EECE 417 Computer Architecture Systems

Note Title 01/04/2007

WEEK 1

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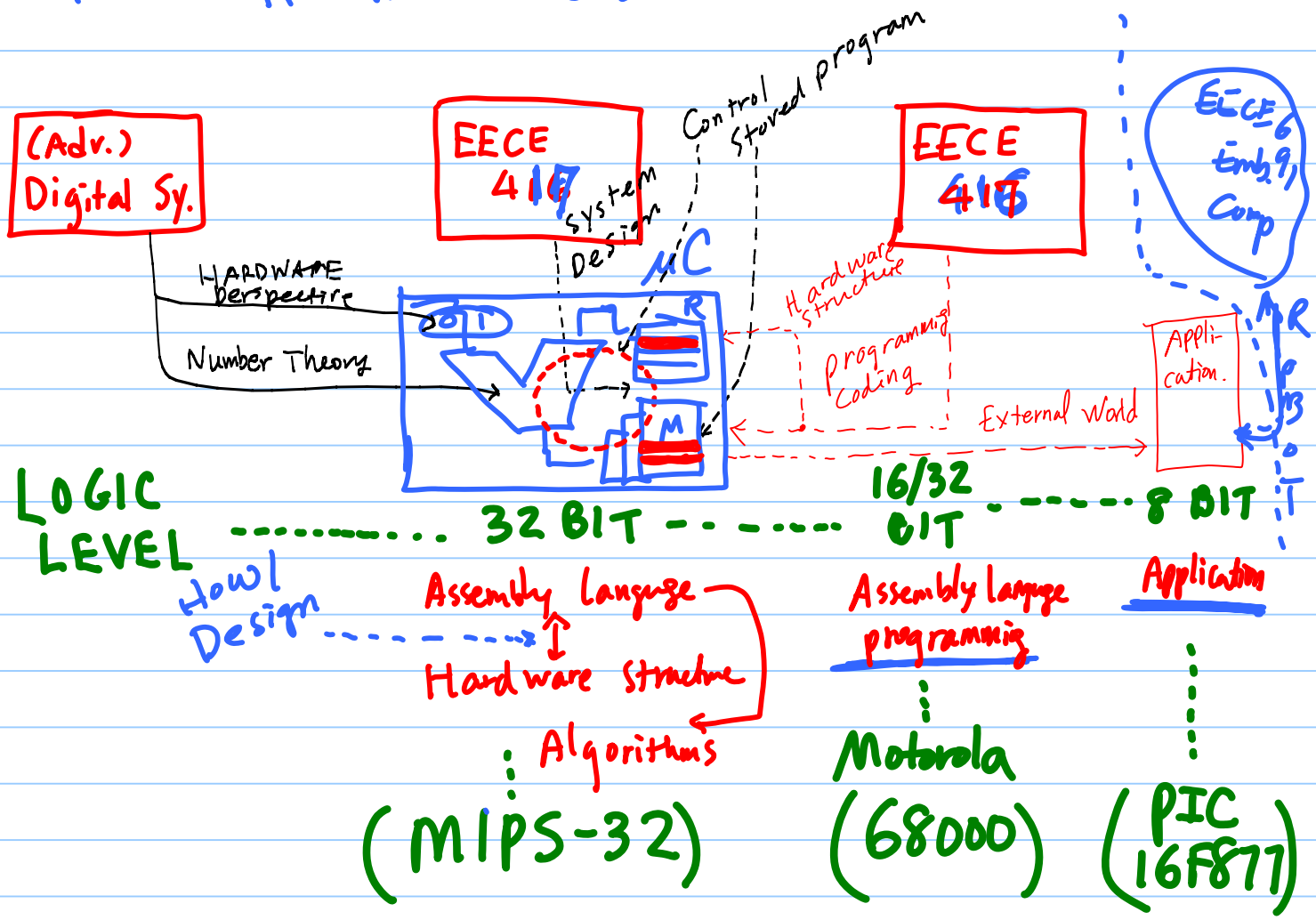
  LKD 3121A
- pre-Req: Digital System Design / or Instructor's Approval
  ?
- Main Subject(Topic): Hardware & Software Interface in Microprocessor/computer
- CLASS TR 2:10-3:30 @LKD 3105
- How Different Courses are Related.



- TEXT Computer Organization and Design (3rd Ed)
  - The Hardware/Software Interface
  - by David A. Patterson / John L. Hennessy
  - Morgan Kaufman (publisher)

- PCspim ← mips emulator

  pcspim.zip
  1. double click
  2. double click setup.exe
  3. Ready

Topics will be covered (Preview)

Ch 1: Computer Abstractions (low level details) & Technology
- High level & Low level language programming
- underlying Hardware
- cpu, control, memory.
- Text (code) & Data
- Technology development

Ch 2: Language of Computer
- MIPS assembly language
- MIPS assembler/simulator: SPIM

Ch 3: Arithmetics for Computers
Integer < signed / unsigned > Operations ADD, SUB, MUL, DIV

floating point

Ch 4: Performance

cpu performance

Ch 5: Processor: Datapath & Control
memory-referenced instr
arithmetic-logical instr
branch instr

Ch 6: Pipelining
- overview of Pipelining
- Pipelined control
- pipelined Datapath

(Ch 7: Memory hierarchy
- Cache
- Virtual Memory)

What next!

1. get a book
2. Read chapter 1
3. try to solve end-of-chapter problems ----- HW assignment will be given from the problems on Thursday!