Examples Of Software Engineering Projects Gsixty

Today, software engineers need to know not only how to program effectively but also how to develop proper engineering practices to make their codebase sustainable and healthy. This book emphasizes this difference between programming and software engineering. How can software engineers manage a living codebase that evolves and responds to changing requirements and demands over the length of its life? Based on their experience at Google, software engineers Titus Winters and Hyrum Wright, along with technical writer Tom Manshreck, present a candid and insightful look at how some of the world's leading practitioners construct and maintain software. This book covers Google's unique engineering culture, processes, and tools and how these aspects contribute to the effectiveness of an engineering organization. You'll explore three fundamental principles that software organizations should keep in mind when designing, architecting, writing, and maintaining code: How time affects the sustainability of software and how to make your code resilient over time How scale affects the viability of software practices within an engineering organization What trade-offs a typical engineer needs to make when evaluating design and development decisions

Provides information on successful software development, covering such topics as customer requirements, task estimates, principles of good design, dealing with source code, system testing, and handling bugs.

For courses in Software Engineering, Software Development, or Object-Oriented Design and Analysis at the Junior/Senior or Graduate level. This text can also be utilized in short technical courses or in short, intensive management courses. Object-Oriented Software Engineering Using UML, Patterns, and Java, 3e, shows readers how to use both the principles of software engineering and the practices of various object-oriented tools, processes, and products. Using a step-by-step case study to illustrate the concepts and topics in each chapter, Bruegge and Dutoit emphasize learning object-oriented software engineer through practical experience: readers can apply the techniques learned in class by implementing a real-world software project. The third edition addresses new trends, in particular agile project management (Chapter 14 Project Management) and agile methodologies (Chapter 16 Methodologies).

This textbook provides a progressive approach to the teaching of software engineering. First, readers are introduced to the core concepts of the object-oriented methodology, which is used throughout the book to act as the foundation for software engineering and programming practices, and partly for the software engineering process itself. Then, the processes involved in software engineering are explained in more detail, especially methods and their applications in design, implementation, testing, and measurement, as they relate to software engineering projects. At last, readers are given the chance to practice these concepts by applying commonly used skills and tasks to a hands-on project. The impact of such a format is the potential for quicker and deeper understanding. Readers will master concepts and skills at the most basic levels before continuing to expand on and apply these lessons in later chapters.

Nowadays, there is software everywhere in our life. It controls cars, airplanes, factories, medical implants. Without software, banking, logistics and transportation, media, and even scientific research would not function in the accustomed way. Building and maintaining software is a knowledge-intensive endeavour and requires that specific experiences are handled successfully. However, neither knowledge nor experience can be collected, stored, and shipped like physical goods, instead these delicate resources require dedicated techniques. Knowledge and experience are often called company assets, yet this is only part of the truth: it is only software engineers and other creative employees who will effectively exploit an organisation's knowledge and experience. Kurt Schneider's textbook is written for those who want to make better use of their own knowledge and experience – either personally or within their group or company. Everyone related to software development will benefit from his detailed explanations and case studies: project managers, software engineers, quality assurance responsibles, and knowledge managers. His presentation is based on years of both practical experience, with companies such as Boeing, Daimler, and Nokia, and research in renowned environments, such as the Fraunhofer Institute. Each chapter is self-contained, it clearly states its learning objectives, gives in-depth presentations, shows the techniques' practical relevance in application scenarios, lists detailed references for further reading, and is finally completed by exercises that review the material presented and also challenge further, critical examinations. The overall result is a textbook that is equally suitable as a personal resource for self-directed learning and as the basis for a one-semester course on software engineering and knowledge management.

