

Digital Logic Design

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11. Concluding Remarks

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Agenda

- Warp up
- Introduction to Computer Systems Design
- Announcement



Wrap up

- Combinational logic design
 - Digital signals
 - Boolean algebra axioms and theorems
 - Optimization techniques
 - Two-level and multi-level
 - Canonical forms, minterms, implicants, prime implicants, and essential prime implicants
 - Cube and Karnaugh map
 - Glitch and hazard
- Sequential logic design
 - Latch and FF, and multi-vibrators
 - RS, clocked RS, master slave, edge triggered D-FF, etc.
 - Shift registers and counters
 - FSM
 - Moore and Mealy machines
 - State transition diagram and table
 - Input and output synchronization



Wrap up

- What we have learned from the lab course?
 - Design and simulation of logic circuits using ISE tool
 - Schematic symbols, Verilog modules
 - How to use equipments
 - Power Supply, Digital Multimeter, Oscilloscope, soldering tools
 - Switch board and Logic tester
 - Combinational Logic
 - 7 - segment display decoder design with primitive gates only
 - ALU with GAL chips
 - Simple sequential Logic
 - Shift registers, Counters
 - FSM design
 - String detector with Xilinx CPLD
 - Waveform generator
 - Final Project
 - Multi-functional watch



Introduction to Computer Systems Design

- Advanced digital systems design
 - The course name misleads the contents
 - We do not use a microprocessor here!
 - All hardwired logic
- Toward practical digital systems design
 - Understanding the real-world design
 - Theory between practice
 - Better tools
 - Larger and complicated programmable logic devices
 - Better optimization
 - Essential peripheral components
 - Memory
 - Communication
 - Display
- Bridge to microprocessor-based systems
- You already know basic prototyping technologies!



Announcement

- Final exam
- Term project
- 뒷풀이
- TBD

