Requirements Engineering Processes And Techniques Worldwide Series In Computer Science

Gathering customer requirements is a key activity for developing software that meets the customer's needs. A concise and practical overview of everything a requirement's analyst needs to know about establishing customer requirements, this first-of-its-kind book is the perfect desk guide for systems or software development work. The book enables professionals to identify the real customer requirements for their projects and control changes and additions to these requirements. This unique resource helps practitioners understand the importance of requirements, leverage effective requirements practices, and better utilize resources. The book also explains how to strengthen interpersonal relationships and communications which are major contributors to project effectiveness. Moreover, analysts find clear examples and checklists to help them implement best practices.
This book constitutes the refereed proceedings of the 13th International Conference on Evaluation of Novel Approaches to Software Engineering, ENASE 2018, held in Funchal, Madeira, Portugal, in March 2018. The 17 revised full papers and 5 revised short papers presented were carefully reviewed and selected from 95 submissions. The papers are organized in topical sections on service science and business information systems and software engineering.
Most processed materials retain a memory of their production process at the molecular level. Subtle changes in production—such as variations in temperature or the presence of impurities—can impart performance benefits or drawbacks to individual batches of products. Some product developers have taken advantage of this process dependency to tailor properties to specific customer needs. In other cases, poorly engineered processes have resulted in serious failures. Process Techniques for Engineering High-Performance Materials explores practical strategies to guide you in systematically developing, improving, and producing engineered materials. The book describes an R&D approach that is common to many material types, from polymers, biochemicals, metal alloys, and composites to coatings, ceramics, elastomers, and processed foods. Throughout, hundreds of examples illustrate successes and disasters in the history of materials development. These examples clearly show how product management and development tactics are constrained by the nature of the production process and the strategy of the company. The author offers practical advice on how to: Foster creativity in an industrial environment and avoid factors that unintentionally suppress technical innovation Develop products when the properties of the product are highly dependent on processing variables Avoid the inevitable scale-up problems that occur on process-dependent materials Get the most out of expensive trial work in a production plant environment Combine products into a systems solution to customer problems Highlighting important rules for product development, this book helps you better understand the mechanics of engineering processed materials and how to adjust your processes to improve performance.
Requirements engineering is the process of discovering, documenting and managing the requirements for a computer-based system. The goal of requirements engineering is to produce a set of system requirements which, as far as possible, is complete, consistent, relevant and reflects what the customer actually wants. Although this ideal is probably unattainable, the use of a systematic approach based on engineering principles leads to better requirements than the informal approach which is still commonly used. This book presents a set of guidelines which reflect the best practice in requirements engineering. Based on the authors' experience in research and in software and systems development, these guidelines explain in an easy-to-understand way how you can improve your requirements engineering processes. The guidelines are applicable for any type of application and, in general, apply to both systems and software engineering. The guidelines here range from simple 'common sense' to those which propose the introduction of complex new methods. The guidelines and process improvement schemes have been organised so that you can pick and choose according to your problems, goals and available budget. There are few dependencies between guidelines so you can introduce them in any order in your organisation. Guidelines presented in the book are consistent with ISO 9000 and CMM are ranked with cost/benefit analysis give implementation advice can be combined and applied to suit your organisation's needs are supported by a web page pointing to RE tools and resources
International Conference, ASEA 2010, Held as Part of the Future Generation Information Technology Conference, FGIT 2010, Jeju Island, Korea, December 13-15, 2010. Proceedings
Methods, Techniques and Tools to Support Situation-Specific Requirements Engineering Processes
The Requirements Engineering Handbook
Processes and Techniques
A Good Practice Guide Set
The Toyota Product Development System
Many software developers often confuse requirements engineering with software specification and, as a result, build unusable systems, despite meeting specifications. Bringing together all the techniques needed by the modern software developer, here is a practical handbook to requirements engineering and systems specification for developers building systems within a service oriented architecture. It introduces the concepts of SOA and relevant standards and technology, such as Web services and ESBs, and then presents a range of modern requirements engineering techniques.
