Cilk Introduction

■ parallel programming is hard
  □ try to use existing programming structures for parallelization
  □ including data parallelism in nested loops
  □ and task parallelism in 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

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