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A Discipline for Software Engineering *A Discipline for Software Engineering Reflections on Management* [Managing the Software Process](#) *Introduction to the Personal Software Process(sm)* [Introduction to the Team Software Process](#) *Introduction to the Personal Software Process TSP(SM) Leading a Development Team* **PSP(sm) Leadership, Teamwork, and Trust** *TSP(SM) Coaching Development Teams* [Software Development for Small Teams](#) **Winning with Software** *Managing Technical People* **Measuring the Software Process** **Professional Financial Computing Using Excel and VBA** **The Capability Maturity Model Software Process Improvement and Management: Approaches and Tools for Practical Development** *TSP An Introduction to Biomechanics* *Software Process Improvement* **Leadership, Teamwork, and Trust** *Hardware-dependent Software* *CMM in Practice* **Method Engineering** **Schaum's Outline of Software Engineering** [Successful Software Process Improvement](#) **Physically Based Rendering** *Rethinking Productivity in Software Engineering* **Project Management Using Earned Value** [Software Process Modeling](#) **Software Engineering Processes** **Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills** **Engineering of Software** **Implementing the IEEE Software Engineering Standards** **CMM Implementation Guide** **Statistical Software Engineering Handbook of Software Engineering and Knowledge Engineering** [Metrics and Models in Software Quality Engineering](#) [Handbook of Software Engineering and Knowledge Engineering](#)

Managing Technical People Nov 18 2021 Well-known author and long-time manager Watts Humphrey offers keen insight into the special challenge of identifying, motivating, and organizing creative technical people, and the opportunities involved in managing these people.

Winning with Software Dec 20 2021 "Every senior executive needs to read this book." --Robert Musson Vice President, Business Strategy Cenus Technologies "An informative book for any business person (not just technologists) who has ever been associated or involved with a software development effort and thought 'there must be a better way!' Watts has provided that better way-- the PSP/TSP, and a great book." --Roy Kinkaid, Head of Continuous Improvement and Software Quality Assurance, EBS Dealing Resources Watts Humphrey is the well-known author of methods and models widely used by organizations, teams, and individuals to improve the efficiency and effectiveness of software development. In *Winning with Software*, he shows corporate executives and senior managers why software is both a business problem and a business opportunity. "This book is extremely well written and targets the right audience. I plan to buy a copy for each of my executives." --Kevin J. Berk, Director, Process Improvement, Total Quality Systems Humphrey, drawing on his own extensive executive and management experience, first demonstrates the critical importance of software to nearly every business, large and small. He then outlines seven steps needed to gain control of a software operation and transform it into a professional, businesslike engineering function. Failure to recognize the importance of software, and to take charge of its development process, runs the risk of damaging the entire business. By contrast, Humphrey relates the substantial benefits real organizations have obtained from such awareness and control, and he concludes with an analysis of the impressive financial returns the recommended transformations typically yield. "This is a great book that will play a valuable role. It has excellent anecdotes that illustrate the points being made, as well as good examples depicting the problems faced by teams and managers. I look forward to sharing it with my colleagues." --Steven Sliwa, President & CEO, Insitu Group Inc. and former President of Embry-Riddle University "The logical approach, the high level explanations, and the application of real-life experiences make the book not only credible but easily understood. If a large number of CEOs don't at least try out the book's concepts, I will be greatly surprised." --David Webb Software Engineering Project Manager, Hill Air Force Base

TSP(SM) Leading a Development Team May 25 2022 Leaders of software-development projects face many challenges. First, you must produce a quality product on schedule and on budget. Second, you must foster and encourage a cohesive, motivated, and smoothly operating team. And third, you must maintain a clear and consistent focus on short- and long-term goals, while exemplifying quality standards and showing confidence and enthusiasm for your team and its efforts. Most importantly, as a leader, you need to feel and act responsible for your team and everything that it does. Accomplishing all these goals in a way that is rewarding for the leader and the team--while producing the results that management wants--is the motivation behind the Team Software Process (TSP). Developed by renowned quality expert Watts S. Humphrey, TSP is a set of new practices and team concepts that helps developers take the CMM and CMMI Capability Maturity Models to the next level. Not only does TSP help make software more secure, it results in an average production gain of 68 percent per project. Because of their quality, timeliness, and security, TSP-produced products can be ten to hundreds of times better than other hardware or software. In this essential guide to TSP, Humphrey uses his vast industry experience to show leaders precisely how to lead teams of software engineers trained in the Personal Software Process (PSP). He explores all aspects of effective leadership and teamwork, including building the right team for the job, the TSP launch process, following the process to produce a quality product, project reviews, and capitalizing on both the leader's and team's capabilities. Humphrey also illuminates the differences between an ineffective leader and a superb one with the objective of helping you understand, anticipate, and correct the most common leadership failings before they undermine the team. An extensive set of appendices provides additional detail on TSP team roles and shows you how to use an organization's communication and command networks to achieve team objectives. Whether you are a new or an experienced team leader, TSPSM: Leading a Development Team provides invaluable examples, guidelines, and suggestions on how to handle the many issues you and your team face together.