Efficient communication, collaboration, data exchange and sharing are crucial for the success of today's many multi-disciplinary and interdisciplinary work environments. The implementation of computer integrated environments (CIE) is increasing and the requirements engineering necessary for the development of these systems is critical. Requirements Engineering for Computer Integrated Environments in Construction provides an important source of information and advice for organizations needing bridge the gap between users and developers in the implementation of computer integrated solutions as well as for consultants providing services to their clients in CIE development. The framework explained in the book is comprehensive and accessible. It provides a set of tools and techniques enabling readers to design, manage and deliver effective CIE-type systems in any complex organization - from construction and manufacturing to the information technology and service sectors. Construction companies for example, can use the framework provided to implement building information modelling to manage the diagnosis, planning, implementation and monitoring stages in BIM adoption. Based on real experiences and lessons learned from many years of system development, this book offers an excellent resource for researchers and postgraduate students interested in CIE development for all multi-disciplinary and interdisciplinary work environments.
Written for those who want to develop their knowledge of requirements engineering process, whether practitioners or students. Using the latest research and driven by practical experience from industry, this book gives useful hints to practitioners on how to write and structure requirements. - Explains the importance of Systems Engineering and the creation of effective solutions to problems - Describes the underlying representations used in system modeling - data flow diagrams; statecharts; object-oriented approaches - Covers a generic multi-layer requirements process - Discusses the key elements of effective requirements management - Includes a chapter written by one of the developers of rich traceability - Introduces an overview of DOORS - a software tool which serves as an enabler of a requirements management process Additional material and links are available at: http://www.requirementsengineering.info "In recent years we have been finding ourselves with a shortage of engineers with good competence in requirements engineering. Perhaps this is in part because requirements management tool vendors have persuaded management that a glitzy tool will solve their requirements engineering problems. Of course, the tools only make it possible for engineers who understand requirements engineering to do a better job. This book goes a long way towards building a foundational set of skills in requirements engineering, so that today's powerful tools can be used sensibly. Of particular value is a recognition of the place software requirements have within the system context, and of ways for dealing with that sensitive connection. This is an important book. I think its particular value in industry will be to bring the requirements engineers and their internal customers to a practical common understanding of what can and should be achieved." (Byron Purves, Technical Fellow, The Boeing Company)
As requirements engineering continues to be recognized as the key to on-time and on-budget delivery of software and systems projects, many engineering programs have made requirements engineering mandatory in their curriculum. In addition, the wealth of new software tools that have recently emerged is empowering practicing engineers to improve their requirements engineering habits. However, these tools are not easy to use without appropriate training. Filling this need, Requirements Engineering for Software and Systems, Second Edition has been vastly updated and expanded to include about 30 percent new material. In addition to new exercises and updated references in every chapter, this edition updates all chapters with the latest applied research and industry practices. It also presents new material derived from the experiences of professors who have used the text in their classrooms. Improvements to this edition include: An expanded introductory chapter with extensive discussions on requirements analysis, agreement, and consolidation An expanded chapter on requirements engineering for Agile methodologies An expanded chapter on formal methods with new examples An expanded section on requirements traceability An updated and expanded section on requirements engineering tools New exercises including ones suitable for research projects Following in the footsteps of its bestselling predecessor, the text illustrates key ideas associated with requirements engineering using extensive case studies and three common example systems: an airline baggage handling system, a point-of-sale system for a large pet store chain, and a system for a smart home. This edition also includes an example of a wet well pumping system for a wastewater treatment station. With a focus on software-intensive systems, but highly applicable to non-software systems, this text provides a probing and comprehensive review of recent developments in requirements engineering in high integrity systems.
