PARALLEL COMPUTING
Cilk
Armin Biere
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parallel programming is hard
  - try to use existing programming structures for parallelization
  - including data parallelism in nested loops
  - and task parallelism in recursive divide-and-conquer algorithms

simple extension of C/C++
  - adds "spawn" and "sync" primitives
  - for automatic work-load balancing

will see how this is implemented later

in practice need “leaf coarsening”
Recursive Task Parallel Fibonacci

```c
int fib (int n) {
    if (n < 2) return n;
    int x = cilk_spawn fib (n - 1);
    int y = cilk_spawn fib (n - 2);
    cilk_sync;
    int r = x + y;
    return r;
}
```