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## Assignment 2

1. How long it took your app to finish the job when using 1 thread?

It took 0.138060 second.

2. How many threads your machine can run simultaneously?

My machine has 4 cores, so it can run 4 threads simultaneously

3. How long it took your app to finish the job when using all available threads?

It took 0.069242 second when I used 4 threads, but it still improved when I used even more than that. For example, as one of my screenshots shows, it took 0.038863 second when I used 15 threads. This seems to be due to the fact that each core can have upto two threads and running programs concurrently increases the efficiency by keeping the core busy. When I used more than 15 threads, the behavior of time was unpredictable and became worse when the number was too big. I assume this is because of excessive context switching by scheduling too many tasks.

4. Did you use task or data parallelization for this program? Why?

I used data parallelism for the assignment, because the task seems to be simple enough for one function to take care of everything. I just needed to divide the range 1 to 10000 into a number of threads and apply the same logic to find the result.