Software Requirements
Requirements Engineering and Rapid Development
Thorny Issues and Practical Advice
An Innovative and Creative Process Model
Encyclopedia of Software Engineering Three-Volume Set (Print)
Advances in Software Engineering
Requirements engineering is the process of eliciting individual stakeholder requirements and needs and developing them into detailed, agreed requirements documented and specified in such a way that they can serve as the basis for all other system development activities. In this textbook, Klaus Pohl provides a comprehensive and well-structured introduction to the fundamentals, principles, and techniques of requirements engineering. He presents approved techniques for eliciting, negotiating and documenting as well as validating, and managing requirements for software-intensive systems. The various aspects of the process and the techniques are illustrated using numerous examples based on his extensive teaching experience and his work in industrial collaborations. His presentation aims at professionals, students, and lecturers in systems and software engineering or business applications development. Professionals such as project managers, software architects, systems analysts, and software engineers will benefit in their daily work from the didactically well-presented combination of validated procedures and industrial experience. Students and lecturers will appreciate the comprehensive description of sound fundamentals, principles, and techniques, which is completed by a huge commented list of references for further reading. Lecturers will find additional teaching material on the book's website, www.requirements-book.com.
Presents a practical object-oriented modelling approach that provides software developers with a single technique with which to model all aspects of the modern business, from the organizational mission right through to user performance and business objectives.
No matter how much instruction you've had on managing software requirements, there's no substitute for experience. Too often, lessons about requirements engineering processes lack the no-nonsense guidance that supports real-world solutions. Complementing the best practices presented in his book, Software Requirements, Second Edition, requirements engineering authority Karl Wiegers tackles even more of the real issues head-on in this book. With straightforward, professional advice and practical solutions based on actual project experiences, this book answers many of the tough questions raised by industry professionals. From strategies for estimating and working with customers to the nuts and bolts of documenting requirements, this essential companion gives developers, analysts, and managers the cosmic truths that apply to virtually every software development project. Discover how to: • Make the business case for investing in better requirements practices • Generate estimates using three specific techniques • Conduct inquiries to elicit meaningful business and user requirements • Clearly document project scope • Implement use cases, scenarios, and user stories effectively • Improve inspections and peer reviews • Write requirements that avoid ambiguity
An analysis of product development. Systems. Product development. Requirements specifications. Requeriments engineering methods. ISAC change analysis and activity study. Information strategy planning. The entity-relationship approach I: models. The entity-relationship approach II: methods. Structured analysis I: models. Structured analysis II: methods. Jackson system development I: models. Jackson system development II: methods. Method integration and strategy selection. A framework for requirements engineering I: models. A framework for requirements engineering II: methods. Development strategies. Selecting a development strategy. Answers to select exercises. Cases. An outline of some development methods.
Rural Youth at the Crossroads
Handbook of Research on Modern Systems Analysis and Design Technologies and Applications
Transitional Societies in Central Europe and Beyond
Engineering and Managing Software Requirements
A Guide to the Project Management Body of Knowledge (PMBOK® Guide) – Seventh Edition and The Standard for Project Management (BRAZILIAN PORTUGUESE)
Requirements Engineering for Software and Systems, Second Edition
"This book provides a compendium of terms, definitions, and explanations of concepts in various areas of systems and design, as well as a vast collection of cutting-edge research articles from the field's leading experts"--Provided by publisher.
Written for those who want to develop their knowledge of requirements engineering process, whether practitioners or students. Using the latest research and driven by practical experience from industry, Requirements Engineering gives useful hints to practitioners on how to write and structure requirements. It explains the importance of Systems Engineering and the creation of effective solutions to problems. It describes the underlying representations used in system modeling and introduces the UML2, and considers the relationship between requirements and modeling. Covering a generic multi-layer requirements process, the book discusses the key elements of effective requirements management. The latest version of DOORS (Version 7) - a software tool which serves as an enabler of a requirements management process - is also introduced to the reader here. Additional material and links are available at: http://www.requirementsengineering.info
This book looks at how to design complex products that have many components with intricate relationships and requirements. It also discusses how to manage processes involved in their lifecycle, from concept generation to disposal, with the objectives of increasing customer satisfaction, quality, safety, and usability and meeting program timings and budgets. Part I covers systems engineering concepts, issues, and bases in product design. Part II examines quality, human factors, and safety engineering approaches. Part III describes important tools and methods used in these fields, and Part IV includes other relevant integration topics, interesting applications of useful techniques, and observations from a few "landmark" product development case studies.