Why another book on software project management? For some time, the fields of project management, computer science, and software development have been growing rapidly and concurrently. Effective support for the enterprise demands the merging of these efforts into a coordinated discipline, one that incorporates best practices from both systems development and project management life cycles. Robert K. Wysocki creates that discipline in this book--a ready reference for professionals and consultants as well as a textbook for students of computer information systems and project management. By their very nature, software projects defy a "one size fits all" approach. In these pages you will learn to apply best-practice principles while maintaining the flexibility that's essential for successful software development. Learn how to make the planning process fit the need * Understand how and why software development must be planned on a certainty-to-uncertainty continuum * Categorize your projects on a four-quadrant model * Learn when to use each of the five SDPM strategies--Linear, Incremental, Iterative, Adaptive, and Extreme * Explore the benefits of each strategic model and what types of projects it supports best * Recognize the activities that go into the Scoping, Planning, Launching, Monitoring/Controlling, and Closing phases of each strategy * Apply this knowledge to the specific projects you manage * Get a clear picture of where you are and how to get where you want to go

Part of the new Digital Filmmaker Series! Digital Filmmaking: An Introductionis the first book in the newDigital Filmmaker Series. Designed for an introductory level course in digital filmmaking, it is intended for anyone who has an interest in telling stories with pictures and sound and won't assume any familiarity with equipment or concepts on the part of the

student. In addition to the basics of shooting and editing, different story forms are introduced from documentary and live events through fictional narratives. Each of the topics is covered in enough depth to allow anyone with a camera and a computer to begin creating visual projects of quality.

Intended for a one-semester, introductory course, Essentials of Software Engineering is a user-friendly, comprehensive introduction to the core fundamental topics and methodologies of software development. The authors, building off their 25 years of experience, present the complete life cycle of a software system, from inception to release and through support. The text is broken into six distinct sections, covering programming concepts, system analysis and design, principles of software engineering, development and support processes, methodologies, and product management. Presenting topics emphasized by the IEEE Computer Society sponsored Software Engineering Body of Knowledge (SWEBOK) and by the Software Engineering 2004 Curriculum Guidelines for Undergraduate Degree Programs in Software Engineering, Essentials of Software Engineering is the ideal text for students entering the world of software development.

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 Practical Approach To Building Small To Medium Software Systems For Real Business Clients Based on more than 100 actual commercial projects, this book clearly explains how to run an agile software development project that delivers high-quality, high-value solutions to business clients. It concentrates on the practical, social, business, and management aspects as well as the technical issues involved. Professor Holcombe successfully connects readers with the wave of "Agile 2.0" concepts that take the techniques of agile development and place them in the service of business goals. Since it is widely believed that the use of Windows XP will become much more common in coming years, readers should be armed with cutting-edge knowledge of the latest practices in the field. Further features of the book include: Case studies provide real-world examples and describe how XP was introduced into the environment Analysis is provided to help readers determine which elements of XP are suitable for the unique challenges and environments for different projects Problems of a failing agile project and how they can be fixed are covered, including insight into which managerial techniques can be employed An Instructor's Guide provides practical advice on how to motivate students, organize real group projects, and deal, in a simple and effective way, with many of the problems that arise A sample syllabus, sample tests, and additional case study information are available on an instructor's password-protected ftp site Running an Agile Software Development Project is an indispensable guide for professional software developers, engineers, and project managers interested in learning how to use agile processes. It is also a valuable textbook for advanced undergraduate- and graduate-level students in computer engineering and software engineering courses.

Professionals in the interdisciplinary field of computer science focus on the design, operation, and maintenance of computational systems and software. Methodologies and tools of engineering are utilized alongside computer applications to develop efficient and precise information databases. Computer Systems and Software Engineering: Concepts, Methodologies, Tools, and Applications is a comprehensive reference source for the latest scholarly material on trends, techniques, and uses of various technology applications and examines the benefits and challenges of these computational developments. Highlighting a range of pertinent topics such as utility computing, computer security, and information systems applications, this multi-volume book is ideally designed for academicians, researchers, students, web designers, software developers, and practitioners interested in computer systems and software engineering.

