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Data Structures and Algorithms in Java - Michael T. Goodrich 2014-01-28

The design and analysis of efficient data structures has long been recognized as a key component of the Computer Science curriculum. Goodrich, Tomassia and Goldwasser's approach to this classic topic is based on the object-oriented paradigm as the framework of choice for the design of data structures. For each ADT presented in the text, the authors provide an associated Java interface. Concrete data structures realizing the ADTs are provided as Java classes implementing the interfaces. The Java code implementing fundamental data structures in this book is organized in a single Java package, net.datastructures. This package forms a coherent library of data structures and algorithms in Java specifically designed for educational purposes in a way that is complimentary with the Java Collections Framework.

Programming and Problem Solving using Python - Anuradha A. Puntambekar 2020-12-01

This textbook is designed to learn python programming from scratch. At the beginning of the book general problem solving concepts such as types of problems, difficulties in problem solving, and problem solving aspects are discussed. From this book, you will start learning the Python programming by knowing about the variables, constants, keywords, data types, indentation and various programming constructs. The most commonly used types such as Lists, Tuples, dictionaries are also discussed with necessary examples and illustrations. The book includes the concepts of functions, lambda functions, modules and strings. In the later part of this book the concept of object oriented programming using Python is discussed in detail. Finally how to handle files and directories using Python is discussed. At the end of book some sample programs in Python are given that are based on the programming constructs. Python will be most demanded language after Java in future. So learning Python is need for today's software professionals. This book serves the purpose of teaching Python programming in the simplest and easiest manner.

Essential Readings in Problem-Based Learning - Andrew Walker 2015-01-15

Like most good educational interventions, problem-based learning (PBL) did not grow out of theory, but out of a practical problem. Medical students were bored, dropping out, and unable to apply what they had learned in lectures to their practical experiences a couple of years later. Neurologist Howard S. Barrows reversed the sequence, presenting students with patient problems to solve in small groups and requiring them to seek relevant knowledge in an effort to solve those problems. Out of his work, PBL was born. The application of PBL approaches has now spread far beyond medical education. Today, PBL is used at levels from elementary school to adult education, in disciplines ranging across the humanities and sciences, and in both academic and corporate settings. This book aims to take stock of developments in the field and to bridge the gap between practice and the theoretical tradition, originated by Barrows, that underlies PBL techniques.

Software Engineering - A. A. Puntambekar 2007

Handbook of Design in Educational Technology - Rosemary Luckin 2013-06-26

The Handbook of Design in Educational Technology provides up-to-date, comprehensive summaries and syntheses of recent research pertinent to the design of information and communication technologies to support learning. Readers can turn to this handbook for expert advice about each stage in the process of

designing systems for use in educational settings; from theoretical foundations to the challenges of implementation, the process of evaluating the impact of the design and the manner in which it might be further developed and disseminated. The volume is organized into the following four sections: Theory, Design, Implementation, and Evaluation. The more than forty chapters reflect the international and interdisciplinary nature of the educational technology design research field.

Artificial Intelligence in Education - Ulrich Hoppe 2003

This work reports on research into intelligent systems, models, and architectures for educational computing applications. It covers a wide range of advanced information and communication and computational methods applied to education and training.

Data Structures - Anuradha A. Puntambekar 2020-12-01

The book has been developed to provide comprehensive and consistent coverage of both the concepts of data structures as well as implementation of these concepts using C programming. The book utilizes a systematic approach wherein each data structure is explained using examples followed by its implementation using a programming language. It begins with the introduction to data types. In this, an overview of various types of data structures is given and asymptotic notations, best case, worst case and average case time complexity is discussed. The book then focuses on the linear data structures such as arrays, stacks, queues and linked lists. In these units each concept is followed by its implementation and logic explanation part. The book then covers the non-linear data structures such as trees and graphs. These data structures are very well explained with the help of illustrative diagrams, examples and implementations. The text book then covers two important topics - hashing and file structures. While explaining the hashing - various hashing methods, and collision handling techniques are explained with necessary illustrations and examples. File structures are demonstrated by implementing sequential, index sequential and random file organization. Finally searching and sorting algorithms, their implementation and time complexities are discussed. The sorting and searching methods are illustrated systematically with the help of examples. The explanation in this book is in a very simple language along with clear and concise form which will help the students to have clear-cut understanding of the subject.

