

Software Requirements Practical Techniques For Gathering And Managing Requirements Throughout The Product Development Cycle Pro Best Practices

Have you ever delivered software that satisfied all of the project specifications, but failed to meet any of the customers' expectations? Without formal, verifiable requirements--and a system for managing them--the result is often a gap between what developers think they're supposed to build and what customers think they're going to get. Too often, lessons about software requirements engineering processes are formal or academic, and not of value to real-world, professional development teams. In **MORE ABOUT SOFTWARE REQUIREMENTS: THORNY ISSUES AND PRACTICAL ADVICE**, the author of *Software Requirements, Second Edition*, describes even more practical techniques for gathering and managing the software requirements that help you meet project specifications and customer expectations. A leading speaker and consultant in the field of requirements engineering, Karl Wieggers takes questions raised by other professional software developers and analysts as a basis for the practical solutions and best practices offered in this guide. Succinct and

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Immediately useful, this book is a must-have for developers and analysts. This is an insightful guide to efficient, practical solutions to real-world C++ problems. Concrete case studies run throughout the book and show how to develop quality C++ software.

Have you ever delivered software that satisfied all the project specifications -- and seemingly none of the customer's expectations? As a customer, do you find yourself guessing exactly what kind of information developers need from you? Without formal, verifiable requirements -- and a system for managing them -- the result is usually a gap between what developers think they're supposed to build and what customers think they're going to get. In *SOFTWARE REQUIREMENTS, Second Edition*, you'll discover practical, proven techniques for managing the requirements engineering process all the way through the development cycle. The author, a leading speaker and consultant in the field of requirements engineering, has expanded his award-winning book with more real-world case examples, up-to-date coverage of use cases and commercially available tools, additional practice exercises, and a new troubleshooting guide. He's also refined his own set of tools and templates for facilitating that all-important communication among users, developers, and management. No matter what kind of software you build or what your role in the development process, *SOFTWARE*

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REQUIREMENTS, Second Edition, delivers the expert tools and guidance you need to engineer software success!

Incomplete or missed requirements, omissions, ambiguous product features, lack of user involvement, unrealistic customer expectations, and the proverbial scope creep can result in cost overruns, missed deadlines, poor product quality, and can very well ruin a project. *Project Scope Management: A Practical Guide to Requirements for Engineering, Product, Construction, IT and Enterprise Projects* describes how to elicit, document, and manage requirements to control project scope creep. It also explains how to manage project stakeholders to minimize the risk of an ever-growing list of user requirements. The book begins by discussing how to collect project requirements and define the project scope. Next, it considers the creation of work breakdown structures and examines the verification and control of the scope. Most of the book is dedicated to explaining how to collect requirements and how to define product and project scope inasmuch as they represent the bulk of the project scope management work undertaken on any project regardless of the industry or the nature of the work involved. The book maintains a focus on practical and sensible tools and techniques rather than academic theories. It examines five different projects and traces their development from a project scope management perspective—from

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project initiation to the end of the execution and control phases. The types of projects considered include CRM system implementation, mobile number portability, port upgrade, energy-efficient house design, and airport check-in kiosk software. After reading this book, you will learn how to create project charters, high-level scope, detailed requirements specifications, requirements management plans, traceability matrices, and a work breakdown structure for the projects covered.

This expanded and updated edition of "Practical Enterprise Software Development Techniques" includes a new chapter which explains what makes enterprise scale software development different from other development endeavors. Chapter 4 has been expanded with additional coverage of code review, bug tracker systems and agile software applications. The chapter order has been changed in response to feedback from readers and instructors who have taught classes using the previous version (which was also published by Apress). This book provides an overview of tools and techniques used in enterprise software development, many of which are not taught in academic programs or learned on the job. This is an ideal resource containing lots of practical information and code examples that you need to master as a member of an enterprise development team. This book aggregates many of these "on the

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job" tools and techniques into a concise format and presents them as both discussion topics and with code examples. The reader will not only get an overview of these tools and techniques, but also several discussions concerning operational aspects of enterprise software development and how it differs from smaller development efforts. For example, in the chapter on Design Patterns and Architecture, the author describes the basics of design patterns but only highlights those that are more important in enterprise applications due to separation of duties, enterprise security, etc. The architecture discussion revolves has a similar emphasis – different teams may manage different aspects of the application's components with little or no access to the developer. This aspect of restricted access is also mentioned in the section on logging. Theory of logging and discussions of what to log are briefly mentioned, the configuration of the logging tools is demonstrated along with a discussion of why it's very important in an enterprise environment.

