# Software Requirements Developer Best Practices

Software EstimationBuilding Software TeamsClean C++User Stories AppliedHow We Test Software at MicrosoftRequirements Engineering for Software and Systems, Second EditionCode CompleteSoftware EngineeringVisual Models for Software RequirementsSeriously Good SoftwareSubscribedCode SimplicitySoftware Engineering Best PracticesExtreme Programming ExplainedMastering the Requirements ProcessSoftware Requirement PatternsArchitecting for ScaleSoftware Configuration Management PatternsVisual Models for Software RequirementsSoftware RequirementsThe Requirements Engineering HandbookMore About Software RequirementsManaging Software RequirementsSoftware RequirementsAgile Software RequirementsScaling Software AgilityDetermining Project RequirementsScenario-Focused EngineeringSoftware Engineering at GoogleBusiness Analysis for PractitionersSoftware for Dependable SystemsAgile Project Management with KanbanBuilding Evolutionary ArchitecturesSoftware Requirements EngineeringBusiness Analysis for Practitioners: A Practice Guide provides a foundation for the practicalAgile Software DevelopmentAdaptive CodeSoftware Project Survival GuideClean CodeSystem Engineering Analysis, Design, and Development

# Software Estimation

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

# Building Software Teams

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 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.

# Clean C++

Good software design is simple and easy to
understand. Unfortunately, the average computer
program today is so complex that no one could
possibly comprehend how all the code works. This
concise guide helps you understand the fundamentals
of good design through scientific laws—principles you
can apply to any programming language or project
from here to eternity. Whether you're a junior
programmer, senior software engineer, or non-
technical manager, you'll learn how to create a sound
plan for your software project, and make better
decisions about the pattern and structure of your
system. Discover why good software design has
become the missing science Understand the ultimate
purpose of software and the goals of good design
Determine the value of your design now and in the
future Examine real-world examples that demonstrate
how a system changes over time Create designs that
allow for the most change in the environment with the
least change in the software Make easier changes in
the future by keeping your code simpler now Gain
better knowledge of your software's behavior with
more accurate tests

# **User Stories Applied**

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

## **How We Test Software at Microsoft**

## **Requirements Engineering for Software and Systems, Second Edition**

Software Development is moving towards a more agile and more flexible approach. It turns out that the traditional "waterfall" model is not supportive in an environment where technical, financial and strategic constraints are changing almost every day. But what is agility? What are today's major approaches? And especially: What is the impact of agile development

principles on the development teams, on project management and on software architects? How can large enterprises become more agile and improve their business processes, which have been existing since many, many years? What are the limitations of Agility? And what is the right balance between reliable structures and flexibility? This book will give answers to these questions. A strong emphasis will be on real life project examples, which describe how development teams have moved from a waterfall model towards an Agile Software Development approach.

# **Code Complete**

Every day, companies struggle to scale critical applications. As traffic volume and data demands increase, these applications become more complicated and brittle, exposing risks and compromising availability. This practical guide shows IT, devops, and system reliability managers how to prevent an application from becoming slow, inconsistent, or downright unavailable as it grows. Scaling isn't just about handling more users; it's also about managing risk and ensuring availability. Author Lee Atchison provides basic techniques for building applications that can handle huge quantities of traffic, data, and demand without affecting the quality your customers expect. In five parts, this book explores: Availability: learn techniques for building highly available applications, and for tracking and improving availability going forward Risk management: identify, mitigate, and manage risks in your application, test

your recovery/disaster plans, and build out systems that contain fewer risks Services and microservices: understand the value of services for building complicated applications that need to operate at higher scale Scaling applications: assign services to specific teams, label the criticalness of each service, and devise failure scenarios and recovery plans Cloud services: understand the structure of cloud-based services, resource allocation, and service distribution

## Software Engineering

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.

