Updated and revised, The Essentials of Computer Organization and Architecture, Third Edition is a comprehensive resource that addresses all of the necessary organization and architecture topics, yet is appropriate for the one-term course. In this best-selling text, Mike Schneider and Judy Gersting unify and lend relevance to the topics of computer science within their proven framework of a six-layer hierarchy of abstractions. The authors begin by showing that computer science is the study of algorithms, which is the central theme of the book, then move up the next five levels of the hierarchy: hardware, virtual machine, software, applications, and ethics. Each layer in the hierarchy builds upon the ideas and concepts presented in earlier chapters. In addition to some motivational applications such as Web page design and interactive graphics, the book covers the fundamental issues of algorithms, hardware design, computer organization, system software, language models, theory of computation, and social and ethical issues of computing. Exposure to these deeper and more complex core ideas introduces students to the richness and beauty of the field and helps them appreciate the principles behind their creation and implementation. While feeling the excitement of computer science, students receive a solid grounding in the central concepts as well as in important uses of computing and information technology. This textbook covers digital design, fundamentals of computer architecture, and assembly language. The book starts by introducing basic number systems, character coding, basic knowledge in digital design, and components of a computer. The book goes on to discuss information representation in computing; Boolean algebra and logic gates; sequential logic; input/output; and CPU performance. The author also covers ARM architecture, ARM instructions and ARM assembly language which is used in a variety of devices such as cell phones, digital TV, automobiles, routers, and switches. The book contains a set of laboratory experiments related to digital design using Logisim software; in addition, each chapter features objectives, summaries, key terms, review questions and problems. The book is targeted to students majoring in Computer Science, Information System and IT and follows the ACM/IEEE 2013 guidelines. • Comprehensive textbook covering digital design, computer architecture, and ARM architecture and assembly • Covers basic number system and coding, basic knowledge in digital design, and components of a computer • Features laboratory exercises in addition to objectives, summaries, key terms, review questions, and problems in each chapter Assembly Language for x86 Processors, 6/e is ideal for undergraduate courses in assembly language programming and introductory courses in computer systems and computer architecture. Written specifically for the Intel/Windows/DOS platform, this complete and fully updated study of assembly language teaches
students to write and debug programs at the machine level. Based on the Intel processor family, the text simplifies and demystifies concepts that students need to grasp before they can go on to more advanced computer architecture and operating systems courses. Students put theory into practice through writing software at the machine level, creating a memorable experience that gives them the confidence to work in any OS/machine-oriented environment. Proficiency in one other programming language, preferably Java, C, or C++, is recommended. Effectively balance today's most important programming principles and concepts with the latest insights into C# using Doyle's C# PROGRAMMING: FROM PROBLEM ANALYSIS TO PROGRAM DESIGN, 4E. This insightful introductory book highlights the latest Visual Studio 2012 and C# 4.0 software with a unique, principles-based approach to give readers a deep understanding of programming. Respected author Barbara Doyle admirably balances principles and concepts, offering just the right amount of detail to create a strong foundation for beginning students. A straightforward approach and understandable vocabulary make it easy for readers to grasp new programming concepts without distraction. The book introduces a variety of fundamental programming concepts, from data types and expressions to arrays and collections, all using the popular C# language. New programming exercises and new numbered examples throughout this edition reflect the latest updates in Visual Studio 2012, while learning objectives, case studies and Coding Standards summaries in each chapter ensure mastery. While this edition assumes no prior programming knowledge, coverage extends beyond traditional programming books to cover new advanced topics, such as portable class libraries to create applications for Windows Phone and other platforms. With entire chapters devoted to working with databases and Web-based applications, you'll find everything you need for a solid understanding of C# and programming fundamentals for ongoing success. