

CS 475/575 -- Spring Quarter 2021

Project #1

OpenMP: Monte Carlo Simulation

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1. Result

Machine: OSU Engineering Server - flip2

The number of threads: 8

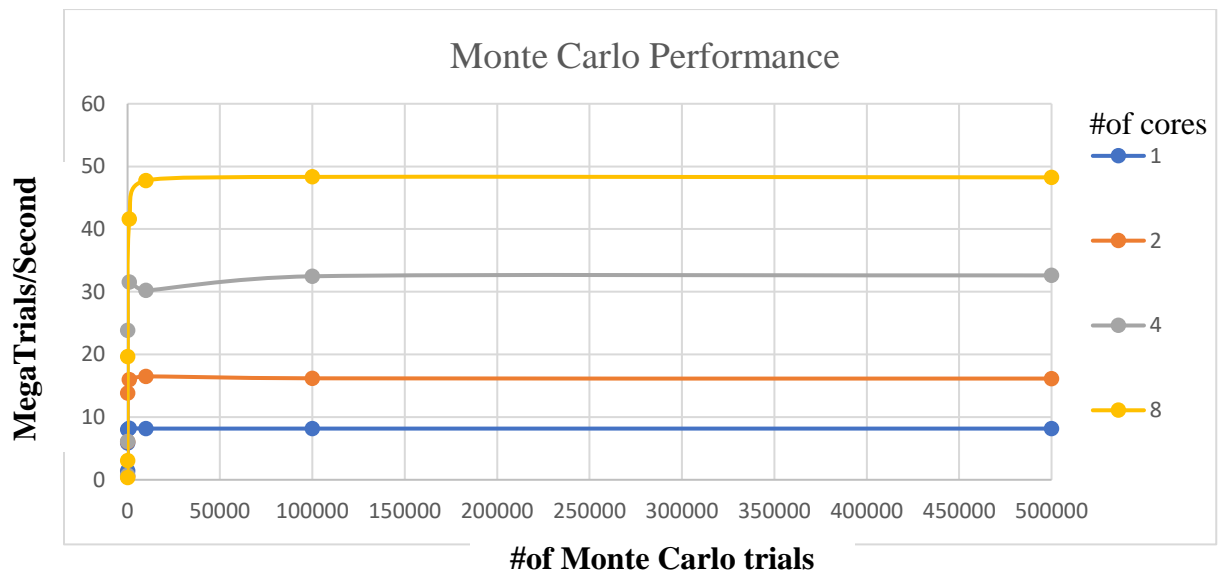
The number of trials: 500000

The probability of hitting the castle: 6.57%

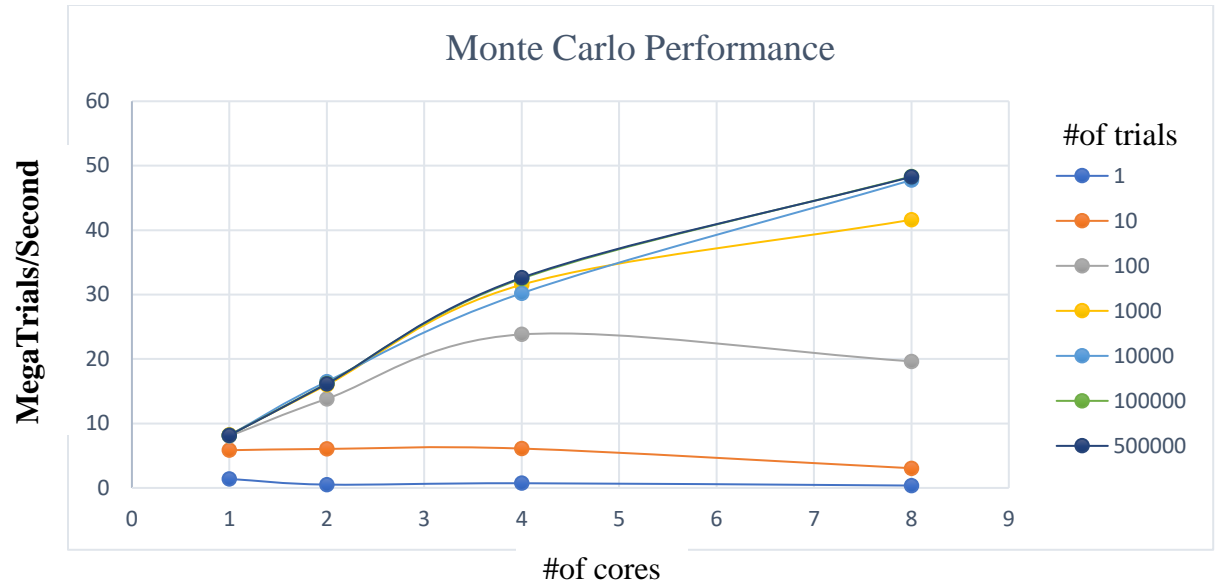
MegaTrials/sec = 48.26

2. Graphs

1) performance vs. number of trials



2) performance vs. number of threads



3. Parallel Fraction

Since 1-thread-to-8-thread $S = 48.26 / 8.17 = 5.9$

The Parallel Fraction (F_p) is $(8./7.) * (1.-(1/S)) = \mathbf{0.95}$