

ECE 2036 Lab 6 Turn-in Sheet

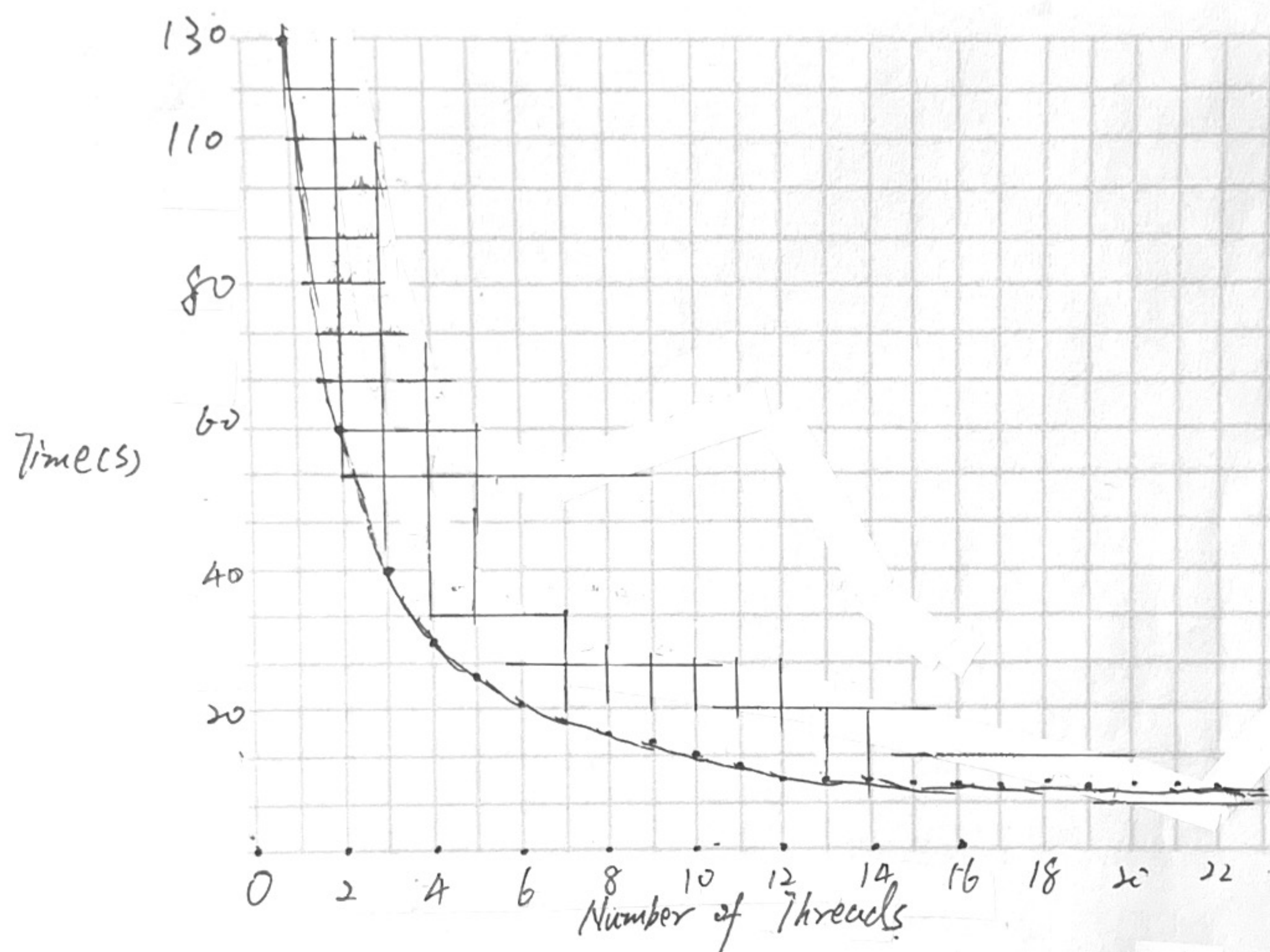
Use your program on coc-ice.pace server to answer the following questions:

- 1) How many concurrent threads can the system run: 28. This value is now referred to as the max_num_threads.
- 2) How many microseconds does it take a single thread to run 10,000 calculations: 119540
- 3) How many microseconds does it take 2 threads to run 10,000 calculations: 60904. Assume the number of calculations is evenly distributed among the two threads.

- 4) Why is the time from #3 not half the time from #2?

Multiple threads share the ^{same} memory space. Which means with more threads, there will be more page-table in memory which will cause over-head. The CPU is devoting more resource into fetching data from the disk

- 5) Starting with one thread and then working up to the max_num_threads by adding one more thread at a time; instead of actually executing the process, create a plot below with Number of Threads vs Processing Time (microseconds) for 1 billion calculations.



In the problem the CPU has less resource to execute the problem causing longer execution time the half of #2

- 6) How many microseconds does it take 1,000 threads to run 1,000 calculations: 26609. Assume the number of calculations is evenly distributed among the threads.
- 7) Assuming that the processing time for a single calculation is negligible and using the results from Question #6, how long does it take to create a single thread in microseconds? 26.609