Threads

Concurrency
Concurrency, Processes and Threads

• Concurrency
  – Multiple activities *appear to* occur simultaneously, (e.g. recording this lecture and displaying this slide).
  – ‘Time slicing’ allows a single execution unit to give the appearance of concurrent execution

• Process
  – Distinct execution context that (by default) shares nothing (e.g. IntelliJ, PowerPoint, Quicktime recorder)

• Thread
  – Intra-process execution context (e.g. IntelliJ’s compiler)
Why Threads?

• ‘Concurrency’
  – Separate concerns (e.g. rendering v logic)
  – Good for: distinct tasks that naturally occur concurrently

• ‘Parallelism’ (a special case of concurrency)
  – Break task into pieces, exploit parallel hardware
  – Good for: computationally intensive problems that can be readily partitioned