Today many companies are employing a user-centered design (UCD) process, but for most companies, usability begins and ends with the usability test. Although usability testing is a critical part of an effective user-centered life cycle, it is only one component of the UCD process. This book is focused on the requirements gathering stage, which often receives less attention than usability

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testing, but is equally as important. Understanding user requirements is critical to the development of a successful product. Understanding Your Users is an easy to read, easy to implement, how-to guide on usability in the real world. It focuses on the "user requirements gathering" stage of product development and it provides a variety of techniques, many of which may be new to usability professionals. For each technique, readers will learn how to prepare for and conduct the activity, as well as analyze and present the data—all in a practical and hands-on way. In addition, each method presented provides different information about the user and their requirements (e.g., functional requirements, information architecture, task flows). The techniques can be used together to form a complete picture of the users' requirements or they can be used separately to address specific product questions. These techniques have helped product teams understand the value of user requirements gathering by providing insight into how users work and what they need to be successful at their tasks. Case studies from industry-leading companies demonstrate each method in action. In addition, readers are provided with the foundation to conduct any usability activity (e.g., getting buy-in from management, legal and ethical considerations, setting up your facilities, recruiting, moderating activities) and to ensure the incorporation of the results into their products. ·Covers all of the

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significant requirements gathering methods in a readable, practical way ·Presents the foundation readers need to prepare for any requirements gathering activity and ensure that the results are incorporated into their products ·Includes invaluable worksheet and template appendices ·Includes a case study for each method from industry leaders ·Written by experienced authors who teach conference courses on this subject to usability professionals and new product designers alike

Over the past decade, there has been an increase in attention and focus on the discipline of software engineering. Software engineering tools and techniques have been developed to gain more predictable quality improvement results. Process standards such as Capability Maturity Model Integration (CMMI), ISO 9000, Software Process Improvement and Capability dEtermination (SPICE), Agile Methodologies, and others have been proposed to assist organizations to achieve more predictable results by incorporating these proven standards and procedures into their software process. Software Process Improvement and Management: Approaches and Tools for Practical Development offers the latest research and case studies on software engineering and development. The production of new process standards assist organizations and software engineers in adding a measure of predictability to the software process.

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Companies can gain a decisive competitive advantage by applying these new and theoretical methodologies in real-world scenarios. Researchers, scholars, practitioners, students, and anyone interested in the field of software development and design should access this book as a major compendium of the latest research in the field.

While a number of books on the market deal with software requirements, this is the first resource to offer you a methodology for discovering and testing the real business requirements that software products must meet in order to provide value. The book provides you with practical techniques that help prevent the main causes of requirements creep, which in turn enhances software development success and satisfaction among the organizations that apply these approaches. Complementing discovery methods, you also learn more than 21 ways to test business requirements from the perspectives of assessing suitability of form, identifying overlooked requirements, and evaluating substance and content. The powerful techniques and methods presented are applied to a real business case from a company recognized for world-class excellence. You are introduced to the innovative Problem Pyramid™ technique which helps you more reliably identify the real problem and requirements content. From an examination of key methods for gathering and understanding information about requirements,

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to seven guidelines for documenting and communicating requirements, while avoiding analysis paralysis, this book is a comprehensive, single source for uncovering the real business requirements for your software development projects.

