Epub free Gcse computer science mark scheme unit 02 computing [PDF]

Logic in Computer Science A Tour of Computer Science Concepts Debugging Our Computer Science Programs: Research, Evaluation, and Recommendations for Improving Our Computer Science and Information Technology Academic Programs COMPUTER SCIENCE PRODIGY (Mark Pincus + Vikas Malpani + Larry Page + Chad Hurley) Logic in Computer Science : Modelling and Reasoning about Systems Learner-Centered Design of Computing Education SOFSEM 2017: Theory and Practice of Computer Science Explorations in Computer Science Analytical Network and System Administration The Cognitive Dynamics of Computer Science Cambridge IGCSE® Computer Science Coursebook Introduction to Machine Learning with Applications in Information Security Oswaal CBSE Question Bank Class 12 Computer Science, Chapterwise and Topicwise Solved Papers For Board Exams 2025 Introduction to Computer Science A Concise Introduction to Programming in Python GATE 2019 Computer Science & Information Technology Masterpiece with 10 Practice Sets (6 in Book + 4 Online) 6th edition GATE 2020 Computer Science & Information Technology Guide with 10 Practice Sets (6 in Book + 4 Online) 7th edition GATE Computer Science and Information Technology Information Security Networks Fundamentals of Multimedia 30-Second Coding Introduction to Computer Science Super-Recursive Algorithms Introduction to Knowledge Systems Compute-IT: Student's Book 2 - Computing for KS3 Oswaal ISC Question Bank Class 11 Computer Science | Chapterwise | Topicwise | Solved Papers | For 2025 Exams The Black Art of Programming Annual Review in Automatic Programming AQA AS/a-Level Computer Science Workbook 1 Data Structures and Algorithm Analysis in C + Higher-Order Perl Oswaal CBSE Question Bank Class 11 Computer Science, Chapterwise and Topicwise Solved Papers For 2025 Exams My Revision Notes: AQA A-level Computer Science Object-Orientation, Abstraction, and Data Structures Using Scala Concise Encyclopedia of Computer Science Discovering Computer Science Applied C: an Introduction and More

Logic in Computer Science

2004-08-26

recent years have seen the development of powerful tools for verifying hardware and software systems as companies worldwide realise the need for improved means of validating their products there is increasing demand for training in basic methods in formal reasoning so that students can gain proficiency in logic based verification methods the second edition of this successful textbook addresses both those requirements by continuing to provide a clear introduction to formal reasoning which is both relevant to the needs of modern computer science and rigorous enough for practical application improvements to the first edition have been made throughout with extra and expanded sections on sat solvers existential universal second order logic micro models programming by contract and total correctness the coverage of model checking has been substantially updated further exercises have been added internet support for the book includes worked solutions for all exercises for teachers and model solutions to some exercises for students

A Tour of Computer Science Concepts

2022-06

a tour of computer science concepts provides students with a solid foundational knowledge base within the discipline of computer science the opening chapter offers readers a concise overview of computer history including the development of computers and the birth of the internet additional chapters discuss the differences between analog and digital data as well as techniques to map one type to another number base systems data storage computer architecture and hardware components and system software and application software students learn about hypertext markup language html and cascading style sheets css fundamental programming concepts such as variable declaration assignment statements user input output conditional statements and loop control structures and functions are demonstrated through the use of javascript closing chapters cover computer networks data transmission between devices and the increased importance of cybersecurity in modern day computing each chapter features a summary review of key concepts and terms and discussion questions to enrich the learning experience succinct yet highly informative a tour of computer science concepts is an ideal resource for foundational courses in computer science

Debugging Our Computer Science Programs: Research, Evaluation, and Recommendations for Improving Our Computer Science and Information Technology Academic Programs

2019-07-18

what could academia learn by studying our current software development teams already working professionally in corporate software engineering and information technology companies what could academia learn from our recent college and university computer science graduates could academia use this information to identify gaps and provide constructive feedback to our colleges and universities to improve the quality of our education programs this action research project provided research data to answer these questions this book outlines research that was completed to debug our computer science and information technology programs and also reflects how one major u s university has solved this problem

COMPUTER SCIENCE PRODIGY (Mark Pincus + Vikas Malpani + Larry Page + Chad Hurley)

2022-06-21

this combo collection set of 4 books includes all time bestseller books this anthology contains mark pincus vikas malpani larry page chad hurley