Data structure and software engineering is an integral part of computer science. This volume presents new approaches and methods to knowledge sharing, brain mapping, data integration, and data storage. The author describes how to manage an organization's business process and domain data and presents new software and hardware testing methods. The book introduces a game development framework used as a learning aid in a software engineering at the university level. It also features a review of social software engineering metrics and methods for processing business information. It explains how to use Pegasys to create and manage sequence analysis workflows.

The book describes how to manage and successfully deliver large, complex, and expensive systems that can be composed of millions of line of software code, being developed by numerous groups throughout the globe, that interface with many hardware items being developed by geographically dispersed companies, where the system also includes people, policies, constraints, regulations, and a myriad of other factors. It focuses on how to seamlessly integrate systems, satisfy the customer's requirements, and deliver within the budget and on time. The guide is essentially a "shopping list" of all the activities that could be conducted with tailoring guidelines to meet the needs of each project.

This handbook of research is one of the few texts to combine Open Source Software (OSS) in public and private sector activities into a single reference source. It examines how the use of OSS affects practices in society, business, government, education, and law.

This tutorial book presents an augmented selection of the material presented at the Software Engineering Education and Training Track at the International Conference on Software Engineering, ICSE 2005, held in St. Louis, MO, USA in May 2005. The 12 tutorial lectures presented cover software engineering education, state of the art and practice: creativity and rigor, challenges for industries and academia, as well as future directions.

Software engineering education is an important, often controversial, issue in the education of Information Technology professionals. It is of concern at all levels of education, whether undergraduate, post-graduate or during the working life of professionals in the field. This publication gives perspectives from academic institutions, industry and education bodies from many different countries. Several papers provide actual curricula based on innovative ideas and modern programming paradigms. Various aspects of project work, as an important component of the educational process, are also covered and the uses of software tools in the software industry and education are discussed. The book provides a valuable source of information for all those interested and involved in software engineering education.

Project-Based Software Engineering is the first book to provide hands-on process and practice in software engineering essentials for the beginner. The book presents steps through the software development life cycle and two running case studies that develop as the steps are presented. Running parallel to the process presentation and case studies, the book supports a semester-long software development project. This book focuses on object-oriented software development, and supports the conceptualization, analysis, design and implementation of an object-oriented project. It is mostly language-independent, with necessary code examples in Java. A subset of UML is used, with the notation explained as needed to support the readers' work. Two running case studies a video game and a library check out system show the development of a software project. Both have sample deliverables and thus provide the reader with examples of the type of work readers are to create. This book is appropriate for readers looking to gain experience in project analysis, design implementation, and testing.

Managing Information Technology Resources in Organizations in the Next Millennium contains more than 200 unique perspectives on numerous timely issues of managing information technology in organizations around the world. This book, featuring the latest research and applied IT practices, is a valuable source in support of teaching and research agendas.

The orderly Sweet-Williams are dismayed at their son's fondness for the messy pastime of gardening.

Explore the latest Java-based software development techniques and methodologies through the project-based approach in this practical guide. Unlike books that use abstract examples and lots of theory, Real-World Software Development shows you how to develop several relevant projects while learning best practices along the way. With this engaging approach, junior developers capable of writing basic Java code will learn about state-of-the-art software development practices for building modern, robust and maintainable Java software. You'll work with many different software development topics that are often excluded from software develop how-to references. Featuring real-world examples, this book teaches you techniques and methodologies for functional programming, automated testing, security, architecture, and distributed systems.

This textbook provides an introduction to software engineering for undergraduate students of computer science. Its emphasis is on a case study approach in which a project is developed through the course of the book illustrating the different activities of software development. The sequence of chapters is essentially the same as the sequence of activities performed during a typical software project. All activities, including quality assurance and control activities, are described in each chapter as integral activities for that phase of the development process. Similarly, the author carefully introduces appropriate metrics for controlling and assessing the software process. This book is intended for students who have had no previous training in software engineering and is suitable for a one semester course. In this new edition two trends are clearly highlighted: software processes and object orientation. From reviews of the first edition "I can recommend this book for classroom adoption or individual study..." Computing Reviews "Overall, the book is very readable and exceptionally well organized ... exposes the reader to many current sophistictaed formal and quantitative methods." American Scientist

This book is designed for use as an introductory software engineering course or as a reference for programmers. Up-to-date text uses both theory applications to design reliable, error-free software. Includes a companion CD-ROM with source code third-party software engineering applications.

