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Digital Logic Design Principles W C B/McGraw-Hill

With an abundance of insightful examples, problems, and computer experiments, Introduction to Logic Design provides a balanced, easy-to-read treatment of the fundamental theory of logic functions and applications to the design of digital devices and systems. Requiring no prior knowledge of electrical circuits or electronics, it supplies the

Fundamentals of Digital Logic with VHDL Design W C B/McGraw-Hill

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 in-depth look at multiplexers, demultiplexers, devices for arithmetic operations, flip-flops and related devices, counters and registers, and data conversion 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 valuable reference book for professionals and researchers.

Digital Logic Design Technical Publications

This book focuses on the basic principles of digital electronics and logic design. It is designed as a textbook for undergraduate students of electronics, electrical engineering, computer science, physics, and information technology. The text covers the syllabi of several Indian and foreign universities. It depicts the comprehensive resources

Digital Design Techniques and Exercises CRC Press

Digital Design and Computer Architecture, Second Edition, takes a unique and modern approach to digital design, introducing the reader to the fundamentals of digital logic and then showing step by step how to build a MIPS microprocessor in both Verilog and VHDL. This new edition combines an engaging and humorous writing style with an updated and hands-on approach to digital design. It presents new content on I/O systems in the context of general purpose processors found in a PC as well as microcontrollers found almost everywhere. Beginning with digital logic gates and progressing to the design of combinational and sequential circuits, the book uses these fundamental building blocks as the basis for the design of an actual MIPS processor. It provides practical examples of how to interface with peripherals using RS232, SPI, motor control, interrupts, wireless, and analog-to-digital conversion. SystemVerilog and VHDL are integrated throughout the text in examples illustrating the methods and techniques for CAD-based circuit design. There are also additional exercises and new examples of parallel and advanced

architectures, practical I/O applications, embedded systems, and heterogeneous computing, plus a new appendix on C programming to strengthen the connection between programming and processor architecture. This new edition will appeal to professional computer engineers and to students taking a course that combines digital logic and computer architecture. Updated based on instructor feedback with more exercises and new examples of parallel and advanced architectures, practical I/O applications, embedded systems, and heterogeneous computing Presents digital system design examples in both VHDL and SystemVerilog (updated for the second edition from Verilog), shown side-by-side to compare and contrast their strengths Includes a new chapter on C programming to provide necessary prerequisites and strengthen the connection between programming and processor architecture Companion Web site includes links to Xilinx CAD tools for FPGA design, lecture slides, laboratory projects, and solutions to exercises. Instructors can also register at textbooks.elsevier.com for access to: Solutions to all exercises (PDF) Lab materials with solutions HDL for textbook examples and exercise solutions Lecture slides (PPT) Sample exams\ Sample course syllabus Figures from the text (JPG, PPT)

Practical Digital Logic Design and Testing CRC Press

New design architectures in computer systems have surpassed industry expectations. Limits, which were once thought of as fundamental, have now been broken. Digital Systems and Applications details these innovations in systems design as well as cutting-edge applications that are emerging to take advantage of the fields increasingly

sophisticated capabilities. This book features new chapters on parallelizing iterative heuristics, stream and wireless processors, and lightweight embedded systems. This fundamental text— Provides a clear focus on computer systems, architecture, and applications Takes a top-level view of system organization before moving on to architectural and organizational concepts such as superscalar and vector processor, VLIW architecture, as well as new trends in multithreading and multiprocessing. includes an entire section dedicated to embedded systems and their applications Discusses topics such as digital signal processing applications, circuit implementation aspects, parallel I/O algorithms, and operating systems Concludes with a look at new and future directions in computing Features articles that describe diverse aspects of computer usage and potentials for use Details implementation and performance-enhancing techniques such as branch prediction, register renaming, and virtual memory Includes a section on new directions in computing and their penetration into many new fields and aspects of our daily lives

Spectral Logic and Its Applications for the Design of Digital Devices John Wiley & Sons

This text is intended for the digital logic design course found in most electrical and computer engineering programs. The authors provide a balance between basic concepts and practical applications using computer-aided design tools.

Digital Design and Computer Architecture CRC Press

From one of the best-known and successful authors in the field comes this new edition of Digital Logic and State Machine Design. The text is concise and

practical, and covers the important area of digital system design specifically for undergraduates. Comer's primary goal is to illustrate that sequential circuits can be designed using state machine techniques. These methods apply to sequential circuit design as efficiently as Boolean algebra and Karnaugh mapping methods apply to combinatorial design. After presenting the techniques, Comer proceeds directly into designing digital systems. This task consists of producing the schematic or block diagram of the system based on nothing more than a given set of specifications. The design serves as the basis for the construction of the actual hardware system. In the new Third Edition, Comer introduces state machines earlier than in previous editions, and adds entire chapters on programmable logic devices and computer organization.