<u>Logic in Computer Science : Modelling and Reasoning about Systems</u>

2004

this second edition continues to provide a clear introduction to formal reasoning which is both relevant to the needs of modern computer science and rigorous enough for practical application improvements have been made throughout with many extra and expanded sections and exercises the coverage of model checking has been substantially updated

Learner-Centered Design of Computing Education

2022-05-31

computing education is in enormous demand many students both children and adult are realizing that they will need programming in the future this book presents the argument that they are not all going to use programming in the same way and for the same purposes what do we mean when we talk about teaching everyone to program when we target a broad audience should we have the same goals as computer science education for professional software developers how do we design computing education that works for everyone this book proposes use of a learner centered design approach to create computing education for a broad audience it considers several reasons for teaching computing to everyone and how the different reasons lead to different choices about learning goals and teaching methods the book reviews the history of the idea that programming isn t just for the professional software developer it uses research studies on teaching computing in liberal arts programs to graphic designers to high school teachers in order to explore the idea that computer science for everyone requires us to re think how we teach and what we teach the conclusion describes how we might create computing education for everyone

SOFSEM 2017: Theory and Practice of Computer Science

2017-01-09

this book constitutes the refereed proceedings of the 43rd international conference on current trends in theory and practice of computer science sofsem 2017 held in limerick ireland in january 2017 the 34 papers presented in this volume were carefully reviewed and selected from 41 submissions they were organized in topical sections named foundations in computer science semantics specification and compositionality theory of mobile and distributed systems verification and automated system analysis petri nets games and relaxed data structures graph theory and scheduling algorithms quantum and matrix algorithms planar and molecular graphs coloring and vertex covers algorithms for strings and formal languages data information and knowledge engineering and software engineering methods tools applications

Explorations in Computer Science

2005-12

revised and updated the second edition of explorations in computer science a guide to discovery provides introductory computer science students with a hands on learning experience designed to expose students to a variety of subject areas this laboratory manual offers challenging exercises in problem solving and experimentation each lab includes objectives references background information and an in depth activity and numerous exercises for deeper investigation of the topic under discussion

Analytical Network and System Administration

2012-12-17

network and system administration usually refers to the skill of keeping computers and networks running properly but in truth the skill needed is that of managing complexity this book describes the science behind these complex systems independent of the actual operating systems they work on it provides a theoretical approach to systems administration that saves time in performing common system administration tasks allows safe utilization of untrained and trained help in maintaining mission critical systems allows efficient and safe centralized network administration managing human computer networks will show how to make informed analyses and decisions about systems how to diagnose faults and weaknesses gives advice guidance as to how to determine optimal policies for system management includes exercises that illustrate the key points of the book the book provides a unique approach to an old problem and will become a classic for researchers and graduate students in networking and computer science as well as practicing system managers and system administrators

The Cognitive Dynamics of Computer Science

2006-06-30

a groundbreaking unifying theory of computer science for low cost high quality software the cognitive dynamics of computer science represents the culmination of more than thirty years of the author's hands on experience in software development which has resulted in a remarkable and sensible philosophy and practice of software development it provides a groundbreaking ontology of computer science while describing the processes methodologies and constructs needed to build high quality large scale computer software systems on schedule and on budget based on his own experience in developing successful low cost software projects the author makes a persuasive argument for developers to understand the philosophical underpinnings of software he asserts that software in reality is an abstraction of the human thought system the author draws from the seminal works of the great german philosophers kant hegel and schopenhauer and recasts their theories of human mind and thought to create a unifying theory of computer science cognitive dynamics that opens the door to the next generation of computer science and forms the basic architecture for total autonomy four detailed cases studies effectively demonstrate how philosophy and practice merge to meet the objective of high quality low cost software the autonomous cognitive system chapter sets forth a model for a completely autonomous computer system using the human thought system as the model for functional architecture and the human thought process as the model for the functional data process although rooted in philosophy this book is practical addressing all the key areas that software professionals need to master in order to remain competitive and minimize costs such as leadership management communication and organization this thought provoking work will change the way students and professionals in computer science and software development conceptualize and

perform their work it provides them with both a philosophy and a set of practical tools to produce high quality low cost software

Cambridge IGCSE® Computer Science Coursebook

2015-11-12

this resource is written to follow the updated cambridge igcse computer science syllabus 0478 with examination from june and november 2016

