Project #1 OpenMP: Monte Carlo Simulation

Erick Branner, brannere@oregonstate.edu | 15 April 2022

Probability

29.08% – for each number of threads (2, 4, 8, 12, 16) at 1,000,000 trials.

Parallel fraction (cs475-proj1-output.csv and cs475-proj1-output.xlsx)

Speedup using best performance from 1 and 4 threads.
Using F =

$$\frac{n}{(n-1)}\left(1-\frac{1}{Speedup}\right)$$

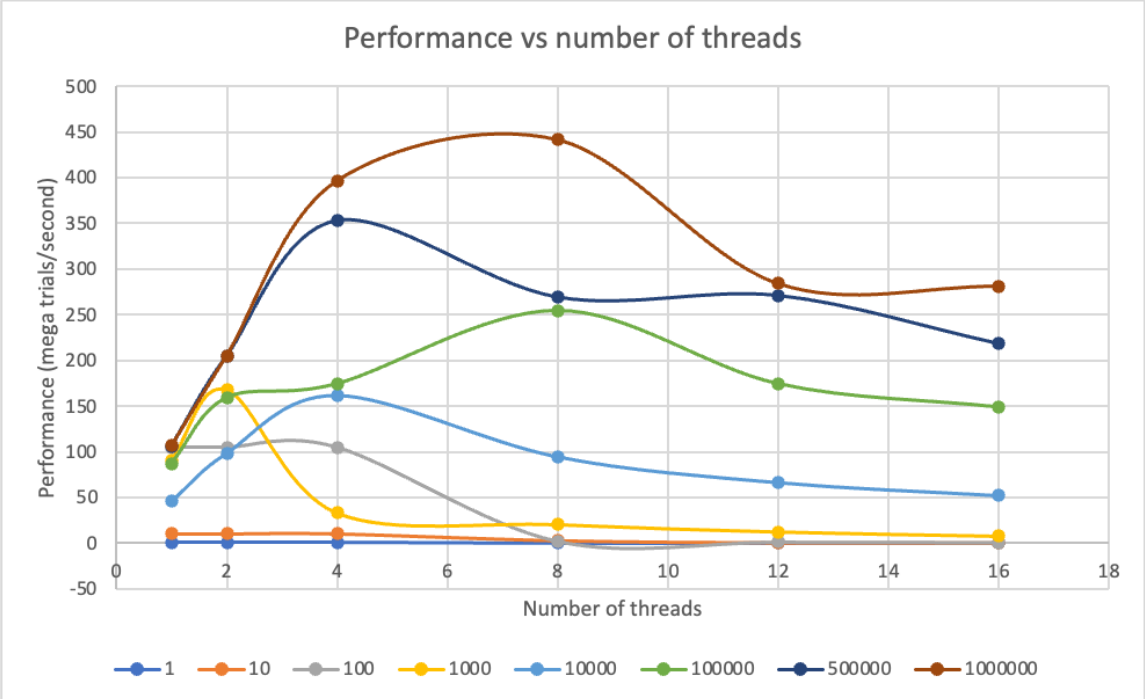
Where

- n = 4
- T_1 = 0.009384 seconds
- T_4 = 0.002521 seconds
- $Speedup_4 = T_1/T_4$ = 3.722332407774693

So **Parallel fraction Fp ~= 0.97513**

Graphs

Performance vs number of threads



Performance vs number of Monte Carlo trials