

Fundamentals Of Software Engineering By Rajib Mall 3rd Edition

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GATE Computer Science and Information Technology | GATE 2020 | By Pearson - Trishna Knowledge Systems

This book has been prepared by a group of faculties who are highly experienced in training GATE candidates and are also subject matter experts. As a result this book would serve as a one-stop solution for any GATE aspirant to crack the examination. The bo

Core C++ - Victor Shtern 2000

This book is designed to teach new or experienced C++ programmers the principles of the C++ programming language--with an emphasis on the fundamentals of object-oriented programing, software engineering, and maintenance. The book progresses from simple language constructs and programming constructs to more complex, stressing the choices that the programmer can make and explaining criteria for arriving at high quality programs.

Software Engineering - Roger S. Pressman 2019-09-09

For almost four decades, Software Engineering: A Practitioner's Approach (SEPA) has been the world's leading textbook in software engineering. The ninth edition represents a major restructuring and update of previous editions, solidifying the book's position as the most comprehensive guide to this important subject.

Taming PYTHON By Programming - Jeeva Jose

This is a great book for Python Beginner and Advanced Learner which covers Basics to Advanced Python Programming where each topic is explained with the help of Illustrations and Examples. More than 450 solved programs of this book are tested in Python 3.4.3 for windows. The range of Python Topics covered makes this book unique which can be used as a self study material or for instructor assisted teaching. This books covers Python Syllabus of all major national and international universities. Also it includes frequently asked questions for interviews and examination which are provided at the end of each chapter.

UNIX and Shell Programming - Behrouz A. Forouzan 2003

Designed as one of the first true textbooks on how to use the UNIX operating system and suitable for a wide variety of UNIX-based courses, UNIX and Shell Programming goes beyond providing a reference of commands to offer a guide to basic commands and shell programming.

Forouzan/Gilberg begin by introducing students to basic commands and tools of the powerful UNIX operating system. The authors then present simple scriptwriting concepts, and cover all material required for understanding shells (e.g., Regular Expressions, grep, sed, and awk) before introducing material on the Korn, C, and Bourne shells. Throughout, in-text learning aids encourage active learning and rich visuals support concept presentation. For example, sessions use color so students can easily distinguish user input from computer output. In addition, illustrative figures help student visualize what the command is doing. Each chapter concludes with problems, including lab sessions where students work on the computer and complete sessions step-by-step. This approach has proven to be successful when teaching this material in the classroom.

Fundamentals of Software Architecture - Mark Richards 2020-01-28

Salary surveys worldwide regularly place software architect in the top 10 best jobs, yet no real guide exists to help developers become architects. Until now. This book provides the first comprehensive overview of software architecture's many aspects. Aspiring and existing architects alike will examine architectural characteristics, architectural patterns, component determination, diagramming and presenting architecture, evolutionary architecture, and many other topics. Mark Richards and Neal Ford—hands-on practitioners who have taught software architecture classes professionally for years—focus on architecture principles that apply across all technology stacks. You'll explore software architecture in a modern light, taking into account all the innovations of the past decade. This book examines: Architecture patterns: The technical basis for many architectural decisions Components: Identification, coupling, cohesion, partitioning, and granularity Soft skills: Effective team management, meetings, negotiation, presentations, and more Modernity: Engineering practices and operational approaches that have changed radically in the past few years Architecture as an engineering discipline: Repeatable results, metrics, and concrete valuations that add rigor to software architecture
Analysis and Design of Information Systems -

Data Science Fundamentals and Practical Approaches - Dr. Gypsy Nandi 2020-06-02

Learn how to process and analysis data using Python KEY FEATURES - The book has theories explained elaborately along with Python code and corresponding output to support the theoretical explanations. The Python codes are provided with step-by-step comments to explain each instruction of the code. - The book is not just dealing with the background mathematics alone or only the programs but beautifully correlates the background mathematics to the theory and then finally translating it into the programs. - A rich set of chapter-end exercises are provided, consisting of both short-answer questions and long-answer questions. DESCRIPTION This book introduces the fundamental concepts of Data Science, which has proved to be a major game-changer in business solving problems. Topics covered in the book include fundamentals of Data Science, data preprocessing, data plotting and visualization, statistical data analysis, machine learning for data analysis, time-series analysis, deep learning for Data Science, social media analytics, business analytics, and Big Data analytics. The content of the book describes the fundamentals of each of the Data Science related topics together with illustrative examples as to how various data analysis techniques can be implemented using different tools and libraries of Python programming language. Each chapter contains numerous examples and illustrative output to explain the important basic concepts. An appropriate number of questions is presented at the end of each chapter for self-assessing the conceptual understanding. The references presented at the end of every chapter will help the readers to explore more on a given topic. WHAT WILL YOU LEARN Perform processing on data for making it ready for visual plot and understand the pattern in data over time. Understand what machine learning is and how learning can be incorporated into a program. Know how tools can be used to perform analysis on big data using python and other standard tools. Perform social media analytics, business analytics, and data analytics on any