Introduction to Machine Learning with Applications in Information Security

2017-09-22

introduction to machine learning with applications in information security provides a class tested introduction to a wide variety of machine learning algorithms reinforced through realistic applications the book is accessible and doesn t prove theorems or otherwise dwell on mathematical theory the goal is to present topics at an intuitive level with just enough detail to clarify the underlying concepts the book covers core machine learning topics in depth including hidden markov models principal component analysis support vector machines and clustering it also includes coverage of nearest neighbors neural networks boosting and adaboost random forests linear discriminant analysis vector quantization naive bayes regression analysis conditional random fields and data analysis most of the examples in the book are drawn from the field of information security with many of the machine learning applications specifically focused on malware the applications presented are designed to demystify machine learning techniques by providing straightforward scenarios many of the exercises in this book require some programming and basic computing concepts are assumed in a few of the application sections however anyone with a modest amount of programming experience should have no trouble with this aspect of the book instructor resources including powerpoint slides lecture videos and other relevant material are provided on an accompanying website cs sjsu edu stamp ml for the reader s benefit the figures in the book are also available in electronic form and in color about the author mark stamp has been a professor of computer science at san jose state university since 2002 prior to that he worked at the national security agency nsa for seven years and a silicon valley startup company for two years he received his ph d from texas tech university in 1992 his love affair with machine learning began in the early 1990s when he was working at the nsa and continues today at sjsu where he has supervised vast numbers of master s student proje

Oswaal CBSE Question Bank Class 12 Computer Science, Chapterwise and Topicwise Solved Papers For Board Exams 2025

2024-01-23

description of the product 100 updated syllabus fully solved board papers we have got you covered with the latest and 100 updated curriculum crisp revision with topic wise revision notes smart mind maps mnemonics extensive practice with 3000 questions board marking scheme answers to give you 3000 chances to become a champ concept clarity with 1000 concepts 50 concept videos for you to learn the cool way with videos and mind blowing concepts nep 2020 compliance with art integration competency based questions for you to be on the cutting edge of the coolest educational trends

Introduction to Computer Science

2016-01-16

an introduction to computer science and the craft of computer programming

A Concise Introduction to Programming in Python

2018-04-17

a concise introduction to programming in python second edition provides a hands on and accessible introduction to writing software in python with no prior programming experience required the second edition was thoroughly reorganized and rewritten based on classroom experience to incorporate a spiral approach starting with turtle graphics and then revisiting concepts in greater depth using numeric textual and image data clear concise explanations written for beginning students emphasizing core principles a variety of accessible examples focusing on key concepts diagrams to help visualize new concepts new sections on recursion and exception handling as well as an earlier introduction of lists based on instructor feedback the text offers sections designed for approximately one class period each and proceeds gradually from procedural to object oriented design examples exercises and projects are included from diverse application domains including finance biology image processing and textual analysis it also includes a brief how to sections that introduce optional topics students may be interested in exploring the text is written to be read making it a good fit in flipped classrooms designed for either classroom use or self study all example programs and solutions to odd numbered exercises except for projects are available at central edu go conciseintro

GATE 2019 Computer Science & Information Technology Masterpiece with 10 Practice Sets (6 in Book + 4 Online) 6th edition

2018-11-19

gate computer science information technology masterpiece 2019 with 10 practice sets 6 in book 4 online tests 6th edition contains exhaustive theory past year questions practice problems and 10 mock tests covers past 14 years questions exhaustive exercise containing 100 150 questions in each chapter in all contains around 5200 mcqs solutions provided for each question in detail the book provides 10 practice sets 6 in book 4 online tests designed exactly on the latest pattern of gate exam

GATE 2020 Computer Science & Information Technology Guide with 10 Practice Sets (6 in Book + 4 Online) 7th edition

2019-05-30

gate computer science information technology guide 2020 with 10 practice sets 6 in book 4 online tests 7th edition contains exhaustive theory past year questions practice problems

and 10 mock tests covers past 15 years questions exhaustive exercise containing 100 150 questions in each chapter in all contains around 5250 mcqs solutions provided for each question in detail the book provides 10 practice sets 6 in book 4 online tests designed exactly on the latest pattern of gate exam

GATE Computer Science and Information Technology

2009

this book has been prepared to meet the requirements of students preparing for gate examination in computer science engineering discipline as per the prescribed

