Software Testing A Craftsmans Approach Fourth Edition

Computer System and Network Security - Gregory B. White 2017-12-14
Computer System and Network Security provides the reader with a basic understanding of the issues involved in the security of computer systems and networks. Introductory in nature, this important new book covers all aspects related to the growing field of computer security. Such complete coverage in a single text has previously been unavailable, and college professors and students, as well as professionals responsible for system security, will find this unique book a valuable source of information, either as a textbook or as a general reference. Computer System and Network Security discusses existing and potential threats to computer systems and networks and outlines the basic actions that are generally taken to protect them. The first two chapters of the text introduce the reader to the field of computer security, covering fundamental issues and objectives. The next several chapters describe security models, authentication issues, access control, intrusion detection, and damage control. Later chapters address network and database security and systems/networks connected to wide-area networks and internetworks. Other topics include firewalls, cryptography, malicious software, and security standards. The book includes case studies with information about incidents involving computer security, illustrating the problems and potential damage that can be caused when security fails. This unique reference/textbook covers all aspects of computer and network security, filling an obvious gap in the existing literature.
Automated Software Testing - Elfriede Dustin 1999-06-28
With the urgent demand for rapid turnaround on new software releases--without compromising quality--the testing element of software development must keep pace, requiring a major shift from slow, labor-intensive testing methods to a faster and more thorough automated testing approach. Automated Software Testing is a comprehensive, step-by-step guide to the most effective tools, techniques, and methods for automated testing. Using numerous case studies of successful industry implementations, this book presents everything you need to know to successfully incorporate automated testing into the development process. In particular, this book focuses on the Automated Test Life Cycle Methodology (ATLM), a structured process for designing and executing testing that parallels the Rapid Application Development methodology commonly used today. Automated Software Testing is designed to lead you through each step of this structured program, from the initial decision to implement automated software testing through test planning, execution, and reporting. Included are test automation and test

management guidance for: Acquiring management support Test tool evaluation and selection The automated testing introduction process Test effort and test team sizing Test team composition, recruiting, and management Test planning and preparation Test procedure development guidelines Automation reuse analysis and reuse library Best practices for test automation

The Craft of Model-Based Testing - Paul C. Jorgensen 2017-05-08

In his latest work, author Paul C Jorgensen takes his well-honed craftsman's approach to mastering model-based testing (MBT). To be expert at MBT, a software tester has to understand it as a craft rather than an art. This means a tester should have deep knowledge of the underlying subject and be well practiced in carrying out modeling and testing techniques. Judgment is needed, as well as an understanding of MBT the tools. The first part of the book helps testers in developing that judgment. It starts with an overview of MBT and follows with an in-depth treatment of nine different testing models with a chapter dedicated to each model. These chapters are tied together by a pair of examples: a simple insurance premium calculation and an event-driven system that describes a garage door controller. The book shows how simpler models—flowcharts, decision tables, and UML Activity charts—express the important aspects of the insurance premium problem. It also shows how transition-based models—finite state machines, Petri nets, and statecharts—are necessary for the garage door controller but are overkill for the insurance premium problem. Each chapter describes the extent to which a model can support MBT. The second part of the book gives testers a greater understanding of MBT tools. It examines six commercial MBT products, presents the salient features of each product, and demonstrates using the product on the insurance premium and the garage door controller problems. These chapters each conclude with advice on implementing MBT in an organization. The last chapter describes six Open Source tools to round out a tester's knowledge of MBT. In addition, the book supports the International Software Testing Qualifications Board's (ISTQB®) MBT syllabus for certification.

How We Test Software at Microsoft - Alan Page 2008-12-10

It may surprise you to learn that Microsoft employs as many software testers as developers. Less surprising is the emphasis the company places on the testing discipline—and its role in managing quality across a diverse, 150+ product portfolio. This book—written by three of Microsoft's most prominent test professionals—shares the best practices, tools, and systems used by the company's 9,000-strong corps of testers. Learn how your colleagues at Microsoft design and manage testing, their approach to training and career development, and what challenges they see ahead. Most important, you'll get practical insights you can apply for better results in your organization. Discover how to: Design effective tests and run them throughout the product lifecycle Minimize cost and risk with functional tests, and know when to apply structural techniques Measure code complexity to identify bugs and potential maintenance issues Use models to generate test cases, surface unexpected application behavior, and manage risk Know when to employ automated tests, design them for long-term use, and plug into an automation infrastructure Review the hallmarks of great testers—and the tools they use to run tests, probe systems, and track progress efficiently Explore the challenges of testing services vs. shrink-wrapped software

Foundations of Software Testing, 2/e - Aditya P Mathur

This edition of Foundations of Software Testing is aimed at the undergraduate, the graduate students and the practicing engineers. It presents sound engineering approaches for test generation, ion, minimization, assessment, and enhancement. Using numerous examples, it offers a lucid description of a wide range of simple to complex techniques for a variety of testing-related tasks. It also discusses the comparative analyses of commercially available testing tools to facilitate the tool ion.