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. For courses in Embedded System Design, Microcontroller's Software and Hardware, Microprocessor Interfacing, Microprocessor Assembly Language Programming, Peripheral Interfacing, Senior Project Design, Embedded System programming with C. The AVR Microcontroller and Embedded Systems: Using Assembly and C features a step-by-step approach in covering both Assembly and C language programming of the AVR family of Microcontrollers. It offers a systematic approach in programming and interfacing of the AVR with LCD, keyboard, ADC, DAC, Sensors, Serial Ports, Timers, DC and Stepper Motors, Opto-isolators, and RTC. Both Assembly and C languages are used in all the peripherals programming. In the first 6 chapters, Assembly language is used to cover the AVR architecture and starting with chapter 7, both Assembly and C languages are used to show the peripherals programming and interfacing. Delivering a solid introduction to assembly language and embedded systems, ARM Assembly Language: Fundamentals and Techniques, Second Edition continues to support the popular ARM7TDMI, but also addresses the latest architectures from ARM, including CortexTM-A, Cortex-R, and Cortex-M processors—all of which have slightly different instruction sets, programmer’s models, and exception handling. Featuring three brand-new chapters, a new appendix, and expanded coverage of the ARM7TM, this edition: Discusses IEEE 754 floating-point arithmetic and explains how to program with the IEEE standard notation Contains step-by-step directions for the use of KeilTM MDK-ARM and Texas Instruments (TI) Code Composer StudioTM Provides a resource to be used alongside a variety of hardware evaluation modules, such as TI's Tiva Launchpad, STMicroelectronics' iNemo and Discovery, and NXP Semiconductors’ Xplorer boards Written by experienced ARM processor designers, ARM Assembly Language: Fundamentals and Techniques, Second Edition covers the topics essential to writing meaningful assembly programs, making it an ideal textbook and professional reference. This textbook introduces readers to assembly and its role in computer programming and design. The author concentrates on covering the 8086 family of processors up to and including the Pentium. The focus is on providing students with a firm grasp of the main features of assembly programming, and how it can be used to improve a computer’s performance. All of the main features are covered in depth: stacks, addressing modes, arithmetic, selection and iteration, as well as bit manipulation. Advanced topics include: string processing, macros, interrupts and input/output handling, and interfacing with such higher-level languages as C. The book is based on a successful course given by the author and includes numerous hands-on exercises. A Revised and Updated Edition of the Authoritative Text This revised and updated Third Edition of the classic text guides students through assembly language using a hands-on approach, supporting future computing professionals with the basics they need to understand the mechanics and function of the computer’s inner workings. Through using real instruction sets to write real assembly language programs, students will become acquainted with the basics of computer architecture. 80x86 Assembly Language and Computer Architecture covers the Intel 80x86 using the powerful tools provided by Microsoft Visual Studio,
including its 32- and 64-bit assemblers, its versatile debugger, and its ability to link assembly language and C/C++ program segments. The text also includes multiple examples of how individual 80x86 instructions execute, as well as complete programs using these instructions. Hands-on exercises reinforce key concepts and problem-solving skills. Updated to be compatible with Visual Studio 2012, and incorporating over a hundred new exercises, 80x86 Assembly Language and Computer Architecture: Third Edition is accessible and clear enough for beginning students while providing coverage of a rich set of 80x86 instructions and their use in simple assembly language programs. The text will prepare students to program effectively at any level. Key features of the fully revised and updated Third Edition include: • Updated to be used with Visual Studio 2012, while remaining compatible with earlier versions • Over 100 new exercises and programming exercises • Improved, clearer layout with easy-to-read illustrations • The same clear and accessibly writing style as previous editions • Full suite of ancillary materials, including PowerPoint lecture outlines, Test Bank, and answer keys • Suitable as a stand-alone text in an assembly language course or as a supplement in a computer architecture courseThis is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. Today's incoming students are more likely to be exposed to Java than ever before. Focusing on a modern architecture (the Java Virtual Machine, or JVM), this text provides a thorough treatment of the principles of computer organization in the context of today's portable computer. Students are given simple but realistic examples to gain a complete understanding of how computation works on such a machine. Juola makes the