Information Security

2011-05-03

now updated your expert guide to twenty first century information security information security is a rapidly evolving field as businesses and consumers become increasingly dependent on complex multinational information systems it is more imperative than ever to protect the confidentiality and integrity of data featuring a wide array of new information on the most current security issues this fully updated and revised edition of information security principles and practice provides the skills and knowledge readers need to tackle any information security challenge taking a practical approach to information security by focusing on real world examples this book is organized around four major themes cryptography classic cryptosystems symmetric key cryptography public key cryptography hash functions random numbers information hiding and cryptanalysis access control authentication and authorization password based security acls and capabilities multilevel security and compartments covert channels and inference control security models such as blp and biba s model firewalls and intrusion detection systems protocols simple authentication protocols session keys perfect forward secrecy timestamps ssh ssl ipsec kerberos wep and gsm software flaws and malware buffer overflows viruses and worms malware detection software reverse engineering digital rights management secure software development and operating systems security this second edition features new discussions of relevant security topics such as the ssh and wep protocols practical rsa timing attacks botnets and security certification new background material has been added including a section on the enigma cipher and coverage of the classic orange book view of security also featured are a greatly expanded and upgraded set of homework problems and many new figures tables and graphs to illustrate and clarify complex topics and problems a comprehensive solutions manual is available to assist in course development minimizing theory while providing clear accessible content i

Networks

2010-03-25

this book brings together advances in mathematics physics computer science biology and social network analysis to present a comprehensive picture of the scientific study of networks the book includes discussion of computer networks social networks biological networks and others and an introduction to the mathematics of network theory

Fundamentals of Multimedia

2021-03-20

previous editionthis textbook introduces the fundamentals of multimedia addressing real issues commonly faced in the workplace the essential concepts are explained in a practical way to enable students to apply their existing skills to address problems in multimedia fully revised and updated this new edition now includes coverage of such topics as 3d tv social networks high efficiency video compression and conferencing wireless and mobile networks and their attendant technologies features presents an overview of the key concepts in multimedia including color science reviews lossless and lossy compression methods for image video and audio data examines the demands placed by multimedia communications on wired and wireless networks discusses the impact of social media and cloud computing on information sharing and on multimedia content search and retrieval includes study exercises at the end of each chapter provides supplementary resources for both students and instructors at an associated website

30-Second Coding

2021-12-14

the successful 30 second series tackles coding the science of programming the technology which operates in almost every aspect of modern life computer code operates behind nearly everything we do from small calculations in the home to complex executions that drive the global economy it influences who we see follow and like online and describes the websites we visit the connections between them the sounds heard on spotify and videos watched on youtube there is very little we do which hasn t in some way been codified analysed and computed electronically yet few of us possess a basic understanding of that ultimate language barrier that s a shame because coding is the key to so much simple programming concepts can explain plenty about the modern world and the changes to come in the age of ai with insightful text edited by computer scientist and technology podcaster mark steadman and contributions from other industry experts learn the origins of computer code from the first computers developed in during the industrial revolution through the codebreaking machines used during world war ii to the hyperfast computers of the present day have all the key terms of this fascinating science explained in simple bitesize chunks of information rich text as well as meeting the key figures who have helped make computer science what it is today from algorithms and scripts to block chain bits and bots turn to 30 second coding to reveal the secrets behind this fascinating subject

Introduction to Computer Science

2015-12-31

the first exposition on super recursive algorithms systematizing all main classes and providing an accessible focused examination of the theory and its ramifications demonstrates how these algorithms are more appropriate as mathematical models for modern computers and how they present a better framework for computing methods develops a new practically oriented perspective on the theory of algorithms computation and automata as a whole

Super-Recursive Algorithms

2006-12-21

focusing on fundamental scientific and engineering issues this book communicates the principles of building and using knowledge systems from the conceptual standpoint as well as the practical previous treatments of knowledge systems have focused on applications within a particular field or on symbol level representations such as the use of frame and rule representations introduction to knowledge systems presents fundamentals of symbol level representations including representations for time space uncertainty and vagueness it also compares the knowledge level organizations for three common knowledge intensive tasks classification configuration and diagnosis the art of building knowledge systems incorporates computer science theory programming practice and psychology the scope of this book is appropriately broad ranging from the design of hierarchical search algorithms to techniques for acquiring the task specific knowledge needed for successful applications each chapter proceeds from concepts to applications and closes with a brief tour of current research topics and open issues readers will come away with a solid foundation that will enable them to create real world knowledge systems using whatever tools and programming languages are most current and appropriate