[Metrics and Models in Software Quality Engineering](#) Sep 24 2019 ""This is the single best book on software quality engineering and metrics that I've encountered."" --Capers Jones, from the Foreword"Metrics and Models in Software Quality Engineering, Second Edition," is the definitive book on this essential topic of software development. Comprehensive in scope with extensive industry examples, it shows how to measure software quality and use measurements to improve the software development process. Four major categories of quality metrics and models are addressed: quality management, software reliability and projection, complexity, and customer view. In addition, the book discusses the fundamentals of measurement theory, specific quality metrics and tools, and methods for applying metrics to the software development process. New chapters bring coverage of critical topics, including: In-process metrics for software testing Metrics for object-oriented software development Availability metrics Methods for conducting in-process quality assessments and software project assessments Dos and Don'ts of Software Process Improvement, by Patrick O'Toole Using Function Point Metrics to Measure Software Process Improvement, by Capers Jones In addition to the excellent balance of theory, techniques, and examples, this book is highly instructive and practical, covering one of the most important topics in software development--quality engineering. 0201729156B08282002 [Software Development for Small Teams](#) Jan 21 2022 I highly recommend this book for anyone who's ever tried to implement RUP on a small project. Pollice and company have demystified and effectively scaled the process while ensuring that its essence hasn't been compromised. A must-have for any RUPster's library! Chris Soskin, Process Engineering Consultant, Toyota Motor Sales Do you want to improve the process on your next project? Perhaps you'd like to combine the best practices from the Rational Unified Process (RUP) and from agile methodologies (such as Extreme Programming). If so, buy this book! *Software Development for Small Teams* describes an entire software development project, from the initial customer contact through delivery of the software. Through a case study, it describes how one small, distributed team designed and applied a successful process. But this is not a perfect case study. The story includes what worked and what didn't, and describes how the team might change its process for the next project. The authors encourage you

to assess their results and to use the lessons learned on your next project. Key topics covered include: Achieving a balance between people, process, and tools; recognizing that software develo

Software Engineering Processes May 01 2020 Software engineering is playing an increasingly significant role in computing and informatics, necessitated by the complexities inherent in large-scale software development. To deal with these difficulties, the conventional life-cycle approaches to software engineering are now giving way to the "process system" approach, encompassing development methods, infrastructure, organization, and management. Until now, however, no book fully addressed process-based software engineering or set forth a fundamental theory and framework of software engineering processes. *Software Engineering Processes: Principles and Applications* does just that. Within a unified framework, this book presents a comparative analysis of current process models and formally describes their algorithms. It systematically enables comparison between current models, avoidance of ambiguity in application, and simplification of manipulation for practitioners. The authors address a broad range of topics within process-based software engineering and the fundamental theories and philosophies behind them. They develop a software engineering process reference model (SEPRM) to show how to solve the problems of different process domains, orientations, structures, taxonomies, and methods. They derive a set of process benchmarks-based on a series of international surveys-that support validation of the SEPRM model. Based on their SEPRM model and the unified process theory, they demonstrate that current process models can be integrated and their assessment results can be transformed between each other. Software development is no longer just a black art or laboratory activity. It is an industrialized process that requires the skills not just of programmers, but of organization and project managers and quality assurance specialists. *Software Engineering Processes: Principles and Applications* is the key to understanding, using, and improving upon effective engineering procedures for software development.

Leadership, Teamwork, and Trust Mar 11 2021 Every business is a software business, and every business can profit from improved software processes *Leadership, Teamwork, and Trust* discusses the critical importance of knowledge work to the success of modern organizations. It explains concrete and necessary steps for reshaping the way in which software development, specifically, is conducted. A sequel to Humphrey's influential *Winning with Software*, this book presents new and copious data to reinforce his widely adopted methods for transforming knowledge work into a significant and sustainable competitive advantage, thereby realizing remarkable returns. Humphrey addresses here the broader business community—executives and senior managers who must recognize that today, every business is a software business.

