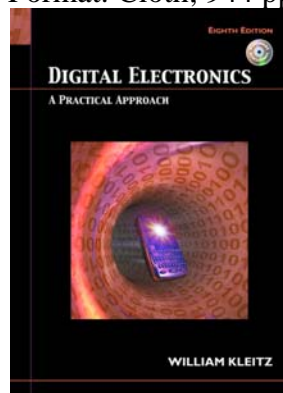# Digital Electronics: A Practical Approach, 8/E

William Kleitz
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BOOK DESCRIPTION

For courses in Digital Electronics, Digital Systems, and Digital Design.
Designed to be an easy-to-learn-from resource it emphasizes practical application of circuit design, operation, and troubleshooting and offers over 1,000 annotated figures to explain circuit operation or emphasize critical components and input/output criteria. This edition features updated information on surface-mount devices, expanded coverage of encoders, decoders, and multiplexers, new troubleshooting examples and more!

Features
- *Programmable Logic Devices (CPLDs)* — Integrated within most chapters as a modern alternative to 7400-Series ICs.
- *Electronics Workbench/MultiSIM examples and troubleshooting probl*ems — Provide computer simulation of design and troubleshooting of digital circuits.
- *Schematic interpretation problems* — Gives students experience interpreting real-world circuits and ICs in complete system schematic diagrams.
- *Timing waveforms* — Gives students experience interpreting the waveforms they will encounter on the job when using oscilloscopes and logic analyzers.
- *Circuit operational notes* — Clarifies illustrations to provide students a quick insight into circuit operation.

- *Design and troubleshooting problems* — Asks students to modify existing circuits, as well as diagnose circuits for proper operation.
- *Margin annotations* — Point out common misconceptions, team discussions, and helpful hints.
- *Over 1,000 annotated figures* — offer descriptive, color annotations that reinforce the fundamental concepts of book.

REVIEW

This book has been in print since 1987 and it was the first book with practical examples. The author has made significant changes since that time. You find many examples using real digital circuits with appropriate output files. In chapter 9, "Logic Families and Their Characteristics," The author introduces various TTL and CMOS families. In chapter 11, "Practical Considerations for Digital Design," there are discussions about flip-flop time parameters, automatic reset, Schmitt-Trigger ICs, switch debouncing, sizing pull-up resistors and practical input and output considerations.

In chapter 11 the author talks about "Interfacing to the Analog World" the author covers analog to digital converting and digital to analog converting; these topics include digital and analog representations, operational amplifier basics, binary-weighted D/A converters, R/2R ladder D/A converters, integrated-circuit D/A converters, integrated-circuit data converter specifications, parallel-encoded A/D converters, counter-ramp A/D converters, successive-approximation A/D conversion, integrated-circuit A/D converters, data acquisition system application, transducers and signal conditioning.

Memory systems are covered in chapter 16; memory concepts, static RAMs, dynamic RAMs, Read-Only Memories, memory expansion and address decoding applications and magnetic/optical storage are included.

The advance chapters are about Microprocessor Fundamentals and 8051 Microcontroller; this book comes with a CD and it has MultiSIM examples. There are 18 chapters in this book. In addition to a companion site for students, the instructor recourses are great.

Saeid Moslehpour, Ph.D.
University of Hartford