material useful and relevant in a course that is often difficult for second-year CS students. This completely updated second edition of MICROCONTROLLERS: FROM ASSEMBLY LANGUAGE TO C USING THE PIC24 FAMILY covers assembly language, C programming, and hardware interfacing for the Microchip PIC24 family, a recently updated microcontroller family from Microchip. Hardware interfacing topics include parallel port usage, analog-to-digital conversion, digital-to-analog conversion, the serial peripheral bus (SPI), the inter-integrated circuit bus (I2C), asynchronous serial communication, and timers. Assembly language programming is covered in the context of the PIC24 instruction set, and no initial knowledge of assembly language programming is assumed. Specific hardware interfacing topics covered are parallel IO, analog-to-digital/digital-to-analog conversion, pulse width modulation, timer usage for IO polling, and industry standard serial interface standards. Interfacing examples include external devices such as pushbutton switches, LEDs, serial EEPROMs, liquid crystal displays (LCDs), keypads, rotary encoders, external digital-to-analog converters, DC motors, servos, temperature sensors, and IR receivers. Master the PIC24 family with MICROCONTROLLERS: FROM ASSEMBLY LANGUAGE TO C USING THE PIC24 FAMILY. Covering routines for the most popular machines - ATT computer, the Atari 68000, the Commodore Amiga and the Macintosh - this book takes readers through all aspects of assembly language programming in a step-by-step fashion. It provides a complete, graduated approach to the entire line of 68000's, giving examples and exercises for each step so that readers can acquire all of the necessary skills. Topics include the 68000 programmer's model, explanations of number systems, subroutines and advanced assembler concepts, such as external references, linking, debugging and macros. More than 100,000 entrepreneurs rely on this book for detailed, step-by-step instructions on building successful, scalable, profitable startups. The National Science Foundation pays hundreds of startup teams each year to follow the process outlined in the book, and it's taught at Stanford, Berkeley, Columbia and more than 100 other leading universities worldwide. Why? The Startup Owner's Manual guides you, step-by-step, as you put the Customer Development process to work. This method was created by renowned Silicon Valley startup expert Steve Blank, co-creator with Eric Ries of the "Lean Startup" movement and tested and refined by him for more than a decade. This 608-page how-to guide includes over 100 charts, graphs, and diagrams, plus 77 valuable checklists that guide you as you drive your company toward profitability. It will help you: • Avoid the 9 deadly sins that destroy startups' chances for success • Use the Customer Development method to bring your business idea to life • Incorporate the Business Model Canvas as the organizing principle for startup hypotheses • Identify your customers and determine how to "get, keep and grow" customers profitably • Compute how you'll drive your startup to repeatable, scalable profits. The Startup Owner's Manual was originally published by K&S Ranch Publishing Inc. and is now available from Wiley. The cover, design, and content are the same as the prior release and should not be considered a new or updated product. A detailed handbook for experienced developers explains how to get the most out of Microsoft's Visual Studio .NET, offering helpful guidelines on how to use its integrated development environment, start-up templates, and other features and tools to create a variety of applications, including Web services. Original. (Advanced) Digital Design and Computer Architecture: ARM Edition covers the
fundamentals of digital logic design and reinforces logic concepts through the design of an ARM microprocessor. Combining an engaging and humorous writing style with an updated and hands-on approach to digital design, this book takes the reader from the fundamentals of digital logic to the actual design of an ARM processor. By the end of this book, readers will be able to build their own microprocessor and will have a top-to-bottom understanding of how it works. Beginning with digital logic gates and progressing to the design of combinational and sequential circuits, this book uses these fundamental building blocks as the basis for designing an ARM processor. SystemVerilog and VHDL are integrated throughout the text in examples illustrating the methods and techniques for CAD-based circuit design. The companion website includes a chapter on I/O systems with practical examples that show how to use the Raspberry Pi computer to communicate with peripheral devices such as LCDs, Bluetooth radios, and motors. This book will be a valuable resource for students taking a course that combines digital logic and computer architecture or students taking a two-semester sequence in digital logic and computer organization/architecture. Covers the fundamentals of digital logic design and reinforces logic concepts through the design of an ARM microprocessor. Features