

## Function Point Analysis Measurement Practices For Successful Software Projects Information Technology

The widespread deployment of millions of current and emerging software applications has placed software economic studies among the most critical of any form of business analysis. Unfortunately, a lack of an integrated suite of metrics makes software economic analysis extremely difficult. The International Function Point Users Group (IFPUG), a nonprofit and member-governed organization, has become the recognized leader in promoting the effective management of application software development and maintenance activities. The IFPUG Guide to IT and Software Measurement brings together 52 leading software measurement experts from 13 different countries who share their insights and expertise. Covering measurement programs, function points in measurement, new technologies, and metrics analysis, this volume: Illustrates software measurement's role in new and emerging technologies Addresses the impact of agile development on software measurement Presents measurement as a powerful tool for auditing and accountability Includes metrics for the CIO Edited by IFPUG's Management and Reporting Committee, the text is useful for IT project managers, process improvement specialists, measurement professionals, and business professionals who need to interact with IT professionals and participate in IT decision-making. It includes coverage of cloud computing, agile development, quantitative project management, process improvement, measurement as a tool in accountability, project ROI measurement, metrics for the CIO, value stream mapping, and benchmarking.

This book constitutes the refereed proceedings of the 16th International Conference on Product-Focused Software Process Improvement, PROFES 2015, held in Bolzano, Italy, in December 2015. The 18 revised full papers presented together with 10 short papers and 18 workshop papers were carefully reviewed and selected from 50 submissions. The papers are organized in topical sections on lessons learned from industry-research collaborations; instruments to improve the software development process; requirements, features, and release management; practices of modern development processes; human factors in modern software development; effort and size estimation validated by professionals; empirical generalization; software reliability and testing in industry; workshop on processes, methods and tools for engineering embedded systems; workshop on human factors in software development processes; and workshop on software startups: state of the art and state of the practice.

With Contributions by Capers Jones, Howard Rubin, David Garmus, Lawrence Putnam, and Elizabeth Clark The accurate, quantitative measurement of software quality and process performance is rapidly becoming an essential part of competition in the ever-tightening software marketplace. Software metrics provide insights into productivity and quality gains from improvements in skill, technology, and development methodology. An effective metrics program helps practitioners assemble the best team, select the optimal development methodology, and enhance the quality of a software product. In short, metrics enable software developers to pursue proven, successful strategies, and to change course when metrics point to less-than-optimum quality or productivity. Written by the world's leading authorities in the field, IT Measurement showcases state-of-the-art in software metrics and provides the practical knowledge that practitioners need in order to take full advantage of software metrics technology. The book's collected articles offer important perspectives on the role of metrics in the development process, and show how metrics directly enhance software quality and output efficiency. The book explores several vital areas, including Function Point Analysis, project estimation and management, outsourcing, statistical process control, and more. These articles range from basic theory to the sophisticated application of metrics. Specific topics covered include: The expanding role of function point metrics Work output measurement for IT work units The use of metrics for tracking Enhanced estimation with metrics Metrics in outsourcing Standardization of SLOC The application of SPC to performance management Functional metrics in B2B e-commerce project success Enlightening and pragmatic, IT Measurement will help you gain a deeper understanding of software metrics and the ability to apply concrete measures in order to objectively evaluate and more finely shape your software development program.

