Homework 7
due Dec 7, 2022

Exercise 7.1 : Fox's algorithm

Write the functions needed to completely implement Fox's algorithm to multiply two *rectangular* matrices.

- Read the two matrices from different files.
- Use the MPI functions to create a Cartesian grid of processes and the row and column communicators.
- Make a printout of the result on process 0 and check the result with matlab.
- Add a timing function, including and excluding the time for I/O (reading and writing).
- Compare the timings of Fox's algorithm with the ones of the algorithm used in Homework 6. How do the timings scale when changing the number of processes? Study separately **strong scaling** (the global sizes of the matrices are constant) and **weak scaling** (the sizes of the local matrices on each process are constant).

(30 points)

Please hand in a *printout* of your programs together with the input and output of your checks and plots of your scaling studies.