This book provides guidelines for practicing design science in the fields of information systems and software engineering research. A design process usually iterates over two activities: first designing an artifact that improves something for stakeholders and subsequently empirically investigating the performance of that artifact in its context. This "validation in context" is a key feature of the book - since an artifact is designed for a context, it should also be validated in this context. The book is divided into five parts. Part I discusses the fundamental nature of design science and its artifacts, as well as related design research questions and goals. Part II deals with the design cycle, i.e. the creation, design and validation of artifacts based on requirements and stakeholder goals. To elaborate this further, Part III presents the role of conceptual frameworks and theories in design science. Part IV continues with the empirical cycle to investigate artifacts in context, and presents the different elements of research problem analysis, research setup and data analysis. Finally, Part V deals with the practical application of the empirical cycle by presenting in detail various research methods, including observational case studies, case-based and sample-based experiments and technical action research. These main sections are complemented by two generic checklists, one for the design cycle and one for the empirical cycle. The

book is written for students as well as academic and industrial researchers in software engineering or information systems. It provides guidelines on how to effectively structure research goals, how to analyze research problems concerning design goals and knowledge questions, how to validate artifact designs and how to empirically investigate artifacts in context – and finally how to present the results of the design cycle as a whole.

Software Engineering: A Methodical Approach (Second Edition) provides a comprehensive, but concise introduction to software engineering. It adopts a methodical approach to solving software engineering problems, proven over several years of teaching, with outstanding results. The book covers concepts, principles, design, construction, implementation, and management issues of software engineering. Each chapter is organized systematically into brief, reader-friendly sections, with itemization of the important points to be remembered. Diagrams and illustrations also sum up the salient points to enhance learning. Additionally, the book includes the author's original methodologies that add clarity and creativity to the software engineering experience. New in the Second Edition are chapters on software engineering projects, management support systems, software engineering frameworks and patterns as a significant building block for the design and construction of contemporary software systems, and emerging software engineering frontiers. The text starts with an introduction of software engineering and the role of the software engineer. The following chapters examine in-depth software analysis, design, development, implementation, and management. Covering object-oriented methodologies and the principles of object-oriented information engineering, the book reinforces an object-oriented approach to the early phases of the software development life cycle. It covers various diagramming techniques and emphasizes object classification and object behavior. The text features comprehensive treatments of: Project management aids that are commonly used in software engineering An overview of the software design phase, including a discussion of the software design process, design strategies, architectural design, interface design, database design, and design and development standards User interface design Operations design Design considerations including system catalog, product documentation, user message management, design for real-time software, design for reuse, system security, and the agile effect Human resource management from a software engineering perspective Software economics Software implementation issues that range from operating environments to the marketing of software Software maintenance, legacy systems, and re-engineering This textbook can be used as a one-semester or two-semester course in software engineering, augmented with an appropriate CASE or RAD tool. It emphasizes a practical, methodical approach to software engineering, avoiding an overkill of theoretical calculations where possible. The primary objective is to help students gain a solid grasp of the activities in the software development life cycle to be confident about taking on new software engineering projects.

Over the past decade, software engineering has developed into a highly respected field. Though computing and software engineering education continues to emerge as a prominent interest area of study, few books specifically focus on software engineering education itself. Software Engineering: Effective Teaching and Learning Approaches and Practices presents the latest developments in software engineering education, drawing contributions from over 20 software engineering educators from around the globe. Encompassing areas such as student assessment and learning, innovative teaching methods, and educational technology, this much-needed book greatly enhances libraries with its unique research content.

