Lecture 21

◆ Logistics
  - HW6 due today (no late assignment accepted, sol'n posted now)
  - Lab7 this week
  - Midterm1 in class on Friday this week
  - Review session Thursday 6pm EEB 037
  - Office hours: Yoky Thu 12-1:20 online, Tony Thu 2-3:30 in lab

◆ Today
  - Quick review of materials covered in midterm 2
  - Logistics of midterm 2
  - Questions
  - Going over some problems

What was covered after midterm 1

◆ Combinational logic applications
  - PLAs/PALs
  - ROMs
  - Adders
  - Multi-level logic
  - Timing diagrams
  - Hazards

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What was covered after midterm 1

- Sequential logic building blocks
  - Latches (R-S and D)
  - Flip-flops (D and T)
  - Latch and flip-flop timing (setup/hold time, prop delay)
  - Timing diagrams
  - Asynchronous inputs and metastability
  - Registers

Remember that the last number was 1

What was covered after midterm 1

- Counters
  - Timing diagrams
  - Shift registers
  - Ring counters
  - State diagrams and state-transition tables
  - Counter design procedure
    1. Draw a state diagram
    2. Draw a state-transition table
    3. Encode the next-state functions
    4. Implement the design
  - Self-starting counters
What was covered after midterm 1

- Finite state machines
  - FSM design procedure
    1. State diagram
    2. state-transition table
    3. State minimization
    4. State encoding
    5. Next-state logic minimization
    6. Implement the design

Don’t expect to know a ton of FSM. Just understand what was presented in the lectures.

Midterm 2 logistics

- 45 minutes long (starts 10:35)
- Materials covered between Lectures 11 to 20 (but not moore/mealy), and HW 4, 5, and 6
- Closed book/notes, no calculator
- Scratch papers provided
- Just have your pencil/pen and eraser
- Raise hand for questions (don’t walk to get help)