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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.

This book is designed to introduce students to programming and computational thinking through the lens of exploring data. You can think of Python as your tool to solve problems that are far beyond the capability of a spreadsheet. It is an easy--to-use and easy-to learn programming language that is freely available on Windows, Macintosh , and Linux computers. There are free downloadable copies of this book in various electronic formats and a self--paced free online course where you can explore the course materials. All the supporting materials for the book are available under open and remixable licenses. This book is designed to teach people to program even if they have no prior experience.

A world list of books in the English language.

Comprehensive treatment focuses on creation of efficient data structures and algorithms and selection or design of data structure best suited to specific problems. This edition uses C++ as the programming language.

Shows developers how COM operates and how to use it to create efficient and stable programs consistent with the COM philosophy, allowing disparate applications and components to work together across a variety of languages, platforms, and host machines. Original. (Advanced).

InfoWorld is targeted to Senior IT professionals. Content is segmented into Channels and Topic Centers. InfoWorld also celebrates people, companies, and projects.

Widely praised for its balanced treatment of computer ethics, Ethics for the Information Age offers a modern presentation of the moral controversies surrounding information technology. Topics such as privacy and intellectual property are explored through multiple ethical theories, encouraging readers to think critically about these issues and to make their own ethical decisions.

Modern X86 Assembly Language Programming shows the fundamentals of x86 assembly language programming. It focuses on the aspects of the x86 instruction set that are most relevant to application software development. The book's structure and sample code are designed to help the reader quickly understand x86 assembly language programming and the computational capabilities of the x86 platform. Please note: Book appendixes can be downloaded here: http://www.apress.com/9781484200650 Major topics of the book include the following: 32-bit core architecture, data types, internal registers, memory addressing modes, and the basic instruction set X87 core architecture, register stack, special purpose registers, floating-point encodings, and instruction set MMX technology and instruction set Streaming SIMD extensions (SSE) and Advanced Vector Extensions (AVX) including internal registers, packed integer arithmetic, packed and scalar floating-point arithmetic, and associated instruction sets 64-bit core architecture, data types, internal registers, memory addressing modes, and the basic instruction set 64-bit extensions to SSE and AVX technologies X86 assembly language optimization strategies and techniques

Assembly Language for x86 Processors, 7e is suitable for undergraduate courses in assembly language programming and introductory courses in computer systems and computer architecture. Proficiency in one other programming language, preferably Java, C, or C++, is recommended. Written specifically for 32- and 64-bit Intel/Windows platform, this complete and fully updated study of assembly language teaches students to write and debug programs at the machine level. This 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. Teaching and Learning Experience This program presents a better teaching and learning experience-for you and your students. It will help: *Teach Effective Design Techniques: Top-down program design demonstration and explanation allows students to apply techniques to multiple programming courses.*Put Theory into Practice: Students will write software at the machine level, preparing them to work in any OS/machine-oriented environment. *Tailor the Text to Fit your Course: Instructors can cover optional chapter topics in varying order and depth. *Support Instructors and Students: Visit the author's web site http: //asmirvine.com/ for chapter objectives, debugging tools, supplemental files, a Getting Started with MASM and Visual Studio 2012 tutorial, and more

Scores of talented and dedicated people serve the forensic science community, performing vitally important work. However, they are often constrained by lack of adequate resources, sound policies, and national support. It is clear that change and advancements, both systematic and scientific, are needed in a number of forensic science disciplines to ensure the reliability of work, establish enforceable standards, and promote best practices with consistent application. Strengthening Forensic Science in the United States: A Path Forward provides a detailed plan for addressing these needs and suggests the creation of a new government entity, the National Institute of Forensic Science, to establish and enforce standards within the forensic science community. The benefits of improving and regulating the forensic science disciplines are clear: assisting law enforcement officials, enhancing homeland security, and reducing the risk of wrongful conviction and exoneration. Strengthening Forensic Science in the United States gives

a full account of what is needed to advance the forensic science disciplines, including upgrading of systems and organizational structures, better training, widespread adoption of uniform and enforceable best practices, and mandatory certification and accreditation programs. While this book provides an essential call-to-action for congress and policy makers, it also serves as a vital tool for law enforcement agencies, criminal prosecutors and attorneys, and forensic science educators.

