



Czech Technical University in Prague, Faculty of Electrical Engineering
Advanced Computer Architectures (B4M35PAP , BE4M35PAP)
Semestral Project 2

Project task: Develop a program for a parallel computing system

Specification:

Write a parallel program for your problem (you can select the problem which you find interesting for yourself, option is to continue with image sharpening task as well). Write short text with the problem description. Implement a C / C ++ program which solves this problem, then parallelize the program. Document experiments and performance gain/dependence on a number of used threads a number of processes. Testing in distributed MPI environment is advantageous.

Formal instructions:

Submissions must be in PDF format (one file) and must include:

- title and basic (name,field of study, branch of study, ...),
- text with problem definition, in which field is used, how is solved by your/selected algorithm
- description/documentation for your C/C++ program

Mandatory parts of submitted solution is commented source code of your program in C/C ++ results of program runtime when N threads (N volts at least 1 to twice the number of cores) on P processors (P at least from 1 to twice the number of processors) are used. Presents results on graphs where is evident influence on number of processors and threads. Comparison of experimental observations for different computational modes of parallelization is welcome. Discussion and conclusion are an essential part of the solution. Describe the used MPI/OpenMP features as a comment in the program or in text.