Introduction to Knowledge Systems

2014-06-28

compute it will help you deliver innovative lessons for the new key stage 3 computing curriculum with confidence using resources and meaningful assessment produced by expert educators with compute it you will be able to assess and record students attainment and monitor progression all the way through to key stage 4 developed by members of computing at school the national subject association for computer science and a team of master teachers who deliver cpd through the network of excellence project funded by the department for education compute it provides a cohesive and supportive learning package structured around the key strands of computing creative and flexible in its approach compute it makes computing for key stage 3 easy to teach and fun and meaningful to learn so you can follow well structured and finely paced lessons along a variety of suggested routes through key stage 3 deliver engaging and interesting lessons using a range of files and tutorials provided for a range of different programming languages ensure progression throughout key stage 3 with meaningful tasks underpinned by unparalleled teacher and student support assess students work with confidence using ready prepared formative and summative tasks that are mapped to meaningful learning outcomes and statements in the new programme of study creative and flexible in its approach compute it makes computing for key stage 3 easy to teach and fun and meaningful to learn this is the second title in the compute it course which comprises three student s books three teacher packs and a range of digital teaching and learning resources delivered through dynamic learning

Compute-IT: Student's Book 2 - Computing for KS3

2014-10-31

description of the product 100 updated with latest 2025 syllabus typologies of questions for 2024 crisp revision with topic wise revision notes smart mind maps extensive practice with 1000 questions self assessment papers concept clarity with 500 concepts 50 concept videos 100 exam readiness with answering tips suggestions

Oswaal ISC Question Bank Class 11 Computer Science | Chapterwise | Topicwise | Solved Papers | For 2025 Exams

2024-03-02

this book is an introduction to computer science and the craft of computer programming the book is a little outdated now as it focuses on third generation languages such as c rather than modern languages such as java however it is still a good general introduction to computer science and programming

The Black Art of Programming

2013-09-04

computer science and technology and their application is an eight chapter book that first presents a tutorial on database organization subsequent chapters describe the general concepts of simula 67 programming language incremental compilation and conversational interpretation dynamic syntax the algol 68 other chapters discuss the general purpose conversational system for graphical programming and automatic theorem proving based on resolution a survey of extensible programming language is also shown

Annual Review in Automatic Programming

2014-05-17

exam board aga level a level subject computer science first teaching september 2015 first exams summer 2016 as summer 2017 a level strengthen your students understanding and upgrade their confidence with our aga computer science workbooks full of self contained exercises to consolidate knowledge and improve performance written by an experienced computer science author and teacher these full colourworkbooks provide stimulus materials on a number of as and a level topics followed by sets of questions designed to develop and test skills in the unit with consolidation questions to reinforce knowledge and test understanding these workbooks will raise your students chances of achieving the highest grades helps students identify their revision needs and see how to target the top grades using online answers for each question saves valuable preparation time and expense with self contained exercises that don t need photocopying and provide instant lesson and homework solutions for specialist and non specialist teachers encourages ongoing revision throughout the course as students progressively develop their skills in class and at home

AQA AS/a-Level Computer Science Workbook 1

2019-01-25

mark allen weiss successful book provides a modern approach to algorithms and data structures using the c programming language the book s conceptual presentation focuses on adts and the analysis of algorithms for efficiency with a particular concentration on performance and running time this edition contains a new chapter that examines advanced data

structures such as red black trees top down splay trees treaps k d trees and pairing heaps among others all code examples now conform to ansi c and coverage of the formal proofs underpinning several key data structures has been strengthened

Data Structures and Algorithm Analysis in C

1997

in this second edition of his successful book experienced teacher and author mark allen weiss continues to refine and enhance his innovative approach to algorithms and data structures written for the advanced data structures course this text highlights theoretical topics such as abstract data types and the efficiency of algorithms as well as performance and running time before covering algorithms and data structures the author provides a brief introduction to c for programmers unfamiliar with the language dr weiss s clear writing style logical organization of topics and extensive use of figures and examples to demonstrate the successive stages of an algorithm make this an accessible valuable text new to this edition an appendix on the standard template library stl c code tested on multiple platforms that conforms to the ansi iso final draft standard 0201361221b04062001