Software Testing - Paul C. Jorgensen 2018-12-07

This updated and reorganized fourth edition of Software Testing: A Craftsman's Approach applies the strong mathematics content of previous editions to a coherent treatment of Model-Based Testing for both code-based (structural) and specification-based (functional) testing. These techniques are extended from the usual unit testing discussions to full coverage of less understood levels integration and system testing. The Fourth Edition: Emphasizes technical inspections and is supplemented by an appendix with a full package of documents required for a sample Use Case technical inspection Introduces an innovative approach that merges the Event-Driven Petri Nets from the earlier editions with the "Swim Lane" concept from the Unified Modeling Language (UML) that permits model-based testing for four levels of interaction among constituents in a System of Systems Introduces model-based development and provides an explanation of how to conduct testing within model-based development environments Presents a new section on methods for testing software in an Agile programming environment Explores test-driven development, reexamines all-pairs testing, and explains the four contexts of software testing Thoroughly revised and updated, Software Testing: A Craftsman's Approach, Fourth Edition is sure to become a standard reference for those who need to stay up to date with evolving technologies in software testing. Carrying on the tradition of previous editions, it will continue to serve as a valuable reference for software testers, developers, and engineers.

How to Break Software - James A. Whittaker 2003

CD-ROM contains: Canned HEAT v.2.0 -- Holodeck Lite v. 1.0.

Component-Based Software Engineering - Umesh Kumar Tiwari 2020-11-18

This book focuses on a specialized branch of the vast domain of software engineering: component-based software engineering (CBSE). Component-Based Software Engineering: Methods and Metrics enhances the basic understanding of components by defining categories, characteristics, repository, interaction, complexity, and composition. It divides the research domain of CBSE into three major sub-domains: (1) reusability issues, (2) interaction and integration issues, and (3) testing and reliability issues. This book covers the state-of-the-art literature survey of at least 20 years in the domain of reusability, interaction and integration complexities, and testing and reliability issues of component-based software engineering. The aim of this book is not only to review and analyze the previous works conducted by eminent researchers, academicians, and organizations in the context of CBSE, but also suggests innovative, efficient, and better solutions. A rigorous and critical survey of traditional and advanced paradigms of software engineering is provided in the book. Features: In-interactions and Out-Interactions both are covered to assess the complexity. In the context of CBSE both white-box and black-box testing methods and their metrics are described. This work covers reliability estimation using reusability which is an innovative method. Case studies and real-life software examples are used to explore the problems and their solutions. Students, research scholars, software developers, and software designers or individuals interested in software engineering, especially in component-based software engineering, can refer to this book to understand the concepts from scratch. These measures and metrics can be used to estimate the software before the actual coding commences.

Modeling Software Behavior - Paul C. Jorgensen 2009-07-21

A common problem with most texts on requirements specifications is that they emphasize structural models to the near exclusion of behavioral models—focusing on what the software is, rather than what it does. If they do cover behavioral models, the coverage is brief and usually focused on a single model. Modeling Software Behavior: A Craftsman's Approach provides detailed treatment of various models of software behavior that support early analysis, comprehension, and model-based testing. Based on the popular and continually evolving course on requirements specification models taught by the author at universities and corporate environments, the text covers six behavioral models—providing the background behind these models and the required mathematics. As evidence of models at work, the author introduces eleven continuing examples. Five of these examples are illustrated with the six models, allowing readers to easily compare the expressive power of the various models. The examples chosen reflect a wide variety of behavioral issues. Providing complete coverage that includes flowcharts, decision tables, finite state machines, two variations of Petri Nets, and StateCharts, this book will help students develop the understanding of the expressive capabilities and limitations of models of system behavior needed to make informed and appropriate choices among different models when confronted with new challenges.