side-by-side examples of the two most prominent Hardware Description Languages (HDLS)—SystemVerilog and VHDL—which illustrate and compare the ways each can be used in the design of digital systems. Includes examples throughout the text that enhance the reader's understanding and retention of key concepts and techniques. The Companion website includes a chapter on I/O systems with practical examples that show how to use the Raspberry Pi computer to communicate with peripheral devices such as LCDs, Bluetooth radios, and motors. The Companion website also includes appendices covering practical digital design issues and C programming as well as links to CAD tools, lecture slides, laboratory projects, and solutions to exercises.COMPUTER ORGANIZATION AND ARCHITECTURE: THEMES AND VARIATIONS stresses the structure of the complete system (CPU, memory, buses and peripherals) and reinforces that core content with an emphasis on divergent examples. This approach to computer architecture is an effective arrangement that provides sufficient detail at the logic and organizational levels appropriate for EE/ECE departments as well as for Computer Science readers. The text goes well beyond the minimal curriculum coverage and introduces topics that are important to anyone involved with computer architecture in a way that is both thought provoking and interesting to all. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.Authored by two of the leading authorities in the field, this guide offers readers the knowledge and skills needed to achieve proficiency with embedded software. This book introduces basic programming of ARM Cortex chips in assembly language and the fundamentals of embedded system design. It presents data representations, assembly instruction syntax, implementing basic controls of C language at the assembly level, and instruction encoding and decoding. The book also covers many advanced components of embedded systems, such as software and hardware interrupts, general purpose I/O, LCD driver, keypad interaction, real-time clock, stepper motor control, PWM input and output, digital input capture, direct memory access (DMA), digital and analog conversion, and serial communication (USART, I2C, SPI, and USB). This is one of a two part series, in which all the exercises of Simulation by Sheldon M. Ross (5th Ed.) are explained thoroughly. The first part will cover Chapters 1 through 6, while the second part the remaining ones. The exercises that involve simulation, are done using C++11.ARM 64-Bit Assembly Language carefully explains the concepts of assembly language programming, slowly building from simple examples towards complex programming on bare-metal embedded systems. Considerable emphasis is put on showing how to develop good, structured assembly code. More advanced topics such as fixed and floating point mathematics, optimization and the ARM VFP and NEON extensions are also covered. This book will help readers understand representations of, and arithmetic operations on, integral and real numbers in any base, giving them a basic understanding of processor architectures, instruction sets, and more. This resource provides an ideal introduction to the principles of 64-bit ARM assembly programming for both the professional engineer and computer engineering student, as well as the dedicated hobbyist with a 64-bit ARM-based computer. Represents the first true 64-bit ARM textbook Covers advanced topics such as fixed and floating point mathematics, optimization and ARM NEON Uses standard, free open-source tools rather than expensive proprietary tools Provides concepts that are illustrated and reinforced with a large number of tested and debugged assembly and C source listings Modern Assembly Language Programming with the ARM Processor is a tutorial-based book on assembly language programming using the ARM processor. It presents the concepts of assembly language programming in different ways, slowly building from simple examples towards complex programming on bare-metal embedded systems. The ARM processor was chosen as it has fewer instructions and irregular addressing
rules to learn than most other architectures, allowing more time to spend on teaching assembly language programming concepts and good programming practice. In this textbook, careful consideration is given to topics that students struggle to grasp, such as registers vs. memory and the relationship between pointers and addresses, recursion, and non-integral binary mathematics. A whole chapter is dedicated to structured programming principles. Concepts are illustrated and reinforced with a large number of tested and debugged assembly and C source listings. The book also covers advanced topics such as fixed and floating point mathematics, optimization, and the ARM VFP and NEON extensions. PowerPoint slides and a solutions manual are included. This book will appeal to professional embedded systems engineers, as well as computer engineering students taking a course in assembly language using the ARM processor. Concepts are illustrated and reinforced with a large number of tested