International Handbook of Metacognition and Learning Technologies - Roger Azevedo 2013-04-23

Education in today's technologically advanced environments makes complex cognitive demands on students pre-learning, during, and post-learning. Not surprisingly, these analytical learning processes--metacognitive processes--have become an important focus of study as new learning technologies are assessed for effectiveness in this area. Rich in theoretical models and empirical data, the International Handbook of Metacognition and Learning Technologies synthesizes current research on this critical topic. This interdisciplinary reference delves deeply into component processes of self-regulated learning (SRL), examining theories and models of metacognition, empirical issues in the study of SRL, and the expanding role of educational technologies in helping students learn. Innovations in multimedia, hypermedia, microworlds, and other platforms are detailed across the domains, so that readers in diverse fields can evaluate the theories, data collection methods, and conclusions. And for the frontline instructor, contributors offer proven strategies for using technologies to benefit students at all levels. For each

technology covered, the Handbook: Explains how the technology fosters students' metacognitive or self-regulated learning. Identifies features designed to study or support metacognitive/SRL behaviors. Reviews how its specific theory or model addresses learners' metacognitive/SRL processes. Provides detailed findings on its effectiveness toward learning. Discusses its implications for the design of metacognitive tools. Examines any theoretical, instructional, or other challenges. These leading-edge perspectives make the International Handbook of Metacognition and Learning Technologies a resource of great interest to professionals and researchers in science and math education, classroom teachers, human resource researchers, and industrial and other instructors.

Fundamentals of Data Structures - Anuradha A. Puntamberkar 2020-12-01

The book has been developed to provide comprehensive and consistent coverage of both the concepts of data structures as well as implementation of these concepts using Python and C++ language. The book utilizes a systematic approach wherein each data structure is explained using examples followed by its implementation using suitable programming language. It begins with the introduction to data structures and algorithms. In this, an overview of various types of data structures is given and asymptotic notations, best case, worst case and average case time complexity is discussed. This part is concluded by discussing the two important algorithmic strategies such as - divide and conquer and greedy method. The book then focuses on the linear data structures such as arrays in which types of arrays, concept of ordered list, implementation of polynomial using arrays and sparse matrix representation and operations are discussed. The implementation of these concepts is using Python and C++ programming language. Then searching and sorting algorithms, their implementation and time complexities are discussed. The sorting and searching methods are illustrated systematically with the help of examples. The book then covers the linear data structures such as linked list, stacks and queues. These data structures are very well explained with the help of illustrative diagrams, examples and implementations. The explanation in this book is in a very simple language along with clear and concise form which will help the students to have clear-cut understanding of the subject.

Encyclopedia of the Sciences of Learning - Norbert M. Seel 2011-10-05

Over the past century, educational psychologists and researchers have posited many theories to explain how individuals learn, i.e. how they acquire, organize and deploy knowledge and skills. The 20th century can be considered the century of psychology on learning and related fields of interest (such as motivation, cognition, metacognition etc.) and it is fascinating to see the various mainstreams of learning, remembered and forgotten over the 20th century and note that basic assumptions of early theories survived several paradigm shifts of psychology and epistemology. Beyond folk psychology and its naïve theories of learning, psychological learning theories can be grouped into some basic categories, such as behaviorist learning theories, connectionist learning theories, cognitive learning theories, constructivist learning theories, and social learning theories. Learning theories are not limited to psychology and related fields of interest but rather we can find the topic of learning in various disciplines, such as philosophy and epistemology, education, information science, biology, and - as a result of the emergence of computer technologies - especially also in the field of computer sciences and artificial intelligence. As a consequence, machine learning struck a chord in the 1980s and became an important field of the learning sciences in general. As the learning sciences became more specialized and complex, the various fields of interest were widely spread and separated from each other; as a consequence, even presently, there is no comprehensive overview of the sciences of learning or the central theoretical concepts and vocabulary on which researchers rely. The Encyclopedia of the Sciences of Learning provides an up-to-date, broad and authoritative coverage of the specific terms mostly used in the sciences of learning and its related fields, including relevant areas of instruction, pedagogy, cognitive sciences, and especially machine learning and knowledge engineering. This modern compendium will be an indispensable source of information for scientists, educators, engineers, and technical staff active in all fields of learning. More specifically, the Encyclopedia provides fast access to the most relevant theoretical terms provides up-to-date, broad and authoritative coverage of the most important theories within the various fields of the learning sciences and adjacent sciences and communication technologies; supplies clear and precise explanations of the theoretical terms, cross-references to related entries and up-to-date references to important research and