Specification by Example - Gojko Adzic 2011-06-02

Summary Specification by Example is an emerging practice for creating software based on realistic examples, bridging the communication gap between business stakeholders and the dev teams building the software. In this book, author Gojko Adzic distills interviews with successful teams worldwide, sharing how they specify, develop, and deliver software, without defects, in short iterative delivery cycles. About the Technology Specification by Example is a collaborative method for specifying requirements and tests. Seven patterns, fully explored in this book, are key to making the method effective. The method has four main benefits: it produces living, reliable documentation; it defines expectations clearly and makes validation efficient; it reduces rework; and, above all, it assures delivery teams and business stakeholders that the software that's built is right for its purpose. About the Book This book distills from the experience of leading teams worldwide effective ways to specify, test, and deliver software in short, iterative delivery cycles. Case studies in this book range from small web startups to large financial institutions, working in many processes including XP, Scrum, and Kanban. This book is written for developers, testers, analysts, and business people working together to build great software. Purchase of the print book comes with an offer of a free PDF, ePub, and Kindle eBook from Manning. Also available is all code from the book. What's Inside Common process patterns How to avoid bad practices Fitting SBE in your process 50+ case studies == Table of Contents Part 1 Getting started Part 2 Key process patterns Part 3 Case studies Key benefits Key process patterns Living documentation Initiating the changes Deriving scope from goals Specifying collaboratively Illustrating using examples Refining the specification Automating validation without changing specifications Validating frequently Evolving a documentation system uSwitch RainStor Iowa Student Loan Sabre Airline Solutions ePlan Services Songkick Concluding thoughts

Testing Complex and Embedded Systems - Kim H. Pries 2018-09-03

Many enterprises regard system-level testing as the final piece of the development effort, rather than as a tool that should be integrated throughout the development process. As a consequence, test teams often execute critical test plans just before product launch, resulting in much of the corrective work being performed in a rush and at the last minute. Presenting combinatorial approaches for improving test coverage, Testing Complex and Embedded Systems details techniques to help you streamline testing and identify problems before they occur—including turbocharged testing using Six Sigma and exploratory testing methods. Rather than present the continuum of testing for particular products or design attributes, the text focuses on boundary conditions. Examining systems and software testing, it explains how to use simulation and emulation to complement testing. Details how to manage multiple test hardware and software deliveries Examines the contradictory perspectives of testing—including ordered/ random, structured /unstructured, bench/field, and repeatable/non repeatable Covers essential planning activities prior to testing, how to scope the work, and how to reach a successful conclusion Explains how to determine when testing is complete Where you find organizations that are successful at product development, you are likely to find groups that practice disciplined, strategic, and thorough testing. Tapping into the authors' decades of experience managing test groups in the automotive industry, this book provides the understanding to help ensure your organization joins the likes of these groups.

Software Testing - Paul C. Jorgensen 2021-06-28

This updated and reorganized Fifth edition of

Software Testing: A Craftsman's Approach applies the strong mathematics content of previous editions to a coherent treatment of software testing. Responding to instructor and student survey input of previous editions, the authors have streamlined chapters and examples. The Fifth Edition: Has a new chapter on feature interaction testing that explores the feature interaction problem and explains how to reduce tests Uses Java instead of pseudo-code for all examples including structured and object-oriented ones Presents model-based development and provides an explanation of how to conduct testing within model-based development environments Explains testing in waterfall, iterative, and agile software development projects Explores test-driven development, reexamines all-pairs testing, and explains the four contexts of software testing Thoroughly revised and updated, Software Testing: A Craftsman's Approach, Fifth Edition is sure to become a standard reference for those who need to stay up to date with evolving technologies in software testing. Carrying on the tradition of previous editions, it is a valuable reference for software testers, developers, and engineers.

Software Engineering Design - Carlos Otero 2012-08-23

Taking a learn-by-doing approach, Software Engineering Design: Theory and Practice uses examples, review questions, chapter exercises, and case study assignments to provide students and practitioners with the understanding required to design complex software systems. Explaining the concepts that are immediately relevant to software designers, it begins with a review of software design fundamentals. The text presents a formal top-down design process that consists of several design activities with varied levels of detail, including the macro-, micro-, and construction-design levels. As part of the top-down approach, it provides in-depth coverage of applied architectural, creational, structural, and behavioral design patterns. For each design issue covered, it includes a step-by-step breakdown of the execution of the design solution, along with an evaluation, discussion, and justification for using that particular solution. The book outlines industry-proven software design practices for leading large-scale software design efforts, developing reusable and high-quality software systems, and producing technical and customer-driven design documentation. It also: Offers one-stop guidance for mastering the Software Design & Construction sections of the official Software Engineering Body of Knowledge (SWEBOK®) Details a collection of standards and guidelines for structuring high-quality code Describes techniques for analyzing and evaluating the quality of software designs Collectively, the text supplies comprehensive coverage of the software design concepts students will need to succeed as professional design leaders. The section on engineering leadership for software designers covers the necessary ethical and leadership skills required of software developers in the public domain. The section on creating software design documents (SDD) familiarizes students with the software design notations, structural descriptions, and behavioral models required for SDDs. Course notes, exercises with answers, online resources, and an instructor's manual are available upon qualified course adoption. Instructors can contact the author about these resources via the author's website: http://softwareengineeringdesign.com/

Fundamentals of Dependable Computing for Software Engineers - John Knight 2012-01-12

