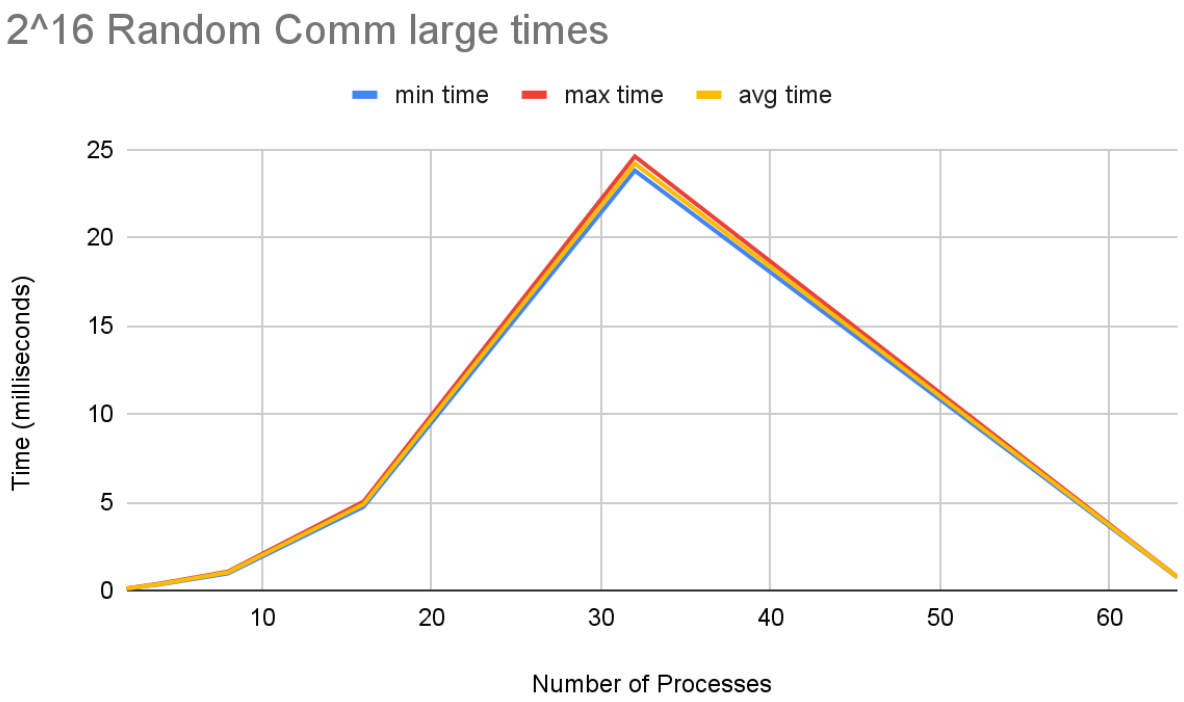
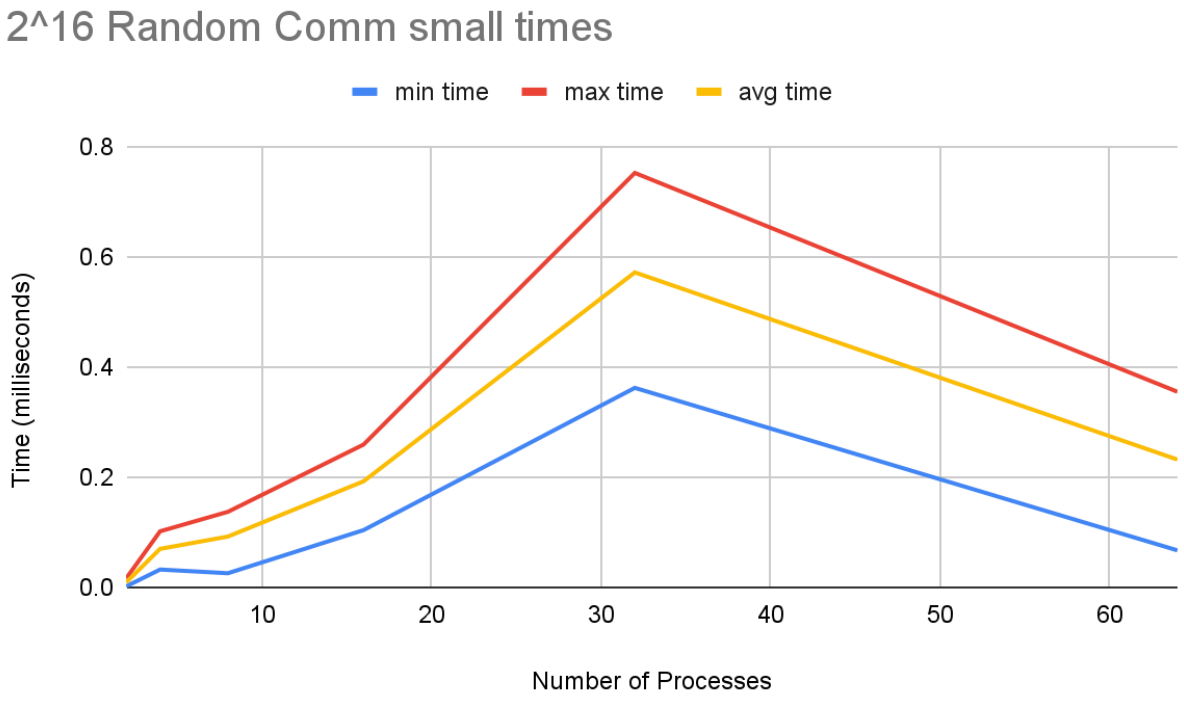