## **Visual Models for Software Requirements**

Summary Serious developers know that code can always be improved. With each iteration, you make optimizations—small and large—that can have a huge impact on your application's speed, size, resilience, and maintainability. In Seriously Good Software: Code that Works, Survives, and Wins, author, teacher, and Java expert Marco Faella teaches you techniques for writing better code. You'll start with a simple application and follow it through seven careful refactorings, each designed to explore another dimension of quality. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the technology Great code blends the skill of a programmer with the time-tested techniques and best practices embraced by the entire development community. Although each application has its own context and character, some dimensions of quality are always important. This book concentrates on eight pillars of seriously good software: speed, memory usage, reliability, readability, thread safety, generality, and elegance. The Java-based examples demonstrate techniques that apply to any OO

language. About the book Seriously Good Software is a handbook for any professional developer serious about improving application quality. It explores fundamental dimensions of code quality by enhancing a simple implementation into a robust, professional-quality application. Questions, exercises, and Java-based examples ensure you'll get a firm grasp of the concepts as you go. When you finish the last version of the book's central project, you'll be able to confidently choose the right optimizations for your code. What's inside Evaluating software qualities Assessing trade-offs and interactions Fulfilling different objectives in a single task Java-based exercises you can apply in any OO language About the reader For web developers comfortable with JavaScript and HTML. About the author Marco Faella teaches advanced programming at a major Italian university. His published work includes peer-reviewed research articles, a Java certification manual, and a video course. Table of Contents *Part 1: Preliminaries * 1 Software qualities and a problem to solve 2 Reference implementation *Part 2: Software Qualities* 3 Need for speed: Time efficiency 4 Precious memory: Space efficiency 5 Self-conscious code: Reliability through monitoring 6 Lie to me: Reliability through testing 7 Coding aloud: Readability 8 Many cooks in the kitchen: Thread safety 9 Please recycle: Reusability

## Seriously Good Software

Software Engineering: Architecture-driven Software Development is the first comprehensive guide to the

underlying skills embodied in the IEEE's Software Engineering Body of Knowledge (SWEBOK) standard. Standards expert Richard Schmidt explains the traditional software engineering practices recognized for developing projects for government or corporate systems. Software engineering education often lacks standardization, with many institutions focusing on implementation rather than design as it impacts product architecture. Many graduates join the workforce with incomplete skills, leading to software projects that either fail outright or run woefully over budget and behind schedule. Additionally, software engineers need to understand system engineering and architecture—the hardware and peripherals their programs will run on. This issue will only grow in importance as more programs leverage parallel computing, requiring an understanding of the parallel capabilities of processors and hardware. This book gives both software developers and system engineers key insights into how their skillsets support and complement each other. With a focus on these key knowledge areas, Software Engineering offers a set of best practices that can be applied to any industry or domain involved in developing software products. A thorough, integrated compilation on the engineering of software products, addressing the majority of the standard knowledge areas and topics Offers best practices focused on those key skills common to many industries and domains that develop software Learn how software engineering relates to systems engineering for better communication with other engineering professionals within a project environment

# Subscribed

Proven techniques for software engineering success
This in-depth volume examines software engineering
topics that are not covered elsewhere: the question of
why software engineering has developed more than
2,500 programming languages; problems with
traditional definitions of software quality; and
problems with common metrics, "lines of code," and
"cost per defect" that violate standard economic
assumptions. The book notes that a majority of "new"
projects are actually replacements for legacy
applications, illustrating that data mining for lost
requirements should be a standard practice. Difficult
social engineering issues are also covered, such as
how to minimize harm from layoffs and downsizing.
Software Engineering Best Practices explains how to
effectively plan, size, schedule, and manage software
projects of all types, using solid engineering
procedures. It details proven methods, from initial
requirements through 20 years of maintenance.
Portions of the book have been extensively reviewed
by key engineers from top companies, including IBM,
Microsoft, Unisys, and Sony. Manage Agile,
hierarchical, matrix, and virtual software development
teams Optimize software quality using JAD, QFD, TSP,
static analysis, inspections, and other methods with
proven success records Use high-speed functional
metrics to assess productivity and quality levels Plan
optimal organization, from small teams through more
than 1,000 personnel

# Code Simplicity

Good requirements do not come from a tool, or from a customer interview. They come from a repeatable set of processes that take a project from the early idea stage through to the creation of an agreed-upon project and product scope between the customer and the developer.From enterprise analysis and planning requirements gathering to documentation,

## Software Engineering Best Practices

Looks at the principles and clean code, includes case studies showcasing the practices of writing clean code, and contains a list of heuristics and "smells" accumulated from the process of writing clean code.

