

## **HOMEWORK 1: MATRIX MULTIPLICATION (5 POINTS)**

Parallelize the sequential matrix multiplication algorithm using OpenMP.

## **HOMEWORK 2: DIJKSTRA ALGORITHM (5 POINTS)**

Parallelize the sequential Dijkstra algorithm using OpenMP.

## **HOMEWORK 3: ERATOSTHENES SIEVE (5 POINTS)**

Parallelize the sequential Eratosthenes Sieve algorithm using OpenMP.

## **HOMEWORK 4: PERFORMANCE ANALYSIS (5 · 3 POINTS)**

1. Choose a large problem size (i.e. matrix size, graph nodes, highest number) and execute each algorithm for 1, 2, 4, and 8 threads;
2. Compute the speedup and efficiency for each algorithm and compare them with the results using the MPI parallelisation.