Cleanroom software engineering is a process for developing and certifying high-reliability software. Combining theory-based engineering technologies in project management, incremental development, software specification and design, correctness verification, and statistical quality certification, the Cleanroom process answers today's call for more reliable software and provides methods for more cost-effective software development. Cleanroom originated with Harlan D. Mills, an IBM Fellow and a visionary in software engineering. Written by colleagues of Mills and some of the most experienced developers and practitioners of Cleanroom, Cleanroom Software Engineering provides a roadmap for software management, development, and testing as disciplined engineering practices. This book serves both as an introduction for those new to Cleanroom and as a reference guide for the growing practitioner community. Readers will discover a proven way to raise both quality and productivity in their software-intensive products, while reducing costs. Highlights Explains basic Cleanroom theory Introduces the sequence-based specification method Elaborates the full management, development, and certification process in a Cleanroom Reference Model (CRM) Shows how the Cleanroom process dovetails with the SEI's Capability Maturity Model for Software (CMM) Includes a large case study to illustrate how Cleanroom methods scale up to large projects.

Do you... Use a computer to perform analysis or simulations in your daily work? Write short scripts or record macros to perform repetitive tasks? Need to integrate off-the-shelf software into your systems or require multiple applications to work together? Find yourself spending too much time working the kinks out of your code? Work with software engineers on a regular basis but have difficulty communicating or collaborating? If any of these sound familiar, then you may need a quick primer in the principles of software engineering. Nearly every engineer, regardless of field, will need to develop some form of software during their career. Without exposure to the challenges, processes, and limitations of software engineering, developing software can be a burdensome and inefficient chore. In What Every Engineer Should Know about Software Engineering, Phillip Laplante introduces the profession of software engineering along with a practical approach to understanding, designing, and building sound software based on solid principles. Using a unique question-and-answer format, this book addresses the issues and misperceptions that engineers need to understand in order to successfully work with software engineers, develop specifications for quality software, and learn the basics of the most common programming languages, development approaches, and paradigms.

Innovations in Computing Sciences and Software Engineering includes a set of rigorously reviewed world-class manuscripts addressing and detailing state-of-the-art research projects in the areas of Computer Science, Software

Engineering, Computer Engineering, and Systems Engineering and Sciences. Topics Covered: •Image and Pattern Recognition: Compression, Image processing, Signal Processing Architectures, Signal Processing for Communication, Signal Processing Implementation, Speech Compression, and Video Coding Architectures. •Languages and Systems: Algorithms, Databases, Embedded Systems and Applications, File Systems and I/O, Geographical Information Systems, Kernel and OS Structures, Knowledge Based Systems, Modeling and Simulation, Object Based Software Engineering, Programming Languages, and Programming Models and tools. •Parallel Processing: Distributed Scheduling, Multiprocessing, Real-time Systems, Simulation Modeling and Development, and Web Applications. •Signal and Image Processing: Content Based Video Retrieval, Character Recognition, Incremental Learning for Speech Recognition, Signal Processing Theory and Methods, and Vision-based Monitoring Systems. •Software and Systems: Activity-Based Software Estimation, Algorithms, Genetic Algorithms, Information Systems Security, Programming Languages, Software Protection Techniques, Software Protection Techniques, and User Interfaces. •Distributed Processing: Asynchronous Message Passing System, Heterogeneous Software Environments, Mobile Ad Hoc Networks, Resource Allocation, and Sensor Networks. •New trends in computing: Computers for People of Special Needs, Fuzzy Inference, Human Computer Interaction, Incremental Learning, Internet-based Computing Models, Machine Intelligence, Natural Language. This handbook provides a unique and in-depth survey of the current state-of-the-art in software engineering, covering its major topics, the conceptual genealogy of each subfield, and discussing future research directions. Subjects include foundational areas of software engineering (e.g. software processes, requirements engineering, software architecture, software testing, formal methods, software maintenance) as well as emerging areas (e.g., self-adaptive systems, software engineering in the cloud, coordination technology). Each chapter includes an introduction to central concepts and principles, a guided tour of seminal papers and key contributions, and promising future research directions. The authors of the individual chapters are all acknowledged experts in their field and include many who have pioneered the techniques and technologies discussed. Readers will find an authoritative and concise review of each subject, and will also learn how software engineering technologies have evolved and are likely to develop in the years to come. This book will be especially useful for researchers who are new to software engineering, and for practitioners seeking to enhance their skills and knowledge.