Physically Based Rendering Sep 04 2020 This updated edition describes both the mathematical theory behind a modern photorealistic rendering system as well as its practical implementation. Through the ideas and software in this book, designers will learn to design and employ a full-featured rendering system for creating stunning imagery. Includes a companion site complete with source code for the rendering system described in the book, with support for Windows, OS X, and Linux.

A Discipline for Software Engineering Nov 30 2022 This new work from Watts Humphrey, author of the influential book, *Managing the Software Process*, broadens his orderly view of software process management, and lays the foundation for a disciplined approach to software engineering. In his earlier book, the author developed concrete methods for managing software development and maintenance. These methods, now commonly practiced in industry, provide programmers and managers with specific steps they can take to evaluate and improve their software capabilities. In this new book, Humphrey scales those methods down to a personal level, helping software engineers develop the skills and habits needed to plan, track, and analyze large, complex projects. Humphrey and others have used material from this book to train professionals and students around the world in a projects-oriented software engineering course. First establishing the need for discipline in software engineering, and the benefits to practitioners of learning how to manage their personal software process, Humphrey then develops a model that they can use to monitor, test, and improve their work. Examples drawn from industry enhance the practical focus of the book, while project exercises give readers the opportunity to practice software process management as they learn it. Features: presents concepts and methods for a disciplined software engineering process; scales down industrial practices for planning, tracking, analysis, and defect management to fit the needs of small-scale program development; and shows how small project disciplines provide a solid base for larger projects.

PSP(sm) Apr 23 2022 Most software-development groups have embarrassing records: By some accounts, more than half of all software projects are significantly late and over budget, and nearly a quarter of them are cancelled without ever being completed. Although developers recognize that unrealistic schedules, inadequate resources, and unstable requirements are often to blame for such failures, few know how to solve these problems. Fortunately, the Personal Software Process (PSP) provides a clear and proven solution. Comprising precise methods developed over many years by Watts S. Humphrey and the Software Engineering Institute (SEI), the PSP has successfully transformed work practices in a wide range of organizations and has already produced some striking results. This book describes the PSP and is the definitive guide and reference for its latest iteration. PSP training focuses on the skills required by individual software engineers to improve their personal performance. Once learned and effectively applied, PSP-trained engineers are qualified to participate on a team using the Team Software Process (TSP), the methods for which are described in the final chapter of the book. The goal for both PSP and TSP is to give developers exactly what they need to deliver quality products on predictable schedules. *PSPSM: A Self-Improvement Process for Software Engineers* presents a disciplined process for software engineers and anyone else involved in software development. This process includes defect management, comprehensive planning, and precise project tracking and reporting. The book first scales down industrial software practices to fit the needs of the module-sized program development, then walks readers through a progressive sequence of practices that provide a sound foundation for large-scale software development. By doing the exercises in the book, and using the PSP methods described here to plan, evaluate, manage, and control the quality of your own work, you will be well prepared to apply those methods on ever larger and more critical projects. Drawing on the author's extensive experience helping organizations to achieve their development goals, and with the PSP benefits well illustrated, the book presents the process in carefully crafted steps. The first chapter describes overall principles and strategies. The next two explain how to follow a defined process, as well as how to gather and use the data required to manage a programming job. Several chapters then cover estimating and planning, followed by quality management and design. The last two chapters show how to put the PSP to work, and how to use it on a team project. A variety of support materials for the book, as described in the Preface, are available on the Web. If you or your organization are looking for a way to improve your project success rate, the PSP could well be your answer.

Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills Mar 30 2020 Computer science graduates often find software engineering knowledge and skills are more in demand after they join the industry. However, given the lecture-based curriculum present in academia, it is not an easy undertaking to deliver industry-standard knowledge and skills in a software engineering classroom as such lectures hardly engage or convince students. *Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills* combines recent advances and best practices to improve the curriculum of software engineering education. This book is an essential reference source for researchers and educators seeking to bridge the gap between industry expectations and what academia can provide in software engineering education.

Successful Software Process Improvement Oct 06 2020 Provides common-sense, proven techniques and approaches that software managers and developers can use to deliver significant process improvements. This book organizes software process improvement into four proven stages: Plan, Do, Check, and Act. It then thoroughly reviews the steps that managers and developers can take in each stage. It shows how to assess current software processes more effectively, and plan and invest to make software development a core competency of your organization. It presents a thoughtful recommendations for making sure that management stays committed to process improvement for the long-haul. Finally, it describes specific techniques organizations can use to track, validate and place a value upon software process improvements. All software developers, project managers, process improvement managers, senior IT managers, and customers for custom software development.