Data Structures and Algorithm Analysis in C+

2003

most perl programmers were originally trained as c and unix programmers so the perl programs that they write bear a strong resemblance to c programs however perl incorporates many features that have their roots in other languages such as lisp these advanced features are not well understood and are rarely used by most perl programmers but they are very powerful they can automate tasks in everyday programming that are difficult to solve in any other way one of the most powerful of these techniques is writing functions that manufacture or modify other functions for example instead of writing ten similar functions a programmer can write a general pattern or framework that can then create the functions as needed according to the pattern for several years mark jason dominus has worked to apply functional programming techniques to perl now mark brings these flexible programming methods that he has successfully taught in numerous tutorials and training sessions to a wider audience introduces powerful programming methods new to most perl programmers that were previously the domain of computer scientists gradually builds up confidence by describing techniques of progressive sophistication shows how to improve everyday programs and includes numerous engaging code examples to illustrate the methods

Higher-Order Perl

2005-03-31

description of the product 100 updated syllabus question typologies we have got you covered with the latest and 100 updated curriculum along with the latest typologies of questions timed revision with topic wise revision notes smart mind maps study smart not hard extensive practice with 1000 questions sas questions sri aurobindo society to give you 1000 chances to become a champ concept clarity with 500 concepts concept videos for you to learn the cool way with videos and mind blowing concepts nep 2020 compliance with competency based questions artificial intelligence for you to be on the cutting edge of the coolest educational trends

Oswaal CBSE Question Bank Class 11 Computer Science, Chapterwise and Topicwise Solved Papers For 2025 Exams

2024-02-03

set your students on track to achieve the best grade possible with my revision notes aga a level computer science our clear and concise approach to revision will help students learn practise and apply their skills and understanding coverage of key content is combined with practical study tips and effective revision strategies to create a guide that can be relied on to build both knowledge and confidence with my revision notes aga a level computer science students can

My Revision Notes: AQA A-level Computer Science

2021-11-11

praise for the first edition the well written comprehensive book is aiming to become a de facto reference for the language and its features and capabilities the pace is appropriate for beginners programming concepts are introduced progressively through a range of examples and then used as tools for building applications in various domains including sophisticated data structures and algorithms highly recommended students of all levels faculty and professionals practitioners d papamichail university of miami in choice magazine mark lewis introduction to the art of programming using scala was the first textbook to use scala for introductory cs courses fully revised and expanded the new edition of this popular text has been divided into two books object orientation abstraction and data structures using scala second edition is intended to be used as a textbook for a second or third semester course in computer science the scala programming language provides powerful constructs for expressing both object orientation and abstraction this book provides students with these tools of object orientation to help them structure solutions to larger more complex problems and to expand on their knowledge of abstraction so that they can make their code more powerful and flexible the book also illustrates key concepts through the creation of data structures showing how data structures can be written and the strengths and weaknesses of each one libraries that provide the functionality needed to do real programming are also explored in the text including guis multithreading and networking the book is filled with end of chapter projects and exercises and the authors have also posted a number of different supplements on the book website video lectures for each chapter in the book are also available on youtube the videos show construction of code from the ground up and this type of live coding is invaluable for learning to program as it allows students into the mind of a more experienced programmer where they can see the thought processes associated with the development of the code about the authors mark lewis is an associate professor at trinity university he teaches a number of different courses spanning from first semester introductory courses to advanced seminars his research interests included simulations and modeling programming languages and numerical modeling of rings around planets with nearby moons lisa lacher is an assistant professor at the university of houston clear lake with over 25 years of professional software development experience she teaches a number of different courses spanning from first semester introductory courses to graduate level courses her research interests include computer science education agile software development human computer interaction and usability engineering as well as measurement and empirical software engineering