data of a company or organization. WHO THIS BOOK IS FOR The book is for readers with basic programming and mathematical skills. The book is for any engineering graduates that wish to apply data science in their projects or wish to build a career in this direction. The book can be read by anyone who has an interest in data analysis and would like to explore more out of interest or to apply it to certain real-life problems. TABLE OF CONTENTS 1. Fundamentals of Data Science 2. Data Preprocessing 3. Data Plotting and Visualization 4. Statistical Data Analysis 5. Machine Learning for Data Science 6. Time-Series Analysis 7. Deep Learning for Data Science 8. Social Media Analytics 9. Business Analytics 10. Big Data Analytics

Global Trends in Information Systems and Software Applications - P. Venkata Krishna
2012-08-01

This 2-Volume-Set, CCIS 0269-CCIS 0270, constitutes the refereed proceedings of the International Conference on Global Trends in Computing and Communication (CCIS 0269) and the International Conference on Global Trends in Information Systems and Software Applications (CCIS 0270), ObCom 2011, held in Vellore, India, in December 2011. The 173 full papers presented together with a keynote paper and invited papers were carefully reviewed and selected from 842 submissions. The conference addresses issues associated with computing, communication and information. Its aim is to increase exponentially the participants' awareness of the current and future direction in the domains and to create a platform between researchers, leading industry developers and end users to interrelate.

Computer Organization and Design - David A. Patterson 2004-08-07

This best selling text on computer organization has been thoroughly updated to reflect the newest technologies. Examples highlight the latest processor designs, benchmarking standards, languages and tools. As with previous editions, a MIPS processor is the core used to present the fundamentals of hardware technologies at work in a computer system. The book presents an entire MIPS instruction set—instruction by instruction—the fundamentals of assembly language, computer arithmetic, pipelining, memory hierarchies and I/O. A new aspect of the third edition is the explicit connection between program performance and CPU performance. The authors show how hardware and software components—such as the specific algorithm, programming language, compiler, ISA and processor implementation—impact program performance. Throughout the book a new feature focusing on program performance describes how to search for bottlenecks and improve performance in various parts of the system. The book digs deeper into the hardware/software interface, presenting a complete view of the function of the programming language and compiler—crucial for understanding computer organization. A CD provides a toolkit of simulators and compilers along with tutorials for using them. For instructor resources click on the grey "companion site" button found on the right side of this page. This new edition represents a major revision. New to this edition: * Entire Text has been updated to reflect new technology * 70% new exercises. * Includes a CD loaded with software, projects and exercises to support courses using a number of tools * A new interior design presents defined terms in the margin for quick reference * A new feature, "Understanding Program Performance" focuses on performance from the programmer's perspective * Two sets of exercises and solutions, "For More Practice" and "In More Depth," are included on the CD * "Check Yourself" questions help students check their understanding of major concepts * "Computers In the Real World" feature illustrates the diversity of uses for information technology * More detail below...

Real-Time Systems Design and Analysis - Phillip A. Laplante 1997

Acknowledgments. Basic Real-Time Concepts. Computer Hardware. Languages Issues. The Software Life Cycle. Real-Time Specification and Design Techniques. Real-Time Kernels. Intertask Communication and Synchronization. Real-Time Memory Management. System Performance Analysis and Optimization. Queuing Models. Reliability, Testing, and Fault Tolerance. Multiprocessing Systems. Hardware/Software Integration. Real-Time Applications. Glossary. Bibliography. Index.