Welcome to the Proceedings of the 2010 International Conference on Advanced Software Engineering and Its Applications (ASEA 2010) – one of the partnering events of the Second International Mega-Conference on Future Generation Information Technology (FGIT 2010). ASEA brings together researchers from academia and industry as well as practitioners to share ideas, problems and solutions relating to the multifaceted aspects of software engineering, including its links to computational sciences, mathematics and information technology. In total, 1,630 papers were submitted to FGIT 2010 from 30 countries, which includes 175 papers submitted to ASEA 2010. The submitted papers went through a rigorous reviewing process: 395 of the 1,630 papers were accepted for FGIT 2010, while 40 papers were accepted for ASEA 2010. Of the 640 papers were selected for the special FGIT 2010 volume published by Springer in the LNCS series. 32 papers are published in this volume, and 2 papers were withdrawn due to technical reasons. We would like to acknowledge the great effort of the ASEA 2010 International Advisory Board and members of the International Program Committee, as well as all the organizations and individuals who supported the idea of publishing this volume of proceedings, including SERSC and Springer. Also, the success of the conference would not have been possible without the huge support from our sponsors and the work of the Chairs and Organizing Committee.
An Object-oriented Approach
Requirements Engineering for Safety-Critical Systems
Frameworks for Understanding
SREP'05
Process Techniques for Engineering High-Performance Materials
Fundamentals, Principles, and Techniques
*Developing today's complex systems requires more than just good software engineering solutions. Many are faced with complex systems projects, incomplete or inaccurate requirements, canceled projects, or cost overruns, and have their systems' users in revolt and demanding more. Others want to build user-centric systems, but fear managing the process. This book describes an approach that brings the engineering process together with human performance engineering and business process reengineering. The result is a manageable user-centered process for gathering, analyzing, and evaluating requirements that can vastly improve the success rate in the development of medium-to-large size systems and applications. Unlike some texts that are primarily conceptual, this volume provides guidelines, "how-to" information, and examples, enabling the reader to quickly apply the process and techniques to accomplish the following goals: * define high quality requirements, * enhance productive client involvement, * help clients maintain competitiveness, * ensure client buy-in and support throughout the process, * reduce missing functionality and corrections, and * improve user satisfaction with systems. This volume clearly details the role of user-centered requirements and knowledge acquisition within Scenario-Based Engineering Process (SEP) and identifies SEP products and artifacts. It assists project personnel in planning and managing effective requirements activities, including managing risks, avoiding common problems with requirements elicitation, organizing project participants and tools, and managing the logistics. Guidelines are provided for the following: selecting the right individual and group techniques to elicit scenarios and requirements from users; subject matter experts, or other shareholders; and ensuring engineers or analysts have the necessary skills.*
Requirements engineering tasks have become increasingly complex. In order to ensure a high level of knowledge and competency among requirements engineers, the International Requirements Engineering Board (IREB) developed a standardized qualification called the Certified Professional for Requirements Engineering (CPRE). The certification defines the practical skills of a requirements engineer on various training levels. This book is designed for self-study and covers the curriculum for the Certified Professional for Requirements Engineering Foundation Level exam as defined by the IREB. The 2nd edition has been thoroughly revised and is aligned with the curriculum Version 2.2 of the IREB. In addition, some minor corrections to the 1st edition have been included. About IREB:The mission of the IREB is to contribute to the standardization of further education in the fields of business analysis and requirements engineering by providing syllabi and examinations, thereby achieving a higher level of applied requirements engineering. The IRE Board is comprised of a balanced mix of independent, internationally recognized experts in the fields of economy, consulting, research, and science. The IREB is a non-profit corporation. For more information visit www.certified-re.com.
