

# [PDF] Digital Design And Computer Architecture, Second Edition

David Harris, Sarah Harris - pdf download free book



## Books Details:

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## Description:

*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](http://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)

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