Midterm Review

Note Title 3/17/2009

why parallel computing

Nomenclature (Flynn)

programming paradigms

- shared memory
- message passing

producer - consumer example

- mutex
- PV
- barriers

parallel random number generation

parallel apps

- Weather / ocean sim
- N-body sim
- ray tracing
- monte-carlo sim
- discrete-event sim
- logic sim
- Gaussian elim

methodology

decomp. → assign. → orchestration → mapping

streaming paradigm

cache coherence

memory consistency

coherence protocols

MI MSI MESI

Dragon

Token

read-modify-write inst

tas, xchg, fetchop

ld-sc

building sync primitives

r-m-w → mutex lock

lock → barriers

Open notes

NO prog. man. AMD or Intel

No computers

Resolve ambiguity on answer sheet