Engineering of Software Feb 28 2020 Software engineering research can trace its roots to a few highly influential individuals. Among that select group is Leon J. Osterweil, who has been a major force in driving

software engineering from its infancy to its modern reality. For more than three decades, Prof. Osterweil's work has fundamentally defined or significantly impacted major directions in software analysis, development tools and environments, and software process--all critical parts of software engineering as it is practiced today. His exceptional contributions to the field have been recognized with numerous awards and honors through his career, including the ACM SIGSOFT Outstanding Research Award, in recognition of his extensive and sustained research impact, and the ACM SIGSOFT Influential Educator Award, in recognition of his career-long achievements as an educator and mentor. In honor of Prof. Osterweil's profound accomplishments, this book was prepared for a special honorary event held during the 2011 International Conference on Software Engineering (ICSE). It contains some of his most important published works to date, together with several new articles written by leading authorities in the field, exploring the broad impact of his work in the past and how it will further impact software engineering research in the future. These papers, part of the core software engineering legacy and now available in one commented volume for the first time, are grouped into three sections: flow analysis for software dependability, the software lifecycle, and software process.

Handbook of Software Engineering and Knowledge Engineering Oct 25 2019 This is the first handbook to cover comprehensively both software engineering and knowledge engineering OCo two important fields that have become interwoven in recent years. Over 60 international experts have contributed to the book. Each chapter has been written in such a way that a practitioner of software engineering and knowledge engineering can easily understand and obtain useful information. Each chapter covers one topic and can be read independently of other chapters, providing both a general survey of the topic and an in-depth exposition of the state of the art. Practitioners will find this handbook useful when looking for solutions to practical problems. Researchers can use it for quick access to the background, current trends and most important references regarding a certain topic. The handbook consists of two volumes. Volume One covers the basic principles and applications of software engineering and knowledge engineering. Volume Two will cover the basic principles and applications of visual and multimedia software engineering, knowledge engineering, data mining for software knowledge, and emerging topics in software engineering and knowledge engineering. Sample Chapter(s). Chapter 1.1: Introduction (97k). Chapter 1.2: Theoretical Language Research (97k). Chapter 1.3: Experimental Science (96k). Chapter 1.4: Evolutionary Versus Revolutionary (108k). Chapter 1.5: Concurrency and Parallelisms (232k). Chapter 1.6: Summary (123k). Contents: Computer Language Advances (D E Cooke et al.); Software Maintenance (G Canfora & A Cimitile); Requirements Engineering (A T Bertziss); Software Engineering Standards: Review and Perspectives (Y-X Wang); A Large Scale Neural Network and Its Applications (D Graupe & H Kordylewski); Software Configuration Management in Software and Hypermedia Engineering: A Survey (L Bendix et al.); The Knowledge Modeling Paradigm in Knowledge Engineering (E Motta); Software Engineering and Knowledge Engineering Issues in Bioinformatics (J T L Wang et al.); Conceptual Modeling in Software Engineering and Knowledge Engineering: Concepts, Techniques and Trends (O Dieste et al.); Rationale Management in Software Engineering (A H Dutoit & B Paech); Exploring Ontologies (Y Kalfoglou), and other papers. Readership: Graduate students, researchers, programmers, managers and academics in software engineering and knowledge engineering."

Software Process Improvement and Management: Approaches and Tools for Practical Development Jul 15 2021 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. 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.

Implementing the IEEE Software Engineering Standards Jan 27 2020 The IEEE's Software Engineering standards are the internationally accepted guidelines for developing software in the commercial, government, and private sectors. This text presents a Software Life-Cycle Model to complement the standards and aid development.