publications. The Encyclopedia also contains biographical entries of individuals who have substantially contributed to the sciences of learning; the entries are written by a distinguished panel of researchers in the various fields of the learning sciences.

Object Oriented and Multicore Programming - Anuradha A. Puntamberkar 2020-12-01

This book covers the object oriented programming aspects using C++ programming. It focuses on developing the applications both at basic and moderate level. In this book there are number of illustrative programming examples that help the students to understand the concepts. Starting from introduction to object oriented programming, handling of control statements using C++, arrays, objects and classes, this book moves gradually towards the concept of overloading, inheritance, Exception handling, and I/O operations. In the later part of this book, concept of multicore programming is discussed. This chapter also focuses on the operating system's role in multicore programming. Then in the next subsequent unit, the concept of processes, interface classes and predicates is discussed. Lastly, the creation and handling of threads, thread scheduling and priorities are illustrated with the help of simple and easy to understand programs. Then there is a discussion on how the communication and synchronization of concurrent tasks take place. This book doesn't just provide a collection of ready-made programs but teaching you the basics of object oriented programming through C++ and multicore programming quickly and painlessly.

Principles of Management - Openstax 2022-03-25

Principles of Management is designed to meet the scope and sequence requirements of the introductory course on management. This is a traditional approach to management using the leading, planning, organizing, and controlling approach. Management is a broad business discipline, and the Principles of Management course covers many management areas such as human resource management and strategic management, as well as behavioral areas such as motivation. No one individual can be an expert in all areas of management, so an additional benefit of this text is that specialists in a variety of areas have authored individual chapters. Contributing Authors David S. Bright, Wright State University Anastasia H. Cortes, Virginia Tech University Eva Hartmann, University of Richmond K. Praveen Parboteeah, University of Wisconsin-Whitewater Jon L. Pierce, University of Minnesota-Duluth Monique Reece Amit Shah, Frostburg State University Siri Terjesen, American University Joseph Weiss, Bentley University Margaret A. White, Oklahoma State University Donald G. Gardner, University of Colorado-Colorado Springs Jason Lambert, Texas Woman's University Laura M. Leduc, James Madison University Joy Leopold, Webster University Jeffrey Muldoon, Emporia State University James S. O'Rourke, University of Notre Dame

New Science of Learning - Myint Swe Khine 2010-06-16

The earliest educational software simply transferred print material from the page to the monitor. Since then, the Internet and other digital media have brought students an ever-expanding, low-cost knowledge base and the opportunity to interact with minds around the globe—while running the risk of shortening their attention spans, isolating them from interpersonal contact, and subjecting them to information overload. The New Science of Learning: Cognition, Computers and Collaboration in Education deftly explores the multiple relationships found among these critical elements in students' increasingly complex and multi-paced educational experience. Starting with instructors' insights into the cognitive effects of digital media—a diverse range of viewpoints with little consensus—this cutting-edge resource acknowledges the double-edged potential inherent in computer-based education and its role in shaping students' thinking capabilities. Accordingly, the emphasis is on strategies that maximize the strengths and compensate for the negative aspects of digital learning, including: Group cognition as a foundation for learning Metacognitive control of learning and remembering Higher education course development using open education resources Designing a technology-oriented teacher professional development model Supporting student collaboration with digital video tools Teaching and learning through social annotation practices The New Science of Learning: Cognition, Computers and Collaboration in Education brings emerging challenges and innovative ideas into sharp focus for researchers in educational psychology, instructional design, education technologies, and the learning sciences.

