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Lab 2

1) code organization and main functions

--the code is divided into functions in one file (main.c)--

a) pasre : is to parse input file into an array in the memory.
b) method 1 : it creates a thread for each row executing calculateRow function.
c) calculateRow : its used in calculating a row in the output matrix.
d) method 2 : it creates a thread for each element executing calculateElement functions .
e) calculateElement: its used in calculating an element an the output array .

2) how to compile the code

in terminal:
1- change directory to the project folder (cd .....)
2- type make
3- type ./shell ..... (where shell is the name of the compiled file)

3) comparison

method 1: is faster specially in case of big numbers of elements more than the number of cores of the processor as switching between lots of threads has big overhead .

method 2 : is faster only in small number of elements
as its more multicore efficient than the first one as it parallaize the code to more threads but incase of a huge number of threads its slower since it switches the cores between lots of threads and thats have high overhead time.

Conc.

There is a best number of thread for each processor according to it number of cores , hyperthreading support and etc .
Here is an example from the real world on some old intel processors