ICS-E4020 Programming Parallel Computers - Assignment 4

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1 Task 1

In this task we had to make modifications to CP8 so that the execution time is reduced. My logic is to send the data to the GPU devices and normalize the data. The normalized data is sent back to the CPU and then set up the GPU devices again to compute the matrix multiplication. As matrix multiplication takes most of the time, we use cache blocking to speed up the operations.

The performance of the program is given below with the table of values and a plot for no. of rows = 1000.

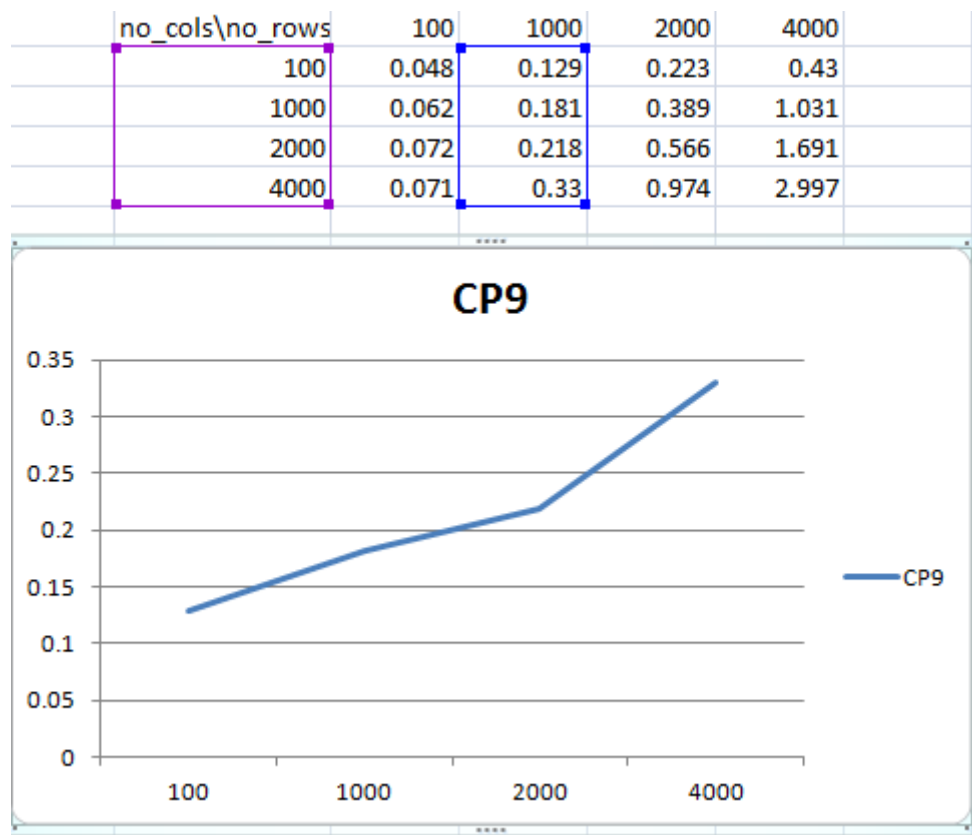| no_cols\no_rows	100	1000	2000	4000
100	0.048	0.129	0.223	0.43
1000	0.062	0.181	0.389	1.031
2000	0.072	0.218	0.566	1.691
4000	0.071	0.33	0.974	2.997

Figure 1: Excel Screenshot of the table and the plot (in secs)