first learn what makes a good plan-and then what makes it agile. Using the techniques in Agile Estimating and Planning , you can stay agile from start to finish, saving time, conserving resources, and accomplishing more. Highlights include: Why conventional prescriptive planning fails and why agile planning works How to estimate feature size using story points and ideal days–and when to use each How and when to re-estimate How to prioritize features using both financial and nonfinancial approaches How to split large features into smaller, more manageable ones How to plan iterations and predict your team's initial rate of progress How to schedule projects that have unusually high uncertainty or schedule-related risk How to estimate projects that will be worked on by multiple teams Agile Estimating and Planning supports any agile, semiagile, or iterative process,

including Scrum, XP, Feature-Driven Development, Crystal, Adaptive Software Development, DSDM, Unified Process, and many more. It will be an indispensable resource for every development manager, team leader, and team member.

Software EstimationDemystifying the Black ArtMicrosoft Press

Printed in full color. Faced with a software project of epic proportions? Tired of over-committing and under-delivering? Enter the dojo of the agile samurai, where agile expert Jonathan Rasmusson shows you how to kick-start, execute, and deliver your agile projects. Combining cutting-edge tools with classic agile practices, The Agile Samurai gives you everything you need to deliver something of value every week and make rolling your software into production a non-event. Get ready to kick some software project butt. By learning the ways of the agile samurai you will discover: how to create plans and schedules your customer and your team can believe in what characteristics make a good agile team and how to form your own how to gather requirements in a fraction of the time using agile user stories what to do when you discover your schedule is wrong, and how to look like a pro correcting it how to execute fiercely by leveraging the power of agile software engineering practices By the end of this book you will know everything you need to set up, execute, and successfully deliver agile projects, and have fun along the way. If you're a project lead, this book gives you the tools to set up and lead your agile project from start to finish. If you are an analyst, programmer, tester, usability designer, or project manager, this book gives you the insight and foundation necessary to become a valuable agile team member. The Agile Samurai slices away the fluff and theory that make other books less-than-agile. It's packed with best practices, war stories, plenty of humor and hands-on tutorial exercises that will get you doing the right things, the right way. This book will make a difference.

Amazon.com's Top-Selling DSP Book for Seven Straight Years—Now Fully Updated! Understanding Digital Signal Processing, Third Edition, is quite simply the best resource for engineers and other technical professionals who want to master and apply today's latest DSP techniques. Richard G. Lyons has updated and expanded his best-selling second edition to reflect the newest technologies, building on the exceptionally readable coverage that made it the favorite of DSP professionals worldwide. He has also added hands-on problems to every chapter, giving students even more of the practical experience they need to succeed. Comprehensive in scope and clear in approach, this book achieves the perfect balance between theory and practice, keeps math at a tolerable level, and makes DSP exceptionally accessible to beginners without ever oversimplifying it. Readers can thoroughly grasp the basics and quickly move on to more sophisticated techniques. This edition adds extensive new coverage of FIR and IIR filter analysis techniques, digital differentiators, integrators, and matched filters. Lyons has significantly updated and expanded his discussions of multirate processing techniques, which are crucial to modern wireless and satellite communications. He also presents nearly twice as many DSP Tricks as in the second edition—including techniques even seasoned DSP professionals may have overlooked. Coverage includes New homework problems that deepen your understanding and help you apply what you've learned Practical, day-to-day DSP implementations and problem-solving throughout Useful new guidance on generalized digital networks, including discrete differentiators, integrators, and matched filters Clear descriptions of statistical measures of signals,

variance reduction by averaging, and real-world signal-to-noise ratio (SNR) computation A significantly expanded chapter on sample rate conversion (multirate systems) and associated filtering techniques New guidance on implementing fast convolution, IIR filter scaling, and more Enhanced coverage of analyzing digital filter behavior and performance for diverse communications and biomedical applications Discrete sequences/systems, periodic sampling, DFT, FFT, finite/infinite impulse response filters, quadrature (I/Q) processing, discrete Hilbert transforms, binary number formats, and much more