## Extreme Programming Explained

As requirements engineering continues to be recognized as the key to on-time and on-budget delivery of software and systems projects, many engineering programs have made requirements engineering mandatory in their curriculum. In addition, the wealth of new software tools that have recently emerged is empowering practicing engineers to improve their requirements engineering habits. However, these tools are not easy to use without appropriate training. Filling this need, Requirements Engineering for Software and Systems, Second Edition has been vastly updated and expanded to include about 30 percent new material. In addition to new exercises and updated references in every chapter, this edition updates all chapters with the latest applied research and industry practices. It also

presents new material derived from the experiences of professors who have used the text in their classrooms. Improvements to this edition include: An expanded introductory chapter with extensive discussions on requirements analysis, agreement, and consolidation An expanded chapter on requirements engineering for Agile methodologies An expanded chapter on formal methods with new examples An expanded section on requirements traceability An updated and expanded section on requirements engineering tools New exercises including ones suitable for research projects Following in the footsteps of its bestselling predecessor, the text illustrates key ideas associated with requirements engineering using extensive case studies and three common example systems: an airline baggage handling system, a point-of-sale system for a large pet store chain, and a system for a smart home. This edition also includes an example of a wet well pumping system for a wastewater treatment station. With a focus on software-intensive systems, but highly applicable to non-software systems, this text provides a probing and comprehensive review of recent developments in requirements engineering in high integrity systems.

## **Mastering the Requirements Process**

Why does poor software quality continue to plague enterprises of all sizes in all industries? Part of the problem lies with the process, rather than individual developers. This practical guide provides ten best practices to help team leaders create an effective

working environment through key adjustments to their process. As a follow-up to their popular book, Building Maintainable Software, consultants with the Software Improvement Group (SIG) offer critical lessons based on their assessment of development processes used by hundreds of software teams. Each practice includes examples of goalsetting to help you choose the right metrics for your team. Achieve development goals by determining meaningful metrics with the Goal-Question-Metric approach Translate those goals to a verifiable Definition of Done Manage code versions for consistent and predictable modification Control separate environments for each stage in the development pipeline Automate tests as much as possible and steer their guidelines and expectations Let the Continuous Integration server do much of the hard work for you Automate the process of pushing code through the pipeline Define development process standards to improve consistency and simplicity Manage dependencies on third party code to keep your software consistent and up to date Document only the most necessary and current knowledge

## **Software Requirement Patterns**

Write maintainable, extensible, and durable software with modern C++. This book is a must for every developer, software architect, or team leader who is interested in good C++ code, and thus also wants to save development costs. If you want to teach yourself about writing clean C++, Clean C++ is exactly what you need. It is written to help C++ developers of all

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

## Architecting for Scale

Praise for the first edition: "This excellent text will be useful to everysystem engineer (SE) regardless of the domain. It covers ALLrelevant SE material and does so in a very clear, methodicalfashion. The breadth and

depth of the author's presentation ofSE principles and practices is outstanding." –Philip Allen This textbook presents a comprehensive, step-by-step guide toSystem Engineering analysis, design, and development via anintegrated set of concepts, principles, practices, andmethodologies. The methods presented in this text apply to any typeof human system -- small, medium, and large organizational systemsand system development projects delivering engineered systems orservices across multiple business sectors such as medical,transportation, financial, educational, governmental, aerospace anddefense, utilities, political, and charity, among others. Provides a common focal point for "bridgingthe gap" between and unifying System Users, System Acquirers,multi-discipline System Engineering, and Project, Functional, andExecutive Management education, knowledge, and decision-making fordeveloping systems, products, or services Each chapter provides definitions of key terms,guiding principles, examples, author's notes, real-worldexamples, and exercises, which highlight and reinforce key SE&Dconcepts and practices Addresses concepts employed in Model-BasedSystems Engineering (MBSE), Model-Driven Design (MDD), UnifiedModeling Language (UMLTM) / Systems Modeling Language(SysMLTM), and Agile/Spiral/V-Model Development such asuser needs, stories, and use cases analysis; specificationdevelopment; system architecture development; User-Centric SystemDesign (UCSD); interface definition & control; systemintegration & test; and Verification & Validation(V&V) Highlights/introduces a new 21st Century