Learn how to attract and keep successful software professionals Software Engineering Quality Practices describes how software engineers and the managers that supervise them can develop quality software in an effective, efficient, and professional manner. This volume conveys practical advice quickly and clearly while avoiding the dogma that surrounds the software profession. It concentrates on what the real requirements of a system are, what constitutes an appropriate solution, and how you can ensure that the realized solution fulfills the desired qualities of relevant stakeholders. The book also discusses how successful organizations attract and keep people who are capable of building high-quality systems. The author succinctly describes the nature and fundamental principles of design and incorporates them into an architectural framework, enabling you to apply the framework to the development of quality software for most applications. The text also analyzes engineering requirements, identifies poor requirements, and demonstrates how bad requirements can be transformed via several important quality practices.
A novel, model-driven approach to security requirements engineering that focuses on socio-technical systems rather than merely technical systems. Security requirements engineering is especially challenging because designers must consider not just the software under design but also interactions among people, organizations, hardware, and software. Taking this broader perspective means designing a secure socio-technical system rather than a merely technical system. This book presents a novel, model-driven approach to designing secure socio-technical systems. It introduces the Socio-Technical Modeling Language (STS-ML) and presents a freely available software tool, STS-Tool, that supports this design approach through graphical modeling, automated reasoning capabilities to verify the models constructed, and the automatic derivation of security requirements documents. After an introduction to security requirements engineering and an overview of computer and information security, the book presents the STS-ML modeling language, introducing the modeling concepts used, explaining how to use STS-ML within the STS method for security requirements, and providing guidelines for the creation of models. The book then puts the STS approach into practice, introducing the STS-Tool and presenting two case studies from industry: an online collaborative platform and an e-Government system. Finally, the book considers other methods that can be used in conjunction with the STS method or that constitute an alternative to it. The book is suitable for course use or as a reference for practitioners. Exercises, review questions, and problems appear at the end of each chapter.
Quality Engineering Techniques
Requirements Engineering for Computer Integrated Environments in Construction
The Scenario-based Engineering Process
Security Requirements Engineering
User-centered Requirements
Requirements Engineering Fundamentals
As future generation information technology (FGIT) becomes specialized and fr- mented, it is easy to lose sight that many topics in FGIT have common threads and, because of this, advances in one discipline may be transmitted to others. Presentation of recent results obtained in different disciplines encourages this interchange for the advancement of FGIT as a whole. Of particular interest are hybrid solutions that c- bine ideas taken from multiple disciplines in order to achieve something more signi- cant than the sum of the individual parts. Through such hybrid philosophy, a new principle can be discovered, which has the propensity to propagate throughout mul- faceted disciplines. FGIT 2009 was the first mega-conference that attempted to follow the above idea of hybridization in FGIT in a form of multiple events related to particular disciplines of IT, conducted by separate scientific committees, but coordinated in order to expose the most important contributions. It included the following international conferences: Advanced Software Engineering and Its Applications (ASEA), Bio-Science and Bio- Technology (BSBT), Control and Automation (CA), Database Theory and Appli- tion (DTA), Disaster Recovery and Business Continuity (DRBC; published indepe- ently), Future Generation Communication and Networking (FGCN) that was c- bined with Advanced Communication and Networking (ACN), Grid and Distributed Computing (GDC), Multimedia, Computer Graphics and Broadcasting (MulGraB), Security Technology (SecTech), Signal Processing, Image Processing and Pattern Recognition (SIP), and u- and e-Service, Science and Technology (UNESST).
Now in its third edition, this classic guide to software requirements engineering has been fully updated with new topics, examples, and guidance. Two leaders in the requirements community have teamed up to deliver a contemporary set of practices covering the full range of requirements development and management activities on software projects. Describes practical, effective, field-tested techniques for managing the requirements engineering process from end to end. Provides examples demonstrating how requirements "good practices" can lead to fewer change requests, higher customer satisfaction, and lower development costs. Fully updated with contemporary examples and many new practices and techniques. Describes how to apply effective requirements practices to agile projects and numerous other special project situations. Targeted to business analysts, developers, project managers, and other software project stakeholders who have a general understanding of the software development process. Shares the insights gleaned from the authors' extensive experience delivering hundreds of software-requirements training courses, presentations, and webinars. New chapters are included on specifying data requirements, writing high-quality functional requirements, and requirements reuse. Considerable depth has been added on business requirements, elicitation techniques, and nonfunctional requirements. In addition, new chapters recommend effective requirements practices for various special project situations, including enhancement and replacement, packaged solutions, outsourced, business process automation, analytics and reporting, and embedded and other real-time systems projects.
