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PA3: Threading
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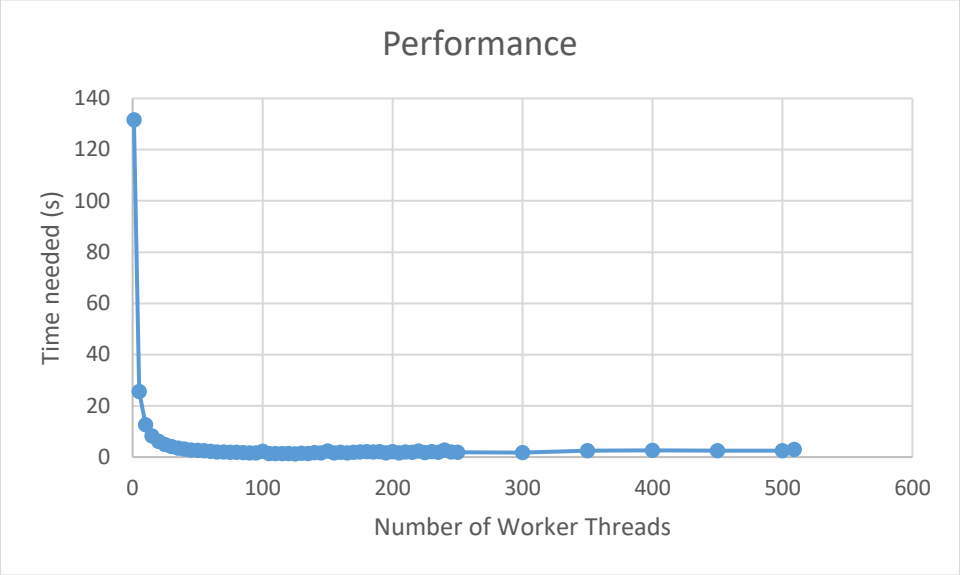
Code Differences:

This code is designed to handle loads of requests from three different customers. The total amount of services needed to process is 3*n. The problem is that it can only handle three threads at most. This program has been modified to be able to handle more. The program can now handle more than one worker thread. The main function has been modified to handle this. In addition to, locks have been set to allow securer accesses and transfers from the Data Server, both in the buffer and histogram. The other files have not been modified

Graph:



It makes sense to see the time it takes to work the requests drop at the start, but after a certain point, performance will get (slightly) worse with too many threads. My program couldn't load anything past 510 worker threads, and I wasn't able to see the performance spike. There is definitely a limit where performance will get worse. Nonetheless, it was still generally more efficient than the given code.

Platform:

I used my Windows 10 computer to call this via Ubuntu shell. The program fails to run at 510 threads, and gives a "can't open that many files" error. It seems like the program tries to keep all the pipe files loaded, and can't handle more than a certain limit. The OS gives up and returns the error that it can't open too many files and the program exits with that error code.