Parallel and Distributed Programming
Laboratory 4

Steps:

1. Create a working directory (eg. lab4).
2. Refer to the sections directive and nowait as well as barrier options on the basis of the sample program. Follow instructions in the provided code - take into consideration the numbers of threads performing individual tasks and the waiting time.
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. Measure the execution time of each option.

   Counting procedure:

   ```
   for(i=0;i<500;i++)
   {
           sum+=a*a;
   }
   ```

4. Parallelize program for multiplying two matrices, test different division strategies and methods of parallelization (internal/external loop). Measure and analyze time of multiplication procedure with and without parallelization.