FUNDAMENTALS OF MOBILE COMPUTING, Second Edition - PATTNAIK, PRASANT KUMAR

2015-11-30

This textbook, now in its Second Edition, addresses the rapid advancements to the area of mobile computing. Almost every chapter has been revised to make the book up to date with the latest developments. It covers the main topics associated with mobile computing and wireless networking at a level that enables the students to develop a fundamental understanding of the technical issues involved in this new and fast emerging discipline. This book first examines the basics of wireless technologies and computer communications that form the essential infrastructure required for building knowledge in the area of mobile computations involving the study of invocation mechanisms at the client end, the underlying wireless communication, and the corresponding server-side technologies. It includes coverage of development of mobile cellular systems, protocol design for mobile networks, special issues involved in the mobility management of cellular system users, realization and applications of mobile ad hoc networks (MANETs), design and operation of sensor networks, special constraints and requirements of mobile operating systems, and development of mobile computing applications. Finally, an example application of the mobile computing infrastructure to M-commerce is described in the concluding chapter of the book. The book is suitable for a one-semester course in mobile computing for the undergraduate students of Computer Science and Engineering, Information Technology, Electronics and Communication Engineering, Master of Computer Applications (MCA), and the undergraduate and postgraduate science courses in computer science and Information Technology. Key Features • Provides unified coverage of mobile computing and communication aspects • Discusses the mobile application development, mobile operating systems and mobile databases as part of the material devoted to mobile computing • Incorporates a survey of mobile operating systems and the latest developments

SOFTWARE DESIGN, ARCHITECTURE AND ENGINEERING - BHATT, PRAMOD CHANDRA P.
2021-07-01

This textbook aims to prepare students, as well as, practitioners for software design and production. Keeping in mind theory and practice, the book keeps a balance between theoretical foundations and practical considerations. The book by and large meets the requirements of students at all levels of computer science and engineering/information technology for their Software design and Software engineering courses. The book begins with concepts of data and object. This helps in exploring the rationale that guide high level programming language (HLL) design and object oriented frameworks. Once past this post, the book moves on to expand on software design concerns. The book emphasizes the centrality of Parnas's separation of concerns in evolving software designs and architecture. The book extensively explores modelling frameworks such as Unified Modelling Language (UML) and Petri net based methods. Next, the book covers architectural principles and software engineering practices such as Agile – emphasizing software testing during development. It winds up with case studies demonstrating how systems evolve from basic concepts to final products for quality software designs. TARGET AUDIENCE • Undergraduate/postgraduate students of Computer Science and Engineering, and Information Technology • Postgraduate students of Software Engineering/Software Systems

Biomedical Engineering Fundamentals - Joseph D. Bronzino 2014-12-17
Known as the bible of biomedical engineering, The Biomedical Engineering Handbook, Fourth Edition, sets the standard against which all other references of this nature are measured. As such, it has served as a major resource for both skilled professionals and novices to biomedical engineering. Biomedical Engineering Fundamentals, the first volume of the handbook, presents material from respected scientists with diverse backgrounds in physiological systems, biomechanics, biomaterials, bioelectric phenomena, and neuroengineering. More than three dozen specific topics are examined, including cardiac biomechanics, the mechanics of blood vessels, cochlear mechanics, biodegradable biomaterials, soft tissue replacements, cellular biomechanics, neural engineering, electrical stimulation for paraplegia, and visual prostheses. The material is presented in a systematic manner and has been updated to reflect the latest

applications and research findings.

Computer Network Simulation Using NS2 - Ajit Kumar Nayak 2016-08-19

Computer Network Simulations Using NS2 provides a solid foundation of computer networking knowledge and skills, covering everything from simple operating system commands to the analysis of complex network performance metrics. The book begins with a discussion of the evolution of data communication techniques and the fundamental issues associated with performance evaluation. After presenting a preliminary overview of simulation and other performance evaluation techniques, the authors: Describe a number of computer network protocols and TCP/IP and OSI models, highlighting the networking devices used Explain a socket and its use in network programming, fostering the development of network applications using C and socket API Introduce the NS2 network simulator, exhibiting its internal architecture, constituent software packages, and installation in different operating systems Delve into simulation using NS2, elaborating on the use of Tcl and OTcl scripts as well as AWK scripting and plotting with Gnuplot Show how to simulate wired and wireless network protocols step by step, layer by layer Explore the idea of simulating very large networks, identifying the challenges associated with measuring and graphing the various network parameters Include nearly 90 example programs, scripts, and outputs, along with several exercises requiring application of the theory and programming Computer Network Simulations Using NS2 emphasizes the implementation and simulation of real-world computer network protocols, affording readers with valuable opportunities for hands-on practice while instilling a deeper understanding of how computer network protocols work.

