

Quiz 5 Review

4/21/2016

Section 13

Colin Schmidt

Agenda

- Synchronization
 - Produce Consumer
 - Mutex
- Memory Models
 - SC, QC, etc.
- Coherence
 - Snoopy
 - Directory

Sync

- What if I add more than one consumer/producer?
 - fences? critical section?
- What if I change the consistency model?
 - fences? critical section?
- What if I give you different primitives?
 - LR/SC, Test&Set, etc.
- What if I change the coherence protocol?

Coherence

- What if I add a state?
 - Better or worse? When?
- What if I start using a directory? or vice versa?
 - States? Better or worse? When? Why?
- What if I run this code?
 - Trace the states? When does communication happen?
- What is the cost of coherence?
 - Overhead? Scaling? Why? Who cares?

Interactions

- Where does coherence and consistency fit in with advanced processors from unit 4?
 - OoO, vector, VLIW?
- How does coherence and consistency affect the design of our memory hierarchy?
 - Virtual memory? TLB?
- How does coherence and consistency affect the design of our ISA?

Quiz Tactics

- 3-4 point question
 - 2-3 sentence answer include WHY
- 5-6 point question
 - multiple what's and why's
- 7+ point question
 - points for each part of the solution you get plus some for explanation

Lab 5 Update

- Working on it
- Something later today
- Mix of Lab 3/4
 - Parameter Experiments
 - Simple Coding
 - Complex coding and performance tuning

PS5 Review