Advanced Java - Anuradha A. Puntamberkar 2020-12-01

Advanced Java is a textbook specially designed for undergraduate and post graduate students of Computer Science. It focuses on developing the applications both at basic and moderate level. This text book is

divided into seven units. The first unit introduces Java network programming. In this unit along with the basic concepts of networking, the programming using Sockets, InetAddress, URL and URLConnection class is discussed in a lucid manner. The second unit is based on JDBC programming. In this unit, connecting with the database is discussed with examples and illustrations. Then next two chapters focuses on server side programming by means of Servlet programming and JSP. In third unit, the illustration of how to create and execute servlets is given. Then the concept of cookies and session management is discussed. In the next subsequent unit the Java Server Pages - its overview and programming is studied. In the last three units the advanced concepts of Java programming such as JSF, Hibernate and Java Web Framework : Spring is discussed. The contents of this textbook is supported with numerous illustrations, examples, program codes, and screenshots. With its lucid presentation and inclusion of numerous examples the book will be very useful for the readers.

Client Side Scripting - Anuradha A. Puntambekar 2020-12-01

JavaScript is an important scripting language for almost every modern web application. It is simple for beginners but complex when you build a full-scale application. The book is extremely user-friendly. It assumes no programming experience and helps the students to learn the JavaScript in step by step manner with the help of illustrative examples. The first two units cover the fundamental concepts of JavaScript such as variables, operators, control structures, arrays, functions and strings. In the third unit, the concept of form and event handling is discussed. This feature of JavaScript help us to design the interactive web page with graphical user interface. In the next subsequent chapter, the book demonstrates how to create and manage cookies, how to create browser history, implementation of form validation with the help of regular expressions, creating rollover effects and creating and handling frames. At the end, the book illustrates creation of banner, management of status bar and creation of slideshows using JavaScript. This book serves the purpose of teaching JavaScript in the simplest and easiest manner.

Web Based Application Development - Anuradha A. Puntambekar 2020-12-01

This textbook has been written in such a way that the concepts are explained with the help of examples. The book covers the topics right from basics of PHP programming such as variables, data types, operators, control structures, arrays to graphics. The book also covers implementation of object oriented concepts such as classes, objects, inheritance, overloading and so on. In the next subsequent unit, the textbook covers creating and validating forms. Finally, the book explains how to connect to database using PHP and MySQL laying more stress on examples. Thus this book helps the students to learn the PHP programming in the most lucid way.

Transdisciplinary Lifecycle Analysis of Systems - R. Curran 2015-07-15

Concurrent Engineering (CE) is based on the premise that different phases of a product's lifecycle should be conducted concurrently and initiated as early as possible within the Product Creation Process (PCP). It has become the substantive basic methodology in many industries, including automotive, aerospace, machinery, shipbuilding, consumer goods, process industry and environmental engineering. CE aims to increase the efficiency of the PCP and reduce errors in later phases while incorporating considerations for full lifecycle and through-life operations. This book presents the proceedings of the 22nd ISPE Inc. (International Society for Productivity Enhancement) International Conference on Concurrent Engineering (CE2015) entitled 'Transdisciplinary Lifecycle Analysis of Systems', and held in Delft, the Netherlands, in July 2015. It is the second in the series 'Advances in Transdisciplinary Engineering'. The book includes 63 peer reviewed papers and 2 keynote speeches arranged in 10 sections: keynote speeches; systems engineering; customization and variability management; production oriented design, maintenance and repair; design methods and knowledge-based engineering; multidisciplinary product management; sustainable product development; service oriented design; product lifecycle management; and trends in CE. Containing papers ranging from the theoretical and conceptual to the highly pragmatic, this book will be of interest to all engineering professionals and practitioners; researchers, designers and educators.

Compiler Construction - William M. Waite 2012-12-06

Compilers and operating systems constitute the basic interfaces between a programmer and the machine for which he is developing software. In this book we are concerned with the construction of the former. Our intent is to provide the reader with a firm theoretical basis for compiler construction and sound engineering

principles for selecting alternate methods, implementing them, and integrating them into a reliable, economically viable product. The emphasis is upon a clean decomposition employing modules that can be re-used for many compilers, separation of concerns to facilitate team programming, and flexibility to accommodate hardware and system constraints. A reader should be able to understand the questions he must ask when designing a compiler for language X on machine Y, what tradeoffs are possible, and what performance might be obtained. He should not feel that any part of the design rests on whim; each decision must be based upon specific, identifiable characteristics of the source and target languages or upon design goals of the compiler. The vast majority of computer professionals will never write a compiler.