Now in its third edition, this classic guide to software requirements engineering has been fully updated with new topics, examples, and guidance. Two leaders in the requirements community have teamed up to deliver a contemporary set of practices covering the full range of requirements development and management activities on software projects. Describes practical, effective, field-tested techniques for managing the requirements engineering process from end to end. Provides examples demonstrating how requirements "good practices" can lead to fewer change requests, higher customer satisfaction, and lower development costs. Fully updated with contemporary examples and many new practices and techniques. Describes how to apply effective requirements practices to agile projects and numerous other special project situations. Targeted to business analysts, developers, project managers, and other software project stakeholders who have a general understanding of the software development process. Shares the insights gleaned from the authors' extensive experience delivering hundreds of software-requirements training courses, presentations, and webinars. New chapters are included on specifying data requirements, writing high-quality functional requirements, and requirements reuse.

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Considerable depth has been added on business requirements, elicitation techniques, and nonfunctional requirements. In addition, new chapters recommend effective requirements practices for various special project situations, including enhancement and replacement, packaged solutions, outsourced, business process automation, analytics and reporting, and embedded and other real-time systems projects.

Updated introduction to software modelling using VDM. Includes advanced online tool support and up-to-date reports on real commercial applications.

Organizations continue to experience project issues associated with poor performance on requirements-related activities. This guide will give you the tools you need to excel in requirements development and management — components of the larger field of business analysis and a critical competence for project, program and portfolio management. Requirements Management: A Practice Guide is a bridge between A Guide to the Project Management Body of Knowledge (PMBOK® Guide), which speaks to requirements development and management from a high-level perspective, and Business Analysis for Practitioners: A Practice Guide, which describes requirements development and management at a detailed and practical level. This practice guide is the middle ground, offering project managers, program managers, teams members and stakeholders the opportunity to learn more about the requirements process

With presentations of concrete software design methodologies and ways to improve design practices, this book explores techniques that are useful in user-centered

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software design. Discussions of interesting new research perspectives by contributors from the United States and Europe are also included.

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

This Expert Guide gives you the techniques and technologies in software engineering to optimally design and implement your embedded system. Written by experts with a

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solutions focus, this encyclopedic reference gives you an indispensable aid to tackling the day-to-day problems when using software engineering methods to develop your embedded systems. With this book you will learn: The principles of good architecture for an embedded system Design practices to help make your embedded project successful Details on principles that are often a part of embedded systems, including digital signal processing, safety-critical principles, and development processes Techniques for setting up a performance engineering strategy for your embedded system software How to develop user interfaces for embedded systems Strategies for testing and deploying your embedded system, and ensuring quality development processes Practical techniques for optimizing embedded software for performance, memory, and power Advanced guidelines for developing multicore software for embedded systems How to develop embedded software for networking, storage, and automotive segments How to manage the embedded development process Includes contributions from: Frank Schirrmeister, Shelly Gretlein, Bruce Douglass, Erich Styger, Gary Stringham, Jean Labrosse, Jim Trudeau, Mike Brogioli, Mark Pitchford, Catalin Dan Udma, Markus Levy, Pete Wilson, Whit Waldo, Inga Harris, Xinxin Yang, Srinivasa Addepalli, Andrew McKay, Mark Kraeling and Robert Oshana. Road map of key problems/issues and references to their solution in the text Review of core methods in the context of how to apply them Examples demonstrating timeless implementation details Short and to- the- point case studies show how key ideas can be implemented,

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the rationale for choices made, and design guidelines and trade-offs

An updated edition of the best tips and tools to plan, build, and execute a structured test operation In this update of his bestselling book, Rex Black walks you through how to develop essential tools and apply them to your test project. He helps you master the basic tools, apply the techniques to manage your resources, and give each area just the right amount of attention so that you can successfully survive managing a test project! Offering a thorough review of the tools and resources you will need to manage both large and small projects for hardware and software, this book prepares you to adapt the concepts across a broad range of settings. Simple and effective, the tools comply with industry standards and bring you up to date with the best test management practices and tools of leading hardware and software vendors. Rex Black draws from his own numerous testing experiences-- including the bad ones, so you can learn from his mistakes-- to provide you with insightful tips in test project management. He explores such topics as: Dates, budgets, and quality-expectations versus reality Fitting the testing process into the overall development or maintenance process How to choose and when to use test engineers and technicians, contractors and consultants, and external test labs and vendors Setting up and using an effective and simple bug-tracking database Following the status of each test case The companion Web site contains fifty tools, templates, and case studies that will help you put these ideas into action--fast!