Digital Logic Saunders College Pub
Description: The book is an attempt to make Digital Logic Design easy and simple to understand. The book covers various features of Logic Design using lots of examples and relevant diagrams. The complete text is reviewed for its correctness. This book is an outcome of sincere effort and hard work to bring concepts of Digital Logic Design close to the audience of this book. The salient features of the book:--Easy explanation of Digital System and Binary Numbers with lots of solved examples-Detailed covering of Boolean Algebra and Gate-Level Minimization with proper examples and diagrammatic representation.- Detailed analysis of different Combinational Logic Circuits-Complete Synchronous sequential Logic understanding-Deep understanding of Memory and Programmable Logic- Detailed analysis of different Asynchronous Sequential Logic Table Of

Contents: Unit 1 : Digital System and Binary Numbers; Part 1: Digital System and Binary Numbers; Part 2 : Boolean Algebra and Gate Level Minimization; Unit 2 : Combinational Logic; Unit 3: Sequential Circuits; Unit 4 : Memory, Programmable Logic and Design; Unit 5 : Asynchronous Sequential Logic
Digital Logic and State Machine Design
 John Wiley & Sons

"An excellent introduction to the digital world in engineering, Introduction to Digital Logic Design explains the simple concepts behind digital logic design from logic gates all the way to the design of sequential machines. Over the course of the eight chapters of the book students explore number systems and codes, simple logic states, boolean algebra, working with logic equations, and simplifying logic functions. They also work with arithmetic in binary systems, common combinational logic functions, counters, and sequential logic. Each chapter includes practical problems that allow for immediate application of the skills and concepts. All material is based on extensive class testing. Simple yet rigorous, Introduction to Digital Logic Design helps first-semester students see the big picture in logic design and doesn't overwhelm them with extraneous details. The text is suitable for first-year engineering, computer science, and information science courses. Rajiv Kapadia earned his Ph.D. at the University of Oklahoma. Dr. Kapadia is an associate professor of electrical and computer engineering and technology at Minnesota State University, Mankato."

Digital Logic Cambridge University Press
 This book provides the reader with the key concepts and techniques of modern digital logic design and applications. This concise treatment provides essential

development and explanations for both classical and modern topics. The modern topics include unicode, unipolar transistors, copper technology, flash memory, HDL, verilog and logic simulation software tools. Also covered are combinatorial logic circuits and transistor circuits. It will be an essential resource for computer scientists, logic circuit designers and computer engineers.

Fundamentals of Digital Logic Design, with VLSI Applications CL Engineering

Fundamentals of Digital Logic With Verilog Design teaches the basic design techniques for logic circuits. It emphasizes the synthesis of circuits and explains how circuits are implemented in real chips. Fundamental concepts are illustrated by using small examples. Use of CAD software is well integrated into the book. A CD-ROM that contains Altera's Quartus CAD software comes free with every copy of the text. The CAD software provides automatic mapping of a design written in Verilog into Field Programmable Gate Arrays (FPGAs) and Complex Programmable Logic Devices (CPLDs). Students will be able to try, firsthand, the book's Verilog examples (over 140) and homework problems. Engineers use Quartus CAD for designing, simulating, testing and implementing logic circuits. The version included with this text supports all major features of the commercial product and comes with a compiler for the IEEE standard Verilog language. Students will be able to: enter a design into the CAD system compile the design into a selected device simulate the functionality and timing of the resulting circuit implement the designs in actual devices (using the school's laboratory facilities) Verilog is a complex language,

so it is introduced gradually in the book. Each Verilog feature is presented as it becomes pertinent for the circuits being discussed. To teach the student to use the Quartus CAD, the book includes three tutorials.

Digital Logic 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 circuit principles, it also includes a chapter on the use of the hardware description language ABEL in the design of circuits using PLDs and a chapter on computer organization.

Digital Principles and Logic Design John Wiley & Sons

DIGITAL LOGIC offers the right balance of classical and up-to-date treatment of combinational and sequential logic design for a first digital logic design class. The author provides a thorough explanation of the design process, including completely worked examples beginning with simple examples and going on to problems of increasing complexity. This text contains PLD (Programmable Logic Design) coverage. Chapter 9 develops complete, worked EPROM, PLA, and EPLD design examples. The problems are developed in Chapter 7 as standard designs using SSI and MSI devices so that your students can see the difference between the two approaches.