Rethinking Productivity in Software Engineering Aug 04 2020 Get the most out of this foundational reference and improve the productivity of your software teams. This open access book collects the wisdom of the 2017 "Dagstuhl" seminar on productivity in software engineering, a meeting of community leaders, who came together with the goal of rethinking traditional definitions and measures of productivity. The results of their work, *Rethinking Productivity in Software Engineering*, includes chapters covering definitions and core concepts related to productivity, guidelines for measuring productivity in specific contexts, best practices and pitfalls, and theories and open questions on productivity. You'll benefit from the many short chapters, each offering a focused discussion on one aspect of productivity in software engineering. Readers in many fields and industries will benefit from their collected work. Developers wanting to improve their personal productivity, will learn effective strategies for overcoming common issues that interfere with progress. Organizations thinking about building internal programs for measuring productivity of programmers and teams will learn best practices from industry and researchers in measuring productivity. And researchers can leverage the conceptual frameworks and rich body of literature in the book to effectively pursue new research directions. What You'll Learn Review the definitions and dimensions of software productivity See how time management is having the opposite of the intended effect Develop valuable dashboards Understand the impact of sensors on productivity Avoid software development waste Work with human-centered methods to measure productivity Look at the intersection of neuroscience and productivity Manage interruptions and context-switching Who Book Is For Industry developers and those responsible for seminar-style courses that include a segment on software developer productivity. Chapters are written for a generalist audience, without excessive use of technical terminology.

An Introduction to Biomechanics May 13 2021 Designed to meet the needs of undergraduate students, "Introduction to Biomechanics" takes the fresh approach of combining the viewpoints of both a well-respected teacher and a successful student. With an eye toward practicality without loss of depth of instruction, this book seeks to explain the fundamental concepts of biomechanics. With the accompanying web site providing models, sample problems, review questions and more, Introduction to Biomechanics provides students with the full range of instructional material for this complex and dynamic field.

The Capability Maturity Model Aug 16 2021 Principal Contributors and Editors: Mark C. Paulk, Charles V. Weber, Bill Curtis, Mary Beth Chrissis "In every sense, the CMM represents the best thinking in the field today... this book is targeted at anyone involved in improving the software process, including members of assessment or evaluation teams, members of software engineering process groups, software managers, and software practitioners..." From the Foreword by Watts Humphrey The Capability Maturity Model for Software (CMM) is a framework that demonstrates the key elements of an effective software process. The CMM describes an evolutionary improvement path for software development from an ad hoc, immature process to a mature, disciplined process, in a path laid out in five levels. When using the CMM, software professionals in government and industry can develop and improve their ability to identify, adopt, and use sound management and technical practices for delivering quality software on schedule and at a reasonable cost. This book provides a description and technical overview of the CMM, along with guidelines for improving software process management overall. It is a sequel to Watts Humphrey's important work, *Managing the Software Process*, in that it structures the maturity framework presented in that book more formally. Features: Compares the CMM with ISO 9001 Provides an overview of ISO's SPICE project, which is developing international standards for software process improvement and capability determination Presents a case study of IBM Houston's Space Shuttle project, which is frequently referred to as being at Level 5 0201546647B04062001

Software Process Modeling Jun 01 2020 This book brings together experts to discuss relevant results in software process modeling, and expresses their personal view of this field. It is designed for a professional audience of researchers and practitioners in industry, and graduate-level students.

CMM Implementation Guide Dec 28 2019 The SEI's Capability Maturity Model (CMM) has been widely adopted by companies seeking enhanced quality and heightened productivity in software development. This guide provides detailed instruction on how to put this model into practice and thereby raise an organization to the next level. Templates, sample documents and presentation materials are included on the CD-ROM.

Professional Financial Computing Using Excel and VBA Sep 16 2021 "Professional Financial Computing Using Excel and VBA is an admirable exposition that bridges the theoretical underpinnings of financial engineering and its application which usually appears as a "black-box" software application. The book opens the black-box and reveals the architecture of risk-modeling and financial engineering based on industry-standard stochastic models by utilizing Excel and VBA functionality to create a robust and practical modeling tool-kit. Financial engineering professionals who purchase this book will have a jumpstart advantage for their customized financial engineering and modeling needs." Dr. Cameron Wicentowich Vice President, Treasury Analytics Canadian Imperial Bank of Commerce (CIBC) "Spreadsheet modeling for finance has become a standard course in the curriculum of many Quantitative Finance programs since the Excel-based Visual Basic programming is now widely used in constructing optimal portfolios, pricing structured products and managing risks. Professional Financial Computing Using Excel and VBA is written by a unique team of finance, physics and computer academics and practitioners. It is a good reference for those who are studying for a Masters degree in Financial Engineering and Risk Management. It can also be useful for financial engineers to jump-start a project on designing structured products, modeling interest term structure or credit risks." Dr. Jin Zhang Director of Master of Finance Program and Associate Professor The University of Hong Kong "Excel has been one of the most powerful tools for financial planning and computing over the last few years. Most users utilize a fraction of its capabilities. One of the reasons is the limited availability of books that cover the advanced features of Excel for Finance. Professional Financial Computing Using Excel and VBA goes the extra mile and deals with the Excel tools many professionals call for. This book is a must for professionals or students dealing with financial engineering, financial risk management, computational finance or mathematical finance. I loved the way the authors covered the material using real life, hands-on examples." Dr. Isaac Gottlieb Temple University Author, Next Generation Excel: Modeling in Excel for Analysts and MBAs
Software Process Improvement Apr 11 2021 This book will help you to manage and control the quality of your organization's software products. Continually dealing with the problems caused by software defects can be both time-consuming and demanding but Sami Zahran's pragmatic approach will take you from reactive fire-fighting to a preventative culture of disciplined and continuous process improvement. This book will help you: establish a process-focused software development organization design and implement procedures for developing quality software in time and within budget benchmark your organization against the industry standards for the software process, including the Capability Maturity Model (CMM), ISO 9001, the new standard ISO/IEC 15504 (originally known as SPICE) and Bootstrap.