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By following the techniques in this book, it is possible to write requirements and specifications that customers, testers, programmers and technical writers will actually read, understand and use. These pages provide precise, practical instructions on how to distinguish requirements from design to produce clear solutions.

The cost of fixing software design flaws after the completion of a software product is so high that it is vital to come up with ways to detect software design flaws in the early stages of software development, for instance, during the software requirements, the analysis activity, or during software design, before coding starts. It is not uncommon that software requirements are ambiguous or contradict each other. Ambiguity is exacerbated by the fact that software requirements are typically written in a natural language, which is not tied to any formal semantics. A palliative to the ambiguity of software requirements is to restrict their syntax to boilerplates, textual templates with placeholders. However, as informal requirements do not enjoy any particular semantics, no essential properties about them (or about the system they attempt to describe) can be proven easily. Formal methods are an alternative to address this problem. They offer a range of mathematical techniques and mathematical tools to validate software requirements in the early stages of software development. This book is a living proof of the use of formal methods to develop software. The particular

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formalisms that we use are EVENT B and refinement calculus. In short: (i) software requirements as written as User Stories; (ii) they are ported to formal specifications; (iii) they are refined as desired; (iv) they are implemented in the form of a prototype; and finally (v) they are tested for inconsistencies. If some unit-test fails, then informal as well as formal specifications of the software system are revisited and evolved. This book presents a case study of software development of a chat system with EVENT B and a case study of formal proof of properties of a social network.

Environment Modeling-Based Requirements Engineering for Software Intensive Systems provides a new and promising approach for engineering the requirements of software-intensive systems, presenting a systematic, promising approach to identifying, clarifying, modeling, deriving, and validating the requirements of software-intensive systems from well-modeled environment simulations. In addition, the book presents a new view of software capability, i.e. the effect-based software capability in terms of environment modeling. Provides novel and systematic methodologies for engineering the requirements of software-intensive systems Describes ontologies and easily-understandable notations for modeling software-intensive systems Analyzes the functional and non-functional requirements based on the properties of the software surroundings Provides an

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essential, practical guide and formalization tools for the task of identifying the requirements of software-intensive systems Gives system analysts and requirements engineers insight into how to recognize and structure the problems of developing software-intensive systems

Learn proven, real-world techniques for specifying software requirements with this practical reference. It details 30 requirement “patterns” offering realistic examples for situation-specific guidance for building effective software requirements. Each pattern explains what a requirement needs to convey, offers potential questions to ask, points out potential pitfalls, suggests extra requirements, and other advice. This book also provides guidance on how to write other kinds of information that belong in a requirements specification, such as assumptions, a glossary, and document history and references, and how to structure a requirements specification. A disturbing proportion of computer systems are judged to be inadequate; many are not even delivered; more are late or over budget. Studies consistently show one of the single biggest causes is poorly defined requirements: not properly defining what a system is for and what it’s supposed to do. Even a modest contribution to improving requirements offers the prospect of saving businesses part of a large sum of wasted investment. This guide emphasizes this important requirement need—determining what a software

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system needs to do before spending time on development. Expertly written, this book details solutions that have worked in the past, with guidance for modifying patterns to fit individual needs—giving developers the valuable advice they need for building effective software requirements

"Essential System Requirements targets the discovery and definition of critical system requirements in the analysis phase of system development - where good design is vital to the success of a project. This book explores a design methodology that involves users early on to describe essential business events. These events then partition the system response into logical, more easily managed segments. The result is a conceptual model that reflects real business needs and accelerates the entire delivery process."--BOOK JACKET.