Shipping imperfect software is like going into debt. When you incur debt, the illusion of doing things faster can lead to exponential growth in the cost of maintaining software. Software debt takes five major forms: technical, quality, configuration management, design, and platform experience. In today's rush to market, software debt is inevitable. And that's okay—if you're careful about the debt you incur, and if you quickly pay it back. In Managing Software Debt, leading Agile expert Chris Sterling shows how understanding software debt can help you move products to market faster, with a realistic plan for refactoring them based on experience. Writing for all Agile software professionals, Sterling explains why you're going into software debt whether you know it or not—and why the interest on that debt can bring projects to a standstill. Next, he thoroughly explains each form of software debt, showing how to plan for it intelligently and repay it successfully. You'll learn why accepting software debt is not the same as deliberate sloppiness, and you'll learn how to use the software debt concept to systematically improve architectural agility. Coverage includes Managing tensions between speed and perfection and recognizing that you'll inevitably ship some "not quite right" code Planning to minimize interest payments by paying debts quickly Building architectures that respond to change and help enterprises run more smoothly Incorporating emergent architecture concepts into daily activities, using Agile collaboration and refactoring techniques Delivering code and other software internals that reduce the friction of future change Using early, automated testing to move past the "break/fix" mentality Scripting and streamlining both deployment and rollback Implementing team configuration patterns and knowledge sharing approaches that make software debt easier to repay Clearing away technical impediments in existing architectures Using the YAGNI ("you ain't gonna need it") approach to strip away unnecessary complexity Using this book's techniques, senior software leadership can deliver more business value; managers can organize and support development teams more effectively; and teams and team members can improve their performance throughout the development lifecycle.

CD-ROM includes: Video introduction -- Book overview -- COCOMO II. 2000 software -- Tutorials -- Adobe Acrobat Reader installation package.

For those considering Extreme Programming, this book provides no-nonsense advice on agile planning, development, delivery, and management taken from the authors' many years of experience. While plenty of books address the what and why of agile development, very few offer the information users can apply directly.

In this comprehensive yet accessible overview for software leaders, the author presents an impactful, action-oriented prescription-covering the practical considerations needed to ensure you reap the full benefits of effective Agile

Essential Information about Algorithms and Data Structures A Classic Reference The latest version of Sedgewick, s best-selling series, reflecting an indispensable body of knowledge developed over the past several decades. Broad Coverage Full treatment of data structures and algorithms for sorting, searching, graph processing, and string processing, including fifty algorithms every programmer should know. See

Effectively forecast, manage, and control software across the entire project lifecycle Accurately size, estimate, and administer software projects with real-world guidance from an industry expert. Fully updated to cover the latest tools and techniques, Applied Software Measurement, Third Edition details how to deploy a cost-effective and pragmatic analysis strategy. You will learn how to use function points and baselines, implement benchmarks and tracking systems, and perform efficiency tests. Full coverage of the latest regulations, metrics, and standards is included. Measure performance at the requirements, coding, testing, and installation phases Set function points for efficiency, cost, market share, and customer satisfaction Analyze quality and productivity using assessments, benchmarks, and baselines Design and manage project cost, defect, and quality tracking systems Use object-oriented, reusable component, Agile, CMM, and XP methods Assess defect removal efficiency using unit tests and multistage test suites