Object-Orientation, Abstraction, and Data Structures Using Scala, Second Edition

2017-01-06

praise for the first edition the well written comprehensive book is aiming to become a de facto reference for the language and its features and capabilities the pace is appropriate for beginners programming concepts are introduced progressively through a range of examples and then used as tools for building applications in various domains including sophisticated data structures and algorithms highly recommended students of all levels faculty and professionals practitioners d papamichail university of miami in choice magazine mark lewis introduction to the art of programming using scala was the first textbook to use scala for introductory cs courses fully revised and expanded the new edition of this popular text has been divided into two books object orientation abstraction and data structures using scala second edition is intended to be used as a textbook for a second or third semester course in computer science the scala programming language provides powerful constructs for expressing both object orientation and abstraction this book provides students with these tools of object orientation to help them structure solutions to larger more complex problems and to expand on their knowledge of abstraction so that they can make their code more powerful and flexible the book also illustrates key concepts through the creation of data structures showing how data structures can be written and the strengths and weaknesses of each one libraries that provide the functionality needed to do real programming are also explored in the text including guis multithreading and networking the book is filled with end of chapter projects and exercises and the authors have also posted a number of different supplements on the book website video lectures for each chapter in the book are also available on youtube the videos show construction of code from the ground up and this type of live coding is invaluable for learning to program as it allows students into the mind of a more experienced programmer where they can see the thought processes associated with the development of the code about the authors mark lewis is an associate professor at trinity university he teaches a number of different courses spanning from first semester introductory courses to advanced seminars his research interests included simulations and modeling programming languages and numerical modeling of rings around planets with nearby moons lisa lacher is an assistant professor at the university of houston clear lake with over 25 years of professional software development experience she teaches a number of different courses spanning from first semester introductory courses to graduate level courses her research interests include computer science education agile software development human computer interaction and usability engineering as well as measurement and empirical software engineering

Object-Orientation, Abstraction, and Data Structures Using Scala

2017-01-06

the concise encyclopedia of computer science has been adapted from the full fourth edition to meet the needs of students teachers and professional computer users in science and industry as an ideal desktop reference it contains shorter versions of 60 of the articles found in the fourth edition putting computer knowledge at your fingertips organised to work for you it has several features that make it an invaluable and accessible reference these include cross references to closely related articles to ensure that you don't miss relevant information appendices covering abbreviations and acronyms notation and units and a timeline of significant milestones in computing have been included to ensure that you get the most from the book a comprehensive index containing article titles names of persons cited references to sub categories and important words in general usage guarantees that you can easily find the information you need classification of articles around the following nine main themes allows you to follow a self study regime in a particular area hardware computer systems information and data software mathematics of computing theory of computation methodologies applications computing milieux presenting a wide ranging perspective on the key concepts and developments that define the discipline the concise encyclopedia of computer science is a valuable reference for all computer users

Concise Encyclopedia of Computer Science

2004-09-03

havill s problem driven approach introduces algorithmic concepts in context and motivates students with a wide range of interests and backgrounds janet davis associate professor and microsoft chair of computer science whitman college this book looks really great and takes exactly the approach i think should be used for a cs 1 course i think it really fills a need in the textbook landscape marie desjardins dean of the college of organizational computational and information sciences simmons university discovering computer science is a refreshing departure from introductory programming texts offering students a much more sincere introduction to the breadth and complexity of this ever growing field james deverick senior lecturer the college of william and mary this unique introduction to the science of computing guides students through broad and universal approaches to problem solving in a variety of contexts and their ultimate implementation as computer programs daniel kaplan dewitt wallace professor macalester college discovering computer science interdisciplinary problems principles and python programming is a problem oriented introduction to computational problem solving and programming in python appropriate for a first course for computer science majors a more targeted disciplinary computing course or at a slower pace any introductory computer science course for a general audience realizing that an organization around language features only resonates with a narrow audience this textbook instead connects programming to students prior interests using a range of authentic problems from the natural and social sciences and the digital humanities the presentation begins with an introduction to the problem solving process contextualizing programming as an essential component then as the book progresses each chapter guides students through solutions to increasingly complex problems using a spiral approach to introduce python language features the text also places programming in the context of fundamental computer scie

Discovering Computer Science

2020-10-12

applied c an introduction and more provides an introduction to c programming from a hands on perspective with this book both computer science and engineering students learn the c language and how to program through the reading and writing of basic programs early in the book after introducing students to the basics the authors use a spiral approach to build on concepts incrementally so that by the end students are able to write longer programs that require multiple functions the teaching of these programming concepts is accompanied by a focus on sound program design that emphasizes the need for complete and accurate program specification as well as careful testing from the beginning both engineering and computer science students will find this book appealing due to the diverse blend of applications in addition to many motivating applications throughout the text topics are introduced with excellent background and motivation followed by accessible explanations illustrated liberally with diagrams graphs and short programs the text is comprehensive and contains enough material for one semester or two quarters of instruction topics in the first half are important for all engineering students to master the third quarter of the text covers basic data structures and algorithms that are of general interest the last quarter of the book is of greater interest to computer science students and includes several important topics that are rarely covered by textbooks or presented in a manner that is accessible to students

Applied C: an Introduction and More

2000-09

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