A guide to the development process covers phase planning, indicators, models, configuration, project inception, system definition, design, and production, and project debriefing

The Software Factory methodology is based on recognition of these similarities and a drive to extend the concept of "reusability" to the point where we achieve entirely automated product lines. Based on an analysis and understanding of the common features and techniques of a set of applications, a Software Factory defines a tailored, end-to-end methodology for building these applications. At the

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heart of the Software factory methodology is the concept of Domain Specific Languages (DSLs), which in essence are development environments specifically tailored to the set of applications in hand. It removes a certain degree of flexibility but greatly enhances productivity by removing a lot of the coding complexity (for an analogy, consider the use of the now ubiquitous drag-and-drop controls in Winforms or Visual Basic). Further, in the SF methodology, patterns, process advice, and best practices can be harvested and applied for all applications in the set. There are some good books on the theory of SF already on the market. Up until this point, a lot of these concepts were fairly theoretical and abstract. Now in its third edition, this classic guide to software requirements engineering has been fully updated with new topics, examples, and guidance. Two leaders in the requirements community have teamed up to deliver a contemporary set of practices covering the full range of requirements development and management activities on software projects. Describes practical, effective, field-tested techniques for managing the requirements engineering process from end to end. Provides examples demonstrating how requirements "good practices" can lead to fewer change requests, higher customer satisfaction, and lower development costs. Fully updated with contemporary examples and many new practices and techniques. Describes how to apply effective requirements practices to agile

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projects and numerous other special project situations. Targeted to business analysts, developers, project managers, and other software project stakeholders who have a general understanding of the software development process. Shares the insights gleaned from the authors' extensive experience delivering hundreds of software-requirements training courses, presentations, and webinars. New chapters are included on specifying data requirements, writing high-quality functional requirements, and requirements reuse. Considerable depth has been added on business requirements, elicitation techniques, and nonfunctional requirements. In addition, new chapters recommend effective requirements practices for various special project situations, including enhancement and replacement, packaged solutions, outsourced, business process automation, analytics and reporting, and embedded and other real-time systems projects. Requirements engineering is the process by which the requirements for software systems are gathered, analyzed, documented, and managed throughout their complete lifecycle. Traditionally it has been concerned with technical goals for, functions of, and constraints on software systems. Aurum and Wohlin, however, argue that it is no longer appropriate for software systems professionals to focus only on functional and non-functional aspects of the intended system and to somehow assume that organizational context and needs are outside their remit.

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Instead, they call for a broader perspective in order to gain a better understanding of the interdependencies between enterprise stakeholders, processes, and software systems, which would in turn give rise to more appropriate techniques and higher-quality systems. Following an introductory chapter that provides an exploration of key issues in requirements engineering, the book is organized in three parts. Part 1 presents surveys of state-of-the-art requirements engineering process research along with critical assessments of existing models, frameworks and techniques. Part 2 addresses key areas in requirements engineering, such as market-driven requirements engineering, goal modeling, requirements ambiguity, and others. Part 3 concludes the book with articles that present empirical evidence and experiences from practices in industrial projects. Its broader perspective gives this book its distinct appeal and makes it of interest to both researchers and practitioners, not only in software engineering but also in other disciplines such as business process engineering and management science.

A classic treatise that defined the field of applied demand analysis, *Consumer Demand in the United States: Prices, Income, and Consumption Behavior* is now fully updated and expanded for a new generation. Consumption expenditures by households in the United States account for about 70% of America's GDP. The primary focus in this book is on how households

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adjust these expenditures in response to changes in price and income. Econometric estimates of price and income elasticities are obtained for an exhaustive array of goods and services using data from surveys conducted by the Bureau of Labor Statistics, providing a better understanding of consumer demand. Practical models for forecasting future price and income elasticities are also demonstrated. Fully revised with over a dozen new chapters and appendices, the book revisits the original Taylor-Houthakker models while examining new material as well, such as the use of quantile regression and the stationarity of consumer preference. It also explores the emerging connection between neuroscience and consumer behavior, integrating the economic literature on demand theory with psychology literature. The most comprehensive treatment of the topic to date, this volume will be an essential resource for any researcher, student or professional economist working on consumer behavior or demand theory, as well as investors and policymakers concerned with the impact of economic fluctuations.

