Digital Logic And Computer Design By Morris Mano 3rd Edition

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Cengage Learning

Prentice Hall

A COMPREHENSIVE GUIDE TO THE DESIGN & ORGANIZATION OF MODERN COMPUTING SYSTEMS Digital Logic Design and Computer Organization with Computer Architecture for Security provides practicing engineers and students with a clear understanding of computer hardware technologies. The fundamentals of digital logic design as well as the use of the Verilog hardware description language are discussed. The book covers computer organization and architecture, modern design concepts, and computer security through hardware. Techniques for designing both small and large combinational and sequential circuits are thoroughly explained. This detailed reference addresses memory technologies, CPU design and techniques to increase performance, microcomputer architecture, including "plug and play" device interface, and memory hierarchy. A chapter on security engineering methodology as it applies to computer architecture concludes the book. Sample problems, design examples, and detailed diagrams are provided throughout this practical resource. COVERAGE INCLUDES: Combinational circuits: small designs Combinational circuits: large designs Sequential circuits: core modules Sequential circuits: small designs Sequential circuits: large designs Memory Instruction set architecture Computer architecture: interconnection Memory system Computer architecture: security Digital Electronics Merrill Publishing Company 本书以介绍数字设计的基础知识以及丰富案例为主要特色, 并在第一版的基础上进行了全面的修订与更新, 更加突出了数字设计相关技术的应用. 本书内容包括: 计算机与数字系统,数制系统,逻辑电路与布尔代数, 组合逻辑电路分析与设计, 时序逻辑电路简介, 同步时序逻辑电路分析与设计, 异步时序逻辑电路分析与设计, 可编程逻辑器件, 数字系统设计. With an Introduction to Verilog and FPGA-Based Design

Fundamentals of Digital Logic and Microcomputer Design, haslong been hailed for its clear and simple presentation of the principles and basic tools required to design typical digital systems such as microcomputers. In this Fifth Edition, the authorfocuses on computer design at three levels: the device level, the logic level, and the system level. Basic topics are covered, suchas number systems and Boolean algebra, combinational and sequentiallogic design, as well as more advanced subjects such as assemblylanguage programming and microprocessor-based system design. Numerous examples are provided throughout the text. Coverage includes: Digital circuits at the gate and flip-flop levels Analysis and design of combinational and sequential circuits Microcomputer organization, architecture, and programmingconcepts Design of computer instruction sets, CPU, memory, and I/O System design features associated with popular microprocessors from An instructor's manual, available upon request Additionally, the of new material. Improved features of this new accompanying CD-ROM, contains step-by-stepprocedures for installing and using Altera Quartus II software, MASM 6.11 (8086), and 68asmsim (68000), provides valuablesimulation results via screen shots. Fundamentals of Digital Logic and Microcomputer Design is an essential reference that will provide you with the fundamental tools you need to design typical digital systems.

<u>Logic Design and the 8086 Microprocessor</u> John Wiley & Sons The book provides a bottom-up approach to understanding how a computer works and how to use computing to solve real-world problems. It covers the basics of digital logic through the lens of computer organization and programming. The reader should be able material on input filter design; new treatment to design his or her own computer from the ground up at the end of the book. Logic simulation with Verilog is used throughout, assembly languages are introduced and discussed, and the fundamentals of computer architecture and embedded systems are touched upon, all in a cohesive design-driven framework suitable for class or self-study.

Logic and Computer Design Fundamentals

Prentice Hall

Digital Logic with an Introduction to Verilog and FPGA-Based Design provides basic knowledge of field programmable gate array (FPGA) design and implementation using Verilog, a hardware description language (HDL) commonly used in the design and verification of digital circuits. Emphasizing fundamental principles,

this student-friendly textbook is an ideal resource for introductory digital logic courses. Chapters offer clear explanations of key concepts and step-by-step procedures that illustrate the real-world application of FPGAbased design. Designed for beginning students familiar with DC circuits and the C programming language, the text begins by describing of basic terminologies and essential concepts of digital integrated circuits using transistors. Subsequent chapters cover device level and logic level design in detail, including combinational and sequential circuits used in the design of microcontrollers and microprocessors. Topics include Boolean algebra and functions, analysis and design of sequential circuits using logic gates, FPGA-based implementation using CAD software tools, and combinational logic design using various HDLs with focus on Verilog.

ARM Edition World Scientific Publishing Company

This textbook is intended to introduce the student of electronics to the fundamentals of digital circuits, both combinational and circuit principles, it also includes a sequential, in a reasonable and systematic manner. It proceeds from basic logic concepts to circuits and designs. Digital Logic John Wiley & Sons For sophomore courses on digital design in an Electrical Engineering, Computer Engineering, or Computer Science department. & Digital Design, fourth edition is a modern update of the classic authoritative text on digital design. & This book teaches the basic concepts of digital design in a clear, accessible manner. The book presents the basic tools for the design of digital circuits and provides procedures suitable for a variety of digital applications.

