Lecture 24:
How would you do this?

David Bindel

22 Nov 2011
Logistics

All graded except the final project – almost there!

Nov 22: Some amusing problems
Nov 24: Thanksgiving (no class)
Nov 29: Wrap-up + start project presentation
  Dec 1: Project presentations
Dec 16: Projects due
Project presentation timing

20 groups × 5 minutes/group = 100 minutes

▪ I’d like 5 groups to talk early!
▪ Send an email if interested
Project presentation logistics

- Stay short and high level – five minutes we’ll all follow
- It’s okay if you’re not done! Point is feedback.
- Can use slides or just talk.
Goal: understand performance! I want

- A description of your problem
- Performance analysis, which might include
  - Serial tuning and reorganizations
  - Strong and weak scaling experiment (speedup plots!)
  - Profiling of communication and computation
  - Tuning of parallelism (communication, synchronization, etc)
  - Comparison to analytical models
  - Comparisons between alternate organizations
- Something finished by Dec 16.
How would you do this in parallel?

- Compute an array of partial sums from a long input?
- Solve a large tridiagonal linear system?
- Partition an imbalanced quadtree?
- Implement the sieve of Eratosthenes?
- Solve a crossword puzzle?
- Find all the words on a Boggle board?
- Write a parallel `make` variant?