Today's software engineer must be able to employ more than one kind of software process, ranging from agile methodologies to the waterfall process, from highly integrated tool suites to refactoring and loosely coupled tool sets. Braude and Bernstein's thorough coverage of software engineering perfects the reader's ability to efficiently create reliable software systems, designed to meet the needs of a variety of customers. Topical highlights . . . • Process: concentrates on how applications are planned and developed • Design: teaches software engineering primarily as a requirements-to-design activity • Programming and agile methods: encourages software engineering as a code-oriented activity • Theory and principles: focuses on foundations • Hands-on projects and case studies: utilizes active team or individual project examples to facilitate understanding theory, principles, and practice In addition to knowledge of the tools and techniques available to software engineers, readers will grasp the ability to interact with customers, participate in multiple software processes, and express requirements clearly in a variety of ways. They will have the ability to create designs flexible enough for complex, changing environments, and deliver the proper products.

Introduction to Software Engineering, Second Edition equips students with the fundamentals to prepare them for satisfying careers as software engineers regardless of future changes in the field, even if the changes are unpredictable or disruptive in nature. Retaining the same organization as its predecessor, this second edition adds considerable material on open source and agile development models. The text helps students understand software development techniques and processes at a reasonably sophisticated level. Readers acquire practical experience through team software projects. Throughout much of the book, a relatively large project is used to teach about the requirements, design, and coding of software. In addition, a continuing case study of an agile software development project offers a complete picture of how a successful agile project can work. The book covers each major phase of the software development life cycle, from developing software requirements to software maintenance. It also discusses project management and explains how to read software engineering literature. Three appendices describe software, Features, Gives readers the option of choosing which software development life cycle model to focus on, including the classical waterfall model, rapid prototyping model, spiral, model, open source model, or agile method, Uses many examples that illustrate the successes and pitfalls of software projects, Encourages the reuse of existing software components in a systematic way, Discusses the typical viewpoints of software managers on relevant technical activities, giving readers additional perspectives on software engineering, Presents state-of-the-art information on important software engineering trends, Provides the basis for team software projects, Includes a case study of an actual complex project created using an agile development process Book jacket.

Computer Architecture/Software Engineering

The abundance of information and increase in computing power currently enable researchers to tackle highly complicated and challenging computational problems. Solutions to such problems are now feasible using advances and innovations from the area of Artificial Intelligence. The general focus of the AIAI conference is to provide insights on how Artificial Intelligence may be applied in real-world situations and serve the study, analysis and modeling of theoretical and practical issues. This volume contains papers selected for presentation at the 6th IFIP Conference on Artificial Intelligence Applications and Innovations (AIAI 2010) and held in Larnaca, Cyprus, during October 6–7, 2010. IFIP AIAI 2010 was co-organized by the University of Cyprus and the Cyprus University of Technology and was sponsored by the Cyprus University of Technology, Frederick University and the Cyprus Tourism Organization. AIAI 2010 is the official conference of the WG12.5 "Artificial Intel- gence Applications" working group of IFIP TC12, the International Federation