Digital Logic and Computer Design CRC Press A college text for a one- or two-term first course in digital logic design at about the sophomore or junior level. It covers the basics of switching theory and logic design necessary to analyze and design combinational and sequential logic circuits at switch, gate, and register (or register-transfer <u>Digital Logic for Computing</u> Prentice Hall Fundamentals of Power Electronics, Third Edition, is an up-to-date and authoritative text and reference book on power electronics. This new edition retains the original objective and philosophy of focusing on the fundamental principles, models, and technical requirements needed for designing practical edition include: new material on switching loss mechanisms and their modeling; wide bandgap semiconductor devices; a more rigorous treatment of averaging; explanation of the Nyquist stability criterion; incorporation of the Tan and Middlebrook model for current programmed control; a new chapter on digital control of switching converters; major new chapters on advanced techniques of designelement theorems; average current control; new of averaged switch modeling, simulation, and indirect power; and sampling effects in DCM, CPM, and digital control. Fundamentals of Power Electronics, Third Edition, is intended for use in introductory power electronics courses and related fields for both senior undergraduates and first-year graduate students interested in converter circuits and electronics, control systems, and magnetic and power systems. It will also be an invaluable reference for professionals working in power electronics, power conversion, and analog and digital electronics. Includes an increased number of end of chapter problems; Updated and

chapters; Includes key principles and a rigorous treatment of topics. Digital Design PHI Learning Pvt. Ltd. The second edition of this text provides an introduction to the analysis and design of digital circuits at a logic, instead of electronics, level. It covers a range of topics, from number system theory to asynchronous logic design. A solution manual is available to instructors only. Requests must be made on official school stationery.

Digital Design and Computer Architecture John Wiley & Sons

Market_Desc: · Electrical engineers · Logic Designers in Computer Industry Special Features: • Provides extensive exercises for readers to work out while studying a topic · Presents up-to-date approaches in logic design in later chapters. Discusses the relationship between digital system design and computer architecture About The Book: This is an introductory-level book on the principles of digital logic design. While providing coverage to the usual topics in combinational and sequential chapter on the use of the hardware description language ABEL in the design of circuits using PLDs and a chapter on computer organization.

Computer Logic Design Pearson Education India

This text is intended for a first course in digital logic design, at the sophomore or junior level, for electrical engineering, computer engineering and computer science programs, as well as for a number of other disciplines such as physics and mathematics. The book can also be used for self-study or for review by practicing engineers and computer scientists not intimately familiar with the subject. After completing this text, the student should be prepared for a second (advanced) course in digital design, switching and automata theory, microprocessors or computer organization. Request Inspection Copy Digital Systems Cambridge University Press This introductory text on 'digital logic and computer organization' presents a logical treatment of all the fundamental concepts necessary to understand the organization and design of a computer. It is designed to cover the requirements of a first-course in computer organization for undergraduate Computer Science, Electronics, or MCA students. Beginning from first Intel and Motorola Future plans in microprocessor development power electronic systems while adding a wealth principles, the text guides students through to a stage where they are able to design and build a small computer with available IC chips. Starting with the foundation material on data representation, computer arithmetic and combinatorial and sequential circuit design, the text explains ALU design and includes a discussion on an ALU IC chip. It also discusses Algorithmic State Machine and its representation using a Hardware Description Language before shifting to computer organization. The evolutionary development of a small hypothetical computer is oriented analysis including feedback and extra-described illustrating hardware-software trade-off in computer organization. Its instruction set is designed giving reasons why each new instruction is introduced. This is followed by a description of the general features of a CPU, organization of main memory and I/O systems. The book concludes with a chapter describing the features of a real computer, namely the Intel Pentium. An appendix describes a number of laboratory experiments which can be put together by students, culminating in the design of a toy computer. Key Features • Selfcontained presentation of digital logic and computer organization with minimal pre-requisites • Large number of examples provided throughout the book • Each chapter begins with learning goals and ends with a summary to aid self-study by students. A Systematic Approach to Digital Logic Design Prentice Hall

> There are many books on computers, networks, and software engineering but none that integrate the

reorganized, including three completely new

three with applications. Integration is important because, increasingly, software dominates the performance, reliability, maintainability, and availability of complex computer and systems. Books on software engineering typically portray software as if it exists in a vacuum with no relationship to the wider system. This is wrong because a system is more than software. It is comprised of people, organizations, processes, hardware, and software. All of these components must be considered in an integrative fashion when designing systems. On the other hand, books on computers and networks do not demonstrate a deep understanding of the intricacies of developing software. In this book you will learn, for example, how to quantitatively analyze the performance, reliability, maintainability, and availability of computers, networks, and software in relation to the total system. Furthermore, you will learn how to evaluate and mitigate the risk of deploying integrated systems. You will learn how to apply many models dealing with the optimization of systems. Numerous quantitative examples are provided to help you understand and interpret model results. This book can be used as a first year graduate course in computer, network, and software engineering; as an on-the-job reference for computer, network, and software engineers; and as a reference for these