Nevertheless, study of compiler technology provides important benefits for almost everyone in the field. • It focuses attention on the basic relationships between languages and machines. Understanding of these relationships eases the inevitable transitions to new hardware and programming languages and improves a person's ability to make appropriate tradeoffs in design and implementation.

Internet Programming - Anuradha A. Puntambekar 2020-12-01

This textbook provides comprehensive introduction to scripting languages that are used for creating web based applications. The book is divided into five different sections. In the first section the book introduces web site basics, HTTP, HTML5 and CSS3. The second and third section is based on client side and server side scripting. In these sections, the client side scripting such as JavaScript, DHTML and JSON is introduced. The server side programming includes Servlet programming and JSP. In this section Java Database Connectivity is introduced and Simple Web Applications based on database connectivity have been developed. The fourth section deals with PHP and XML. The last section includes introduction to AJAX and Web Services. A database driven web service is developed and explained in step by step manner. At the end of the book some sample programs based on various scripting languages are given. The book helps the reader to learn the internet programming in the most lucid way. Various programming examples discussed in this book will motivate the students to learn the subject.

Fundamentals of Object-oriented Design in UML - Meilir Page-Jones 2000

Fundamentals of Object-Oriented Design in UML shows aspiring and experienced programmers alike how to apply design concepts, the UML, and the best practices in OO development to improve both their code and their success rates with object-based projects.

Verification of Communication Protocols in Web Services - Kazi Sakib 2013-10-02

In the near future, wireless sensor networks will become an integral part of our day-to-day life. To solve different sensor networking related issues, researchers have been putting various efforts and coming up with innovative ideas. Within the last few years, we have seen a steep growth of research works particularly on various sensor node organization issues. The objective of this book is to gather recent advancements in the fields of self-organizing wireless sensor networks as well as to provide the readers with the essential information about sensor networking.

Web Technologies: Html, Javascript, Php, Java, Jsp, Asp.Net, Xml And Ajax, Black Book (With Cd) - Kogent Learning Solutions Inc. (with Cd) 2009-09-01

Data Structures Using C++ - D. S. Malik 2009-07-31

Now in its second edition, D.S. Malik brings his proven approach to C++ programming to the CS2 course. Clearly written with the student in mind, this text focuses on Data Structures and includes advanced topics in C++ such as Linked Lists and the Standard Template Library (STL). The text features abundant visual diagrams, examples, and extended Programming Examples, all of which serve to illuminate difficult concepts. Complete programming code and clear display of syntax, explanation, and example are used throughout the text, and each chapter concludes with a robust exercise set. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Soft Computing for Problem Solving - Kedar Nath Das 2019-11-27

This two-volume book presents the outcomes of the 8th International Conference on Soft Computing for Problem Solving, SocProS 2018. This conference was a joint technical collaboration between the Soft Computing Research Society, Liverpool Hope University (UK), and Vellore Institute of Technology (India),

and brought together researchers, engineers and practitioners to discuss thought-provoking developments and challenges in order to select potential future directions. The book highlights the latest advances and innovations in the interdisciplinary areas of soft computing, including original research papers on algorithms (artificial immune systems, artificial neural networks, genetic algorithms, genetic programming, and particle swarm optimization) and applications (control systems, data mining and clustering, finance, weather forecasting, game theory, business and forecasting applications). It offers a valuable resource for both young and experienced researchers dealing with complex and intricate real-world problems that are difficult to solve using traditional methods.