Fundamentals of Dependable Computing for Software Engineers presents the essential elements of computer system dependability. The book describes a comprehensive dependability-engineering process and explains the roles of software and software engineers in computer system dependability. Readers will learn: Why dependability matters What it means for a system to be dependable How to build a dependable software system How to assess whether a software system is adequately dependable The author focuses on the actions needed to reduce the rate of failure to an acceptable level, covering material essential for engineers developing systems with extreme consequences of failure, such as safety-critical systems, security-critical systems, and critical infrastructure systems. The text explores the systems engineering aspects of dependability and provides a framework for engineers to reason and make decisions about software and its dependability. It also offers a comprehensive approach to achieve software dependability and includes a bibliography of the most relevant literature. Emphasizing the software engineering elements of dependability, this book helps software and computer engineers in fields requiring ultra-high levels of dependability, such as avionics, medical devices, automotive electronics, weapon systems, and advanced information systems, construct software systems that are dependable and within budget and time constraints.

Lessons Learned in Software Testing - Cem Kaner 2011-08-02

Decades of software testing experience condensed into the most important lessons learned. The world's leading software testing experts lend you their wisdom and years of experience to help you avoid the most common mistakes in testing software. Each lesson is an assertion related to software testing, followed by an explanation or example that shows you the how, when, and why of the testing lesson. More than just tips, tricks, and pitfalls to avoid, Lessons Learned in Software Testing speeds you through the critical testing phase of the software development project without the extensive trial and error it normally takes to do so. The ultimate resource for software testers and developers at every level of expertise, this guidebook features: * Over 200 lessons gleaned from over 30 years of combined testing experience * Tips, tricks, and common pitfalls to avoid by simply reading the book rather than finding out the hard way * Lessons for all key topic areas, including test design, test management, testing strategies, and bug reporting * Explanations and examples of each testing trouble spot help illustrate each lesson's assertion

The Software Craftsman - Sandro Mancuso 2014-12-14

In The Software Craftsman, Sandro Mancuso explains what craftsmanship means to the developer and his or her organization, and shows how to live it every day in your real-world development environment. Mancuso shows how software craftsmanship fits with and helps students improve upon best-practice technical disciplines such as agile and lean, taking all development projects to the next level. Readers will learn how to change the disastrous perception that software developers are the same as factory workers, and that software projects can be run like factories.

Introduction to Software Project Management - Adolfo Villafiorita 2016-04-19

Although software development is one of the most complex activities carried out by man, sound development processes and proper project management can help ensure your software projects are delivered on time and under budget. Providing the know-how to manage software projects effectively, Introduction to Software Project Management supplies an accessible introduction to software project management. The book begins with an overview of the fundamental techniques of project management and the technical aspects of software development. This section supplies the understanding of the techniques required to mitigate uncertainty in projects and better control the complexity of software development projects. The second part illustrates the technical activities of software development in a coherent process—describing how to customize this process to fit a wide range of software development scenarios. Examines project management frameworks and software development standards, including ESA and NASA guidelines, PRINCE2®, and PMBOK® Addresses open source development practices and tools so readers can adopt best practices and get started with tools that are available for free Explains how to tailor the development process to different kinds of products and formalities, including the development of web applications Includes access to additional material for both practitioners and teachers at www.spmbook.com Supplying an analysis of existing development and management frameworks, the book describes how to set up an open-source tool infrastructure to manage projects. Since practitioners must be able to mix traditional and agile techniques effectively, the book covers both and explains how to use traditional techniques for planning and developing software components alongside agile methodologies. It does so in a manner that will help you to foster freedom and creativity in assembling the processes that will best serve your needs.

