Course title
Computer Architecture

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Course outline

- Chapter 1: Fundamentals, 50 p.
  - Fundamentals of computer design
- Chapter 2: Instruction level parallelism, 80 p.
  - ILP architectures
  - Dependencies
  - ILP study
  - Dynamic scheduling (Tomasulo’s algorithm)
  - Branch predictions
- Chapter 3: Limit of Instruction level parallelism, 40 p.
- Chapter 4: Multiprocessor and thread-level parallelism, 60 p.
Course outline (cont.)

- Chapter 5: Memory hierarchy design, 50 p.
- Chapter 6: Storage systems, 50 p.
  - Advanced topics in disk storage
Cache Coherence in I/O (講義範例)

- Cache coherency
  - I/O masters versus CPU

- Scenarios
  - Write-back
  - Write-through

- Write invalidate protocol

- Write broadcast protocol
  - Write-update
  - Multiple writes to the same word (no read in between) require multiple write broadcasts, but only one invalidation is enough in a write invalidation protocol.