INTRODUCTION TO INFORMATION TECHNOLOGY - RAJARAMAN, V. 2018-01-01

his textbook is designed to teach a first course in Information Technology (IT) to all undergraduate students. In view of the all-pervasive nature of IT in today's world a decision has been taken by many universities to introduce IT as a compulsory core course to all Bachelor's degree students regardless of their specialisation. This book is intended for such a course. The approach taken in this book is to emphasize the fundamental "Science" of Information Technology rather than a cook book of skills. Skills can be learnt easily by practice with a computer and by using instructions given in simple web lessons that have been cited in the References. The book defines Information Technology as the technology that is used to acquire, store, organize, process and disseminate processed data, namely, information. The unique aspect of the book is to examine processing all types of data: numbers, text, images, audio and video data. As IT is a rapidly changing field, we have taken the approach to emphasize reasonably stable, fundamental concepts on which the technology is built. A unique feature of the book is the discussion of topics such as image, audio and video compression technologies from first principles. We have also described the latest technologies such as 'e-wallets' and 'cloud computing'. The book is suitable for all Bachelor's degree students in Science, Arts, Computer Applications, and Commerce. It is also useful for general reading to learn about IT and its latest trends. Those who are curious to know, the principles used to design jpg, mp3 and mpeg4 compression, the image formats—bmp, tiff, gif, png, and jpg, search engines, payment systems such as BHIM and Paytm, and cloud computing, to mention a few of the technologies discussed, will find this book useful. KEY FEATURES • Provides comprehensive coverage of all basic concepts of IT from first principles • Explains acquisition, compression, storage, organization, processing and dissemination of multimedia data • Simple explanation of mp3, jpg, and mpeg4 compression • Explains how computer networks and the Internet work and their applications • Covers business data processing, World Wide Web, e-commerce, and IT laws • Discusses social impacts of IT and career opportunities in IT and IT enabled services • Designed for self-study with every chapter starting with learning objectives and concluding with a comprehensive summary and a large number of exercises.

Software Quality Engineering - Jeff Tian 2005-05-20

The one resource needed to create reliable software This text offers a comprehensive and

integrated approach to software quality engineering. By following the author's clear guidance, readers learn how to master the techniques to produce high-quality, reliable software, regardless of the software system's level of complexity. The first part of the publication introduces major topics in software quality engineering and presents quality planning as an integral part of the process. Providing readers with a solid foundation in key concepts and practices, the book moves on to offer in-depth coverage of software testing as a primary means to ensure software quality; alternatives for quality assurance, including defect prevention, process improvement, inspection, formal verification, fault tolerance, safety assurance, and damage control; and measurement and analysis to close the feedback loop for quality assessment and quantifiable improvement. The text's approach and style evolved from the author's hands-on experience in the classroom. All the pedagogical tools needed to facilitate quick learning are provided: * Figures and tables that clarify concepts and provide quick topic summaries * Examples that illustrate how theory is applied in real-world situations * Comprehensive bibliography that leads to in-depth discussion of specialized topics * Problem sets at the end of each chapter that test readers' knowledge This is a superior textbook for software engineering, computer science, information systems, and electrical engineering students, and a dependable reference for software and computer professionals and engineers.

Fundamentals of Software Engineering - Rajib Mall 2004-08

Introduction to the Personal Software Process (sm) - Watts S. Humphrey 1996-12-20

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

Software Engineering Fundamentals - Ali Behforooz 1996

Software Engineering Fundamentals provides a comprehensive overview of software engineering and its process, builds on experience drawn from actual practice, and guides engineering students towards a better understanding of various disciplines, tasks, and specialities that contribute to the development of a software product. Intended for both students and professionals, the text follows the full software development life cycle, including a thorough coverage of methods, tools, principles, and guidelines. Software Engineering Fundamentals is unique in its coverage of such topics as software metrics, real-time software design, quality assurance, reliability, risk management, cost and schedule estimation, sizing, planning, test and integration process, technical management, and human factors. It establishes the concept of software development as an engineering process and software as an engineered product, and describes software development as a team-oriented activity usually conducted in a system development setting. The notion of using software metrics (attributes) to measure properties of the software product as a means to evaluate and control the development process is introduced, software metrics are presented as a management tool, and the software development process is described using an accepted review and documentation structure as an outline. Many interim products of the software engineering process are described in enough detail to permit the reader to produce a credible draft of these products. While encouraging the use of modeling techniques

for sizing, cost and schedule estimation, reliability, risk assessment, and real-time design, the authors emphasize the need to calibrate models with actual data. Explicit guidance is provided for virtually every task that a software engineer may be assigned, and realistic case studies and examples are used extensively to reinforce the topics presented. Software Engineering Fundamentals presents a unique blend of practical and theoretical treatment of software engineering topics for students and professional use.