How Google Tests Software - James A. Whittaker

2012-03-21
2012 Jolt Award finalist! Pioneering the Future of Software Test Do you need to get it right, too? Then, learn from Google. Legendary testing expert James Whittaker, until recently a Google testing leader, and two top Google experts reveal exactly how Google tests software, offering brand-new best practices you can use even if you're not quite Google's size…yet! Breakthrough Techniques You Can Actually Use Discover 100% practical, amazingly scalable techniques for analyzing risk and planning tests…thinking like real users…implementing exploratory, black box, white box, and acceptance testing…getting usable feedback…tracking issues…choosing and creating tools…testing "Docs & Mocks," interfaces, classes, modules, libraries, binaries, services, and infrastructure…reviewing code and refactoring…using test hooks, presubmit scripts, queues, continuous builds, and more. With these techniques, you can transform testing from a bottleneck into an accelerator–and make your whole organization more productive!
Patterns for Performance and Operability - Chris Ford 2007-12-22
Structured to follow the software life cycle, Patterns for Performance and Operability provides advice and examples-based instructions at every phase. You can read it from start to finish or go directly to those chapters that interest you the most. Whatever approach you choose, you will learn: How to: · Define and document comprehensive non-functional requirements for any software system · Define scope and logistics for non-functional test activities · Execute non-functional tests and report results clearly and effectively · Patterns for defensive software designs in common software scenarios that promote operability and availability · Implement the right level of reporting, monitoring, and trending for highly available production software systems Patterns for: · Software designs that support simpler and more efficient operation in a production environment · Software design that support high-performance and scalability Strategies and Techniques for: · Techniques for managing and troubleshooting during a production crisis · Strategies for resisting project pressure to compromise on quality or completeness of non-functional activities in the software cycle
Software Test Attacks to Break Mobile and Embedded Devices - Jon Duncan Hagar 2013-09-25
Address Errors before Users Find Them Using a mix-and-match approach, Software Test Attacks to Break Mobile and Embedded Devices presents an attack basis for testing mobile and embedded systems. Designed for testers working in the ever-expanding world of "smart" devices driven by software, the book focuses on attack-based testing that can be used by individuals and teams. The numerous test attacks show you when a software product does not work (i.e., has bugs) and provide you with information about the software product under test. The book guides you step by step starting with the basics. It explains patterns and techniques ranging from simple mind mapping to sophisticated test labs. For traditional testers moving into the mobile and embedded area, the book bridges the gap between IT and mobile/embedded system testing. It illustrates how to apply both traditional and new approaches. For those working with mobile/embedded systems without an extensive background in testing, the book brings together testing ideas, techniques, and solutions that are immediately applicable to testing smart and mobile devices.
Software Testing Fundamentals - Marnie L. Hutcheson 2003-04-07
A highly anticipated book from a world-class authority who has trained on every continent and taught on many corporate campuses, from GTE to Microsoft First book publication of the two critically acclaimed and widely used testing methodologies developed by the author, known as MITs and S-curves, and more methods and metrics not previously available to the public Presents practical, hands-on testing skills that can be used everyday in real-life development tasks Includes three in-depth case studies that demonstrate how the tests are used Companion Web site includes sample worksheets, support materials, a discussion group for readers, and links to other resources
Software Testing - Paul C. Jorgensen 2013-05-01
Since the last publication of this international bestseller, software testing has seen a renaissance of renewed interest and technology. The biggest change comes in the growing

prominence and acceptance of Agile Programming. Software Testing: A Craftsman’s Approach, Third Edition extends the combination of theory and practicality of the first two editions to include agile programming development and discusses the serious effect this emerging area is having on software testing. The third edition of the widely adopted text and reference book is comprised of six parts. It begins by providing the mathematical background in discrete mathematics and linear graph theory that is used in subsequent sections. The book continues to describe specification-based (functional) and code-based (structural) test development techniques, while extending this theoretical approach to less understood levels of integration and system testing. The author further develops this discussion to include object-oriented software. A completely new section relates all of the previously discussed concepts to the agile software development movement and highlights issues such as how agile and XP development environments are radically changing the role of software testers by making testing integral at every phase of the development process. Thoroughly revised and updated, Software Testing: A Craftsman’s Approach, Third Edition is sure to become a standard reference for those who need to stay up-to-date with evolving technologies in software testing. Carrying on the tradition of previous editions, it will continue to serve as a valuable reference for software testers, developers, and engineers.
Programming Languages for MIS - Hai Wang 2014-01-23
Programming Languages for MIS: Concepts and Practice supplies a synopsis of the major computer programming languages, including C++, HTML, JavaScript, CSS, VB.NET, C#.NET, ASP.NET, PHP (with MySQL), XML (with XSLT, DTD, and XML Schema), and SQL. Ideal for undergraduate students in IS and IT programs, this textbook and its previous versions have been used in the authors’ classes for the past 15 years. Focused on web application development, the book considers client-side computing, server-side computing, and database applications. It emphasizes programming techniques, including structured programming, object-oriented programming, client-side programming, server-side programming, and graphical user interface. Introduces the basics of computer languages along with the key characteristics of all procedural computer languages Covers C++ and the fundamental concepts of the two programming paradigms: function-oriented and object-oriented Considers HTML, JavaScript, and CSS for web page development Presents VB.NET for graphical user interface development Introduces PHP, a popular open source programming language, and explains the use of the MySQL database in PHP Discusses XML and its companion languages, including XSTL, DTD, and XML Schema With this book, students learn the concepts shared by all computer languages as well as the unique features of each language. This self-contained text includes exercise questions, project requirements, report formats, and operational manuals of programming environments. A test bank and answers to exercise questions are also available upon qualified course adoption. This book supplies professors with the opportunity to structure a course consisting of two distinct modules: the teaching module and the project module. The teaching module supplies an overview of representative computer languages. The project module provides students with the opportunity to gain hands-on experience with the various computer languages through projects.
Clean Code - Robert C. Martin 2009
Looks at the principles and clean code, includes case studies showcasing the practices of writing clean code, and contains a list of heuristics and "smells" accumulated from the process of writing clean code.
Software Testing - Srinivasan Desikan 2006
"Software Testing: Principles and Practices is a comprehensive treatise on software testing. It provides a pragmatic view of testing, addressing emerging areas like extreme testing and ad hoc testing"--Resource description page.
Advanced Software Testing - Vol. 2, 2nd Edition - Rex Black 2014-09-12
This book teaches test managers what they need to know to achieve advanced skills in test estimation, test planning, test monitoring, and test control. Readers will learn how to define the overall testing goals and strategies for the systems being tested. This hands-on, exercise-rich book provides experience with planning, scheduling, and tracking these tasks. You'll be