for Information Processing Technical Committee on Artificial Intelligence (AI). AIAI is a conference that grows in significance every year attracting researchers from different countries around the globe. It maintains high quality, standards and welcomes research papers describing technical advances and engineering and ind- trial applications of intelligent systems. AIAI 2010 was not confined to introducing how AI may be applied in real-life situations, but also included innovative methods, techniques, tools and ideas of AI expressed at the algorithmic or systemic level. Software Engineering: The Current Practice teaches students basic software engineering skills and helps practitioners refresh their knowledge and explore recent developments in the field, including software changes and iterative processes of software development. After a historical overview and an introduction to software technology and models, the book discusses the software change and its phases, including concept location, impact analysis, refactoring, actualization, and verification. It then covers the most common iterative processes: agile, directed, and centralized processes. The text also journeys through the software life span from the initial development of software from scratch to the final stages that lead toward software closedown. For Professionals The book gives programmers and software managers a unified view of the contemporary practice of software engineering. It shows how various developments fit together and fit into the contemporary software engineering mosaic. The knowledge gained from the book allows practitioners to evaluate and improve the software engineering processes in their projects. For Instructors Instructors have several options for using this classroom-tested material. Designed to be run in conjunction with the lectures, ideas for student projects include open source programs that use Java or C++ and range in size from 50 to 500 thousand lines of code. These projects emphasize the role of developers in a classroom-tailored version of the directed iterative process (DIP). For Students Students gain a real understanding of software engineering processes through the lectures and projects. They acquire hands-on experience with software of the size and quality comparable to that of industrial software. As is the case in the industry, students work in teams but have individual assignments and accountability.

Based on their own experiences of in-depth case studies of softwareprojects in international corporations, in this book theauthors present detailed practical guidelines on the preparation,conduct, design and reporting of case studies of softwareengineering. This is the first software engineering specificbook on the case study research method.

Practical Guidance on the Efficient Development of High-Quality Software Introduction to Software Engineering, Second Edition equips students with the fundamentals to prepare them for satisfying careers as software engineers regardless of future changes in the field, even if the changes are unpredictable or disruptive in nature. Retaining the same organization as its predecessor, this second edition adds considerable material on open source and agile development models. The text helps students understand software development techniques and processes at a reasonably sophisticated level. Students acquire practical experience through team software projects. Throughout much of the book, a relatively large project is used to teach about the requirements, design, and coding of software. In addition, a continuing case study of an agile software development project offers a complete picture of how a successful agile project can work. The book covers each major phase of the software development life cycle, from developing software requirements to software maintenance. It also discusses project management and explains how to read software engineering literature. Three appendices describe software patents, command-line arguments, and flowcharts.

Betrayal! Corruption! Software engineering? Industry experts Johann Rost and Robert L. Glass explore the seamy underbelly of software engineering in this timely report on and analysis of the prevalance of subversion, lying, hacking, and espionage on every level of software project management. Based on the authors' original research and augmented by frank discussion and insights from other well-respected figures, The Dark Side of Software Engineering goes where other management studies fear to tread -- a corporate environment where schedules are fabricated, trust is betrayed, millions of dollars are lost, and there is a serious need for the kind of corrective action that this book ultimately proposes. To build reliable, industry-applicable software products, large-scale software project groups must continuously improve software engineering processes to increase product quality, facilitate cost reductions, and adhere to tight schedules. Emphasizing the critical components of successful large-scale software projects, Software Project Management: A Process-Driven Approach discusses human resources, software engineering, and technology to a level that exceeds most university-level courses on the subject. The book is organized into five parts. Part I defines project management with information on project and process specifics and choices, the skills and experience needed, the tools available, and the human resources organization and management that brings it all together. Part II explores software life-cycle management. Part III tackles software engineering processes and the range of processing models devised by several domestic and international organizations. Part IV reveals the human side of project management with chapters on managing the team, the suppliers, and the customers themselves. Part V wraps up coverage with a look at the technology, techniques, templates, and checklists that can help your project teams meet and exceed their goals. A running case study provides authoritative insight and insider information on the tools and techniques required to ensure product quality, reduce costs, and meet project deadlines. Praise for the book: This book presents all aspects of modern project management practices ... includes a wealth of quality templates that practitioners can use to build their own tools. ... equally useful to students and professionals alike. —Maqbool Patel, PhD, SVP/CTO/Partner, Acuitec