An Integrated Approach to Software Engineering - Pankaj Jalote 2013-06-29

It is clear that the development of large software systems is an extremely complex activity, which is full of various opportunities to introduce errors. Software engineering is the discipline that provides methods to handle this complexity and enables us to produce reliable software systems with maximum productivity. An Integrated Approach to Software Engineering is different from other approaches because the various topics are not covered in isolation. A running case study is employed throughout the book, illustrating the different activity of software development on a single project. This work is important and instructive because it not only teaches the principles of software engineering, but also applies them to a software development project such that all aspects of development can be clearly seen on a project.

OBJECT-ORIENTED SOFTWARE ENGINEERING - YOGESH SINGH 2012-03-05

This comprehensive and well-written book presents the fundamentals of object-oriented software engineering and discusses the recent technological developments in the field. It focuses on object-oriented software engineering in the context of an overall effort to present object-oriented concepts, techniques and models that can be applied in software estimation, analysis, design, testing and quality improvement. It applies unified modelling language notations to a series of examples with a real-life case study. The example-oriented approach followed in this book will help the readers in understanding and applying the concepts of object-oriented software engineering quickly and easily in various application domains. This book is designed for the undergraduate and postgraduate students of computer science and engineering, computer applications, and information technology. KEY FEATURES : Provides the foundation and important concepts of object-oriented paradigm. Presents traditional and object-oriented software development life cycle models with a special focus on Rational Unified Process model. Addresses important issues of improving software quality and measuring various object-oriented constructs using object-oriented metrics. Presents numerous diagrams to illustrate object-oriented software engineering models and concepts. Includes a large number of solved examples, chapter-end review questions and multiple choice questions along with their answers.

Gray Hat Python - Justin Seitz 2009-04-15

Python is fast becoming the programming language of choice for hackers, reverse engineers, and software testers because it's easy to write quickly, and it has the low-level support and libraries that make hackers happy. But until now, there has been no real manual on how to use Python for a variety of hacking tasks. You had to dig through forum posts and man pages, endlessly tweaking your own code to get everything working. Not anymore. Gray Hat Python explains the concepts behind hacking tools and techniques like debuggers, trojans, fuzzers, and emulators. But author Justin Seitz goes beyond theory, showing you how to harness existing Python-based security tools—and how to build your own when the pre-built ones won't cut it. You'll learn how to: -Automate tedious reversing and security tasks -Design and program your own debugger -Learn how to fuzz Windows drivers and create powerful fuzzers from scratch -Have fun with code and library injection, soft and hard hooking techniques, and other software trickery -Sniff secure traffic out of an encrypted web browser session -Use PyDBG, Immunity Debugger, Sulley, IDAPython, PyEMU, and more The world's best hackers are using Python to do their handiwork. Shouldn't you?

Software Engineering Concepts - Richard E. Fairley 1985

Egg Science and Technology - William J Stadelman 2017-12-14

Here is the complete source of information on egg handling, processing, and utilization. Egg

Science and Technology, Fourth Edition covers all aspects of grading, packaging, and merchandising of shell eggs. Full of the information necessary to stay current in the field, Egg Science and Technology remains the essential reference for everyone involved in the egg industry. In this updated guide, experts in the field review the egg industry and examine egg production practices, quality identification and control, egg and egg product chemistry, and specialized processes such as freezing, pasteurization, desugarization, and dehydration. This updated edition explores new and recent trends in the industry and new material on the microbiology of shell eggs, and it presents a brand-new chapter on value-added products. Readers can seek out the most current information available in all areas of egg handling and discover totally new material relative to fractionation of egg components for high value, nonfood uses. Contributing authors to Egg Science and Technology present chapters that cover myriad topics, ranging from egg production practices to nonfood uses of eggs. Some of these specific subjects include: handling shell eggs to maintain quality at a level for customer satisfaction trouble shooting problems during handling chemistry of the egg, emphasizing nutritional value and potential nonfood uses merchandising shell eggs to maximize sales in refrigerated dairy sales cases conversion of shell eggs to liquid, frozen, and dried products value added products and opportunities for merchandising egg products as consumers look for greater convenience Egg Science and Technology is a must-have reference for agricultural libraries. It is also an excellent text for upper-level undergraduate and graduate courses in food science, animal science, and poultry departments and is an ideal guide for professionals in related food industries, regulatory agencies, and research groups.