SystemsEngineering & Development (SE&D) paradigm that is easy tounderstand and implement. Provides practices that are critical stagingpoints for technical decision making such as Technical StrategyDevelopment; Life Cycle requirements; Phases, Modes, & States;SE Process; Requirements Derivation; System ArchitectureDevelopment, User-Centric System Design (UCSD); EngineeringStandards, Coordinate Systems, and Conventions; et al. Thoroughly illustrated, with end-of-chapter exercises andnumerous case studies and examples, Systems EngineeringAnalysis, Design, and Development, Second Edition is a primarytextbook for multi-discipline, engineering, system analysis, andproject management undergraduate/graduate level students and avaluable reference for professionals.

## Software Configuration Management Patterns

## Visual Models for Software Requirements

Today, software engineers need to know not only how to program effectively but also how to develop proper engineering practices to make their codebase sustainable and healthy. This book emphasizes this difference between programming and software engineering. How can software engineers manage a living codebase that evolves and responds to changing requirements and demands over the length of its life? Based on their experience at Google, software engineers Titus Winters and Hyrum Wright,

along with technical writer Tom Manshreck, present a candid and insightful look at how some of the world's leading practitioners construct and maintain software. This book covers Google's unique engineering culture, processes, and tools and how these aspects contribute to the effectiveness of an engineering organization. You'll explore three fundamental principles that software organizations should keep in mind when designing, architecting, writing, and maintaining code: How time affects the sustainability of software and how to make your code resilient over time How scale affects the viability of software practices within an engineering organization What trade-offs a typical engineer needs to make when evaluating design and development decisions

## Software Requirements

Gathering customer requirements is a key activity for developing software that meets the customer's needs. A concise and practical overview of everything a requirement's analyst needs to know about establishing customer requirements, this first-of-its-kind book is the perfect desk guide for systems or software development work. The book enables professionals to identify the real customer requirements for their projects and control changes and additions to these requirements. This unique resource helps practitioners understand the importance of requirements, leverage effective requirements practices, and better utilize resources. The book also explains how to strengthen interpersonal relationships and communications which

are major contributors to project effectiveness.
Moreover, analysts find clear examples and checklists
to help them implement best practices.

# The Requirements Engineering Handbook

The software development ecosystem is constantly
changing, providing a constant stream of new tools,
frameworks, techniques, and paradigms. Over the
past few years, incremental developments in core
engineering practices for software development have
created the foundations for rethinking how
architecture changes over time, along with ways to
protect important architectural characteristics as it
evolves. This practical guide ties those parts together
with a new way to think about architecture and time.

# More About Software Requirements

"We need better approaches to understanding and
managing software requirements, and Dean provides
them in this book. He draws ideas from three very
useful intellectual pools: classical management
practices, Agile methods, and lean product
development. By combining the strengths of these
three approaches, he has produced something that
works better than any one in isolation." –From the
Foreword by Don Reinertsen, President of Reinertsen
& Associates; author of Managing the Design Factory;
and leading expert on rapid product development
Effective requirements discovery and analysis is a
critical best practice for serious application

development. Until now, however, requirements and Agile methods have rarely coexisted peacefully. For many enterprises considering Agile approaches, the absence of effective and scalable Agile requirements processes has been a showstopper for Agile adoption. In Agile Software Requirements, Dean Leffingwell shows exactly how to create effective requirements in Agile environments. Part I presents the "big picture" of Agile requirements in the enterprise, and describes an overall process model for Agile requirements at the project team, program, and portfolio levels Part II describes a simple and lightweight, yet comprehensive model that Agile project teams can use to manage requirements Part III shows how to develop Agile requirements for complex systems that require the cooperation of multiple teams Part IV guides enterprises in developing Agile requirements for ever-larger "systems of systems," application suites, and product portfolios This book will help you leverage the benefits of Agile without sacrificing the value of effective requirements discovery and analysis. You'll find proven solutions you can apply right now–whether you're a software developer or tester, executive, project/program manager, architect, or team leader.