This textbook lays the foundations for System-of-Systems Requirements Engineering and Requirements Management practices, principles, technique, and processes. It provides a comprehensive treatment of requirements engineering, an integral part of Multidisciplinary Systems Engineering. The book takes the student/reader though the entire process of documenting, analyzing, tracing, prioritizing, and managing requirements, and then goes on the describe controlling and communicating requirement change throughout the system development lifecycle. The authors discuss the role of requirements management in support of other requirements engineering processes; describe the principal requirements engineering activities and their relationships; introduces techniques for requirements elicitation and analysis and describes requirements validation and the role of requirements reviews; and discusses the role of requirements management in support of other requirements engineering processes. A full suite of classroom material is provided including exercises, assignments, and PowerPoint slides.
Featuring chapters by an international group of scholars and academics, Rural Youth at the Crossroads discusses the challenges and contexts facing youth from rural communities in countries with legacies of socialism undergoing social, political, and economic transition. The chapters employ a variety of sources and approaches to examine rural youth outcomes, and the well-being and sustainability of rural areas. The book focuses particularly on career and educational goals, the often contradictory relations between rural schools and communities, majority-minoritized group relations, community engagement, and political attitudes. Individual chapters examine these questions and dynamics within Croatia, Czechia, Hungary, Romania, Russia, Serbia, and Vietnam. In total the volume represents a unique and timely comparative discussion of the relationship between youth and rural development within transitional societies, and the challenges and opportunities for enhancing the well-being and sustainability of rural communities. Aimed at informing strategies to revitalize rural social space, this book is targeted towards social scientists with interest in sociology and rural sociology, demography, education, youth development, community/regional development, rurality, public policy, and identity formation in transitional contexts. As such, this book will have international appeal to researchers, educators, and policymakers in transitional countries, and to those interested in these topics, regions, and communities.
New Horizons in Design Science: Broadening the Research Agenda
International Conference on Advanced Software Engineering and Its Applications, ASEA 2009 Held as Part of the Future Generation Information Technology Conference, FGIT 2009, Jeju Island, Korea, December 10-12, 2009. Proceedings
Integrating People, Process, and Technology
Requirements Engineering
Getting Requirements Right
Requirements Engineering Processes and Techniques with Requirements Engineering
PMBOK& ® Guide is the go-to resource for project management practitioners. The project management profession has significantly evolved due to emerging technology, new approaches and rapid market changes. Reflecting this evolution, The Standard for Project Management enumerates 12 principles of project management and the PMBOK& ® Guide & – Seventh Edition is structured around eight project performance domains.This edition is designed to address practitioners' current and future needs and to help them be more proactive, innovative and nimble in enabling desired project outcomes.This edition of the PMBOK& ® Guide: · Reflects the full range of development approaches (predictive, adaptive, hybrid, etc.); · Provides an entire section devoted to tailoring the development approach and processes; · Includes an expanded list of models, methods, and artifacts; · Focuses on not just delivering project outputs but also enabling outcomes; and · Integrates with PMIstandards+™ for information and standards application content based on project type, development approach, and industry sector.
"Mastering the Requirements Process: Getting Requirements Right" sets out an industry-proven process for gathering and verifying requirements, regardless of whether you work in a traditional or agile development environment. In this sweeping update of the bestselling guide, the authors show how to discover precisely what the customer wants and needs, in the most efficient manner possible.
The book discusses the essential elements of requirements engineering applied to Safety Critical Systems such as the relationship between safety/hazard analysis and requirements specification, a balance between conservative and agile methodologies, the role of requirements engineering in safety cases, and requirements engineering maturity model.