The main focus of this eBook is "How to get prepared for managing a remote team." Typical questions that come up while preparing are: Which country shall we outsource our work to?; What project shall we choose to start with?; Which company suits our needs best?; Shall we set up our own captive center or outsource to a partner?; Are we organized well enough to start offshoring work? Most people tend to focus a lot on these 'initiation' questions at the expense of wondering 'how to organize'. Preparation is seen as selecting the right country and partner and then 'just get going'. Many problems can be prevented by investing time in the right organization before the 'real work' starts. In this eBook, we try to provide advice on both perspectives, based on experiences from several experts around the globe. The first chapter is written by Hugo Messer, he describes how to get started. The main questions he answered in this chapter are related to 'initiation' and the questions above. Hugo has gained substantial experience in setting up and managing remote teams, with suppliers, freelancers and own offices. Then, Patrick van Dun, an experienced 'offshore founder', provides guidelines on the choice of setting up your own remote office versus engaging a partner. Zhenya Rozinskiy discusses his best practices for getting the right people on your team. Zhenya has set up several teams around the world. Amanda Crouch from the UK has over 20 years of experience as a management consultant and researcher. She looks at stimulating collaboration at the company and individual level. Ove Holmberg, an IT project manager and agile coach from Sweden, describes his concept of the virtual teamroom. Andreas Brilling from Germany works as engagement manager for CapGemini and has led a large offshoring initiative from Australia. In the final chapter Hugo shares his personal story of how he got started with setting up his own offices in India and Ukraine. This is the second eBook in a series of eBooks that will be published within a couple of month's interval and later on into one printed book. These eBooks are being written through a crowdwriting project and the authors are experts from all over the world.

Project managers, technical leads, and Windows programmers throughout the industry share an important concern--how to get their development schedules under control. Rapid Development addresses that concern head-on with philosophy, techniques, and tools that help shrink and control development schedules and keep projects moving. The style is friendly and conversational--and the content is impressive.

"If you're looking for solid, easy-to-follow advice on estimation, requirements gathering, managing change, and more, you can stop now: this is the book for you."--Scott Berkun, Author of The Art of Project Management What makes software projects succeed? It takes more than a good idea and a team of talented programmers. A project manager needs to know how to guide the team through the entire software project. There are common pitfalls that plague all software projects and rookie mistakes that are made repeatedly--sometimes by the same people! Avoiding these pitfalls is not hard, but it is not necessarily intuitive. Luckily, there are tried and true techniques that can help any project manager. In Applied Software Project Management, Andrew Stellman and Jennifer Greene provide you with tools, techniques, and practices that you can use on your own projects right away. This book supplies you with the information you need to diagnose your team's situation and presents practical advice to help you achieve your goal of building better software. Topics include: Planning a software project Helping a team estimate its workload Building a schedule Gathering software requirements and creating use cases Improving programming with refactoring, unit testing, and version control Managing an outsourced project Testing software Jennifer Greene and Andrew Stellman have been building software together since 1998. Andrew comes from a programming background and has managed teams of requirements analysts, designers, and developers. Jennifer has a testing background and has managed teams of architects, developers, and testers. She has led multiple large-scale outsourced projects. Between the two of them, they have managed every aspect of software development. They have worked in a wide range of industries, including finance, telecommunications, media, nonprofit, entertainment, natural-language processing, science, and academia. For more information about them and this book, visit stellman-greene.com

Write code that can adapt to changes. By applying this book's principles, you can create code that accommodates new requirements and unforeseen scenarios without significant rewrites. Gary McLean Hall describes Agile best practices, principles, and patterns for designing and writing code that can evolve more quickly and easily, with fewer errors, because it doesn't impede change. Now revised, updated, and expanded, Adaptive Code, Second Edition adds indispensable practical insights on Kanban, dependency inversion, and creating reusable abstractions. Drawing on over a decade of Agile consulting and development experience, McLean Hall has updated his best-seller with deeper coverage of unit testing, refactoring, pure dependency injection, and more. Master powerful new ways to: • Write code that enables and complements Scrum, Kanban, or any other Agile framework • Develop code that can survive major changes in requirements • Plan for adaptability by using dependencies, layering, interfaces, and design patterns •

Perform unit testing and refactoring in tandem, gaining more value from both • Use the "golden master" technique to make legacy code adaptive • Build SOLID code with single-responsibility, open/closed, and Liskov substitution principles • Create smaller interfaces to support more-diverse client and architectural needs • Leverage dependency injection best practices to improve code adaptability • Apply dependency inversion with the Stairway pattern, and avoid related anti-patterns About You This book is for programmers of all skill levels seeking more-practical insight into design patterns, SOLID principles, unit testing, refactoring, and related topics. Most readers will have programmed in C#, Java, C++, or similar object-oriented languages, and will be familiar with core procedural programming techniques.

