

Tutorial No. 2

Multithreading

OpenMP

Exercise 2.1

Implement a `Matrix` class that overloads the `operator*()` for matrix-matrix multiplication. The multiplication should be parallelized using openMP. Discuss possible optimizations and drawbacks of your implementation.

Exercise 2.2

Using OpenMP, write a parallel program to compute the prime numbers smaller or equal to n . The value of n is given as a parameter. Your program should use parallelism only if n is greater than 100,000.

Exercise 2.3

Implement with OpenMP a parallel in-place quicksort algorithm. What are the issues of the naive implementation? How to avoid them?