020174158XB02212002

"A clearly written book that is a useful primer for a very complicated set of topics." --Capers Jones, Chief Scientist Emeritus, Software Productivity Research LLC Practical Software Estimation brings together today's most valuable tips, techniques, and best practices for accurately estimating software project efforts, costs, and schedules. Written by a leading expert in the field, it addresses the full spectrum of real-world challenges faced by those who must develop reliable estimates. M. A. Parthasarathy draws on the immense experience of Infosys, one of the world's largest and most respected providers of IT-enabled business solutions, to bring you the only book with detailed guidance on estimating insourced and outsourced software projects, as well as projects that blend both approaches. He demonstrates how to successfully utilize Function Point (FP) methods, the industry's leading estimation model. Then, using real case studies, he systematically identifies pitfalls that can lead to inaccurate estimates--and offers proven solutions. Coverage includes How to estimate all types of software projects, including "fresh" development, reengineering, and maintenance How to incorporate the impact of core project elements on estimates: scope, environment, experience, and tools FP analysis from start to finish: data and transaction functions, general system characteristics, and more FP methods for any platform or business function Innovative re-estimation methods to track progress How to quote RFPs and prepare contracts: fixed price, time/material, and project execution lifecycle models Alternatives to FP: Delphi, COCOMO II, and COSMIC-FFP How to choose the right estimation tools Practical Software Estimation is the definitive reference for anyone who must estimate software projects accurately: project and IT managers, individual developers, system designers, architects, executives, consultants, and outsourcers alike. List of Figures List of Tables Foreword Preface Acknowledgments Chapter 1: Introduction Chapter 2: Role of Estimation in Software Projects Chapter 3: A Study of Function Point Analysis Chapter 4: Data Functions Chapter 5: Transactional Functions Chapter 6: General System Characteristics Chapter 7: Size, Effort, and Scheduling of Projects Chapter 8: Estimation Flavors Chapter 9: A Sense of Where You Are Chapter 10: Tips, Tricks, and Traps Chapter 11: Insourcing versus Outsourcing Chapter 12: Key Factors in Software Contracts Chapter 13: Project Estimation and Costing Chapter 14: Other Estimation Methods Chapter 15: Estimation Tools Chapter 16: Estimation Case Study Appendix A: Reference Tables: Transaction Function Counts Appendix B: Reference Tables: Data Function Points Bibliography Index

This book constitutes the refereed proceedings of the 20th International Conference on Product-Focused Software Process Improvement, PROFES 2019, held in Barcelona, Spain, in November 2019. The 24 revised full papers 4 industry papers, and 11 short papers presented were carefully reviewed and selected from 104 submissions. The papers cover a broad range of

topics related to professional software development and process improvement driven by product and service quality needs. They are organized in topical sections on testing, software development, technical debt, estimations, continuous delivery, agile, project management, microservices, and continuous experimentation. This book also includes papers from the co-located events: 10 project papers, 8 workshop papers, and 4 tutorial summaries.

"If the purpose is to create one of the best books on requirements yet written, the authors have succeeded." —Capers Jones It is widely recognized that incorrect requirements account for up to 60 percent of errors in software products, and yet the majority of software development organizations do not have a formal requirements process. Many organizations appear willing to spend huge amounts on fixing and altering poorly specified software, but seem unwilling to invest a much smaller amount to get the requirements right in the first place. *Mastering the Requirements Process, Second Edition*, sets out an industry-proven process for gathering and verifying requirements with an eye toward today's agile development environments. In this total update of the bestselling guide, the authors show how to discover precisely what the customer wants and needs while doing the minimum requirements work according to the project's level of agility. Features include The Volere requirements process—completely specified, and revised for compatibility with agile environments A specification template that can be used as the basis for your own requirements specifications New agility ratings that help you funnel your efforts into only the requirements work needed for your particular development environment and project How to make requirements testable using fit criteria Iterative requirements gathering leading to faster delivery to the client Checklists to help identify stakeholders, users, nonfunctional requirements, and more Details on gathering and implementing requirements for iterative releases An expanded project sociology section for help with identifying and communicating with stakeholders Strategies for exploiting use cases to determine the best product to build Methods for reusing requirements and requirements patterns Examples showing how the techniques and templates are applied in real-world situations

This volume is based on the research papers presented in the 4th Computer Science On-line Conference. The volume *Software Engineering in Intelligent Systems* presents new approaches and methods to real-world problems, and in particular, exploratory research that describes novel approaches in the field of Software Engineering. Particular emphasis is laid on modern trends in selected fields of interest. New algorithms or methods in a variety of fields are also presented. The Computer Science On-line Conference (CSOC 2015) is intended to provide an international forum for discussions on the latest high-quality research results in all areas related to Computer Science. The addressed topics are the theoretical aspects and applications of Computer Science, Artificial Intelligences, Cybernetics, Automation Control Theory and Software Engineering.

