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CS575
Project0: Simple OpenMP experiment

1. Tell what machine you ran this on

Ubuntu running on Intel core i5 - 2 cores & 4 logical processors@2.30Ghz

2. What performance results did you get?

Using 1 thread(s)....
Peak Performance = 732.81 MegaMults/Sec
Average Performance = 448.04 MegaMults/Sec
Performance difference = 284.77 MegaMults/Sec
Execution time for 1 thread(s):0.001365 microseconds

Using 4 thread(s)....
Peak Performance = 1949.06 MegaMults/Sec
Average Performance = 1589.61 MegaMults/Sec
Performance difference = 359.44 MegaMults/Sec
Execution time for 4 thread(s):0.000546 microseconds

3. What was your 4-thread-to-one-thread speedup?

Speedup: S= (Execution time with one thread) / (Execution time with four threads) =3.4

4. Why do you think it is behaving this way?

Using 1 thread gave better consistency of timing than using 4 threads as the difference between the average and peak performance is less for 1 thread. But the execution time of 4 threads is less and the performance is more as compared to 1 thread. This is because 4 threads are used to compute the array multiplication in parallel. The elements of the array are multiplied one after another if only 1 thread is used. However, if 4 threads are used the elements of the array are multiplied simultaneously which reduces the execution time and increases the performance.

5. What was your Parallel Fraction, Fp?

fp=0.76