Computer Architecture - Atul P. Godse 2008

Structure of Computers Functional units, Basic operational concepts, Bus structures, Software performance, Memory locations and address, Memory operations, Instruction and instruction sequencing, Addressing modes, Assembly language, Basic I/O operations, Stacks and queues. Arithmetic Unit Addition and subtraction of signed numbers, Design of fast adder, Multiplication of positive numbers, Signed operand multiplication and fast multiplication, Integer division, Floating point numbers and operations. Processing Unit Fundamental concepts, Execution of a complete instruction, Multiple bus organization, Hardwired control, Microprogrammed control, Pipelining, Basic concepts, Data hazards, Instruction hazards, Influence on instruction sets, Data path and control consideration, Superscalar operation. Memory System Basic concepts, Semiconductor RAMs, ROMs, Speed, Size and cost, Cache memories, Performance consideration, Virtual memory, Memory Management requirements, Secondary storage. I/O Organization Accessing I/O devices, Interrupts, Direct Memory Access, Buses, Interface circuits, Standard I/O interfaces (PCI, SCSI, USB)

Microprocessors & Microcontrollers - Atul P. Godse 2008

Pentium Microprocessor Historical evolution of 80286, 386 and 486 processors, Pentium features and architecture, Pin description, Functional description, Pentium real mode, Pentium RISC features, Pentium super-scalar architecture - pipelining, Instruction paring rules, Branch prediction, Instruction and data caches The floating-point unit. Bus Cycles and Memory Organisation Initialization and configuration, Bus operations-reset, Non pipelined and pipelined (read and write), Memory organisation and I/O organisation, Data transfer mechanism-8 bit, 16 bit, 32 bit data bus interface. Pentium programming Programmer's model, Register set, Addressing modes, Instruction set, Data types, Data transfer instructions, String instructions, Arithmetic instructions, Logical instructions, Bit manipulation instructions, Program transfer instructions and Processor control instructions. Protected Mode Introduction, Segmentation-support registers, Related instructions descriptors, Memory management through segmentation, Logical to linear address translation, Protection by segmentation, Privilege level-protection, Related instructions, Inter-privilege level transfer of control, Paging-support registers, descriptors, Linear to physical address translation, TLB, Page level protection, Virtual memory. Multitasking, Interrupts Exceptions and I/O Multitasking - Support registers, Related descriptors, Task switching, I/O Permission bit map. Virtual mode - features, Address generation, Privilege level, Instructions and registers available, entering and leaving V86 mode. Interrupt structure - Real, Protected and Virtual 8086 modes, I/O handling in Pentium, Comparison of all three modes. 8051 Micro-controller Micro-controller MCS-51 family architecture, On-chip data memory and program memory organization - Register set, Register bank, SFRs, External data memory and program memory, Interrupts structure, Timers and their programming, Serial port and programming, Other features, Design of minimum system using 8051 micro-controller for various applications. PIC Micro-controller Overview and features of PIC16C, PIC 16F8XX, Pin diagram, Capture mode, Compare mode, PWM mode, Block diagram, Programmer's model PIC, Reset and clocking. Memory organization - program memory, data memory, Flash, EEPROM, PIC 16F8XX addressing modes, Instruction set, programming, I/O ports, Interrupts, Timers, ADC.

Object Oriented Programming - Anuradha A. Puntambekar 2020-12-01

This book covers the object oriented programming aspects using Java programming. It focuses on developing the applications both at basic and moderate level. In this book there are number of illustrative programming examples that help the students to understand the concepts. Starting from introduction to Java programming, handling of control statements, arrays, objects and classes, this book moves gradually towards Exception handling, Interfaces, Collection classes and concurrent programming with the help of

Java threads. In addition, the book also covers JAVA FX basics, Event driven programming, Animations, creating GUI applications and multimedia using JAVA FX. Explanation of all the object oriented programming concepts is given in simple and expressive language. Also, the Java programs are followed by step by step explanation. This book explains the object oriented programming concepts in such a way that even if the reader having no Java programming background can develop the applications with ease.

Design and analysis of Algorithms, 2/e - Himanshu B. Dave

This second edition of Design and Analysis of Algorithms continues to provide a comprehensive exposure to the subject with new inputs on contemporary topics in algorithm design and algorithm analysis. Spread over 21 chapters aptly complemented by five appendices, the book interprets core concepts with ease in logical succession to the student's benefit.