# Managing Software Requirements

Introduction to tutorial: software requirements engineering; Introductions, issues and terminology; System and software systems engineering; Software requirements analysis and specifications; Software requirements methodologies and tools; Requirements

and quality management; Software system engineering process models; Appendix; Author's biographies. \t.

## Software Requirements

Looks at a successful software project and provides details for software development for clients using object-oriented design and programming.

## Agile Software Requirements

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.

# **Scaling Software Agility**

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.

# **Determining Project Requirements**

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 Wiegers 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

## Scenario-Focused Engineering

Provides information on using visual models in the software engineering process.

## Software Engineering at Google

"Companies have been implementing large agile projects for a number of years, but the 'stigma' of 'agile only works for small projects' continues to be a frequent barrier for newcomers and a rallying cry for agile critics. What has been missing from the agile literature is a solid, practical book on the specifics of developing large projects in an agile way. Dean Leffingwell's book Scaling Software Agility fills this gap admirably. It offers a practical guide to large project issues such as architecture, requirements development, multi-level release planning, and team organization. Leffingwell's book is a necessary guide for large projects and large organizations making the transition to agile development." —Jim Highsmith, director, Agile Practice, Cutter Consortium, author of Agile Project Management "There's tension between building software fast and delivering software that lasts, between being ultra-responsive to changes in the market and maintaining a degree of stability. In his latest work, Scaling Software Agility, Dean Leffingwell shows how to achieve a pragmatic balance among these forces. Leffingwell's observations of the problem, his advice on the solution, and his

description of the resulting best practices come from experience: he's been there, done that, and has seen what's worked." —Grady Booch, IBM Fellow Agile development practices, while still controversial in some circles, offer undeniable benefits: faster time to market, better responsiveness to changing customer requirements, and higher quality. However, agile practices have been defined and recommended primarily to small teams. In Scaling Software Agility, Dean Leffingwell describes how agile methods can be applied to enterprise-class development. Part I provides an overview of the most common and effective agile methods. Part II describes seven best practices of agility that natively scale to the enterprise level. Part III describes an additional set of seven organizational capabilities that companies can master to achieve the full benefits of software agility on an enterprise scale. This book is invaluable to software developers, testers and QA personnel, managers and team leads, as well as to executives of software organizations whose objective is to increase the quality and productivity of the software development process but who are faced with all the challenges of developing software on an enterprise scale.

# **Business Analysis for Practitioners**

"Mastering the Requirements Process: Getting Requirements Right" sets out an industry-proven process for gathering and verifying requirements, regardless of whether you work in a traditional or agile development environment. In this sweeping

update of the bestselling guide, the authors show how to discover precisely what the customer wants and needs, in the most efficient manner possible.

## Software for Dependable Systems

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 Americaâ__s GDP. The primary focus in this book is on how households 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.

## Agile Project Management with Kanban

Business Analysis for Practitioners: A Practice Guide provides practical resources to tackle the project-related issues associated with requirements and business analysis—and addresses a critical need in the industry for more guidance in this area. The practice guide begins by describing the work of business analysis. It identifies the tasks that are performed, in addition to the essential knowledge and skills needed to effectively perform business analysis on programs and projects.