For undergraduate courses in assembly language programming, introductory courses in computer systems, and computer architecture. Teach effective design techniques to help students put theory into practice Written specifically for 32- and 64-bit Intel/Windows platform, Assembly Language for x86 Processors , establishes a complete and fully updated study of assembly language. The text teaches students to write and debug programs at the machine level, using effective design techniques that apply to multiple programming courses through top-down program design demonstration and explanation. This approach 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 to create a memorable experience that gives them the confidence to work in any OS/machine-oriented environment. With the 8th Edition, and for the first time, Assembly Language for x86 Processors moves into the world of interactive electronic textbooks, enabling students to experiment and interact with review questions, code animations, tutorial videos, and multiple-input exercises. The convenient, simple--to-use mobile reading experience extends learning beyond class time. Pearson eText allows educators to easily share their own notes with students so they see the connection between their reading and what they learn in class -- motivating them to keep reading, and keep learning. Portable access lets students study on the go, even offline. And, student usage analytics offer insight into how students use the eText, helping educators tailor their instruction.

Besides MASM exercises, the labs include several Capture the Flag exercises with development of binary vectors for buffer overflow against attacks against Linux servers, programming with "as" AT&T in Linux, inline assembly with gnu C and C++, and programming in Java. The material in these laboratory works is based on lectures taught at Florida Tech over multiple years for the classes on Machine Architecture and Assembly Language (CSE

3120) and Computer Organization (CSE 2120). This edition is supposed to accompany lectures from Kip Irvine's book Assembly Language for x86 Processors, Editions 7 or 8. Each lab is numbered to specify the association with a chapter of that book, and references to those editions' pages and exercises are made when applicable. There are 2-3 different labs for most chapters from that book. For foundational material not found in that book, in particular for information about Linux-world assemblers like AT&T syntax as/gas and nasm, an introduction is offered before the corresponding Labs. The book is available on lulu.com.

Until the late 1980s, information processing was associated with large mainframe computers and huge tape drives. During the 1990s, this trend shifted toward information processing with personal computers, or PCs. The trend toward miniaturization continues and in the future the majority of information processing systems will be small mobile computers, many of which will be embedded into larger products and interfaced to the physical environment. Hence, these kinds of systems are called embedded systems. Embedded systems together with their physical environment are called cyber-physical systems. Examples include systems such as transportation and fabrication equipment. It is expected that the total market volume of embedded systems will be significantly larger than that of traditional information processing systems such as PCs and mainframes. Embedded systems share a number of common characteristics. For example, they must be dependable, efficient, meet real-time constraints and require customized user interfaces (instead of generic keyboard and mouse interfaces). Therefore, it makes sense to consider common principles of embedded system design. Embedded System Design starts with an introduction into the area and a survey of specification models and languages for embedded and cyber-physical systems. It provides a brief overview of hardware devices used for such systems and presents the essentials of system software for embedded systems, like real-time operating systems. The book also discusses evaluation and validation techniques for embedded systems. Furthermore, the book presents an overview of techniques for mapping applications to execution platforms. Due to the importance of resource efficiency, the book also contains a selected set of optimization techniques for embedded systems, including special compilation techniques. The book closes with a brief survey on testing. Embedded

System Design can be used as a text book for courses on embedded systems and as a source which provides pointers to relevant material in the area for PhD students and teachers. It assumes a basic knowledge of information processing hardware and software. Courseware related to this book is available at http://ls12-www.cs.tu-dortmund.de/~marw edel.

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.Uses the Intel IA-32 processor family as its base, showing how to program for Windows and DOS. 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. Covers 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.

Beginning COBOL for Programmers is a comprehensive, sophisticated tutorial and modular skills reference on the COBOL programming language for established programmers. This book is for you if you are a developer who would like to—or must—add COBOL to your repertoire. Perhaps you recognize the opportunities presented by the current COBOL skills crisis, or are working in a mission critical enterprise which retains legacy COBOL applications. Whatever your situation, Beginning COBOL for Programmers meets your needs as an established programmer moving to COBOL. Beginning COBOL for Programmers includes comprehensive coverage of ANS 85 COBOL features and techniques, including control structures, condition names, sequential and direct access files, data redefinition, string handling, decimal arithmetic, subprograms, and the report writer. The final chapter includes a substantial introduction to object-oriented COBOL. Benefiting from over one hundred example programs, you'll receive an extensive introduction to the core and advanced features of the COBOL language and will learn to apply these through comprehen-

sive and varied exercises. If you've inherited some legacy COBOL, you'll be able to grasp the COBOL idioms, understand the constructs, and recognize what's happening in the code you're working with. Today's enterprise application developers will find that COBOL skills open new—or old—doors, and this extensive COBOL reference is the book to help you acquire and develop your COBOL skills.

