Complex digital circuits

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Abstrak

This textbook is designed for a second course on digital systems, focused on the design of digital circuits. It was originally designed to accompany a MOOC (Massive Open Online Course) created at the Autonomous University of Barcelona (UAB), currently available on the Coursera platform. Readers will learn to develop complex digital circuits, starting from a functional specification, will know the design alternatives that a development engineer can choose to reach the specified circuit performance, and will understand which design tools are available to develop a new circuit.

- Provides textbook coverage for one-semester, second course on digital systems, focused on the design of digital circuits;
- Explains how to develop complex digital circuits, starting from a functional specification;
- Demonstrates which design tools are necessary to develop a new circuit;
- Describes the main problems development engineers are faced with, during the process of developing a new circuit;
- Uses applied examples of complex circuits, such as elliptic curve scalar product, image processing, finite field operations;
- Includes numerous, solved-examples in-text, as well as end of chapter exercises;
- Provides all necessary VHDL and C source files.