This book constitutes the thoroughly refereed post-proceedings of the International Workshop on Software Measurement, IWSM-Mensura 2007, held in Palma de Mallorca, Spain, in November 2007. The 16 revised full papers presented were carefully reviewed and selected for inclusion in the book. The papers deal with aspects of software measurement like function-points measurement, effort and cost estimates, prediction, industrial experiences in software measurement, planning and implementing measurement, measurement-based software process improvement, best practices in software measurement, usability and user interaction measurement, measurement of open source projects, teaching and learning software measurement as well as new trends and ontologies for software measurement.

There's more to IT than technology! Yes, IT involves computers, software, and services, but good IT synthesizes these elements with a concentration on how your organization can best meet its goals. Increasingly, the IT department is the hub of any company-and companies expect IT managers to accomplish a variety of tasks with limited resources. Thus, CIOs must hone their organizational and managerial skills to run the most effective program possible. Join author Jan De Sutter as he details the range of methodologies necessary for effective IT management, from how to align your IT department with the mission of your organization to how to measure and present the results of your work. *The Power of IT* is a must-have for CIOs, IT managers, IT professionals, and MBA students everywhere, and is sure to become a much-utilized resource in company libraries, business management courses, and the personal collections of those who not only want to get IT done, but who also want to do IT right.

This is the revised edition of the first text book In English specially developed for training for IPMA-D and IPMA-C exams, now based on Version 4 of the ICB. In this 4th edition, the text has been restructured to align with the structure of the competence elements in the ICB version 4, divided into Practice competences, People competences and Perspective competences. Therefore, this book will be essential guidance and study book for everyone studying for the IPMA-D, IPMA-C and IPMA-B exams. Besides that, it is an extremely rich source book for those project managers that have committed themselves to a lifelong professional development. In addition, the book had to be applicable to groups of project managers originating from diverse cultures. For this reason, this is not a book that tells how a Westerner must behave in an Arab or an Asian country, but one that looks at the different subjects covered in the ICB, as seen from diverse cultural standpoints. Each chapter is based on the same structure: Key concepts, Introduction, Actions that lead to competence development, Self-assessment, Special topics, Assignments. Text boxes, additional to the main text, give additional explanation to the main text. An elaborate Index of terms allows that this book can be used as a highly up-to-date information source to all aspects of project management. Next to that all, a web-site is available with videos, discussion fora on specific topics, and the opportunity to discuss with the author.

Drawing on best practices identified at the Software Quality Institute and embodied in bodies of knowledge from the Project Management Institute, the American Society of Quality, IEEE, and the Software Engineering Institute, *Quality Software Project Management* teaches 34 critical skills that allow any manager to minimize costs, risks, and time-to-market. Written by leading practitioners Robert T. Futrell, Donald F. Shafer, and Linda I. Shafer, it addresses the entire project lifecycle, covering process, project, and people. It contains extensive practical resources-including downloadable checklists, templates, and forms.

CRM is an integrated information system that is used to plan, schedule and control the pre-sales and post-sales activities in an organization. This text is a manager's guide to

making the most of CRM techniques for enhancing customer service, sales force effectiveness and marketing strategy.

On behalf of the PROFES Organizing Committee, we are proud to present to you the proceedings of the 9th International Conference on Product-Focused Software Process Improvement (PROFES 2008) held in Frascati - Monteporzio Catone, Rome, Italy. Since 1999, PROFES has established itself as one of the recognized international process improvement conferences. The main theme of PROFES is professional software process improvement (SPI) motivated by product and service quality needs. Focussing on a product to be developed, PROFES 2008 addressed both quality engineering and management topics including processes, methods, techniques, tools, organizations, and enabling SPI. Both solutions found in practice and the relevant research results from academia were presented. Domains such as the automotive and mobile applications industry are growing rapidly, resulting in a strong need for professional development and improvement. Nowadays, the majority of embedded software is developed in collaboration, and distribution of embedded software development continues to increase. Thus, PROFES 2008 addressed different development modes, roles in the value chain, stakeholders' viewpoints, collaborative development, as well as economic and quality aspects. Agile development was included again as one of the themes. Since the beginning of the series of PROFES conferences, the purpose has been to bring to light the most recent findings and novel results in the area of process improvement, and to stimulate discussion among researchers, experienced professionals, and technology providers from around the world.