New Shopping Malls - Carles Broto 2006

Creating an appealing overall look as well as a distinctive image for each shop...integrating communal areas...handling parking and public facilities...these are just some of the challenges facing the designers of modern shopping malls. "Shop and Malls" features dozens of remarkable examples of successful malls, each one showcased with floor plans, insightful text, sketches, and full-color photographs that show how the designers met the retail challenge. "Shop and Malls" is a one-stop shopping resource for design professionals, architects, and urban planners.

Software Engineering for Game Developers - John P. Flynt 2005

"Software Engineering for Game Developers" is a unique guide—a toolbox for effectively building a computer game using practices that are fostered by software engineering. Examine each major phase of the software engineering lifecycle of an actual game and its developers and gather the tools you need to organize your programming into proper engineering patterns. This book documents a comprehensive development process that started from a set of requirements. This process guided the development team to consistently design and implement a game according to these requirements, staying within budget and delivering the game on time. The tools provided within this book are a valuable resource for software developers in any area—game software development professionals, game producers and designers, testers, writers, artists, and educators.

Fundamentals Of Cloud Computing - Prasant Kumar Pattnaik

In recent times, Cloud Computing has emerged as an important topic in the realm of Information Technology. Cloud Computing has gained eminence due to the growing usage of the Internet among people. This book is especially intended for readers who have no prior knowledge of the subject. Some topics in this book are unique and based on published information that is current and timely and is helpful for research scholars as well as specialists working in areas related to cloud computing. This book is suitable as an introductory text for one semester course in Cloud Computing for undergraduate and postgraduate science courses in Computer Science and Information Technology.

Real-Time Systems - Rajib Mall 2009-05

The presence and use of real-time systems is becoming increasingly common. Examples of such systems range from nuclear reactors, to automotive controllers, and also entertainment software

such as games and graphics animation. The growing importance of rea.

PANKAJ JALOTE'S SOFTWARE ENGINEERING: A PRECISE APPROACH - Pankaj Jalote 2010

The goal of this book is to introduce to the students a limited number of concepts and practices which will achieve the following two objectives: Teach the student the skills needed to execute a smallish commercial project. Provide the students necessary conceptual background for undertaking advanced studies in software engineering, through organized courses or on their own. This book focuses on key tasks in two dimensions - engineering and project management - and discusses concepts and techniques that can be applied to effectively execute these tasks. The book is organized in a simple manner, with one chapter for each of the key tasks in a project. For engineering, these tasks are requirements analysis and specification, architecture design, module level design, coding and unit testing, and testing. For project management, the key tasks are project planning and project monitoring and control, but both are discussed together in one chapter on project planning as even monitoring has to be planned. In addition, one chapter clearly defines the problem domain of Software Engineering, and another Chapter discusses the central concept of software process which integrates the different tasks executed in a project. Each chapter opens with some introduction and clearly lists the chapter goals, or what the reader can expect to learn from the chapter. For the task covered in the chapter, the important concepts are first discussed, followed by a discussion of the output of the task, the desired quality properties of the output, and some practical methods and notations for performing the task. The explanations are supported by examples, and the key learnings are summarized in the end for the reader. The chapter ends with some self-assessment exercises. Finally, the book contains a question bank at the end which lists out questions with answers from major universities.