Now in its 2nd edition, this textbook has been updated on a new development board from STMicroelectronics - the Arm Cortex-M0+ based Nucleo-F091RC. Designed to be used in a one- or two-semester introductory course on embedded systems.

Molecular Exercise Physiology: An Introduction is the first student-friendly textbook to be published on this key topic in contemporary sport and exercise science. It introduces sport and exercise genetics and the molecular mechanisms by which exercise causes adaptation. The text is linked to real life sport and exercise science situations such as 'what makes people good at distance running?', 'what DNA sequence variations code for a high muscle mass?' or 'by what mechanisms does exercise improve type2 diabetes?' The book includes a full range of useful features, such as summaries, definitions of key terms, guides to further reading, review questions, personal comments by molecular exercise pioneers (Booth, Bouchard) and leading research in the field, as well as descriptions of research methods. A companion website offers interactive and downloadable resources for both student and lecturers. Structured around central themes in sport and exercise science, such as nutrition, endurance training, resistance training, exercise & chronic disease and ageing, this book is the perfect foundation around which to build a complete upper-level undergraduate or postgraduate course on molecular exercise physiology.

For courses in Visual Basic Programming Visual Basic fundamentals Rich in concise, practical examples, Starting Out With Visual Basic covers the tools and features of Visual Basic, and when and how to use them. The authors introduce the fundamentals of Visual Basic in clear, easy-to-understand language, making it accessible to novice programming students. Students not only learn how to use the various controls, constructs, and features of Visual Basic, but also why and when to use them. The 8th Edition includes updates for compatibility with Visual Studio 2017. Also available with MyLab Programming By combining trusted author content with digital tools and a flexible platform, MyLab [or

Mastering] personalizes the learning experience and improves results for each student. With MyLab Programming, students work through hundreds of short, auto-graded coding exercises and receive immediate and helpful feedback based on their work. Note: You are purchasing a standalone product; MyLab Programming does not come packaged with this content. Students, if interested in purchasing this title with MyLab Programming, ask your instructor for the correct package ISBN and Course ID. Instructors, contact your Pearson representative for more information. If you would like to purchase both the physical text and MyLab Programming, search for: 0135862477/9780135862476 Starting Out with Visual Basic, Plus MyLab Programming -- Access Card Package, 8e Package consists of: 0135204658/9780135204658 Starting Out with Visual Basic, 8/e 0135228093 / 9780135228098 MyLab Programming Standalone Access Card

Artificial intelligence (AI) is a field within computer science that is attempting to build enhanced intelligence into computer systems. This book traces the history of the subject, from the early dreams of eighteenth-century (and earlier) pioneers to the more successful work of today's AI engineers. AI is becoming more and more a part of everyone's life. The technology is already embedded in face-recognizing cameras, speech-recognition software, Internet search engines, and health-care robots, among other applications. The book's many diagrams and easy-to-understand descriptions of AI programs will help the casual reader gain an understanding of how these and other AI systems actually work. Its thorough (but unobtrusive) end-of-chapter notes containing citations to important source materials will be of great use to AI scholars and researchers. This book promises to be the definitive history of a field that has captivated the imaginations of scientists, philosophers, and writers for centuries.

"This set of books represents a detailed compendium of authoritative, research-based entries that define the contemporary state of knowledge on technology"--Provided by publisher.

Learn the basics of operating systems and architecture in the context of a microprocessor. -- Each book includes a CD-ROM containing Microsoft's MASM Assembly Language Development System version 6.11. -- Provides an extensive link library -- Fully explains how to use the assembler, linker, and debugger. An ideal quick-reference for people who need to brush up on their PC Assembler programming skills, and a quality tutorial for those who already program

in C, this complete and fully updated study of assembly language for the IBM-PC covers the basics of operating systems and architecture in the context of a microprocessor. Based on the intel 80 x 86 processor family, it concentrates on the MS-DOS operating system, and provides literally hundreds of short examples that show how assembly language may be applied to useful problems.

This text is an introduction to the design and implementation of various types of system software. A central theme of the book is the relationship between machine architecture and system software.