able to describe and organize the necessary activities as well as learn to select, acquire, and assign adequate resources for testing tasks. You'll learn how to form, organize, and lead testing teams, and master the organizing of communication among the members of the testing teams, and between the testing teams and all the other stakeholders. Additionally, you'll learn how to justify decisions and provide adequate reporting information where applicable. With over thirty years of software and systems engineering experience, author Rex Black is President of RBCS, is a leader in software, hardware, and systems testing, and is the most prolific author practicing in the field of software testing today. He has published a dozen books on testing that have sold tens of thousands of copies worldwide. He is past president of the International Software Testing Qualifications Board (ISTQB) and a director of the American Software Testing Qualifications Board (ASTQB). This book will help you prepare for the ISTQB Advanced Test Manager exam. Included are sample exam questions, at the appropriate level of difficulty, for most of the learning objectives covered by the ISTQB Advanced Level Syllabus. The ISTQB certification program is the leading software tester certification program in the world. With about 300,000 certificate holders and a global presence in over 50 countries, you can be confident in the value and international stature that the Advanced Test Manager certificate can offer you. This second edition has been thoroughly updated to reflect the new ISTQB Advanced Test Manager 2012 Syllabus, and the latest ISTQB Glossary. This edition reflects Rex Black's unique insights into these changes, as he was one of the main participants in the ISTQB Advanced Level Working Group.
Software Testing - Brian Hambling 2015-06
This guide provides practical insight into the world of software testing, explaining the basic steps of the testing process and how to perform effective tests. It also presents an overview of different techniques, both dynamic and static, and how to apply them.
Beginning Software Engineering - Rod Stephens 2015-03-02
A complete introduction to building robust and reliable software Beginning Software Engineering demystifies the software engineering methodologies and techniques that professional developers use to design and build robust, efficient, and consistently reliable software. Free of jargon and assuming no previous programming, development, or management experience, this accessible guide explains important concepts and techniques that can be applied to any programming language. Each chapter ends with exercises that let you test your understanding and help you elaborate on the chapter's main concepts. Everything you need to understand waterfall, Sashimi, agile, RAD, Scrum, Kanban, Extreme Programming, and many other development models is inside! Describes in plain English what software engineering is Explains the roles and responsibilities of team members working on a software engineering project Outlines key phases that any software engineering effort must handle to produce applications that are powerful and dependable Details the most popular software development methodologies and explains the different ways they handle critical development tasks Incorporates exercises that expand upon each chapter's main ideas Includes an extensive glossary of software engineering terms
Agile Principles, Patterns, and Practices in C# - Robert C. Martin 2006-07-20
With the award-winning book Agile Software Development: Principles, Patterns, and Practices, Robert C. Martin helped bring Agile principles to tens of thousands of Java and C++ programmers. Now .NET programmers have a definitive guide to agile methods with this completely updated volume from Robert C. Martin and Micah Martin, Agile Principles, Patterns, and Practices in C#. This book presents a series of case studies illustrating the fundamentals of Agile development and Agile design, and moves quickly from UML models to real C# code. The introductory chapters lay out the basics of the agile movement, while the later chapters show proven techniques in action. The book includes many source code examples that are also available for download from the authors' Web site. Readers will come away from this book understanding Agile principles, and the fourteen practices of Extreme Programming Spiking, splitting, velocity, and planning iterations and

releases Test-driven development, test-first design, and acceptance testing Refactoring with unit testing Pair programming Agile design and design smells The five types of UML diagrams and how to use them effectively Object-oriented package design and design patterns How to put all of it together for a real-world project Whether you are a C# programmer or a Visual Basic or Java programmer learning C#, a software development manager, or a business analyst, Agile Principles, Patterns, and Practices in C# is the first book you should read to understand agile software and how it applies to programming in the .NET Framework.

