Digital and Microprocessor Fundamentals: Theory and Application (4th Edition)

William Kleitz
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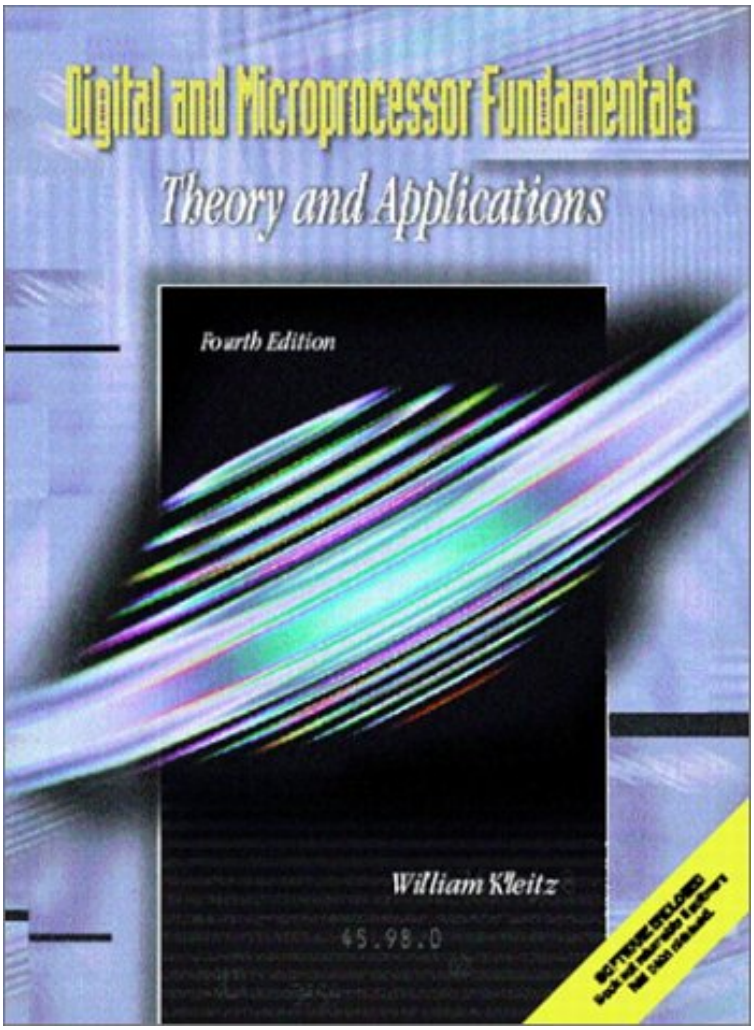

#1532986 in Books 2002-04-22Ingredients: Example IngredientsOriginal language:EnglishPDF # 1 11.25 x 1.25 x 8.75l, .0 #File Name: 0130932175608 pages | File size: 49.Mb

William Kleitz : Digital and Microprocessor Fundamentals: Theory and Application (4th Edition) before purchasing it in order to gage whether or not it would be worth my time, and all praised Digital and Microprocessor Fundamentals: Theory and Application (4th Edition):

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review helpful. College textbookBy Steven WelterUsed this book for a class in college and worked fine. Arrived in new condition. Good seller, good book.

For one-semester consolidated courses in Digital and Microprocessor Fundamentals, or one-semester courses in Digital Fundamentals followed by one-semester courses in Microprocessor Fundamentals. Focusing on the "must know" essentials, this text provides single-volume coverage of the fundamentals of both digital electronics and microprocessors--helping students become proficient at both hardware and software principles. It uses a simple, easy-to-understand writing style, an abundance of clearly explained examples, and nearly 1,000 illustrations to explore practical applications and problems using industry-standard ICs, circuits, and schematics that students will encounter on the job.