MatLab, Third Edition is the only book that gives a full introduction to programming in MATLAB combined with an explanation of the software's powerful functions, enabling engineers to fully exploit its extensive capabilities in solving engineering problems. The book provides a systematic, step-by-step approach, building on concepts throughout the text, facilitating easier learning. Sections on common pitfalls and programming guidelines direct students towards best practice. The book is organized into 14 chapters, starting with programming concepts such as variables, assignments, input/output, and selection statements; moves onto loops; and then solves problems using both the 'programming concept' and the 'power of MATLAB' side-by-side. In-depth coverage is given to input/output, a topic that is fundamental to many engineering applications. Vectorized Code has been made into its own chapter, in order to emphasize the importance of using MATLAB efficiently. There are also expanded examples on low-level file input functions, Graphical User Interfaces, and use of MATLAB Version R2012b; modified and new end-of-chapter exercises; improved labeling of plots; and improved standards for variable names and documentation. This book will be a valuable resource for engineers learning to program and model in MATLAB, as well as for undergraduates in engineering and science taking a course that uses (or recommends) MATLAB. Presents programming concepts and MATLAB built-in functions side-by-side Systematic, step-by-step approach, building on concepts throughout the book, facilitating easier learning Sections on common pitfalls and programming guidelines direct students towards best practice

Queneau uses a variety of literary styles and forms in ninety-nine exercises which retell the same story about a minor brawl aboard a bus

Python for Everybody is designed to introduce students to programming and soft-

ware development through the lens of exploring data. You can think of the Python programming language as your tool to solve data problems that are beyond the capability of a spreadsheet.Python is an easy to use and easy to learn programming language that is freely available on Macintosh, Windows, or Linux computers. So once you learn Python you can use it for the rest of your career without needing to purchase any software.This book uses the Python 3 language. The earlier Python 2 version of this book is titled "Python for Informatics: Exploring Information".There are free downloadable electronic copies of this book in various formats and supporting materials for the book at www.pythonlearn.com. The course materials are available to you under a Creative Commons License so you can adapt them to teach your own Python course.

Gain the fundamentals of x86 64-bit assembly language programming and focus on the updated aspects of the x86 instruction set that are most relevant to application software development. This book covers topics including x86 64-bit programming and Advanced Vector Extensions (AVX) programming. The focus in this second edition is exclusively on 64-bit base programming architecture and AVX programming. Modern X86 Assembly Language Programming's structure and sample code are designed to help you quickly understand x86 assembly language programming and the computational capabilities of the x86 platform. After reading and using this book, you'll be able to code performance-enhancing functions and algorithms using x86 64-bit assembly language and the AVX, AVX2 and AVX-512 instruction set extensions. What You Will Learn Discover details of the x86 64-bit platform including its core architecture, data types, registers, memory addressing modes, and the basic instruction set Use the x86 64-bit instruction set to create performance-enhancing functions that are callable from a high-level language (C++) Employ x86 64-bit assembly language to efficiently manipulate common data types and programming constructs including integers, text strings, arrays, and structures Use the AVX instruction set to perform scalar floating-point arithmetic Exploit the AVX, AVX2, and AVX-512 instruction sets to significantly accelerate the performance of computationally-intense algorithms in problem domains such as image processing, computer graphics, mathematics, and statistics Apply various coding strategies and techniques to optimally exploit the x86 64-bit, AVX, AVX2, and AVX-512 instruction sets for maximum possible performance Who This Book Is For Software de-

velopers who want to learn how to write code using x86 64-bit assembly language. It's also ideal for software developers who already have a basic understanding of x86 32-bit or 64-bit assembly language programming and are interested in learning how to exploit the SIMD capabilities of AVX, AVX2 and AVX-512.

Data Mining: Concepts and Techniques provides the concepts and techniques in processing gathered data or information, which will be used in various applications. Specifically, it explains data mining and the tools used in discovering knowledge from the collected data. This book is referred as the knowledge discovery from data (KDD). It focuses on the feasibility, usefulness, effectiveness, and scalability of techniques of large data sets. After describing data mining, this edition explains the methods of knowing, preprocessing, processing, and warehousing data. It then presents information about data warehouses, online analytical processing (OLAP), and data cube technology. Then, the methods involved in mining frequent patterns, associations, and correlations for large data sets are described. The book details the methods for data classification and introduces the concepts and methods for data clustering. The remaining chapters discuss the outlier detection and the trends, applications, and research frontiers in data mining. This book is intended for Computer Science students, application developers, business professionals, and researchers who seek information on data mining. Presents dozens of algorithms and implementation examples, all in pseudo-code and suitable for use in real-world, large-scale data mining projects Addresses advanced topics such as mining object-relational databases, spatial databases, multimedia databases, time-series databases, text databases, the World Wide Web, and applications in several fields Provides a comprehensive, practical look at the concepts and techniques you need to get the most out of your data