This book provides an overview of tools and techniques used in enterprise software development, many of which are not taught in academic programs or learned on the job. This is an ideal resource containing lots of practical information and code examples that you need to master as a member of an enterprise development team. This book aggregates many of these "on the job" tools and techniques into a concise format and presents them as both discussion topics and with code examples. The reader will not only get an overview of these tools and techniques, but also several discussions concerning operational aspects of enterprise software development and how it differs from smaller development efforts. For example, in the chapter on Design Patterns and Architecture, the author describes the basics

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of design patterns but only highlights those that are more important in enterprise applications due to separation of duties, enterprise security, etc. The architecture discussion revolves has a similar emphasis – different teams may manage different aspects of the application’s components with little or no access to the developer. This aspect of restricted access is also mentioned in the section on logging. Theory of logging and discussions of what to log are briefly mentioned, the configuration of the logging tools is demonstrated along with a discussion of why it’s very important in an enterprise environment.

No matter how much instruction you’ve had on managing software requirements, there’s no substitute for experience. Too often, lessons about requirements engineering processes lack the no-nonsense guidance that supports real-world solutions. Complementing the best practices presented in his book, *Software Requirements, Second Edition*, requirements engineering authority Karl Wieggers tackles even more of the real issues head-on in this book. With straightforward, professional advice and practical solutions based on actual project experiences, this book answers many of the tough questions raised by industry professionals. From strategies for estimating and working with customers to the nuts and bolts of documenting requirements, this essential companion gives developers, analysts, and managers the cosmic truths that apply to virtually every software development project. Discover how to:

- Make the business case for investing in better requirements practices
- Generate estimates using three specific techniques
- Conduct inquiries to elicit meaningful business and user requirements
- Clearly document project scope
- Implement use cases, scenarios, and user stories effectively
- Improve inspections and peer reviews
- Write requirements that avoid ambiguity

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The LASER school is intended for professionals from the industry (engineers and managers) as well as university researchers, including PhD students. Participants learn about the most important software technology advances from the pioneers in the field. The school's focus is applied, although theory is welcome to establish solid foundations. The format of the school favors extensive interaction between participants and speakers. LASER 2011 is devoted to software verification tools. There have been great advances in the field of software verification in recent years. Today verification tools are being increasingly used not only by researchers, but by programming practitioners. The summer school will focus on several of the most prominent and practical of such tools from different areas of software verification (such as formal proofs, testing and model checking). During the school the participants will not only learn the principles behind the tools, but also get hands-on experience, trying the tools on real 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

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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

Software Requirements Pearson Education

Software Engineering A Practical Approach By Laxmidhar V. Gaopandeln In this book the author has covered almost all the topics in software engineering which includes types of software projects, their execution models, software development life cycles (SDLC), different development models like Waterfall, Iterative, Incremental, Spiral, Agile and Test Driven Development (TDD). He has covered in depth software requirements including business requirement documents (BRD), functional requirement documents (FRD), software requirement specifications (SRS), what makes a good specifications, software analysis, design and architecture covering structured system analysis and design method (SSADM), object oriented analysis and design (OOAD) methodology, unified modelling language (UML) and UML diagrams, design patterns, software architecture types like layered, microservices, serverless, even driven architecture. Usability and user experience (UX) chapter covers all important aspects of usability engineering and steps in usability. Chapters on quality and quality systems describe attributes of quality and quality systems like ISO 9001, SEI CMMI. Software testing chapter covers details of software testing, types of testing, testing models etc. Details of configuration management, release management, risk management, software

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support, project management and methodologies are covered in detail. Details on what makes a good project manager and project management organization are also covered in detail. Chapter on software estimation is very detailed and covers various estimation techniques, like Agile estimation, class based simplified estimation for OOAD systems, function point analysis, Mark II, COCOMO etc. Templates for various artifacts are also listed and will be useful for the software engineering work. The book covers five interesting case studies and learnings from them from author own practical experience while executing software projects and product development. The author has also given interesting eighteen exercises for developing a new software system covering all the topics in software engineering. Lot of useful data is also shared which will be very useful for students, teachers and practitioner.

