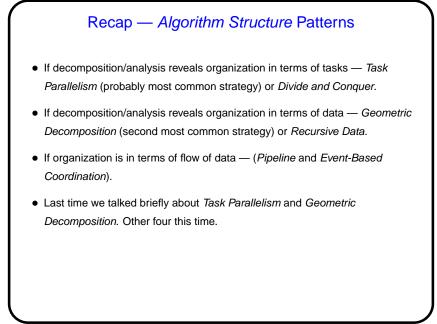
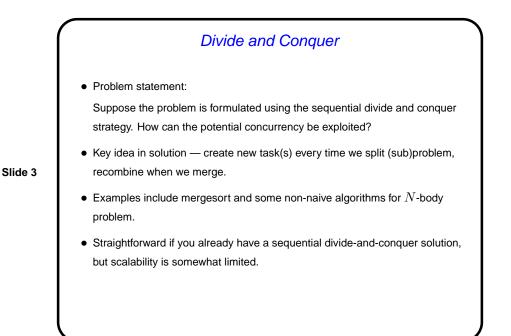


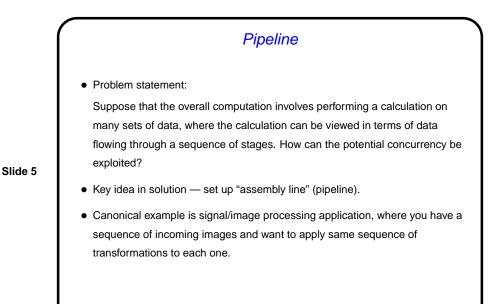
Slide 1

Slide 2





*Recursive Data*Problem statement: Suppose the problem involves an operation on a recursive data structure (such as a list, tree, or graph) that appears to require sequential processing. How can operations on these data structures be performed in parallel?
Slide 4
Key idea in solution — "out of the box" thinking to expose concurrency.
Probably least-used structure currently (because it doesn't map well to current architectures); included for completeness and because examples are interesting — e.g. "roots in forest" example.



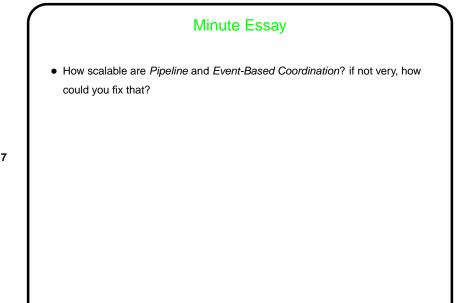
Event-Based Coordination

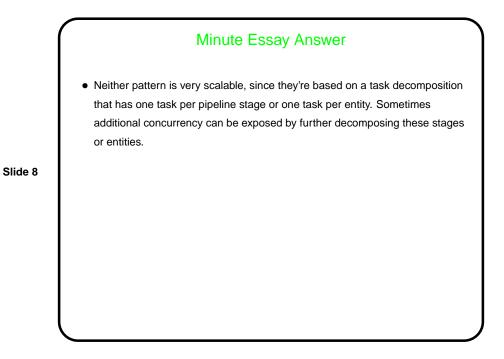
• Problem statement:

Suppose the application can be decomposed into groups of semi-independent tasks interacting in an irregular fashion. The interaction is determined by the flow of data between them which implies ordering constraints between the tasks. How can these tasks and their interaction be implemented so they can execute concurrently?

- Key idea in solution structure computation in terms of semi-independent entities, interacting via "events".
- Canonical example is discrete event simulation simulating many semi-independent entities that interact in irregular/unpredictable ways.

Slide 6





Slide 7