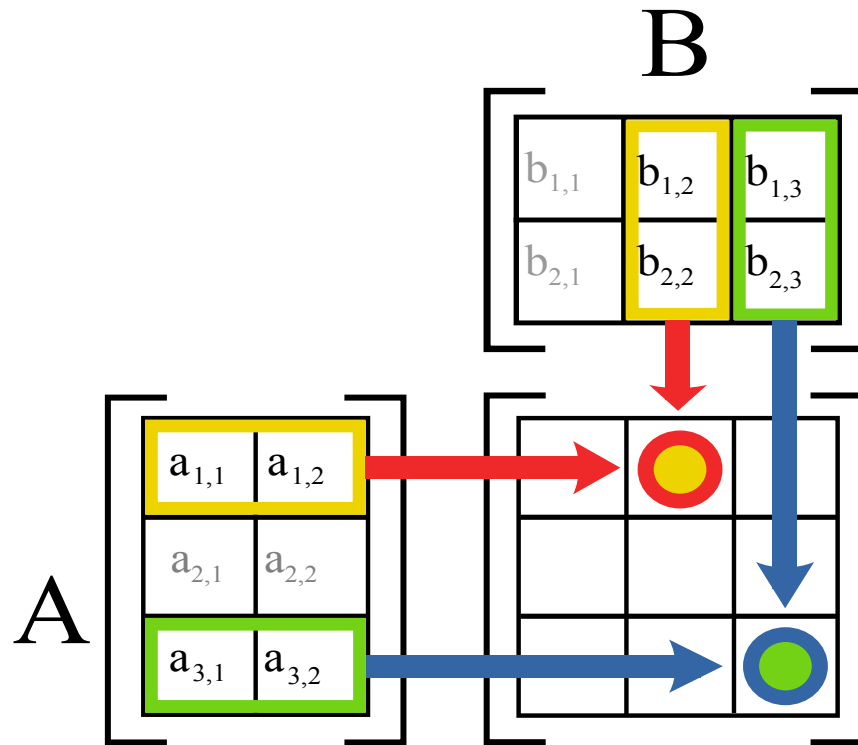


Exercise: parallel matrix multiply

Matrix Multiplication



Parallelization

- Ideal for parallelization
 - Input arrays are read-only
 - Output array is written to exactly once
- Break into parallel units of work
 - Unit = single output cell
 - Unit = single output row
 - Unit = several output rows
- Divide units of work among threads

Code structure

- Define a Runnable or Callable<Void> per unit
 - Parameterized by unit size
- Main routine organizes the work; examples:
 - Spawn one thread per unit
 - Use a fixed-size thread pool; submit units of work to the thread pool queue
- What are the tradeoffs?
 - Consider unit size vs. threading strategy