Software Development From A to Z - Olga Filipova 2018-10-12

Understand the big picture of the software development process. We use software every day - operating systems, applications, document editing programs, home banking - but have you ever wondered who creates software and how it's created? This book guides you through the entire process, from conception to the finished product with the aid of user-centric design theory and tools. Software Development: From A to Z provides an overview of backend development - from databases to communication protocols including practical programming skills in Java and of frontend development - from HTML and CSS to npm registry and Vue.js framework. You'll review quality assurance engineering, including the theory about different kind of tests and practicing end-to-end testing using Selenium. Dive into the devops world where authors discuss continuous integration and continuous delivery processes along with each topic's associated technologies. You'll then explore insightful product and project management coverage where authors talk about agile, scrum and other processes from their own experience. The topics that are covered do not require a deep knowledge of technology in general; anyone possessing basic computer and programming knowledge will be able to complete all the tasks and fully understand the concepts this book aims at delivering. You'll wear the hat of a project manager, product owner, designer, backend, frontend, QA and devops engineer, and find your favorite role. What You'll Learn Understand the processes and roles involved in the creation of software Organize your ideas when building the concept of a new product Experience the work performed by stakeholders and other departments of expertise, their individual challenges, and how to overcome possible threats Improve the ways stakeholders and departments can work with each other Gain ideas on how to improve communication and processes Who This Book Is For Anyone who is on a team that creates software and is curious to learn more about other stakeholders or departments involved. Those interested in a career change and want to learn about how software gets created. Those who want to build technical startups and wonder what roles might be involved in the process.

The Engineering Capstone Course - Harvey F. Hoffman 2014-07-14

This essential book takes students and instructors through steps undertaken in a start-to-finish engineering project as conceived and presented in the engineering capstone course. The learning experience follows an industry model to prepare students to recognize a need for a product or

service, create and work in a team; identify competition, patent overlap, and necessary resources, generate a project proposal that accounts for business issues, prepare a design, develop and fabricate the product or service, develop a test plan to evaluate the product or service, and prepare and deliver a final report and presentation. Throughout the book, students are asked to examine the business viability aspects of the project. The Engineering Capstone Course: Fundamentals for Students and Instructors emphasizes that a design must meet a set of realistic technical specifications and constraints including examination of attendant economics, environmental needs, sustainability, manufacturability, health and safety, governmental regulations, industry standards, and social and political constraints. The book is ideal for instructors teaching, or students working through, the capstone course.

Theory of Computer Science - K. L. P. Mishra 2006-01-01

This Third Edition, in response to the enthusiastic reception given by academia and students to the previous edition, offers a cohesive presentation of all aspects of theoretical computer science, namely automata, formal languages, computability, and complexity. Besides, it includes coverage of mathematical preliminaries. NEW TO THIS EDITION • Expanded sections on pigeonhole principle and the principle of induction (both in Chapter 2) • A rigorous proof of Kleene's theorem (Chapter 5) • Major changes in the chapter on Turing machines (TMs) - A new section on high-level description of TMs - Techniques for the construction of TMs - Multitape TM and nondeterministic TM • A new chapter (Chapter 10) on decidability and recursively enumerable languages • A new chapter (Chapter 12) on complexity theory and NP-complete problems • A section on quantum computation in Chapter 12. • KEY FEATURES • Objective-type questions in each chapter—with answers provided at the end of the book. • Eighty-three additional solved examples—added as Supplementary Examples in each chapter. • Detailed solutions at the end of the book to chapter-end exercises. The book is designed to meet the needs of the undergraduate and postgraduate students of computer science and engineering as well as those of the students offering courses in computer applications.

Electronics - Circuits and Systems - Owen Bishop 2011-01-13

First Published in 2010. Routledge is an imprint of Taylor & Francis, an informa company.

Software Engineering - K. K. Aggarwal 2008-01-01

FUNDAMENTALS OF SOFTWARE ENGINEERING, FIFTH EDITION - MALL, RAJIB 2018-09-01

This new edition of the book, is restructured to trace the advancements made and landmarks achieved in software engineering. The text not only incorporates latest and enhanced software engineering techniques and practices, but also shows how these techniques are applied into the practical software assignments. The chapters are incorporated with illustrative examples to add an analytical insight on the subject. The book is logically organised to cover expanded and revised treatment of all software process activities. KEY FEATURES • Large number of worked-out examples and practice problems • Chapter-end exercises and solutions to selected problems to check students' comprehension on the subject • Solutions manual available for instructors who are confirmed adopters of the text • PowerPoint slides available online at www.phindia.com/rajibmall to provide integrated learning to the students NEW TO THE FIFTH EDITION • Several rewritten sections in almost every chapter to increase readability • New topics on latest developments, such as agile development using SCRUM, MC/DC testing, quality models, etc. • A large number of additional multiple choice questions and review questions in all the chapters help students to understand the important concepts TARGET AUDIENCE • BE/B.Tech (CS and IT) • BCA/MCA • M.Sc. (CS) • MBA