Web-Teaching - David W. Brooks 2006-04-11

This book delves into a review of current research, active learning strategies, Web courseware, metacognition, strategies for Web discussions, promoting student self-regulation, building interactive Web pages, basic HTML coding, managing Web sites, using databases, automated testing, and security and legal issues. It helps readers pick and choose what aspects of the Web to employ to achieve the greatest student learning gains.

Handbook of Research on Human Performance and Instructional Technology - Song, Holim 2009-10-31

"This book addresses the connection between human performance and instructional technology with teaching and learning, offering innovative ideas for instructional technology applications and elearning"-- Provided by publisher.

The Nature of Technology - Michael P. Clough 2013-09-03

How does technology alter thinking and action without our awareness? How can instantaneous information access impede understanding and wisdom? How does technology alter conceptions of education, schooling, teaching and what learning entails? What are the implications of these and other technology issues for society? Meaningful technology education is far more than learning how to use technology. It entails an understanding of the nature of technology — what technology is, how and why technology is developed, how individuals and society direct, react to, and are sometimes unwittingly changed by technology. This book places these and other issues regarding the nature of technology in the context of learning, teaching and schooling. The nature of technology and its impact on education must become a significant object of inquiry among educators. Students must come to understand the nature of technology so that they can make informed decisions regarding how technology may influence thinking, values and action, and when and how technology should be used in their personal lives and in society. Prudent choices regarding technology cannot be made without understanding the issues that this book raises. This book is intended to raise such issues and stimulate thinking and action among teachers, teacher educators, and education researchers. The contributions to this book raise historical and philosophical issues regarding the nature of technology and their implications for education; challenge teacher educators and teachers to promote understanding of the nature of technology; and provide practical considerations for teaching the nature of technology.

WEB TECHNOLOGY - N. P. GOPALAN 2014-07-30

This well-received book, now in its second edition, incorporates a new chapter on PHP as Chapter 13 based on the readers' demand in today's world PHP which is an important web programming technology. This text provides students with a comprehensible introduction to the programming and scripting languages currently used to create Web sites and Web applications—the main aim being to teach the programming concepts of various Web technologies and the fundamentals needed to program on the Internet. The book emphasises the underlying fundamentals of Web page development and prepares students to build real-world, industrial strength Web-based applications, and use a wide variety of Web development tools effectively and efficiently. Students are introduced to the concepts of Internet Protocols, Java networking, JavaScript, VBScript and PHP. The material presented on Java network programming contains an elaborate description with examples to help the reader clearly understand the networking concepts. The book is intended as a text for students of Computer Science and Engineering, Information Technology, and Master of Computer Applications. Key Features • Presents well-designed material on HTML, DHTML, XML and

PHP with many practical exercises. • Explains the development of servlets with simple examples. • Explores the programming features of JSPs. • Introduces the elements of ASPs with worked-out exercises. • Includes Review Questions and Objective Type Questions at the end of each chapter.

Trends and Applications in Information Systems and Technologies - Álvaro Rocha 2021-03-28

This book is composed of a selection of articles from The 2021 World Conference on Information Systems and Technologies (WorldCIST'21), held online between 30 and 31 of March and 1 and 2 of April 2021 at Hangra de Heroismo, Terceira Island, Azores, Portugal. WorldCIST is a global forum for researchers and practitioners to present and discuss recent results and innovations, current trends, professional experiences and challenges of modern information systems and technologies research, together with their technological development and applications. The main topics covered are: A) Information and Knowledge Management; B) Organizational Models and Information Systems; C) Software and Systems Modeling; D) Software Systems, Architectures, Applications and Tools; E) Multimedia Systems and Applications; F) Computer Networks, Mobility and Pervasive Systems; G) Intelligent and Decision Support Systems; H) Big Data Analytics and Applications; I) Human-Computer Interaction; J) Ethics, Computers & Security; K) Health Informatics; L) Information Technologies in Education; M) Information Technologies in Radiocommunications; N) Technologies for Biomedical Applications.