and debugged assembly and C source listing. Intended for use on very low-cost platforms, such as the Raspberry Pi or pcDuino, but with the support of a full Linux operating system and development tools Includes discussions of advanced topics, such as fixed and floating point mathematics, optimization, and the ARM VFP and NEON extensions. This widely used, fully updated assembly language book provides basic information for the beginning programmer interested in computer architecture, operating systems, hardware manipulation, and compiler writing. Use the Intel IA-32 processor family as its base, showing how to program for Windows and DOS. It is written in a clear and straightforward manner for high readability. Includes a companion CD-ROM with all sample programs, and Microsoft® Macro Assembler Version 8, along with an extensive companion Website maintained by the author. Covars machine architecture, processor architecture, assembly language fundamentals, data transfer, addressing and arithmetic, procedures, conditional processing, integer arithmetic, strings and arrays, structures and macros, 32-bit Windows programming, language interface, disk fundamentals, BIOS-level programming, MS-DOS programming, floating-point programming, and IA-32 instruction encoding. For embedded systems programmers and engineers, communication specialists, game programmers, and graphics programmers /*4204Q-9, 0-13-142044-5, Britton, Robert, MIPS Assembly Language Programming, 1/E*/ Users of this book will gain an understanding of the fundamental concepts of contemporary computer architecture, starting with a Reduced Instruction Set Computer (RISC). An understanding of computer architecture needs to begin with the basics of modern computer organization. The MIPS architecture embodies the fundamental design principles of all contemporary RISC architectures. This book provides an understanding of how the functional components of modern computers are put together and how a computer works at the machine-language level." Well-written and clearly organized, this book covers the basics of MIPS architecture, including algorithm development, number systems, function calls, reentrant functions, memory-mapped I/O, exceptions and interrupts, and floating-point instructions. " For employees in the field of systems, systems development, systems analysis, and systems management. This softcover supplement is intended for student use as an easy reference guide for Appendices A, D & E. These are the Appendices on The LC-3 ISA, The C Programming Language, and Useful Tables respectively. Intelligent readers who want to build their own embedded computer systems-- installed in everything from cell phones to cars to handheld organizers to refrigerators-- will find this book to be the most in-depth, practical, and up-to-date guide on the market. Designing Embedded Hardware carefully steers between the practical and philosophical aspects, so developers can both create their own devices and gadgets and customize and extend off-the-shelf systems. There are hundreds of books to choose from if you need to learn programming, but only a few are available if you want to learn to create hardware. Designing Embedded Hardware provides software and hardware engineers with no prior experience in embedded systems with the necessary conceptual and design building blocks to understand the architectures of embedded systems. Written to provide the depth of coverage and real-world examples developers need, Designing Embedded Hardware also provides a road-map to the pitfalls and traps to avoid in designing embedded systems. Designing Embedded Hardware covers such essential topics as: The principles of developing computer hardware Core hardware designs Assembly language concepts Parallel I/O Analog-digital conversion Timers (internal and external) UART Serial Peripheral Interface Inter-Integrated Circuit Bus Controller Area Network (CAN) Data Converter Interface (DCI) Low-power operation This invaluable and eminently useful book gives you the practical tools and skills to develop, build, and program your own application-specific computers. A compiler translates a program written in a high level language into a program written in a lower level language. For students of computer science, building a compiler from scratch is a rite of passage: a challenging and fun project that offers insight into many different aspects of computer science, some deeply theoretical, and others highly practical. This book offers a one semester introduction into compiler construction, enabling the reader to