## Building Evolutionary Architectures

It may surprise you to learn that Microsoft employs as many software testers as developers. Less surprising is the emphasis the company places on the testing discipline—and its role in managing quality across a diverse, 150+ product portfolio. This book—written by three of Microsoft's most prominent test professionals—shares the best practices, tools, and systems used by the company's 9,000-strong corps of testers. Learn how your colleagues at Microsoft design and manage testing, their approach to training and career development, and what challenges they see ahead. Most important, you'll get practical insights you can apply for better results in your organization. Discover how to: Design effective tests

and run them throughout the product lifecycle Minimize cost and risk with functional tests, and know when to apply structural techniques Measure code complexity to identify bugs and potential maintenance issues Use models to generate test cases, surface unexpected application behavior, and manage risk Know when to employ automated tests, design them for long-term use, and plug into an automation infrastructure Review the hallmarks of great testers—and the tools they use to run tests, probe systems, and track progress efficiently Explore the challenges of testing services vs. shrink-wrapped software

## Software Requirements Engineering

Provides a variety of reusable patterns and situation-specific frameworks for writing software requirements.

## Business Analysis for Practitioners: A Practice Guide provides a foundation for the practical

Great technology alone is rarely sufficient today to ensure a product's success. At Microsoft, scenario-focused engineering is a customer-centric, iterative approach used to design and deliver the deeper experiences and emotional engagement customers demand in new products. In this book, you'll discover the proven practices and lessons learned from real-world implementations of this approach, including: Why design matters: Understand a competitive

landscape where customers are no longer satisfied by products that are merely useful, but respond instead to products they crave using. What it means to be customer focused: Recognize that you are not the customer, understand customers can have difficulty articulating what they want, and apply techniques that uncover their unspoken needs. How to iterate effectively: Implement a development system that is flexible enough to respond to early and continuous feedback, and enables experimentation with multiple ideas and feedback loops simultaneously. How to bridge the culture gap: In an engineering environment traditionally rooted in strong analytics, the ideas and practices for scenario-focused engineering may not be intuitive. Learn how to change team mindset from deciding what a product, service, or device will do, to discovering what customers actually want and what will work for them in real-life scenarios. Connections with Lean and Agile approaches: See the connections, gaps, and overlaps among the Lean, Agile, and Scenario-Focused Engineering methodologies, and achieve a more holistic view of software development.

## Agile Software Development

A USA Today bestseller! Companies like Netflix, Spotify, and Salesforce are just the tip of the iceberg for the subscription model. The real transformation--and the real opportunity--is just beginning. Subscription companies are growing nine times faster than the S&P 500. Why? Because unlike product companies, subscription companies know

their customers. A happy subscriber base is the ultimate economic moat. Today's consumers prefer the advantages of access over the hassles of maintenance, from transportation (Uber, Surf Air), to clothing (Stitch Fix, Eleven James), to razor blades and makeup (Dollar Shave Club, Birchbox). Companies are similarly demanding easier, long-term solutions, trading their server rooms for cloud storage solutions like Box. Simply put, the world is shifting from products to services. But how do you turn customers into subscribers? As the CEO of the world's largest subscription management platform, Tien Tzuo has helped hundreds of companies transition from relying on individual sales to building customer-centric, recurring-revenue businesses. His core message in Subscribed is simple: Ready or not, excited or terrified, you need to adapt to the Subscription Economy -- or risk being left behind. Tzuo shows how to use subscriptions to build lucrative, ongoing one-on-one relationships with your customers. This may require reinventing substantial parts of your company, from your accounting practices to your entire IT architecture, but the payoff can be enormous. Just look at the case studies: * Adobe transitions from selling enterprise software licenses to offering cloud-based solutions for a flat monthly fee, and quadruples its valuation. * Fender evolves from selling guitars one at a time to creating lifelong musicians by teaching beginners to play, and keeping them inspired for life. * Caterpillar uses subscriptions to help solve problems -- it's not about how many tractors you can rent, but how much dirt you need to move. In Subscribed, you'll learn how these companies made the shift, and how you can

transform your own product into a valuable service with a practical, step-by-step framework. Find out how how you can prepare and prosper now, rather than trying to catch up later.