Requirements engineering is the process by which the requirements for software systems are gathered, analyzed, documented, and managed throughout their complete lifecycle. Traditionally it has been concerned with technical goals for, functions of, and constraints on software systems. Aurum and Wohlin, however, argue that it is no longer appropriate for software systems professionals to focus only on functional and non-functional aspects of the intended system and to somehow assume that organizational context and needs are outside their remit. Instead, they call for a broader perspective in order to gain a better understanding of the interdependencies between enterprise stakeholders, processes, and software systems, which would in turn give rise to more appropriate techniques and higher-quality systems. Following an introductory chapter that provides an exploration of key issues in requirements engineering, the book is organized in three parts. Part 1 presents surveys of state-of-the art requirements engineering process research along with critical assessments of existing models, frameworks and techniques. Part 2 addresses key areas in requirements engineering, such as market-driven requirements engineering, goal modeling, requirements ambiguity, and others. Part 3 concludes the book with articles that present empirical evidence and experiences from practices in industrial projects. Its broader perspective gives this book its distinct appeal and makes it of interest to both researchers and practitioners, not only in software engineering but also in other disciplines such as business process engineering and management science.
Designing Secure Socio-Technical Systems
Requirements Engineering: Laying a Firm Foundation
Mastering the Requirements Process
Software Engineering Quality Practices
13th International Conference, ENASE 2018, Funchal, Madeira, Portugal, March 23 – 24, 2018, Revised Selected Papers
This book focuses on various topics related to engineering and management of requirements, in particular elicitation, negotiation, prioritisation, and documentation (whether with natural languages or with graphical models). The book provides methods and techniques that help to characterise, in a systematic manner, the requirements of the intended engineering system. It was written with the goal of being adopted as the main text for courses on requirements engineering, or as a strong reference to the topics of requirements in courses with a broader scope. It can also be used in vocational courses, for professionals interested in the software and information systems domain. Readers who have finished this book will be able to: - establish and plan a requirements engineering process within the development of complex engineering systems; - define and identify the types of relevant requirements in engineering projects; - choose and apply the most appropriate techniques to elicit the requirements of a given system; - conduct and manage negotiation and prioritisation processes for the requirements of a given engineering system; - document the requirements of the system under development, either in natural language or with graphical and formal models. Each chapter includes a set of exercises.
Requirements Engineering Processes and Techniques Why this book was written The value of introducing requirements engineering to trainee software engineers is to equip them for the real world of software and systems development. What is involved in Requirements Engineering? As a discipline, newly emerging from software engineering, there are a range of views on where requirements engineering starts and finishes and what it should encompass. This book offers the most comprehensive coverage of the requirements engineering process to date - from initial requirements elicitation through to requirements validation. How and Which methods and techniques should you use? As there is no one catch-all technique applicable to all types of system, requirements engineers need to know about a range of different techniques. Tried and tested techniques such as data-flow and object-oriented models are covered as well as some promising new ones. They are all based on real systems descriptions to demonstrate the applicability of the approach. Who should read it? Principally written for senior undergraduate and graduate students studying computer science, software engineering or systems engineering, this text will also be helpful for those in industry new to requirements engineering. Accompanying Website: http: //www.comp.lancs.ac.uk/computing/resources/re Visit our Website: http://www.wiley.com/college/wws
This book has two audiences: the practising Requirements Engineer and the advanced student of software engineering or computer science. The book is unique because it introduces latest research results and, at the same time, presents highly practical and useful techniques. This book is complementary to texts on software requirements and system Requirements Engineering because of its focus on the problems caused by the fact that Requirements Engineering involves people. Throughout this book the author has sought to introduce the reader to a number of techniques which have not previously been included within mainstream computer science literature. The techniques chosen have been shown to work in practice in both commercial and research pro jects. The appendices contain step-by-step guides to particular tech niques; sufficient detail is provided for readers to try the techniques for themselves. The problem faced by the Requirements Engineer is complex, it con cerns meeting the needs of the customer and at the same time meeting the needs of the designer.