build a simple compiler that accepts a C-like language and translates it into working X86 or ARM assembly language. It is most suitable for undergraduate students who have some experience programming in C, and have taken courses in data structures and computer architecture. The MIPS microprocessor is the most known representer of the RISC design philosophy and constitutes an ideal tool for introducing Assembly programming. Moreover, the MIPS 32bit Assembly is the most popular tool among Universities due to simplicity for learning and understanding. This book has been written from a pure educational point of view and constitutes an ideal learning tool for students. Additionally, this book has some unique features such as: - understandable text - flow charts analysis - step by step code development - well documented code - analytic figures - laboratory exercises. It is important to note that the whole book material has been tested under real conditions in higher education. By buying this book you have access to download material such as lab solution manual and power point presentations. This book constitutes the ultimate educational guide which offers important knowledge and demystifies the Assembly programming. Moreover, this book has been written by taking into account the real needs of students, teachers and others who want to develop MIPS Assembly based applications. The above lines, state the deep belief of the author that this book will constitute a great teaching and educational tool for helping anyone understand the MIPS 32bit Assembly language. On the other hand, the book can be easily used by the teacher for organizing lectures and presentations as well as the laboratory exercises. Please check the sample pages in panospapazoglou.gr/support. This book will enable the reader to very quickly begin programming in assembly language. Through this hands-on programming, readers will also learn more about the computer architecture of the Intel 32-bit processor, as well as the relationship between high-level and low-level languages. Topics: presents an overview of assembly language, and an introduction to general purpose registers; illustrates the key concepts of each chapter with complete programs, chapter summaries, and exercises; covers input/output, basic arithmetic instructions, selection structures, and iteration structures; introduces logic, shift, arithmetic shift, rotate, and stack instructions; discusses procedures and macros, and examines arrays and strings; investigates machine language from a discovery perspective. This textbook is an ideal introduction to programming in assembly language for undergraduate students, and a concise guide for professionals wishing to learn how to write logically correct programs in a minimal amount of time. Assembly language is as close to writing machine code as you can get without writing in pure hexadecimal. Since it is such a low-level language, it’s not practical in all cases, but should definitely be considered when you're looking to maximize performance. With Assembly Language by Chris Rose, you’ll learn how to write x64 assembly for modern CPUs, first by writing inline assembly for 32-bit applications, and then writing native assembly for C++ projects. You’ll learn the basics of memory spaces, data segments, CISC instructions, SIMD instructions, and much more. Whether you’re working with Intel, AMD, or VIA CPUs, you'll find this book a valuable starting point since many of the instructions are shared between processors. This updated and expanded second edition of Book provides a user-friendly introduction to the subject, Taking a clear structural framework, it guides the reader through the subject's core elements. A flowing writing style combines with the use of illustrations and diagrams throughout the text to ensure the reader understands even the most complex of concepts. This succinct and enlightening overview is a required reading for all those interested in the subject. We hope you find this book useful in shaping your future career & Business. This introduction to the organization and programming of the 8086 family of microprocessors used in IBM microcomputers and compatibles is comprehensive and thorough. Includes coverage of I/O control, video/graphics control, text display, and OS/2. Strong pedagogy with numerous sample programs illustrates practical examples of structured programming. Learn how to program with C++ using today’s definitive choice for your first programming language experience -- C++. PROGRAMMING: FROM PROBLEM ANALYSIS TO PROGRAM DESIGN, 8E. D.S. Malik’s time-tested, user-centered methodology incorporates a strong focus on problem-solving with full-code examples that vividly demonstrate the hows and whys of applying programming concepts and utilizing C++ to work through a problem. Thoroughly updated end-of-chapter exercises, more than 20 extensive new programming exercises, and numerous new examples drawn from Dr. Malik’s experience further strengthen the reader’s understanding of problem solving and program design in this new edition. This book covers the most important features of C++ 14 Standard with timely discussions that ensure this edition equips you to succeed in your first programming experience and well beyond. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version. The free book "Fundamentals of Computer Programming with C#" is a comprehensive computer programming tutorial that teaches programming, logical thinking, data structures and algorithms, problem solving and
