Thread-Level Parallelism

iW = 4
Avg IPC = 1.5 } 3.0
IPC = 1.5 }

- Motivation:
  - a single thread leaves a processor under-utilized for most of the time
  - by doubling processor area, single thread performance barely improves

- Strategies for thread-level parallelism:
  - multiple threads share the same large processor → reduces under-utilization, efficient resource allocation
    Simultaneous Multi-Threading (SMT)
  - each thread executes on its own mini processor → simple design, low interference between threads
    Chip Multi-Processing (CMP) or multi-core