A Discipline for Software Engineering Jan 01 2023

Introduction to the Personal Software Process(sm) Aug 28 2022 This newest book from Watts Humphrey is a hands-on introduction to basic disciplines of software engineering. Designed as a workbook companion to any introductory programming or software-engineering text, Humphrey provides here the practical means to integrate his highly regarded Personal Software Process (PSP) into college and university curricula. The book may also be adapted for use in industrial training or for self-improvement by practicing software engineers. Applying the book's exercises to their course assignments, students learn both to manage their time effectively and to monitor the quality of their work, good practices they will need to be successful in their future careers. The book is supported by its own electronic supplement, which includes spreadsheets for data entry and analysis. A complete instructor's package is also available. By mastering PSP techniques early in their studies, students can avoid--or overcome--the popular "hacker" ethic that leads to so many bad habits. Employers will appreciate new hires prepared to do competent professional work without, as now is common, expensive retraining and years of experience.

Schaum's Outline of Software Engineering Nov 06 2020 Tough Test Questions? Missed Lectures? Not Enough Time? Fortunately for you, there's Schaum's Outlines. More than 40 million students have trusted Schaum's to help them succeed in the classroom and on exams. Schaum's is the key to faster learning and higher grades in every subject. Each Outline presents all the essential course information in an easy-to-follow, topic-by-topic format. You also get hundreds of examples, solved problems, and practice exercises to test your skills. This Schaum's Outline gives you Practice problems with full explanations that reinforce knowledge Coverage of the most up-to-date developments in your course field In-depth review of practices and applications Fully compatible with your classroom text, Schaum's highlights all the important facts you need to know. Use Schaum's to shorten your study time-and get your best test scores! Schaum's Outlines-Problem Solved.

TSP(SM) Coaching Development Teams Feb 19 2022 Most modern software development projects require teams, and good teamwork largely determines a project's success. The Team Software Process (TSP), created by Watts S. Humphrey, is a set of engineering practices and team concepts that produce effective teams, thereby helping developers deliver high-quality products on time and within budget. TSP bridges Humphrey's seminal work on the Capability Maturity Model (CMM), an improvement framework for the entire software organization, and his Personal Software Process (PSP), practices designed to improve the work of individual developers. Typical first-time TSP teams increase productivity by more than 50 percent while greatly increasing the quality of their delivered products. However, TSP teams only continue to improve under the guidance of a capable coach. One industrial-strength team, for example, increased its productivity by an additional 94 percent and reduced test defects by 85 percent through three consecutive TSP quarterly product release cycles. Without competent coaching, teams often do not progress much beyond the initial one-time improvement seen after the introduction of the TSP. Humphrey distinguishes between TSP coaching and TSP leadership, explaining why the skillful performance of both functions is critical. In this practical guide, he shares coaching methods that have repeatedly inspired TSP teams and steered them toward success. With the help of a coach, TSP teams undergo a brief but intense project launch in which they define their own processes, make their own plans, and negotiate their commitments with management, resulting in dramatically enhanced performance. Whether you are considering the TSP or are actively implementing it, TSPSM-Coaching Development Teams provides the invaluable examples, guidelines, and suggestions you need to get started and keep developing as a team coach. It's meant to complement Humphrey's other books, TSPSM-Leading a Development Team and TSPSM: A Self-Improvement Process for Software Engineers. Together, the three works offer a rich resource for improving your software development capabilities.

