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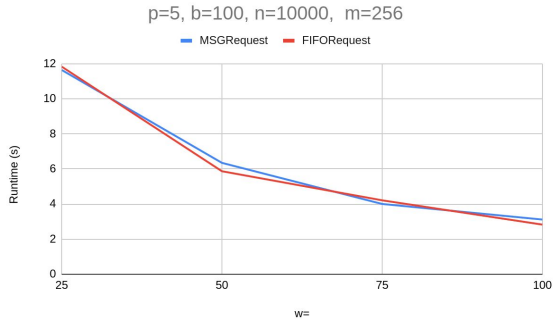
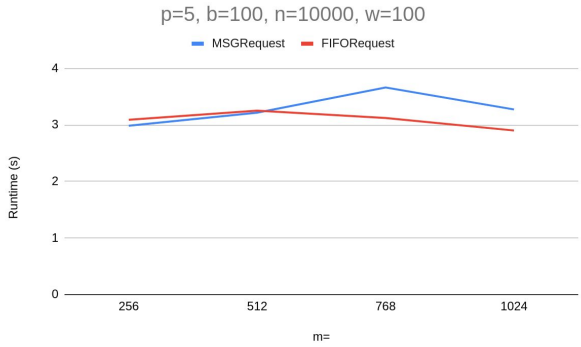
PA5 Report

PA5 introduces new forms of interprocess communication to the base PA4 code. These two forms are children classes of the more general request channel class, MSGRequestChannel and FIFORequestChannel. The core components of the previous assignment are still in use, however they had to be adapted to accommodate the abstract class and it's children. You can see the runtimes below with different values of m and w. Since the MSGRequest channels cap out at 100, that was the max value when comparing worker threads even though FIFO channels can go up to 500.





The maximum number of channels for MSGchannels and FIFO channels are 100 and 500 respectively. When the user attempts to create more channels, the system responds with either "Too many open files" or "Not enough space on device".

The cleanup process for the FIFOchannels was easy, simply closing the channels and removing the channels files using their channel names. To close the MSGchannels it was a matter of closing the channels and unlinking them from the involved files and processes.

I did have a harder time debugging this assignment than I did with the last one. My two main bugs were with creating the channels for both the server and the client. The solution was found in the fact that the pipes would open only when there was a read and a write between the two files and not before, which allowed my program to run instead of freezing up when trying to create the FIFO/msg channels. Another issue that I had was that for a while my histogram was showing data with no spread whatsoever, meaning every data point returned was in a singular range. This was because the values read from the buffer were the exact same as the msg that was written in, which when returned and interpreted as a double, resulted in a 0 value.