

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

*1010
+ 0110

????*

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

1, 2, 3, 4, ...

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

*The last coin was 25cents and
already had 50cents deposited
so let's pop out a soda*

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

Midterm 2 logistics

- ◆ 45minutes 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)