Software engineering requires specialized knowledge of a broad spectrum of topics, including the construction of software and the platforms, applications, and environments in which the software operates as well as an understanding of the people who build and use the software. Offering an authoritative perspective, the two volumes of the Encyclopedia of Software Engineering cover the entire multidisciplinary scope of this important field. More than 200 expert contributors and reviewers from industry and academia across 21 countries provide easy-to-read entries that cover software requirements, design, construction, testing, maintenance, configuration management, quality control, and software engineering management tools and methods. Editor Phillip A. Laplante uses the most universally recognized definition of the areas of relevance to software engineering, the Software Engineering Body of Knowledge (SWEBOK®), as a template for organizing the material. Also available in an electronic format, this encyclopedia supplies software engineering students, IT professionals, researchers, managers, and scholars with unrivaled coverage of the topics that encompass this ever-changing field. Also Available Online This Taylor & Francis encyclopedia is also available through online subscription, offering a variety of extra benefits for researchers, students, and librarians, including: Citation tracking and alerts Active reference linking Saved searches and marked lists HTML and PDF format options Contact Taylor and Francis for more information or to inquire about subscription options and print/online combination packages. US: (Tel) 1.888.318.2367; (E-mail) e-reference@taylorandfrancis.com International: (Tel) +44 (0) 20 7017 6062; (E-mail) online.sales@tandf.co.uk
A Good Practice Guide
10th International Conference, DESRIST 2015, Dublin, Ireland, May 20-22, 2015, Proceedings
A Study Guide for the Certified Professional for Requirements Engineering Exam - Foundation Level - Ireb Compliant
Requirements Modelling and Specification for Service Oriented Architecture
Process for System Architecture and Requirements Engineering
Requirements in Engineering Projects
In today's industrial and complex world, the progress of change is incredible. The amount of information which needs to be analyzed is very large and time has become more and more limited. Industries and firms of all sizes desire to increase productivity and sustainability to keep their competitive edge in the marketplace. One of the best tools for achieving this is the application of Quality Engineering Techniques (QET). This book will introduce the integrated model and the numerical applications for implementing it.
This book constitutes the thoroughly refereed proceedings of the 10th International Conference on Design Science Research in Information Systems and Technology, DESRIST 2015, held in Dublin, Ireland, in May 2015. The 22 full papers, 11 short papers and 10 short papers describing prototypes and products were carefully reviewed and selected from 111 submissions. The papers are organized in topical sections on design science research in action; meta perspectives; data mining and analytics; emerging themes; design practice and design thinking; and prototypes.
System Requirements Engineering presents a balanced view of the issues, concepts, models, techniques and tools found in requirements engineering research and practice. Requirements engineering is presented from business, behavioural and software engineering perspectives and a general framework is established at the outset. This book considers requirements engineering as a combination of three concurrent and interacting processes: eliciting knowledge related to a problem domain, ensuring the validity of such knowledge and specifying the problem in a formal way. Particular emphasis is given to requirements elicitation techniques and there is a fully integrated treatment of the development of requirements specifications through enterprise modelling, functional requirements and non-functional requirements.
The ability to bring new and innovative products to market rapidly is the prime critical competence for any successful consumer-driven company. All industries, especially automotive, are slashing product development lead times in the current hyper-competitive marketplace. This book is the first to thoroughly examine and analyze the truly effective product development methodology that has made Toyota the most forward-thinking company in the automotive industry. Winner of the 2007 Shingo Prize For Excellence In Manufacturing Research! In The Toyota Product Development System: Integrating People, Process, and Technology, James Morgan and Jeffrey Liker compare and contrast the world-class product development process of Toyota with that of a U.S. competitor. They use extensive examples from Toyota and the U.S. competitor to demonstrate value stream mapping as an extraordinarily powerful tool for continuous improvement. Through examples and case studies, this book illustrates specific techniques and proven practices for dealing with challenges associated with product development, such as synchronizing multiple disciplines, multiple function workload leveling, compound process variation, effective technology integration, and knowledge management. Readers of this book can focus on optimizing the entire product development value stream rather than focus on a specific tool or technology for local improvements.
Designing Complex Products with Systems Engineering Processes and Techniques
System Requirements Engineering
Evaluation of Novel Approaches to Software Engineering
More About Software Requirements
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