Introduction to Combinatorial Testing - D. Richard Kuhn 2016-04-19

Combinatorial testing of software analyzes interactions among variables using a very small number of tests. This advanced approach has demonstrated success in providing strong, low-cost testing in real-world situations. Introduction to Combinatorial Testing presents a complete self-contained tutorial on advanced combinatorial testing methods for real-world software. The book introduces key concepts and procedures of combinatorial testing, explains how to use software tools for generating combinatorial tests, and shows how this approach can be integrated with existing practice. Detailed explanations and examples clarify how and why to use various techniques. Sections on cost and practical considerations describe tradeoffs and limitations that may impact resources or funding. While the authors introduce some of the theory and mathematics of combinatorial methods, readers can use the methods without in-depth knowledge of the underlying mathematics. Accessible to undergraduate students and researchers in computer science and engineering, this book illustrates the practical application of combinatorial methods in software testing. Giving pointers to freely available tools and offering resources on a supplementary website, the book encourages readers to apply these methods in their own testing projects.

Practical Test Design - Istvan Forgacs 2019-08-28

This book presents the key test design techniques, in line with ISTQB, and explains the why and when of using them, with practical examples and code snippets. How and why the techniques can be combined is covered, as are automated test design methods. Tips and exercises are included throughout the book.

Software Testing - Paul C. Jorgensen 2002-06-26

The software development world has changed significantly in the past five years. Noteworthy among its many changes is the emergence of the "Unified Modeling Language" (UML) as an industry standard. While thousands of software computer professionals and students continue to rely upon the bestselling first edition of Software Testing, the time has come to bring it up to date. Thoroughly revised, the second edition of Software Testing: A Craftsman's Approach reflects the recent growth and changes in software standards and development. Outdated material has been deleted and new topics, figures, case studies now complement its solid, accessible treatment of the mathematics and techniques of software testing. Foremost among this edition's refinements is the definition of a generalized pseudocode that replaces the outdated Pascal code used in the examples. The text is now independent of any particular programming language. The author has also added five chapters on object-oriented testing, incorporated object-oriented versions of two earlier examples, and used them in the chapter on object-oriented testing, which he completely revised with regard to UML. In addition, GUI testing receives full treatment. The new edition of Software Testing provides a comprehensive synthesis of the fundamentals, approaches, and methods that form the basis of the craft. Mastering its contents will allow practitioners to make well-informed choices, develop creative solutions, and ultimately derive the sense of pride and pleasure that a true craftsperson realizes from a job well done.

Software Testing - Ron Patton 2006-09

Software Architecture in Practice - Len Bass 2003

This is the eagerly-anticipated revision to one of the seminal books in the field of software architecture which clearly defines and explains the topic.

Agile Java™ - Jeff Langr 2005-02-14

Master Java 5.0 and TDD Together: Build More

Robust, Professional Software Master Java 5.0, object-oriented design, and Test-Driven Development (TDD) by learning them together. Agile Java weaves all three into a single coherent approach to building professional, robust software systems. Jeff Langr shows exactly how Java and TDD integrate throughout the entire development lifecycle, helping you leverage today's fastest, most efficient development techniques from the very outset. Langr writes for every programmer, even those with little or no experience with Java, object-oriented development, or agile methods. He shows how to translate oral requirements into practical tests, and then how to use those tests to create reliable, high-performance Java code that solves real problems. Agile Java doesn't just teach the core features of the Java language: it presents coded test examples for each of them. This TDD-centered approach doesn't just lead to better code: it provides powerful feedback that will help you learn Java far more rapidly. The use of TDD as a learning mechanism is a landmark departure from conventional teaching techniques. Presents an expert overview of TDD and agile programming techniques from the Java developer's perspective Brings together practical best practices for Java, TDD, and OO design Walks through setting up Java 5.0 and writing your first program Covers all the basics, including strings, packages, and more Simplifies object-oriented concepts, including classes, interfaces, polymorphism, and inheritance Contains detailed chapters on exceptions and logging, math, I/O, reflection, multithreading, and Swing Offers seamlessly-integrated explanations of Java 5.0's key innovations, from generics to annotations Shows how TDD impacts system design, and vice versa Complements any agile or traditional methodology, including Extreme Programming (XP)

Foundations of Software Engineering - Ashfaque Ahmed 2016-08-25

The best way to learn software engineering is by understanding its core and peripheral areas. Foundations of Software Engineering provides in-depth coverage of the areas of software engineering that are essential for becoming proficient in the field. The book devotes a complete chapter to each of the core areas. Several peripheral areas are also explained by assigning a separate chapter to each of them. Rather than using UML or other formal notations, the content in this book is explained in easy-to-understand language. Basic programming knowledge using an object-oriented language is helpful to understand the material in this book. The knowledge gained from this book can be readily used in other relevant courses or in real-world software development environments. This textbook educates students in software engineering principles. It covers almost all facets of software engineering, including requirement engineering, system specifications, system modeling, system architecture, system implementation, and system testing. Emphasizing practical issues, such as feasibility studies, this book explains how to add and develop software requirements to evolve software systems. This book was written after receiving feedback from several professors and software engineers. What resulted is a textbook on software engineering that not only covers the theory of software engineering but also presents real-world insights to aid students in proper implementation. Students learn key concepts through carefully explained and illustrated theories, as well as concrete examples and a complete case study using Java. Source code is also available on the book’s website. The examples and case studies increase in complexity as the book progresses to help students build a practical understanding of the required theories and applications.