Statistical Software Engineering Nov 26 2019 This book identifies challenges and opportunities in the development and implementation of software that contain significant statistical content. While emphasizing the relevance of using rigorous statistical and probabilistic techniques in software engineering contexts, it presents opportunities for further research in the statistical sciences and their applications to software engineering. It is intended to motivate and attract new researchers from statistics and the mathematical sciences to attack relevant and pressing problems in the software engineering setting. It describes the "big picture," as this approach provides the context in which statistical methods must be developed. The book's survey nature is directed at the mathematical sciences audience, but software engineers should also find the statistical emphasis refreshing and stimulating. It is hoped that the book will have the effect of seeding the field of statistical software engineering by its indication of opportunities where statistical thinking can help to increase understanding, productivity, and quality of software and software production.

Measuring the Software Process Oct 18 2021 "While it is usually helpful to launch improvement programs, many such programs soon get bogged down in detail. They either address the wrong problems, or they keep beating on the same solutions, wondering why things don't improve. This is when you need an objective way to look at the problems. This is the time to get some data." Watts S. Humphrey, from the Foreword This book, drawing on work done at the Software Engineering Institute and other organizations, shows how to use measurements to manage and improve software processes. The authors explain specifically how quality characteristics of software products and processes can be quantified, plotted, and analyzed so the performance of software development activities can be predicted, controlled, and guided to achieve both business and technical goals. The measurement methods presented, based on the principles of statistical quality control, are illuminated by application examples taken from industry. Although many of the methods discussed are

applicable to individual projects, the book's primary focus is on the steps software development organizations can take toward broad-reaching, long-term success. The book particularly addresses the needs of software managers and practitioners who have already set up some kind of basic measurement process and are ready to take the next step by collecting and analyzing software data as a basis for making process decisions and predicting process performance. Highlights of the book include: Insight into developing a clear framework for measuring process behavior Discussions of process performance, stability, compliance, capability, and improvement Explanations of what you want to measure (and why) and instructions on how to collect your data Step-by-step guidance on how to get started using statistical process control If you have responsibilities for product quality or process performance and you are ready to use measurements to manage, control, and predict your software processes, this book will be an invaluable resource.

Introduction to the Team Software Process Jul 27 2022 TSPi overview; The logic of the team software process; The TSPi process; The team roles; Using the TSPi; Teamwork.

TSP Jun 13 2021 Most modern software development projects require teams, and good teamwork largely determines a project's success. The Team Software Process (TSP), created by Watts S. Humphrey, is a set of engineering practices and team concepts that produce effective teams, thereby helping developers deliver high-quality products on time and within budget. TSP bridges Humphrey's seminal work on the Capability Maturity Model (CMM), an improvement framework for the entire software organization, and his Personal Software Process (PSP), practices designed to improve the work of individual developers. Typical first-time TSP teams increase productivity by more than 50 percent while greatly increasing the quality of their delivered products. However, TSP teams only continue to improve under the guidance of a capable coach. One industrial-strength team, for example, increased its productivity by an additional 94 percent and reduced test defects by 85 percent through three consecutive TSP quarterly product release cycles. Without competent coaching, teams often do not progress much beyond the initial one-time improvement seen after the introduction of the TSP. Humphrey distinguishes between TSP coaching and TSP leadership, explaining why the skillful performance of both functions is critical. In this practical guide, he shares coaching methods that have repeatedly inspired TSP teams and steered them toward success. With the help of a coach, TSP teams undergo a brief but intense project launch in which they define their own processes, make their own plans, and negotiate their commitments with management, resulting in dramatically enhanced performance. Whether you are considering the TSP or are actively implementing it, TSPSM—Coaching Development Teams provides the invaluable examples, guidelines, and suggestions you need to get started and keep developing as a team coach. It's meant to complement Humphrey's other books, TSPSM—Leading a Development Team and PSPSM: A Self-Improvement Process for Software Engineers. Together, the three works offer a rich resource for improving your software development capabilities.

Reflections on Management Oct 30 2022 A Lifetime of Invaluable Management Insights from Legendary Software Quality Guru Watts S. Humphrey In 1986, Watts S. Humphrey made an outrageous commitment: a promise to transform software development. As the pioneering innovator behind SEI's Capability Maturity Model (CMM), Personal Software Process (PSP), and Team Software Process (TSP), Humphrey has more than met that promise. But his contributions go beyond methodology: For decades, his deeply personal writings on project management have been admired by software engineers worldwide. *Reflections on Management* brings together Humphrey's best and most influential essays and articles--sharing insights that will be indispensable for anyone who must achieve superior results in software or any other endeavor. Collected here for the first time, these works offer compelling insights into everything from planning day-to-day work to improving quality, encouraging teamwork to becoming a truly great leader. All of these writings share a powerful vision, grounded by a life in software that has extended across nearly six decades. The vision is this: To succeed, professionals must effectively manage for more than plans, schedules, and code--they must manage teams, bosses, and above all, themselves.