high quality code with lots of examples in C#. It starts with the first steps in programming and software development like variables, data types, conditional statements, loops and arrays and continues with other basic topics like methods, numeral systems, strings and string processing, exceptions, classes and objects. After the basics this fundamental programming book enters into more advanced programming topics like recursion, data structures (lists, trees, hash-tables and graphs), high-quality code, unit testing and refactoring, object-oriented principles (inheritance, abstraction, encapsulation and polymorphism) and their implementation the C# language. It also covers fundamental topics that each good developer should know like algorithm design, complexity of algorithms and problem solving. The book uses C# language and Visual Studio to illustrate the programming concepts and explains some C# / .NET specific technologies like lambda expressions, extension methods and LINQ. The book is written by a team of developers lead by Svetlin Nakov who has 20+ years practical software development experience. It teaches the major programming concepts and way of thinking needed to become a good software engineer and the C# language in the meantime. It is a great start for anyone who wants to become a skillful software engineer. The books do not teach technologies like databases, mobile and web development, but shows the true way to master the basics of programming regardless of the languages, technologies and tools. It is good for beginners and intermediate developers who want to put a solid base for a successful career in the software engineering industry. The book is accompanied by free video lessons, presentation slides and mind maps, as well as hundreds of exercises and live examples. Download the free C# programming book, videos, presentations and other resources from http://introprogramming.info. Title: Fundamentals of Computer Programming with C# (The Bulgarian C# Programming Book) ISBN: 9789544007737 ISBN-13: 978-954-400-773-7 ISBN-10: 954-400-773-3 (9544007733) Author: Svetlin Nakov & Co. Pages: 1132 Language: English Published: Sofia, 2013 Publisher: Faber Publishing, Bulgaria Web site: http://www.introprogramming.info License: CC-Attribution-Share-Alike Tags: free, programming, book, computer programming, programming fundamentals, ebook, book programming, C#, C# book, tutorial, C# tutorial; programming concepts, programming fundamentals, compiler, Visual Studio, .NET, .NET Framework, data types, variables, expressions, statements, console, conditional statements, control-flow logic, loops, arrays, numeral systems, methods, strings, text processing, StringBuilder, exceptions, exception handling, stack trace, streams, files, text files, linear data structures, list, linked list, stack, queue, tree, balanced tree, graph, depth-first search, DFS, breadth-first search, BFS, dictionaries, hash tables, associative arrays, sets, algorithms, sorting algorithm, searching algorithms, recursion, combinatorial algorithms, algorithm complexity, OOP, object-oriented programming, classes, objects, constructors, fields, properties, static members, abstraction, interfaces, encapsulation, inheritance, virtual methods, polymorphism, cohesion, coupling, enumerations, generics, namespaces, UML, design patterns, extension methods, anonymous types, lambda expressions, LINQ, code quality, high-quality code, high-quality classes, high-quality methods, code formatting, self-documenting code, code refactoring, problem solving, problem solving methodology, 9789544007737, 9544007733This textbook teaches useful programming techniques. It was developed so that the order and presentation of material is determined by pedagogical necessity. Important but difficult concepts are delayed until the reader has a sound grasp of the fundamentals and these more advanced concepts are actually needed. Constant and exhaustive reinforcement ensures that readers thoroughly understand the concepts presented. The author's extensive set of exercises, with answers, tests the student's grasp of what is happening in the machine on a nuts and bolts level. Praised by experts for its clarity and topical breadth, this visually appealing, comprehensive source on PCs uses an easy-to-understand, step-by-step approach to teaching the fundamentals of 80x86 assembly language programming and PC architecture. This edition has been updated to include coverage of the latest 64-bit microprocessor from Intel and AMD, the multi core features of the new 64-bit microprocessors, and programming devices via USB ports. Offering readers a fun, hands-on learning experience, the text uses the Debug utility to show what action the instruction performs, then provides a sample program to show its application. Reinforcing concepts with numerous examples and review questions, its oversized pages delve into dozens of related subjects, including DOS memory map, BIOS, microprocessor architecture, supporting chips, buses, interfacing techniques, system programming, memory hierarchy, DOS memory management, tables of instruction timings, hard disk characteristics, and more. For learners ready to master PC system programming.