Thoroughly reviewed and eagerly anticipated by the agile community, *User Stories Applied* offers a requirements process that saves time, eliminates rework, and leads directly to better software. The best way to build software that meets users' needs is to begin with "user stories": simple, clear, brief descriptions of functionality that will be valuable to real users. In *User Stories Applied*, Mike Cohn provides you with a front-to-back blueprint for writing these user stories and weaving them into your development lifecycle. You'll learn what makes a great user story, and what makes a bad one. You'll discover practical ways to gather user stories, even when you can't speak with your users. Then, once you've compiled your user stories, Cohn shows how to organize them, prioritize them, and use them for planning, management, and testing. User role modeling: understanding what users have in common, and where they differ Gathering stories: user interviewing, questionnaires, observation, and workshops Working with managers, trainers, salespeople and other "proxies" Writing user stories for acceptance testing

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Using stories to prioritize, set schedules, and estimate release costs Includes end-of-chapter practice questions and exercises User Stories Applied will be invaluable to every software developer, tester, analyst, and manager working with any agile method: XP, Scrum... or even your own home-grown approach.

Software development consultant Wiegers describes various formal and informal methods for conducting a peer review program, such as pair programming, team reviews, the "walkthrough," and the ad hoc review. The main part of the text is devoted to the various stages of the technique of inspection. Coverage extends to the social issues involved in critiquing the work of others and overcoming resistance to reviews. c. Book News Inc.

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

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Nowadays, software developers recurrently have to decide how to elicit requirements information from product development stakeholders. Even though they appreciate the importance of requirements elicitation, they still select techniques subjectively. This is due to the fact that they have limited knowledge of how many techniques are currently available and to that the information available about existing elicitation techniques is mostly descriptive and there is hardly any pragmatic or prescriptive information. This book addresses how to select the best requirements elicitation techniques at any time in the process. To this, it proposes a framework with three components: the contextual attributes affecting technique effectiveness; adequacy of the elicitation techniques, that is, prescriptions on use for the attribute values; and selection procedures that suggest, after determining the contextual situation, techniques for use in the next elicitation session subject to technique adequacy. In sum, this book provides a practical insight to help developers systematically and objectively select requirements elicitation techniques for a software project.

Project Requirements: A Guide to Best Practices gives project managers tools they can assimilate and apply easily to improve project success rates, reduce development costs, reduce rework, and accelerate time to market. Based on experience and best practices, this valuable reference will help you:

- Clarify real requirements before you initiate project work
- Improve management of project requirements
- Save time and effort
- Manage to your schedule
- Improve the quality of deliverables
- Increase customer satisfaction and drive repeat business

Project Requirements: A Guide to Best Practices provides project managers with a direct, practical strategy to overcome requirements challenges and manage requirements successfully.

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Develop more secure and effective antivirus solutions by leveraging antivirus bypass techniques

Key Features: Gain a clear understanding of the security landscape and research approaches to bypass antivirus software Become well-versed with practical techniques to bypass antivirus solutions Discover best practices to develop robust antivirus solutions

Book Description: Antivirus software is built to detect, prevent, and remove malware from systems, but this does not guarantee the security of your antivirus solution as certain changes can trick the antivirus and pose a risk for users. This book will help you to gain a basic understanding of antivirus software and take you through a series of antivirus bypass techniques that will enable you to bypass antivirus solutions. The book starts by introducing you to the cybersecurity landscape, focusing on cyber threats, malware, and more. You will learn how to collect leads to research antivirus and explore the two common bypass approaches used by the authors. Once you've covered the essentials of antivirus research and bypassing, you'll get hands-on with bypassing antivirus software using obfuscation, encryption, packing, PowerShell, and more. Toward the end, the book covers security improvement recommendations, useful for both antivirus vendors as well as for developers to help strengthen the security and malware detection capabilities of antivirus software. By the end of this security book, you'll have a better understanding of antivirus software and be able to confidently bypass antivirus software.