# Adaptive Code

Most IT systems fail to meet expectations. They don't meet business goals and don't support users efficiently. Why? Because the requirements didn't address the right issues. Writing a good requirements specification doesn't take more time. This book shows how it¿s done - many times faster and many times smarter. What are the highlights? Two complete real-life requirements specifications (the traditional and the fast approach) and examples from many others. Explanations of both traditional and fast approaches, and discussions of their strengths and weaknesses in different project types (tailor-made, COTS, and product development). Real-life illustrations of all types of requirements, stakeholder analysis, cost/benefit and other techniques to ensure that business goals are met. Proven methods for dealing with difficult or complex requirements, such as specifying ease-of-use, or dealing with 200 reports that might be needed because they are in the old system. Who is it for? Everyone involved in the software supply chain, from analysts and developers to end users, will learn new techniques, benefit from requirements written by other specialists, and discover successes and failures from other companies. Software suppliers will find ideas for helping customers and writing competitive proposals.

Programmers and other developers will learn how to express requirements without specifying technical details, and how to reduce risks when developing a system. Students aspiring to IT careers will learn the theory and practice of requirements engineering, and get a strong foundation for case studies and projects. Who is the author? Soren Lauesen is currently professor at the IT-University of Copenhagen. He has worked in the IT industry for 20 years and has been a professor at Copenhagen Business School for 15. He has been co-founder of three educational and two industrial development organizations. His industry projects have encompassed compilers, operating systems, process control, temporal databases, and software quality assurance. His research interests include human-computer interaction, requirements specification, object-oriented design, quality assurance, marketing and product development, and interaction between research and industry. He has a broad range of other interests ranging from biology to dancing and foreign cultures.

## Software Project Survival Guide

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. 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.

# Clean Code

Apply best practices for capturing, analyzing, and implementing software requirements through visual models—and deliver better results for your business. The authors—experts in eliciting and visualizing

requirements—walk you through a simple but comprehensive language of visual models that has been used on hundreds of real-world, large-scale projects. Build your fluency with core concepts—and gain essential, scenario-based context and implementation advice—as you progress through each chapter. Transcend the limitations of text-based requirements data using visual models that more rigorously identify, capture, and validate requirements Get real-world guidance on best ways to use visual models—how and when, and ways to combine them for best project outcomes Practice the book's concepts as you work through chapters Change your focus from writing a good requirement to ensuring a complete system

## System Engineering Analysis, Design, and Development

The focus of Software for Dependable Systems is a set of fundamental principles that underlie software system dependability and that suggest a different approach to the development and assessment of dependable software. Unfortunately, it is difficult to assess the dependability of software. The field of software engineering suffers from a pervasive lack of evidence about the incidence and severity of software failures; about the dependability of existing software systems; about the efficacy of existing and proposed development methods; about the benefits of certification schemes; and so on. There are many anecdotal reports, which-although often useful for indicating areas of concern or highlighting promising

avenues of research-do little to establish a sound and complete basis for making policy decisions regarding dependability. The committee regards claims of extraordinary dependability that are sometimes made on this basis for the most critical of systems as unsubstantiated, and perhaps irresponsible. This difficulty regarding the lack of evidence for system dependability leads to two conclusions: (1) that better evidence is needed, so that approaches aimed at improving the dependability of software can be objectively assessed, and (2) that, for now, the pursuit of dependability in software systems should focus on the construction and evaluation of evidence. The committee also recognized the importance of adopting the practices that are already known and used by the best developers; this report gives a sample of such practices. Some of these (such as systematic configuration management and automated regression testing) are relatively easy to adopt; others (such as constructing hazard analyses and threat models, exploiting formal notations when appropriate, and applying static analysis to code) will require new training for many developers. However valuable, though, these practices are in themselves no silver bullet, and new techniques and methods will be required in order to build future software systems to the level of dependability that will be required.

ROMANCE  ACTION & ADVENTURE  MYSTERY & THRILLER  BIOGRAPHIES & HISTORY  CHILDREN'S YOUNG ADULT  FANTASY  HISTORICAL FICTION HORROR  LITERARY FICTION  NON-FICTION  SCIENCE FICTION