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Complementation Using Shannon's Expansion; 3.6 Heuristic Minimization of Logic Circuits; 3.6.1 Expand; 3.6.2 Reduce; 3.6.3 Irredundant
3.6.4 Espresso3.7 Minimization of Multiple-Output Functions; 3.8 NAND-NAND and NOR-NOR Logic; 3.8.1 NAND-NAND Logic; 3.8.2 NOR-NOR Logic; 3.9 Multilevel Logic Design; 3.9.1 Algebraic and Boolean Division; 3.9.2 Kernels; 3.10 Minimization of Multilevel Circuits Using Don't Cares; 3.10.1 Satisfiability Don't Cares; 3.10.2 Observability Don't Cares; 3.11 Combinational Logic Implementation Using EX-OR and AND Gates; 3.12 Logic Circuit Design Using Multiplexers and Decoders; 3.12.1 Multiplexers; 3.12.2 Demultiplexers and Decoders; 3.13 Arithmetic Circuits; 3.13.1 Half-Adders; 3.13.2 Full Adders
3.13.3 Carry-Lookahead Adders3.13.4 Carry-Select Adder; 3.13.5 Carry-Save Addition; 3.13.6 BCD Adders; 3.13.7 Half-Subtractors; 3.13.8 Full Subtractors; 3.13.9 Two's Complement Subtractors; 3.13.10 BCD Substractors; 3.13.11 Multiplication; 3.13.12 Comparator; 3.14 Combinational Circuit Design Using PLDs; 3.14.1 PROM; 3.14.2 PLA; 3.14.3 PAL; Exercises; References; 4 Fundamentals of Synchronous Sequential Circuits; 4.1 Introduction; 4.2 Synchronous and Asynchronous Operation; 4.3 Latches; 4.4 Flip-Flops; 4.4.1 D Flip-Flop; 4.4.2 JK Flip-Flop; 4.4.3 T Flip-Flop
4.5 Timing in Synchronous Sequential Circuits4.6 State Tables and State Diagrams; 4.7 Mealy and Moore Models; 4.8 Analysis of Synchronous Sequential Circuits; Exercises; References; 5 VHDL in Digital Design; 5.1 Introduction; 5.2 Entity and Architecture; 5.2.1 Entity; 5.2.2 Architecture; 5.3 Lexical Elements in VHDL; 5.4 Data Types; 5.5 Operators; 5.6 Concurrent and Sequential Statements; 5.7 Architecture Description; 5.8 Structural Description; 5.9 Behavioral Description; 5.10 RTL Description; Exercises; 6 Combinational Logic Design Using VHDL; 6.1 Introduction
6.2 Concurrent Assignment Statements

Sommario/riassunto

A major objective of this book is to fill the gap between traditional logic design principles and logic design/optimization techniques used in practice. Over the last two decades several techniques for computer-aided design and optimization of logic circuits have been developed. However, underlying theories of these techniques are inadequately covered or not covered at all in undergraduate text books. This book covers not only the ""classical"" material found in current text books but also selected materials that modern logic designers need to be familiar with.