

Laboratory 7:

Basic parallelization with OpenMP

Introduction:

- OpenMP should be enabled
 - o in gcc -fopenmp,
 - o in Visual Studio->Properties->C/C++->Language->Enable OpenMP support.

Steps:

1. Create a working directory (eg. Lab_7) .
2. On the basis of the [sample program](#) test the various data-sharing clauses. Follow instructions in the provided code and try to understand behavior of each clause.
3. Modify a [program](#) that calculates the sum of five hundred squares of any number and parallelize it. In order to obtain good results, test reduction clause (#pragma omp parallel for reduction(op:var)), locks (omp_set_lock), atomic and critical directives.
4. Parallelize [program](#) for multiplying two matrices, test different division strategies and methods of parallelization (internal/external loop). Prepare a graph with the time of multiplication procedure with and without parallelization and compare the results with previous laboratories.