Laboratory Assessment 3: Parallel Computin

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1 Numeric Approximations

By compiling and running [1] trapezoidal.cpp and monte.cpp, the following graphs [2] were observed.

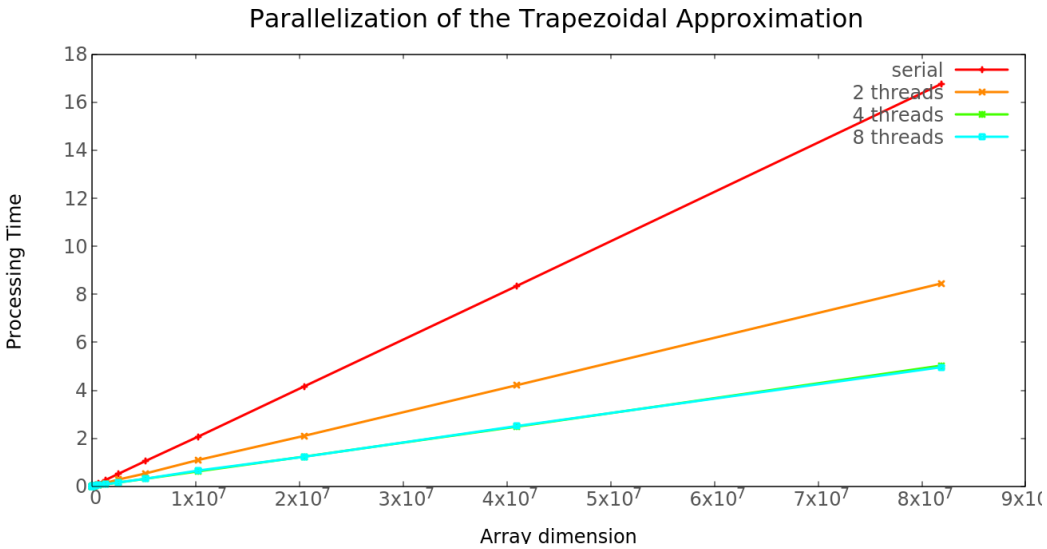

Figure 1: Line plot of array dimension vs access time, Approximating integral with trapezoidal method

[1] using -std=c++11 flag

[2] note, The graph for 4 threads in the trapezoidal method is covered by the 8 thread graph

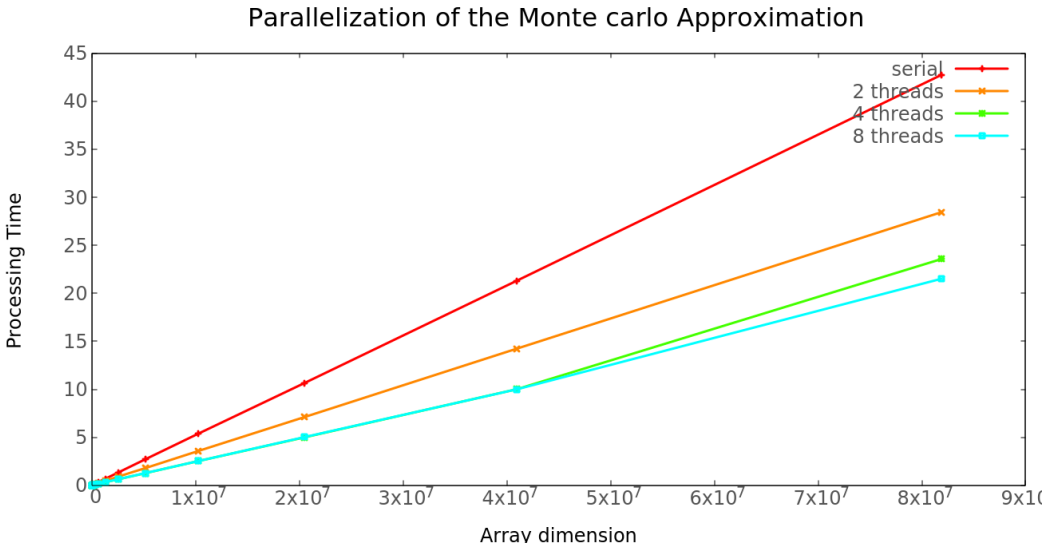

Figure 2: Line plot of array dimension vs access time, Approximating integral with monte carlo method

Although the Trapezoidal method parallizes well, the accuracy of the approximation did not improve much, with each run providing the same value

The monte-carlo method is better suited for parallelization, as it can be noted that increasing the number of stones improves the accuracy