Practical approach to software measurement Contains hands-on industry experiences

"If you are looking for a complete treatment of business intelligence, then go no further than this book. Larissa T. Moss and Shaku Atre have covered all the bases in a cohesive and logical order, making it easy for the reader to follow their line of thought. From early design to ETL to physical database design, the book ties together all the components of business intelligence." --Bill Inmon, Inmon Enterprises This is the eBook version of the print title. The eBook edition contains the same content as the print edition. You will find instructions in the last few pages of your eBook that directs you to the media files. Business Intelligence Roadmap is a visual guide to developing an effective business intelligence (BI) decision-support application. This book outlines a methodology that takes into account the complexity of developing applications in an integrated BI environment. The authors walk readers through every step of the process--from strategic planning to the selection of new technologies and the evaluation of application releases. The book also serves as a single-source guide to the best practices of BI projects. Part I steers readers through the six stages of a BI project: justification, planning, business analysis, design, construction, and deployment. Each chapter describes one of sixteen development steps and the major activities, deliverables, roles, and responsibilities. All technical material is clearly expressed in tables, graphs, and diagrams. Part II provides five matrices that serve as references for the development process charted in Part I. Management tools, such as graphs illustrating the timing and coordination of activities, are included throughout the book. The authors conclude by crystallizing their many years of experience in a list of dos, don'ts, tips, and rules of thumb. Both the book and the methodology it describes are designed to adapt to the specific needs of individual stakeholders and organizations. The book directs business representatives, business sponsors, project managers, and technicians to the chapters that address their distinct responsibilities. The framework of the book allows organizations to begin at any step and enables projects to be scheduled and managed in a variety of ways. Business Intelligence Roadmap is a clear and comprehensive guide to negotiating the complexities inherent in the development of valuable business intelligence decision-support applications.

Function Point Analysis Measurement Practices for Successful Software Projects Addison-Wesley Professional

This book constitutes the refereed proceedings of the 7th International Conference on Product-Focused Software Process Improvement, PROFES 2006, held in Amsterdam, June 2006. The volume presents 26 revised full papers and 12 revised short papers together with 6 reports on workshops and tutorials. The papers constitute a balanced mix of academic and industrial aspects, organized in topical sections on decision support, embedded software and system development, measurement, process improvement, and more.

For over 20 years, Software Engineering: A Practitioner's Approach has been the best selling guide to software engineering for students and industry professionals alike. The sixth edition continues to lead the way in software engineering. A new Part 4 on Web Engineering presents a complete engineering approach for the analysis, design, and testing of Web Applications, increasingly important for today's students. Additionally, the UML coverage has been enhanced and significantly increased in this new edition. The pedagogy has also been improved in the new edition to include sidebars. They provide information on relevant software tools, specific work flow for specific kinds of projects, and additional information on various topics. Additionally, Pressman provides a running case study called "Safe Home" throughout the book, which provides the application of software engineering to an industry project. New additions to the book also include chapters on the Agile Process Models, Requirements Engineering, and Design Engineering. The book has been completely updated and contains hundreds of new references to software tools that address all important topics in the book. The ancillary material for the book includes an expansion of the case study, which illustrates it with UML diagrams. The On-Line Learning Center includes resources for both instructors and students such as checklists, 700 categorized web references, Powerpoints, a test bank, and a software engineering library-containing over 500 software engineering papers. TAKEAWY HERE IS THE

FOLLOWING:1. AGILE PROCESS METHODS ARE COVERED EARLY IN CH. 42. NEW PART ON WEB APPLICATIONS --5 CHAPTERS

The Certified Function Point Specialist Examination Guide provides a complete and authoritative review of the rules and guidelines prescribed in the release of version 4.3 of the Function Point Counting Practices Manual (CPM). Providing a fundamental understanding of the IFPUG Functional Size Measurement method, this is the ideal study guide for

the CFPS examination. The text: Includes time-tested tips on how to best prepare for the exam Provides a series of questions and answers at the end of each chapter with specific references to the latest version of the CPM Contains two CFPS practice exams to measure understanding and identify areas where more study is needed Active members of the Counting Practices Committee and a past president of the IFPUG supply time-tested insight on how to use the CPM manual effectively and efficiently during the exam. The two sample exams and detailed examples throughout the text help to ensure readers develop the comprehension required to attain certification the first time around. Following certification, this book is a valuable reference for applying the IFPUG method for sizing proficient software design, development, and deployment. Praise for the book: While there are a number of solid books on counting function points, this new book fills a gap in the function point literature by providing useful information on the specifics of becoming a certified function point counter. The authors are all qualified for the work at hand, and indeed have contributed to the function point counting methodology. —Capers Jones, President, Capers Jones & Associates LLC