Advanced Software Testing - Vol. 3, 2nd Edition - Jamie L Mitchell 2015-03-20

This book is written for the technical test analyst who wants to achieve advanced skills in test analysis, design, and execution. With a hands-on, exercise-rich approach, this book teaches you how to define and carry out the tasks required to implement a test strategy. You will be able to analyze, design, implement, and execute tests using risk considerations to determine the appropriate effort and priority for tests. This book will help you prepare for the ISTQB Advanced Technical Test Analyst exam. Included are sample exam questions for most of the learning objectives covered by the latest (2012) ISTQB Advanced Level syllabus. The ISTQB certification program is the leading software tester certification program in the world. You can be confident in the value and international stature that the Advanced Technical Test Analyst certificate will offer you. With over thirty years of software and systems engineering experience, author Rex Black is President of RBCS, a leader in software, hardware, and systems testing, and the most prolific author practicing in the field of software testing today. Previously, he served as President of both the International and American Software Testing Qualifications Boards (ISTQB and ASTQB). Jamie Mitchell is a consultant who has been working in software testing, test automation, and development for over 20 years. He was a member of the Technical Advisory Group for ASTQB, and one of the primary authors for the ISTQB Advanced Technical Test Analyst 2012 syllabus.

How to Reduce the Cost of Software Testing - Matthew Heusser 2018-09-03

Plenty of software testing books tell you how to test well; this one tells you how to do it while decreasing your testing budget. A series of essays written by some of the leading minds in software testing, How to Reduce the Cost of Software Testing provides tips, tactics, and techniques to help readers accelerate the testing process, improve the performance of the test teams, and lower costs. The distinguished team of contributors—that includes corporate test leaders, best paper authors, and keynote speakers from leading software testing conferences—supply concrete suggestions on how to find cost savings without sacrificing outcome. Detailing strategies that testers can immediately put to use to reduce costs, the book explains how to make testing nimble, how to remove bottlenecks in the testing process, and how to locate and track defects efficiently and effectively. Written in language accessible to non-technical executives, as well as those doing the testing, the book considers the latest advances in test automation, ideology, and technology. Rather than present the perspective of one or two experts in software testing, it supplies the wide-ranging perspectives of a team of experts to help ensure your team can deliver a completed test cycle in less time, with more confidence, and reduced costs.

The Art of Software Testing - Glenford J. Myers 2004-07-22

This long-awaited revision of a bestseller provides a practical discussion of the nature and aims of software testing. You'll find the latest methodologies for the design of effective test cases, including information on psychological and economic principles, managerial aspects, test tools, high-order testing, code inspections, and debugging. Accessible, comprehensive, and always practical, this edition provides the key information you need to test successfully, whether a novice or a working programmer. Buy your copy today and end up with fewer bugs tomorrow.

Just Enough Software Architecture - George Fairbanks 2010-08-30

This is a practical guide for software developers, and different than other software architecture books. Here's why: It teaches risk-driven architecting. There is no need for meticulous designs when risks are small, nor any excuse for sloppy designs when risks threaten your success. This book describes a way to do just enough architecture. It avoids the one-size-fits-all process tar pit with advice on how to tune your design effort based on the risks you face. It democratizes architecture. This book seeks to make architecture relevant to all software developers. Developers need to understand how to use constraints as guiderails that ensure desired outcomes, and how seemingly small changes can affect a system's properties. It cultivates declarative knowledge. There is a difference between being able to hit a ball and knowing why you are able to hit it, what psychologists refer to as procedural knowledge versus declarative knowledge. This book will make you more aware of what you have been doing and provide names for the concepts. It emphasizes the engineering. This book focuses on the technical parts of software development and what developers do to ensure the system works not job titles or processes. It shows you how to build models and analyze architectures so that you can make principled design tradeoffs. It describes the techniques software designers use to reason about medium to large sized problems and points out where you can learn specialized techniques in more detail. It provides practical advice. Software design decisions influence the architecture and vice versa. The approach in this book embraces drill-down/pop-up behavior by describing models that have various levels of abstraction, from architecture to data structure design.