

Sept 7th

Sunday, August 28, 2016 11:48 PM

Parallel execution needs:

Parallel tasks/work
Synchronization
Multiple resources
Communication

why different?

Synchronization doesn't actually require communication.

→ If we have communication, it doesn't mean we have established synchronization.

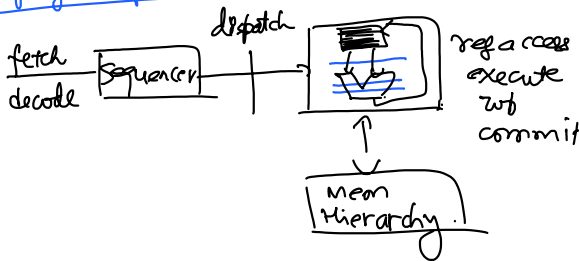
Synchronization: Implicit (clock)
Explicit.

Parallelism: circuits: → wires/registers/memory.
→ circuits operate concurrently (always)

Synch: Handshake - explicit signals
Clock

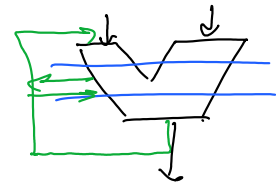
wave-pipelined → removing clock in design & manipulating delays

Simplified processor:



F D I R E E E W C

→ Instructions running in parallel
→ Inst. level parallelism.



In addition to wires/registers; communication through buses

Synchronization b/w instructions: sequence of inst. (implicit)

OOO:

what changed? Synch. of instructions: — scheduler will take care of it now.

→ Software pipelines

Resources in parallel system

Mu