What You Will Learn: Explore the security landscape and get to grips with the fundamentals of antivirus software Discover how to gather AV bypass research leads using malware analysis tools Understand the two commonly used antivirus bypass approaches Find out how to bypass static and dynamic antivirus engines Understand and implement bypass techniques in real-world scenarios Leverage best practices and recommendations for implementing antivirus

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solutions Who this book is for: This book is for security researchers, malware analysts, reverse engineers, pentesters, antivirus vendors looking to strengthen their detection capabilities, antivirus users and companies that want to test and evaluate their antivirus software, organizations that want to test and evaluate antivirus software before purchase or acquisition, and tech-savvy individuals who want to learn new topics.

Solid requirements engineering has increasingly been recognized as the key to improved, on-time, and on-budget delivery of software and systems projects. This textbook provides a comprehensive treatment of the theoretical and practical aspects of discovering, analyzing, modeling, validating, testing, and writing requirements for systems of all kinds, with an intentional focus on software-intensive systems. It brings into play a variety of formal methods, social models, and modern requirements for writing techniques to be useful to the practicing engineer. This book was written to support both undergraduate and graduate requirements engineering courses. Each chapter includes simple, intermediate, and advanced exercises. Advanced exercises are suitable as a research assignment or independent study and are denoted by an asterisk. Various exemplar systems illustrate points throughout the book, and four systems in particular—a baggage handling system, a point of sale system, a smart home system, and a wet well pumping system—are used repeatedly. These systems involve application domains with which most readers are likely to be familiar, and they cover a wide range of applications from embedded to organic in both industrial and consumer implementations. Vignettes at the end of each chapter provide mini-case studies showing how the learning in the chapter can be employed in real systems. Requirements engineering is a dynamic field and this text keeps pace with these changes. Since the first edition of this text,

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there have been many changes and improvements. Feedback from instructors, students, and corporate users of the text was used to correct, expand, and improve the material. This third edition includes many new topics, expanded discussions, additional exercises, and more examples. A focus on safety critical systems, where appropriate in examples and exercises, has also been introduced. Discussions have also been added to address the important domain of the Internet of Things. Another significant change involved the transition from the retired IEEE Standard 830, which was referenced throughout previous editions of the text, to its successor, the ISO/IEC/IEEE 29148 standard.

A self-contained introduction to abstract interpretation–based static analysis, an essential resource for students, developers, and users. Static program analysis, or static analysis, aims to discover semantic properties of programs without running them. It plays an important role in all phases of development, including verification of specifications and programs, the synthesis of optimized code, and the refactoring and maintenance of software applications. This book offers a self-contained introduction to static analysis, covering the basics of both theoretical foundations and practical considerations in the use of static analysis tools. By offering a quick and comprehensive introduction for nonspecialists, the book fills a notable gap in the literature, which until now has consisted largely of scientific articles on advanced topics. The text covers the mathematical foundations of static analysis, including semantics, semantic abstraction, and computation of program invariants; more advanced notions and techniques, including techniques for enhancing the cost-accuracy balance of analysis and abstractions for advanced programming features and answering a wide range of semantic questions; and techniques for implementing and using static analysis tools. It begins with background information and an

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intuitive and informal introduction to the main static analysis principles and techniques. It then formalizes the scientific foundations of program analysis techniques, considers practical aspects of implementation, and presents more advanced applications. The book can be used as a textbook in advanced undergraduate and graduate courses in static analysis and program verification, and as a reference for users, developers, and experts.

Practical Support for Lean Six Sigma Software Process Definition: Using IEEE Software Engineering Standards addresses the task of meeting the specific documentation requirements in support of Lean Six Sigma. This book provides a set of templates supporting the documentation required for basic software project control and management and covers the integration of these templates for their entire product development life cycle. Find detailed documentation guidance in the form of organizational policy descriptions, integrated set of deployable document templates, artifacts required in support of assessment, organizational delineation of process documentation.

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