

Threads

Concurrency

C7

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