DIGITAL LOGIC DESIGN McGraw-Hill

Higher Education

This text and reference provides students and practicing engineers with an introduction to the classical methods of designing electrical circuits, but incorporates modern logic design techniques used in the latest microprocessors, microcontrollers, microcomputers, and various LSI components. The book provides a review of the classical methods e.g., the basic concepts of Boolean algebra, combinational logic and sequential logic procedures, before engaging in the practical design approach and the use of computer-aided tools. The book is enriched with numerous examples (and their solutions), over 500 illustrations, and includes a CD-ROM with simulations, additional figures, and third party software to illustrate the concepts discussed in the book.

Digital Logic Circuits using VHDL Delmar Pub

Designed for the first digital course for four-year electrical engineering majors and for the second course (following basic logic) for four-year electrical and electronic engineering technology majors. Features a classical approach to the subject. Provides a thorough explanation of the design process. Includes real-world examples with real-world parts. Extensive problem sets. PLD coverage.

Digital Logic: Applications And Design Morgan Kaufmann

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.

Fundamentals of Digital Logic with Verilog Design Elsevier

New, updated and expanded topics in the fourth edition include: EBCDIC, Grey code, practical applications of flip-flops, linear and shaft encoders, memory elements and FPGAs. The section on fault-finding has been expanded. A new chapter is dedicated to the interface between digital components and analog voltages. A highly accessible, comprehensive and fully up to date digital systems text A well known and respected text now revamped for current courses Part of the Newnes suite of texts for HND/1st year modules

Digital Electronics Springer Science & Business Media

This text presents the essentials of modern logic design. The author conveys key concepts in a clear, informal manner, demonstrating theory through numerous examples to establish a theoretical basis for practical applications. All major topics, including PLD-based digital design, are covered, and detailed coverage of digital logic circuit testing methods critical to successful chip manufacturing, are included. The industry standard PLD programming language ABEL is fully integrated where appropriate. The work also includes coverage of test generation techniques and design methods for testability, a complete discussion of PLD (Programmable Logic Device) based digital design, and coverage of state assignment and minimization explained using computer aided techniques.

DIGITAL LOGIC AND COMPUTER DESIGN BPB Publications

This popular volume provides a solid foundation in the elements of basic

digital electronics and switching theory that are used in most practical digital design today -- and builds on that theory with discussions of real-world digital components, design methodologies, and tools. Covers a full range of topics -- number systems and codes, digital circuits, combinational logic design principles and practices, combinational logic design with PLDs, sequential logic design principles and practices, sequential logic design with PLDs, memory, and additional real-world topics (e.g., computer-aided engineering tools, design for testability, estimating digital system reliability, and transmission lines, reflections, and termination). This edition introduces PLDs as soon as possible, emphasizes CMOS logic families and introduces digital circuits in a strongly technology-independent fashion, covers the latest Generic Array Logic (GAL) devices, offers expanded coverage of ROM and RAM system-level design, and provides additional design examples. For those needing a solid introduction or review of the principles and practices of modern digital design. Previously announced in Oct. 1992 PTR Catalogue.

Digital Logic Design CRC Press
PRINCIPLES OF MODERN DIGITAL DESIGN FROM UNDERLYING PRINCIPLES TO IMPLEMENTATION—A THOROUGH INTRODUCTION TO DIGITAL LOGIC DESIGN With this book, readers discover the connection between logic design principles and theory and the logic design and optimization techniques used in practice. Therefore, they not only learn how to implement current design techniques, but also how these techniques were developed and why they work. With a deeper understanding of the underlying principles, readers become better problem-solvers when faced with new and difficult digital

design challenges. Principles of Modern Digital Design begins with an examination of number systems and binary code followed by the fundamental concepts of digital logic. Next, readers advance to combinational logic design. Armed with this foundation, they are then introduced to VHDL, a powerful language used to describe the function of digital circuits and systems. All the major topics needed for a thorough understanding of modern digital design are presented, including: Fundamentals of synchronous sequential circuits and synchronous sequential circuit design Combinational logic design using VHDL Counter design Sequential circuit design using VHDL Asynchronous sequential circuits VHDL-based logic design

examples are provided throughout the book to illustrate both the underlying principles and practical design applications. Each chapter is followed by exercises that enable readers to put their skills into practice by solving realistic digital design problems. An accompanying website with Quartus II software enables readers to replicate the book's examples and perform the exercises. This book can be used for either a two- or one-semester course for undergraduate students in electrical and computer engineering and computer science. Its thorough explanation of theory, coupled with examples and exercises, enables both students and practitioners to master and implement modern digital design techniques with confidence.