From the PublisherFocusing on the "must know" essentials, this text provides single-volume coverage of the fundamentals of both digital electronics and microprocessors -- and helps students become proficient at both the hardware and software aspects of microprocessor-based systems. It uses a simple, easy-to-understand writing style, an abundance of clearly-explained examples, and nearly 1000 illustrations to explain practical applications and problems using industry-standard ICs and circuits and schematics that students will encounter on the job.From the Back Cover This is one of very few books that combine the "must know" essentials of digital electronics and microprocessors. Through this approach, it enables students to readily understand both hardware and software. The fourth edition of Digital and Microprocessor Fundamentals: Theory and Applications enhances coverage of the following topics: Computer magnetic and optical memory devices of basic electricity principles Instructions for implementing digital logic with CPLDs Circuit design applications using CPLDs Using the EMAC Primer Microprocessor Trainer Using the SIM8085 Microprocessor Simulator on a PC Important World Wide Web sites The CD packaged with this text includes SIM8085 software. This valuable learning tool allows students to simulate their programs on a Windows-based PC as they monitor registers and memory. Excerpt. Reprinted by permission. All rights reserved. Some college curriculums have the luxury of time for a four-semester sequence to teach Digital Electronics I and II, followed by Microprocessors I and II. The subject matter spans as many as three separate textbooks and numerous data manuals and specification sheets. Providing a working knowledge of both subjects in a single book, to be covered in one or two semesters, is quite a challenge. Before writing such a book, one might ask, "If I were a complete digital novice, what would it take to build up a working knowledge of digital and microprocessor systems in the shortest possible length of time?" To succeed, brief exposures to "nice-to-know" topics have to be omitted. Instead, the book must stick to the fundamentals that are absolutely necessary to build a solid foundation for the growth of knowledge. Advances in technology have made it easier to put together microprocessor-based designs without knowing all of the innermost details previously required to make a design work. There are several advantages to covering both digital and microprocessor topics in a single book. The digital chapters (1-7), refer to practical applications of the theory as it will be used in the later microprocessor chapters. Then, the microprocessor chapters (8-14) revisit earlier explanations of circuits that now function as building blocks or interface devices for the microprocessor systems. This text is intended for students of vocational two- or four-year technology or engineering technology schools. It can be used for a one-semester digital-and-microprocessor course, or for a one-semester digital course followed by a one-semester microprocessor course. Upon completion of this text, the student will be prepared to go on to advanced microprocessor topics such as 16/32-bit processors, system bus standards, and high-level-language program development. In several sections throughout the book, it is assumed that the student has an understanding of, or is concurrently enrolled in, a basic electricity course. Thus the examples and system design applications can give a complete explanation of circuit operation. The microprocessor chapters use the 8085A microprocessor and 8051 microcontroller to explain the fundamentals of microprocessor architecture, programming, and hardware. The microprocessor coverage is approximately 50% software and 50% hardware. Most of the examples and applications involve some kind of Input/output (I/O) with electronic devices such as switches, sensors, analog converters, and displays. This helps tie together the digital electronic theory learned in the earlier chapters with the hardware/software requirements needed to interface with the outside world via the most commonly used microprocessor support ICs. Solutions to practical design applications are given to illustrate I/O protocol requirements and timing analysis. The software instruction set is not given all at onceinstructions are introduced as needed, to solve a particular design application. Only practical, workable designs are used so that the reader can develop a complete understanding of the application with no frustrating gaps. TO THE STUDENT As a student of Digital and Microprocessor Electronics, you are in the unique position of being able to become proficient at both the hardware and software aspects of microprocessor-based systems. This text is intended to provide you with the tools required to understand basic microprocessor-based systems and to provide the foundation for more advanced topics. You'll see that the teaching style of this book is first to provide all theory required to understand a particular IC or circuit, and then to give an example of its use. By studying and reworking the examples with the solutions hidden, you can prepare yourself to solve all of the problems at the end of the chapters. You'll find the answers to half of the problems in Appendix G. Another index that you'll find very

useful is the Supplementary Index of Integrated Circuits. You can use this index to locate the pages in the book that give the pin configuration and function of a particular IC. Another feature is the glossary at the end of each chapter, which you can use to review the key terms presented in the chapter. If you've written computer software in a high-level language such as BASIC, you already know how exciting it is to write a successful program. Microprocessor-level software is even more exciting because of its ability to interact directly with electronic devices. However, it can be very frustrating because each operation requires you to provide detailed instructions. As a beginner, one of the best ways to get started is to copy a program exactly as presented in this text and then modify it to suit your needs. Spend some time skimming through the Instruction Set Reference Encyclopedia in Appendix D. Even though you won't know what each instruction does, you'll learn what instructions are available and how to look them up. Another important supplement is the SIM8085 software provided on the enclosed CD (see Appendix N). This will allow you to simulate most of the programs in the examples and homework on your Windows-based PC. Many of the textbook examples are also provided on the CD. This allows you to go through the program step by step as you monitor the microprocessor registers and memory. TO THE INSTRUCTOR This book covers sufficient material for a two-semester sequence: first Digital Fundamentals and then Microprocessor Fundamental. The digital chapters (1-7) cover number systems, digital signals, logic gates, combinational logic, medium-scale ICs, sequential logic circuits, and analog converters. The microprocessor chapters (8-14) cover memories, PLDs, fundamental 8085A architecture and software, intermediate hardware and software, interface applications, and the 8051 microcontroller.