Function point analysis is established internationally as a method for determining the scope and functional size of software from an assessment of the user requirements. The IFPUG “Function Point Counting Practices Manual” and the Nesma FPA counting practices manual “Definitions and Counting Guidelines for the Application of Function Point Analysis” both follow the “Albrecht” method and describe how to apply the method to implemented systems, software development and software enhancement. Application of the method to software enhancement is not well developed; other priorities have prevented a more considered treatment of this aspect of its application in the past. Function point analysis has been applied extensively to the development of new software. Its use in this respect is well established and is supported by a wealth of research and practical experience. It is now appropriate to explore in greater depth the application of FPA to software enhancement and maintenance. Users of software metrics need to know whether FPA can be successfully applied to software enhancement and, if so, in what way and within what constraints. Consideration of these issues led NESMA to form the working group on “FPA for Enhancement and Maintenance”. These guidelines apply FPA for enhancement projects, adjusting the regular weight of a function impacted by the enhancement project by an impact factor. The impact factor depends on the degree in which the function is enhanced by the project. The guidelines are universally applicable, so also using the IFPUG CPM 4.3 FPA guidelines as your basic FPA measure. Objectives The Guide is intended for anyone with an interest in the management of enhancements to an information system. The Guide describes an objective and replicable method for assessing the scope and size of an enhancement project. The method is objective in that the results obtained are independent of the person applying the method; the result obtained is bona fide in that two different people using the same guidelines obtain the same result. The method is replicable in that a particular outcome can be determined a priori, and the same outcome can be produced on the second and subsequent applications of the method. Intended Audience The Guide is intended for anyone who performs function point analysis and wants to measure the size of enhancement projects more precisely. It is assumed that the reader is familiar with the standard FPA method. Scope of the Research NESMA considered the application of FPA to software enhancement from the perspective of the standard function point analysis method. The result of this work, embodied in these guidelines, is a method applicable to software enhancement and testing that is strongly related to the standard FPA method. The term Enhancement Function Point Analysis (EFPA) is used to differentiate the method from the standard function point analysis method. Disclaimer The method has been tried in practice. However, NESMA does not claim that the method in its current form has been validated scientifically. Additional research and practical use is necessary to demonstrate the validity of the method. By offering this guide to the international functional software measurement community, NESMA wants to advance the application of function point analysis to enhancement projects and to broaden the understanding of measurement applied to software enhancement. NESMA is not responsible for any use of this method or for the results obtained from its application. Comments and suggestions for further improvement of this method may be sent to [office@nesma.org](mailto:office@nesma.org).

This volume constitutes the refereed proceedings of the Third International Conference on Contemporary Computing, IC3 2010, held in Noida, India, in August 2010.

This present volume describes some of the latest advances in the computer science field today. This current volume emphasizes information processing with chapters on artificial intelligence, data bases and software engineering. In particular it looks at the interfaces between AI and software development with chapters on how AI affects the development of correct programs, and conversely, how software engineering can affect the development of correct AI programs. Key Features: \* In-depth surveys and tutorials on new computer technology. \* Well-known authors and researchers in the field. \* Extensive bibliographies with most chapters. \* Impact of AI on software development and impact of software development on correct AI programs. \* What is the educational role of mathematics in the development of the next generation of computer professional? \* In-depth surveys and tutorials on new computer technology. \* Well-known authors and researchers in the field. \* Extensive bibliographies with most chapters. \* Impact of AI on software development and impact of software development on correct AI programs. \* What is the educational role of mathematics in the development of the next generation of computer professional?