Fundamentals of Software Engineering - Hitesh Mohapatra 2020-01-14

Practical Handbook to understand the hidden language of computer hardware and software DESCRIPTION This book teaches the essentials of software engineering to anyone who wants to become an active and independent software engineer expert. It covers all the software engineering fundamentals without forgetting a few vital advanced topics such as software

engineering with artificial intelligence, ontology, and data mining in software engineering. The primary goal of the book is to introduce a limited number of concepts and practices which will achieve the following two objectives: Teach students the skills needed to execute a smallish commercial project. Provide students with the necessary conceptual background for undertaking advanced studies in software engineering through courses or on their own. **KEY FEATURES** - This book contains real-time executed examples along with case studies. - Covers advanced technologies that are intersectional with software engineering. - Easy and simple language, crystal clear approach, and straight forward comprehensible presentation. - Understand what architecture design involves, and where it fits in the full software development life cycle. - Learning and optimizing the critical relationships between analysis and design. - Utilizing proven and reusable design primitives and adapting them to specific problems and contexts. **WHAT WILL YOU LEARN** This book includes only those concepts that we believe are foundational. As executing a software project requires skills in two dimensions—engineering and project management—this book focuses on crucial tasks in these two dimensions and discuss the concepts and techniques that can be applied to execute these tasks effectively. **WHO THIS BOOK IS FOR** The book is primarily intended to work as a beginner’s guide for Software Engineering in any undergraduate or postgraduate program. It is directed towards students who know the program but have not had formal exposure to software engineering. The book can also be used by teachers and trainers who are in a similar state—they know some programming but want to be introduced to the systematic approach of software engineering. **TABLE OF CONTENTS** 1. Introductory Concepts of Software Engineering 2. Modelling Software Development Life Cycle 3. Software Requirement Analysis and Specification 4. Software Project Management Framework 5. Software Project Analysis and Design 6. Object-Oriented Analysis and Design 7. Designing Interfaces & Dialogues and Database Design 8. Coding and Debugging 9. Software Testing 10. System Implementation and Maintenance 11. Reliability 12. Software Quality 13. CASE and Reuse 14. Recent Trends and Development in Software Engineering 15. Model Questions with Answers
Object-oriented Software Engineering - Timothy Christian Lethbridge 2004

This book covers the essential knowledge and skills needed by a student who is specializing in software engineering. Readers will learn principles of object orientation, software development, software modeling, software design, requirements analysis, and testing. The use of the Unified Modelling Language to develop software is taught in depth. Many concepts are illustrated using complete examples, with code written in Java.

Fundamentals of Biochemical Engineering - Rajiv Dutta 2010-11-19

The biology, biotechnology, chemistry, pharmacy and chemical engineering students at various university and engineering institutions are required to take the Biochemical Engineering course either as an elective or compulsory subject. This book is written keeping in mind the need for a text book on afore subject for students from both engineering and biology backgrounds. The main feature of this book is that it contains the solved problems, which help the students to understand the subject better. The book is divided into three sections: Enzyme mediated bioprocess, whole cell mediated bioprocess and the engineering principle in bioprocess. Dr. Rajiv Dutta is Professor in Biotechnology and Director, Amity Institute of Biotechnology, Lucknow. He earned his M. Tech. in Biotechnology and Engineering from the Department of Chemical Engineering, IIT, Kharagpur and Ph.D. in Bioelectronics from BITS, Pilani. He has taught Biochemical Engineering and Biophysics to B.E., M.E. and M.Sc. level student carried out advanced research in the area of Ion channels at the Department of Botany at Oklahoma State University, Stillwater and Department of Biological Sciences at Purdue University, West Lafayette, IN. He also holds the position of Nanion Technologies Adjunct Research Professor at Research Triangle Institute, RTP, NC. He had received various awards including JCI Outstanding Young Person of India and ISBEM Dr. Ramesh Gulrajani Memorial Award 2006 for outstanding research in electro physiology.

Fundamentals of Software Engineering - Carlo Ghezzi 2003

Provides coverage of fundamentals of software engineering by stressing principles and methods through formal and informal approaches. This book emphasizes, identifies, and applies fundamental principles that are applicable throughout the software lifecycle, in contrast to other texts which are based in the lifecycle model of software development.