Advanced Data Structures - Anuradha A. Puntambekar 2020-12-01

Advanced Data Structures is a core subject in Computer Science. It includes a solid introduction to algorithms, data structures and uses C++ syntax and structure in the design of data structures. This textbook helps the students to make the transition from fundamentals of data structures to an advanced level of data structures and their applications. At the beginning, the non-linear data structures such as trees and graphs are discussed in the first two units. In the third unit, the concept of hashing is discussed. In this, the hashing methods, collision handling techniques, concept of dictionary and skip lists are discussed. Next two units are based on search trees and multiway trees. These are basically the advanced level tree structures such as AVL trees, Optimal Binary Search Trees (OBST), B trees, B+ trees, Trie trees, Red-black trees, KD trees and AA trees. Sufficient number of examples and programming illustrations are supported for better understanding of the complex concepts in the simplest manner. Finally, the file organization is discussed, in which various file organization techniques and implementation is illustrated. The objective of this book is to enable students to have the much-needed foundation for advanced technical skill, leading to better problem-solving approach.

Automata and Computability - Anuradha A. Puntambekar 2020-12-01

The book has been developed to provide comprehensive and consistent coverage of concepts of automata theory, formal languages and computation. This book begins by giving prerequisites for the subject, like strings, languages, types of automata, deterministic and non-deterministic automata. It proceeds forward to discuss advanced concepts like regular expressions, context free grammar and pushdown automata. The text then goes on to give a detailed description of context free and non context free languages and Turing Machine with its complexity. This compact and well-organized book provides a clear understanding of the subject with its emphasis on concepts along with a large number of examples.

Compiler Design - Anuradha A. Puntambekar 2011

Analysis and Design of Algorithms - Anuradha A. Puntambekar 2020-12-01

This well-organized textbook provides the design techniques of algorithms in a simple and straight forward manner. The book begins with a description of the fundamental concepts such as algorithm, functions and relations, vectors and matrices. Then it focuses on efficiency analysis of algorithms. In this unit, the technique of computing time complexity of the algorithm is discussed along with illustrative examples. Gradually, the text discusses various algorithmic strategies such as divide and conquer, dynamic programming, Greedy algorithm, backtracking and branch and bound. Finally the string matching algorithms and introduction to NP completeness is discussed. Each algorithmic strategy is explained in stepwise manner, followed by examples and pseudo code. Thus this book helps the reader to learn the analysis and design of algorithms in the most lucid way.

Learning to Think Spatially - National Research Council 2005-02-03

Learning to Think Spatially examines how spatial thinking might be incorporated into existing standards-based instruction across the school curriculum. Spatial thinking must be recognized as a fundamental part of K-12 education and as an integrator and a facilitator for problem solving across the curriculum. With advances in computing technologies and the increasing availability of geospatial data, spatial thinking will play a significant role in the information-based economy of the twenty-first century. Using appropriately designed support systems tailored to the K-12 context, spatial thinking can be taught formally to all students. A geographic information system (GIS) offers one example of a high-technology support system that can enable students and teachers to practice and apply spatial thinking in many areas of the curriculum.

Principles of Compiler Design - Aho Alfred V 1998

Bio-MEMS - Wanjun Wang 2006-12-15

Microelectromechanical systems (MEMS) are evolving into highly integrated technologies for a variety of application areas. Add the biological dimension to the mix and a host of new problems and issues arise that require a broad understanding of aspects from basic, materials, and medical sciences in addition to engineering. Collecting the efforts of renowned leaders in each of these fields, BioMEMS: Technologies and Applications presents the first wide-reaching survey of the design and application of MEMS technologies for use in biological and medical areas. This book considers both the unique characteristics of biological samples and the challenges of microscale engineering. Divided into three main sections, it first examines fabrication technologies using non-silicon processes, which use materials that are appropriate for medical/biological analyses. These include UV lithography, LIGA, nanoimprinting, injection molding, and hot-embossing. Attention then shifts to microfluidic components and sensing technologies for sample preparation, delivery, and analysis. The final section outlines various applications and systems at the leading edge of BioMEMS technology in a variety of areas such as genomics, drug delivery, and proteomics. Laying a cross-disciplinary foundation for further development, BioMEMS: Technologies and Applications provides engineers with an understanding of the biological challenges and biological scientists with an understanding of the engineering challenges of this burgeoning technology.