The volume includes a set of selected papers extended and revised from the I2009 Pacific-Asia Conference on Knowledge Engineering and Software Engineering (KESE 2009) was held on December 19~ 20, 2009, Shenzhen, China. Volume 1 is to provide a forum for researchers, educators, engineers, and government officials involved in the general areas of Computer and Software Engineering to disseminate their latest research results and exchange views on the future research directions of these fields. 140 high-quality papers are included in the volume. Each paper has been peer-reviewed by at least 2 program committee members and selected by the volume editor Prof. Yanwen Wu. On

behalf of this volume, we would like to express our sincere appreciation to all of authors and referees for their efforts reviewing the papers. Hoping you can find lots of profound research ideas and results on the related fields of Computer and Software Engineering.

The Certified Function Point Specialist Examination Guide provides a complete and authoritative review of the rules and guidelines prescribed in the release of version 4.3 of the Function Point Counting Practices Manual (CPM). Providing a fundamental understanding of the IFPUG Functional Size Measurement method, this is the ideal study guide for the exam. This volume contains 85 papers presented at CSI 2013: 48th Annual Convention of Computer Society of India with the theme "ICT and Critical Infrastructure". The convention was held during 13th –15th December 2013 at Hotel Novotel Varun Beach, Visakhapatnam and hosted by Computer Society of India, Vishakhapatnam Chapter in association with Vishakhapatnam Steel Plant, the flagship company of RINL, India. This volume contains papers mainly focused on Data Mining, Data Engineering and Image Processing, Software Engineering and Bio-Informatics, Network Security, Digital Forensics and Cyber Crime, Internet and Multimedia Applications and E-Governance Applications.

Software legend Capers Jones reveals the tight links between software quality, ROI, and TCO, and help you optimize all three

- Strong empirical evidence that high quality generates strongly positive ROI and reduced TCO.
- Practical ways to prevent defects, and remove them in pre-test, test, and postrelease.
- Easy checklists for assessing and improving practice, plus insights into the costs/benefits of intervention.

By renowned software consultant Capers Jones. In this book, world-renowned software management expert Capers Jones and software quality guru Jitendra Subramanyam help development leaders and practitioners quantify and optimize the economic impact of quality throughout the software lifecycle - and then choose the highest value interventions to improve it. The authors introduce powerful empirical and field data on the ability of inspection, static analysis, and test methods to reduce up to 95% of defects, and discuss the business value of improvements of this magnitude. The Economics of Software Quality is based on proven best quality practices in IT departments and at world-leading integrators, embedded software companies, and systems software groups. Jones and Curtis bring together crucial new information on:

- Identifying and fixing the root causes of short- and long-term software cost inefficiencies.
- Predicting and measuring software defects and their quality impacts.
- Assessing current practices and identifying the best interventions.
- Calculating the ROI of quality during development and maintenance.
- Comparing and choosing methods of defect prevention.
- Selecting methods of defect removal, such as inspections and static analysis.
- Understanding and evaluating more than 20 kinds of software testing.
- Best practices for postrelease defect reporting and repair.
- Recognizing 'hazardous' metrics and their problems

The two volumes of this book collect high-quality peer-reviewed research papers presented in the International Conference on ICT for Sustainable Development (ICT4SD 2015) held at Ahmedabad, India during 3 – 4 July 2015. The book discusses all areas of Information and Communication Technologies and its applications in field for engineering and management. The main focus of the volumes are on applications of ICT for Infrastructure, e-Governance, and contemporary technologies advancements on Data Mining, Security, Computer Graphics, etc. The objective of this International Conference is to provide an opportunity for the researchers, academicians, industry persons and students to interact and exchange ideas, experience and expertise in the current trend and strategies for Information and Communication Technologies.

The idea of Business Rules has been around for a while. Simply put, a Business Rule is a statement that defines or constrains some aspect of the business. In practice they are meant to reduce or eliminate the delays, waste, and frustration associated with the IT department having to be involved with almost every action affecting an organization's information systems. The advent of Web services has created renewed interest in them. There are now several well established rules-based products that have demonstrated the effectiveness of their use. But until now there has not been a definitive guide to Business Rules. Ron Ross, considered to be the father of Business Rules, will help organizations apply this powerful solution to their own computer system problems. This book is intended to be the first book that anyone from an IT manager to a business manager will read to understand what Business Rules are, and what how they can be applied to their own situation.