This 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. For an introductory course on UNIX. UNIX for Programmers and Users, Third Edition follows in the tradition of previous editions to provide students with complete, up-to-date coverage of UNIX. In this new edition they will find information on basic concepts, popular utilities, shells, networking, systems programming, internals, system administration, and much more.

Assembly Language Programming Made Clear: A Systematic Approach teaches stu-

dents the fundamentals of assembly language programming through the use of two pseudo-languages that enable them to design their programs. It also prepares them to write their programs by teaching them the structure of the necessary registers. Chapters are organized so that information is presented in manageable chunks, all supported with clear examples and include exercises that allow students to immediately apply what they have learned. Over the course of the book students will work with number bases for integers, simple algorithms for converting between a number base and the base, if-then and while conditional statements, and arithmetic expressions. They will also study dynamic storage for decimal numbers through stacks and strings, string arrays, and much more. The book includes an appendix on signed numbers and the flag signals. Assembly Language Programming Made Clear can be used in courses within computer science programs. Its cogent discussion of foundational skills also makes it appropriate for classes in anti-virus software and those that prepare students for the development of higher-level language. Initially a computer programmer, Howard Dachslager earned his Ph.D. in mathematics specializing in real analysis and probability theory at the University of California, Berkeley. Dr. Dachslager has since taught mathematics and programming to diverse student populations. He is currently a faculty member at Irvine Community College, where his course offerings include algebra, statistics, calculus, and finite mathematics. He is the author of several books on both programming and mathematics, most recently Fundamentals of Statistics and Probability Theory, Two Volumes: A Tutorial Approach. Dr. Dachslager is a member of the American Mathematical Society.

A modern and unified treatment of the mechanics, planning, and control of robots, suitable for a first course in robotics.

This practical text contains fairly "traditional" coverage of data structures with a clear and complete use of algorithm analysis, and some emphasis on file processing techniques as relevant to modern programmers. It fully integrates OO programming with these topics, as part of the detailed presentation of OO programming itself.Chapter topics include lists, stacks, and queues; binary and general trees; graphs; file processing and external sorting; searching; indexing; and limits to computation.For programmers who need a good reference on data structures.

In the Fifth Edition, Advanced Visual Basic 2010 helps those who are familiar with the fundamentals of Visual Basic 2010 pro-

gramming harness its power for more advanced uses. Coverage of sophisticated tools and techniques used in the industry today include various database, ASP.NET, LINQ, WPF and Web Services topics. After studying the book and completing the programming exercises, students should be able to create small- to medium-sized Windows and Web applications that use databases. They will also gain essential concepts in object-oriented programming, event-driven programming, and test-driven development. Each subject is presented in an understandable style that makes this book a leader in the field.

Part I of this book is a practical introduction to working with the Isabelle proof assistant. It teaches you how to write functio-

nal programs and inductive definitions and how to prove properties about them in Isabelle's structured proof language. Part II is an introduction to the semantics of imperative languages with an emphasis on applications like compilers and program analysers. The distinguishing feature is that all the mathematics has been formalised in Isabelle and much of it is executable. Part I focusses on the details of proofs in Isabelle; Part II can be read even without familiarity with Isabelle's proof language, all proofs are described in detail but informally. The book teaches the reader the art of precise logical reasoning and the practical use of a proof assistant as a surgical tool for formal proofs about computer science artefacts. In this sense it represents a formal approach to computer science, not

just semantics. The Isabelle formalisation, including the proofs and accompanying slides, are freely available online, and the book is suitable for graduate students, advanced undergraduate students, and researchers in theoretical computer science and logic.

Structure and Interpretation of Computer Programs by Harold Abelson and Gerald Jay Sussman is licensed under a Creative Commons Attribution-NonCommercial 3.0 License.

Comprehensive treatment focuses on creation of efficient data structures and algorithms and selection or design of data structure best suited to specific problems. This edition uses Java as the programming language.