

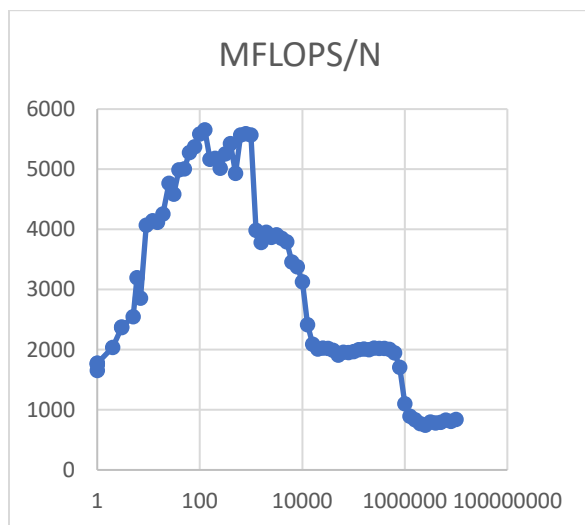
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CS450

HW1 – Report

During the course of this assignment, I was able to discover interesting outcomes of the data. For task 1, there were very interesting drop offs that occurred in the MFLOPS values as N reached certain values, namely 1000, 10000, and 1000000. I believe that this is due to the system needing to access increasing levels of cache to support the values that it is attempting to work with, and thus taking longer to access for larger values. It is very interesting to me how sharply the MFLOPS value falls at these positions, and really emphasizes the point to me that it is important to know your dataset to get the most efficiency out of your code.



Task 2 had similarly interesting results as task 1, with the first 2 given states producing relatively the same results as one another. However, state 3 produced very different results and had significantly worse performance at larger values of N, as shown. This likely has something to do

with the alternating nature of the values given, which I believe would have an effect on the space needed to store the potential values. As the range of the values is essentially doubled, this could affect the required storage space. Another explanation could be that the system has to decide how to combine the numbers in the summation phase, in that it alternates between addition and subtraction, meaning that it requires extra clocks to perform the operations.