Going where no book on software measurement and metrics has previously gone, this critique thoroughly examines a number of bad measurement practices, hazardous metrics, and huge gaps and omissions in the software literature that neglect important topics in measurement. The book covers the major gaps and omissions that need to be filled if data about software development is to be useful for comparisons or estimating future projects. Among the more serious gaps are leaks in reporting about software development efforts that, if not corrected, can distort data and make benchmarks almost useless and possibly even harmful. One of the most common leaks is that of unpaid overtime. Software is a very labor-intensive occupation, and many practitioners work very long hours. However, few companies actually record unpaid overtime. This means that software effort is underreported by around 15%, which is too large a value to ignore. Other sources of leaks include the work of part-time specialists who come and go as needed. There are dozens of these specialists, and their combined effort can top 45% of total software effort on large projects. The book helps software project managers and developers uncover errors in measurements so they can develop meaningful benchmarks to estimate software development efforts. It examines variations in a number of areas that include: Programming languages Development methodology Software reuse Functional and nonfunctional requirements Industry type Team size and experience Filled with tables and charts, this book is a starting point for making measurements that reflect current software development practices and realities to arrive at meaningful benchmarks to guide successful software projects.

Annotation This book constitutes the thoroughly refereed post-proceedings of the International Workshop on Software Measurement, IWSM-Mensura 2007, held in Palma de Mallorca, Spain, in November 2007. The 16 revised full papers presented were carefully reviewed and selected for inclusion in the book. The papers deal with aspects of software measurement like function-points measurement, effort and cost estimates, prediction, industrial experiences in software measurement, planning and implementing measurement, measurement-based software process improvement, best practices in software measurement, usability and user interaction measurement, measurement of open source projects, teaching and learning software measurement as well as new trends and ontologies for software measurement.

Software is the essential enabler for the new economy and science. It creates new markets and new directions for a more reliable, flexible, and robust society. It empowers the exploration of our world in ever more depth. However, software often falls short behind our expectations. Current software methodologies, tools and techniques remain expensive and not yet reliable for a highly changeable and evolutionary market. Many approaches have been proven only as case-by-case oriented methods. This book presents a number of new trends and theories in the direction in which we believe software science and engineering may develop to transform the role of software and science in tomorrow's information society.

Designed to conform to the ISO/IEC standard 14143, the Common Software Measurement International Consortium (COSMIC) Function Point method has become the major estimation technique based on international standards for building software-intensive systems. COSMIC Function Points: Theory and Advanced Practices supplies a cutting-edge look at current a

Gathering customer requirements is a key activity for developing software that meets the customer's needs. A concise and practical overview of everything a requirements

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.

This book constitutes the refereed proceedings of two joint events - the International Workshop on Software Measurement, IWSM 2009 and the International Conference on Software Process and Product Measurement, Mensura 2009, held in Amsterdam, The Netherlands, in November 2009. The 24 revised full papers presented were carefully reviewed and selected from numerous submissions for inclusion in the book. This book considers issues such as the applicability of measures and metrics to software, the efficiency of measurement programs in industry and the theoretical foundations of software engineering.

Function Point Analysis: Measurement Practices for Successful Software Projects is a comprehensive presentation of the principles of function point analysis (FPA) and a guide to its effective use in managing the development and deployment of software. Written for both information technology (IT) practitioners and managers, it describes how to use this proven-but-underutilized software-sizing metric to achieve successful software projects. Completely up-to-date, the book introduces the latest rules and guidelines released in the International Function Point Users Group (IFPUG) Counting Practices Manual 4.1. Function Point Analysis presents fundamental counting techniques for basic-to-advanced technologies. It explains the calculations for determining function point size, an indication of a software application's overall functionality and complexity. Moving beyond mechanics, the book features the most common uses of FPA and reveals experience-based techniques for applying the methodology with success. The book covers such important topics as: An overview of FPA for the IT executive A description of software measurement, relating size to other software metrics Sizing data and transactional functions The application of general system characteristics Counting object-oriented, Web-based, client-server, and GUI applications Becoming a Certified Function Point Specialist (CFPS), using a practice exam The use of FPA for accurate project estimating, development and maintenance outsourcing, and performance productivity baselining FPA automation tools, including function point repository tools and function point- based project estimation tools The role of FPA in standardizing industry benchmarking data Numerous detailed examples and case studies demonstrate the FPA methodology in action. As a reference, tutorial, and practical guide, Function Point Analysis: Measurement Practices for Successful Software Projects raises the level of awareness and understanding of FPA and its role in bringing proven quality standards to the software development industry. 0201699443B04062001