Managing the Software Process Sep 28 2022 The author, drawing on years of experience at IBM and the SEI, provides here practical guidance for improving the software development and maintenance process. He focuses on understanding and managing the software process because this is where he feels organizations now encounter the most serious problems, and where he feels there is the best opportunity for significant improvement. Both program managers and practicing programmers, whether working on small programs or large-scale projects, will learn how good their own software process is, how they can make their process better, and where they need to begin. "This book will help you move beyond the turning point, or crisis, of feeling over-whelmed by the task of managing the software process to understanding what is essential in software management and what you can do about it." Peter Freeman, from the Foreword 0201180952B04062001

Leadership, Teamwork, and Trust Mar 23 2022 Every business is a software business, and every business can profit from improved software processes Leadership, Teamwork, and Trust discusses the critical importance of knowledge work to the success of modern organizations. It explains concrete and necessary steps for reshaping the way in which software development, specifically, is conducted. A sequel to Humphrey's influential *Winning with Software*, this book presents new and copious data to reinforce his widely adopted methods for transforming knowledge work into a significant and sustainable competitive advantage, thereby realizing remarkable returns. Humphrey addresses here the broader business community--executives and senior managers who must recognize that today, every business is a software business.

Hardware-dependent Software Feb 07 2021 Despite its importance, the role of HdS is most often underestimated and the topic is not well represented in literature and education. To address this, *Hardware-dependent Software* brings together experts from different HdS areas. By providing a comprehensive overview of general HdS principles, tools, and applications, this book provides adequate insight into the current technology and upcoming developments in the domain of HdS. The reader will find an interesting text book with self-contained introductions to the principles of Real-Time Operating Systems (RTOS), the emerging BIOS successor UEFI, and the Hardware Abstraction Layer (HAL). Other chapters cover industrial applications, verification, and tool environments. Tool introductions cover the application of tools in the ASIP software tool chain (i.e. Tensilica) and the generation of drivers and OS components from C-based languages. Applications focus on telecommunication and automotive systems.

Project Management Using Earned Value Jul 03 2020

Method Engineering Dec 08 2020 Method Engineering focuses on the design, construction and evaluation of methods, techniques and support tools for information systems development It addresses a number of important topics, including: method representation formalisms; meta-modelling; situational methods; contingency approaches; system development practices of method engineering; terminology and reference models; ontologies; usability and experience reports; and organisational support and impact.

Introduction to the Personal Software Process Jun 25 2022 This newest book from Watts Humphrey is a hands-on introduction to basic disciplines of software engineering. Designed as a workbook companion to any introductory programming or software-engineering text, Humphrey provides here the practical means to integrate his highly regarded Personal Software Process (PSP) into the undergraduate curriculum. Applying the book's exercises to course assignments, students learn both to manage their time effectively and to monitor the quality of their work, good practices they will need to be successful in their future careers. The book is supported by its own electronic supplement, which includes spreadsheets for data entry and analysis. A complete instructor's package is also available. By mastering PSP techniques early in their studies, students can avoid-or overcome-the popular "hacker" ethic that leads to so many bad habits. Employers will appreciate new hires prepared to do competent professional work without, as now is common, expensive retraining and years of experience.

CMM in Practice Jan 09 2021 Project initiation; Project planning; Project execution and termination.

Handbook of Software Engineering and Knowledge Engineering Aug 23 2019 This is the first handbook to cover comprehensively both software engineering and knowledge engineering — two important fields that have become interwoven in recent years. Over 60 international experts have contributed to the book. Each chapter has been written in such a way that a practitioner of software engineering and knowledge engineering can

easily understand and obtain useful information. Each chapter covers one topic and can be read independently of other chapters, providing both a general survey of the topic and an in-depth exposition of the state of the art. Practitioners will find this handbook useful when looking for solutions to practical problems. Researchers can use it for quick access to the background, current trends and most important references regarding a certain topic. The handbook consists of two volumes. Volume One covers the basic principles and applications of software engineering and knowledge engineering. Volume Two will cover the basic principles and applications of visual and multimedia software engineering, knowledge engineering, data mining for software knowledge, and emerging topics in software engineering and knowledge engineering.

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