CSE 260M / ESE 260
Intro. To Digital Logic & Computer Design

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&
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5W+H

(Questions welcome at any time)

Who?

- Bill Siever & Jim Feher
  - Teaching Prof. In CSE; Teaching Professor in ESE
- You?
  - Mostly mix of Computer Engineering & Electrical Engineering Majors
  - Many in Dual Degree program
  - Prerequisites: Intro. To Computer Science (Programming)
  - Other related courses? 260M? 361S? 362M?

What?

- Digital Logic!
  - Digital: Usually about binary-based systems
    - Q: Why binary?
- Computer Design
  - Focus on Architecture: How Digital Logic is Used for a Modern Computer

When?

- Class (now): Tues/Thurs 2:30-3:50
- Instructor & TA Office Hours: TBD

Where?

- Tuesdays: Hillman 70
- This Thursday: Hillman 70
- Future Thursdays: TBD (Update coming soon)

Why?

- Digital logic is critical to
  - All of computing
  - Recent advances in A.I./M.L.
  - Understanding system-level behavior of computers

Why?

- Deep understanding benefits:
  - Debugging
  - Design at all levels (hardware, software/API)
- Integration of knowledge
  - Bring together lots of classes / topics

How?

- Overview of Syllabus / Schedule / Webpage
  - https://wustl.instructure.com/courses/133776
  - Summary:
    - For credit: Exams, Homework, Studios, Prep work summaries
    - For prep: Lectures/discussion, Prep work (reading, videos, etc.)

Challenges

- Significant change in content from prior semesters
- Much is new to TAs
- Much is new to *everyone*
- There will be some challenges & problems
  - That’s common in engineering
  - We’ll focus on helping you learn the critical concepts despite setbacks

Review: Boolean Logic Operations

LOGIC OPERATION	COMMON PROG. LANG. SYMBOLS	FIRST-ORDER LOGIC	DIGITAL LOGIC
And	&&, and	$\wedge$	* (multiplication)
Or	||, or	$\vee$	+
Not / Negation	!, not	$\neg$	/ (also line over)

Gates: Conceptual Machines for Boolean Ops

LOGIC OPERATION	COMMON PROG. LANG. SYMBOLS	FIRST-ORDER LOGIC	DIGITAL LOGIC	GATE
And	&&, and	$\wedge$	* (multiplication)	See here
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Gates: Machines for Boolean Ops

(A look at “Computer Engineering for Babies”)

Gates: Machines for Boolean Ops

- They are the “keys” to this semester

For Thursday

- Read Chapter 1: 1.1-1.5
- Complete the questions (Canvas) before 11:am
  - Future prep work questions are 11:59pm on Mondays
  - Reading is almost all of Chapters 1-7. Can work ahead!