Anyone who develops software for a living needs a proven way to produce it better, faster, and cheaper. The Productive Programmer offers critical timesaving and productivity tools that you can adopt right away, no matter what platform you use. Master developer Neal Ford not only offers advice on the mechanics of productivity-how to work smarter, spurn interruptions, get the most out your computer, and avoid repetition-he also details valuable practices that will help you elude common traps, improve your code, and become more valuable to your team. You'll learn to: Write the test before you write the code Manage the lifecycle of your objects fastidiously Build only what you need now, not what you might need later Apply ancient philosophies to software development Question authority, rather than blindly adhere to standards Make hard things easier and impossible things possible through meta-programming Be sure all code within a method is at the same level of abstraction Pick the right editor and assemble the best tools for the job This isn't theory, but the fruits of Ford's real-world experience as an Application Architect at the global IT consultancy ThoughtWorks. Whether you're a beginner or a pro with years of experience, you'll improve your work and your career with the simple and straightforward principles in The Productive Programmer.

Often referred to as the "black art" because of its complexity and uncertainty, software estimation is not as difficult or puzzling as people think. In fact, generating accurate estimates is straightforward—once you understand the art of creating them. In his highly anticipated book, acclaimed author Steve McConnell unravels the mystery to successful software estimation—distilling academic information and real-world experience into a practical guide for working software professionals. Instead of arcane treatises and rigid modeling techniques, this guide highlights a proven set of procedures, understandable formulas, and heuristics that individuals and development teams can apply to their projects to help achieve estimation proficiency. Discover how to: Estimate schedule and cost—or estimate the functionality that can be delivered within a given time frame Avoid common software estimation mistakes Learn estimation techniques for you, your team, and your organization * Estimate specific project activities—including development, management, and defect correction Apply estimation approaches to any type of project—small or large, agile or traditional Navigate the shark-

infested political waters that surround project estimates When many corporate software projects are failing, McConnell shows you what works for successful software estimation.

API Design for C++ provides a comprehensive discussion of Application Programming Interface (API) development, from initial design through implementation, testing, documentation, release, versioning, maintenance, and deprecation. It is the only book that teaches the strategies of C++ API development, including interface design, versioning, scripting, and plug-in extensibility. Drawing from the author's experience on large scale, collaborative software projects, the text offers practical techniques of API design that produce robust code for the long term. It presents patterns and practices that provide real value to individual developers as well as organizations. API Design for C++ explores often overlooked issues, both technical and non-technical, contributing to successful design decisions that product high quality, robust, and long-lived APIs. It focuses on various API styles and patterns that will allow you to produce elegant and durable libraries. A discussion on testing strategies concentrates on automated API testing techniques rather than attempting to include end-user application testing techniques such as GUI testing, system testing, or manual testing. Each concept is illustrated with extensive C++ code examples, and fully functional examples and working source code for experimentation are available online. This book will be helpful to new programmers who understand the fundamentals of C++ and who want to advance their design skills, as well as to senior engineers and software architects seeking to gain new expertise to complement their existing talents. Three specific groups of readers are targeted: practicing software engineers and architects, technical managers, and students and educators. The only book that teaches the strategies of C++ API development, including design, versioning, documentation, testing, scripting, and extensibility. Extensive code examples illustrate each concept, with fully functional examples and working source code for experimentation available online. Covers various API styles and patterns with a focus on practical and efficient designs for large-scale long-term projects. Looks at a successful software project and provides details for software development for clients using object-oriented design and programming.

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