CMPS 321 | Computer Architecture

• Winter Quarter 2016
• Mid Term 1 Review
Convert Binary Instructions

• Covered in Ch 1 & 2
• Review notes from Week 1 Lecture on Moodle
Convert MIPS to C

• Use examples previously provided
Differentiate between R, I, and J Types

• R Type
• I Type
• J Type

• Know how to identify each type. Understand how to take a MIPS instruction and convert it to Binary and back.
Write Methods

• Compare and Contrast write methods
  • Write Buffer
    • Similar to write through
  • Write Through
    • Every update to cache cascades down hierarchy
    • Pros: simple, guarantees coherency
    • Cons: Slow, causes stalls in datapath
  • Write Back
    • Only sends data down the hierarch and to main memory
    • Pros: fast
    • Cons: More to do on cash miss

• Covered in Ch 5
Define Terms

• Spatial Locality
• Temporal Locality
• Cache Hit
• Cache Miss
• Conflict Miss
• Page Fault
• Block
• Hit Time
• Miss Penalty
Addressing Methods for Accessing Cache

• Direct Mapped Cache
  • Each cache entry contains 1 block

• Set-associative caches
  • Set is a line, where # of blocks is indicated in the name
    • i.e. 2-way set-associative

• Full-associative caches
  • Can be placed in any cache entry
Discuss Addressing

• Relative Addressing
  • Example Branch Equal
    • `beq`

• Base Addressing
  • Example Load Word
    • `lw`