<u>Digital Design</u> Routledge DIGITAL LOGIC AND MICROPROCESSOR DESIGN WITH INTERFACING, 2E provides a solid foundation for designing digital logic circuits. This unique approach combines the This textbook, based on the author's use of logic principles and the building of fifteen years of teaching, is a complete individual components to create data paths and control units so readers can build dedicated custom microprocessors and general-purpose microprocessors. Readers design simple microprocessors from the ground up, implement them in real hardware, mathematics, the authors introduce all and interface them to actual devices. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Fundamentals of Digital Logic and Microcomputer Design McGraw Hill Professional

disciplines.

The fundamentals and implementation of digital electronics are essential to understanding the design and working of consumer/industrial electronics, communications, embedded systems, computers, security and military equipment. Devices used in applications such as these are constantly decreasing in size and employing more complex technology. It is therefore essential for engineers and students to understand the fundamentals, implementation and application principles of digital electronics, devices and integrated circuits. This is so that they can use the most appropriate and effective technique to suit their technical need. This book provides practical and comprehensive coverage of digital electronics, bringing together information on fundamental theory, operational aspects and potential applications. With worked problems, examples, and review questions for each chapter, Digital Electronics includes: information on number systems, binary codes, digital arithmetic, logic gates and families, and Boolean algebra; an at the Autonomous University of Barcelona in-depth look at multiplexers, demultiplexers, devices for arithmetic operations, flip-flops and related devices, system is and how it can be developed, counters and registers, and data conversion preparing them for steps toward other circuits; up-to-date coverage of recent application fields, such as programmable logic devices, microprocessors, microcontrollers, digital troubleshooting and digital instrumentation. A comprehensive, must-read book on digital electronics for senior undergraduate and graduate students of electrical, electronics and computer engineering, and a introduced are reinforced by plentiful valuable reference book for professionals

Design McGraw-Hill Education Digital Logic & Computer DesignPearson

and researchers.

Education IndiaDigital Logic and Computer DesignPearson Education India

Digital Logic Design Principles Morgan Kaufmann The third edition of Digital Logic Techniques provides a clear and comprehensive treatment of the representation of data, operations on data, combinational logic design, sequential logic, computer architecture, and practical digital circuits. A wealth of exercises and worked examples in each chapter give students valuable experience in applying the concepts and techniques discussed. Beginning with an objective comparison between analogue and digital representation of data, the author presents the Boolean algebra framework for digital electronics, develops combinational logic design from first principles, and presents cellular logic as an alternative structure more relevant than canonical forms to VLSI implementation. He then addresses sequential logic design and develops a strategy for designing finite state machines, giving students a solid foundation for more advanced studies in automata theory. The second half of the book focuses on the digital system as an entity. Here the author examines the implementation of logic systems in programmable hardware, outlines the specification of a system, explores arithmetic processors, and elucidates fault diagnosis. The final chapter examines the electrical properties of logic components, compares the different logic families, and highlights the problems that can arise in constructing practical hardware systems.

With an Introduction to the Verilog HDL World Scientific

teaching tool for turning students into logic designers in one semester. Each chapter describes new concepts, giving extensive applications and examples. Assuming no prior knowledge of discrete background in propositional logic, asymptotics, graphs, hardware and electronics. Important features of the presentation are: • All material is presented in full detail. Every designed circuit is formally specified and implemented, the correctness of the implementation is proved, and the cost and delay are analyzed • Algorithmic solutions are offered for logical simulation, computation of propagation delay and minimum clock period • Connections are drawn from the physical analog world to the digital abstraction • The language of graphs is used to describe formulas and circuits • Hundreds of figures, examples and exercises enhance understanding. The extensive website (http://www.eng.tau.ac.il /~guy/Even-Medina/) includes teaching slides, links to Logisim and a DLX assembly simulator.

Digital Logic and Computer Design Prentice Hall

This textbook for a one-semester course in Digital Systems Design describes the basic methods used to develop "traditional" Digital Systems, based on the use of logic gates and flip flops, as well as more advanced techniques that enable the design of very large circuits, based on Hardware Description Languages and Synthesis tools. It was originally designed to accompany a MOOC (Massive Open Online Course) created (UAB), currently available on the Coursera platform. Readers will learn what a digital technical disciplines, such as Computer Architecture, Robotics, Bionics, Avionics and others. In particular, students will learn to design digital systems of medium complexity, describe digital systems using high level hardware description languages, and understand the operation of computers at their most basic level. All concepts illustrations, examples, exercises, and applications. For example, as an applied Foundation of Digital Electronics and Logic example of the design techniques presented, the authors demonstrate the synthesis of a

position to enter the world of Computer Architecture and Embedded Systems.

simple processor, leaving the student in a