Software development has been a troubling since it first started. There are seven chronic problems that have plagued it from the beginning: Incomplete and ambiguous user requirements that grow by >2% per month. Major cost and schedule overruns for large applications > 35% higher than planned. Low defect removal efficiency (DRE) Cancelled projects that are not completed: > 30% above 10,000 function points. Poor quality and low reliability after the software is delivered: > 5 bugs per FP. Breach of contract litigation against software outsource vendors. Expensive maintenance and enhancement costs after delivery. These are endemic problems for software executives, software engineers and software customers but they are not insurmountable. In Software Development Patterns and Antipatterns, software engineering and metrics pioneer Capers Jones presents technical solutions for all seven. The solutions involve moving from harmful patterns of software development to effective patterns of software development. The first section of the book examines common software development problems that have been observed in many companies and government agencies. The data on the problems comes from consulting studies, breach of contract lawsuits, and the literature on major software failures. This section considers the factors involved with cost overruns, schedule delays, canceled projects, poor quality, and expensive maintenance after deployment. The second section shows patterns that lead to software success. The data comes from actual companies. The section's first chapter on Corporate Software Risk Reduction in a Fortune 500 company was based on a major telecom company whose CEO was troubled by repeated software failures. The other chapters in this section deal with methods of achieving excellence, as well as measures that can prove excellence to C-level executives, and with continuing excellence through the maintenance cycle as well as for software development.

The widespread deployment of millions of current and emerging software applications has placed software economic studies among the most critical of any form of business analysis. Unfortunately, a lack of an integrated suite of metrics makes software economic analysis extremely difficult. The International Function Point Users Group (IFPUG), a nonpro

Provides everything needed to implement Mk II FPA, which was previously available only under license. Mk II FPA represents a new generation of Function Point Analysis. It provides a set of software measurement techniques suitable for sizing and estimating business applications software. This is a fully integrated and calibratable method for estimating effort, time and manpower required for software development projects, taking into account the concepts of risk analysis. Written by the originator of the method, provides the complete definition, case studies and practical tips on implementation.

An effective, quantitative approach for estimating and managing software projects How many people do I need? When will the quality be good enough for commercial sale? Can this really be done in two weeks? Rather than relying on instinct, the authors of Software Measurement and Estimation offer a new, tested approach that includes the quantitative tools, data, and knowledge needed to make sound estimations. The text begins with the foundations of measurement, identifies the appropriate metrics, and then focuses on techniques and tools for estimating the effort needed to reach a given level of quality and performance for a software project. All the factors that impact estimations are thoroughly examined, giving you the tools needed to regularly adjust and improve your estimations to complete a project on time, within budget, and at an expected level of quality. This text includes several features that have proven to be successful in making the material accessible and easy to master: \* Simple, straightforward style and logical presentation

and organization enables you to build a solid foundation of theory and techniques to tackle complex estimations \* Examples, provided throughout the text, illustrate how to use theory to solve real-world problems \* Projects, included in each chapter, enable you to apply your newfound knowledge and skills \* Techniques for effective communication of quantitative data help you convey your findings and recommendations to peers and management Software Measurement and Estimation: A Practical Approach allows practicing software engineers and managers to better estimate, manage, and effectively communicate the plans and progress of their software projects. With its classroom-tested features, this is an excellent textbook for advanced undergraduate-level and graduate students in computer science and software engineering. An Instructor Support FTP site is available from the Wiley editorial department.

[Copyright: a0bc2d129ae6c6808a9989ed47454a68](#)