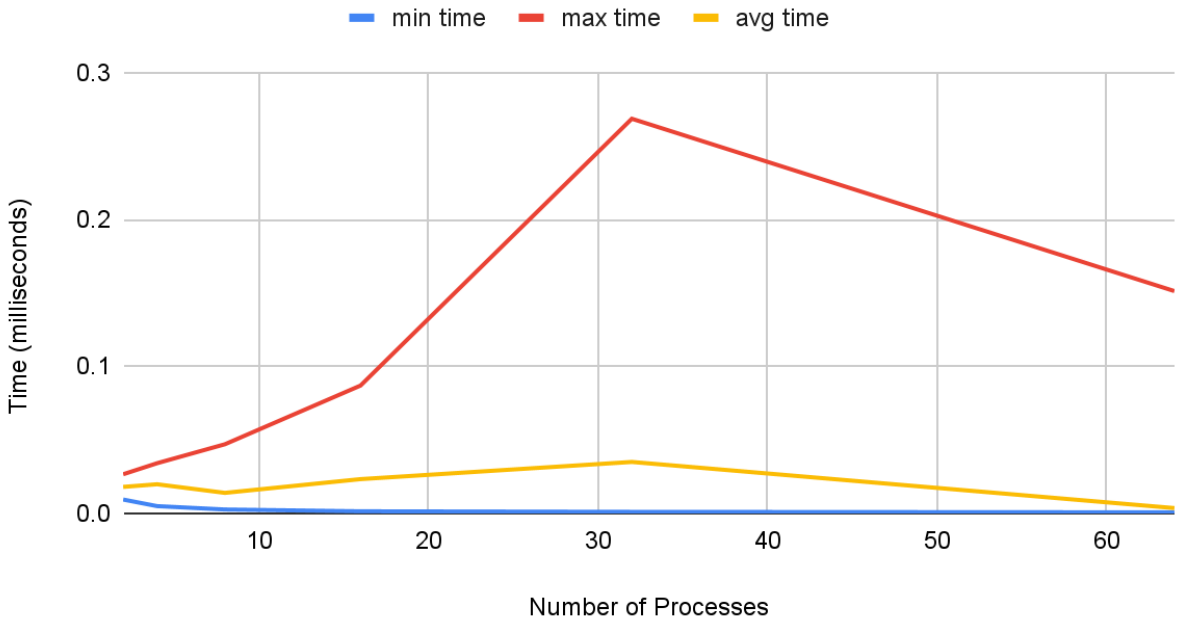
MPI and CUDA Analysis for Samplesort

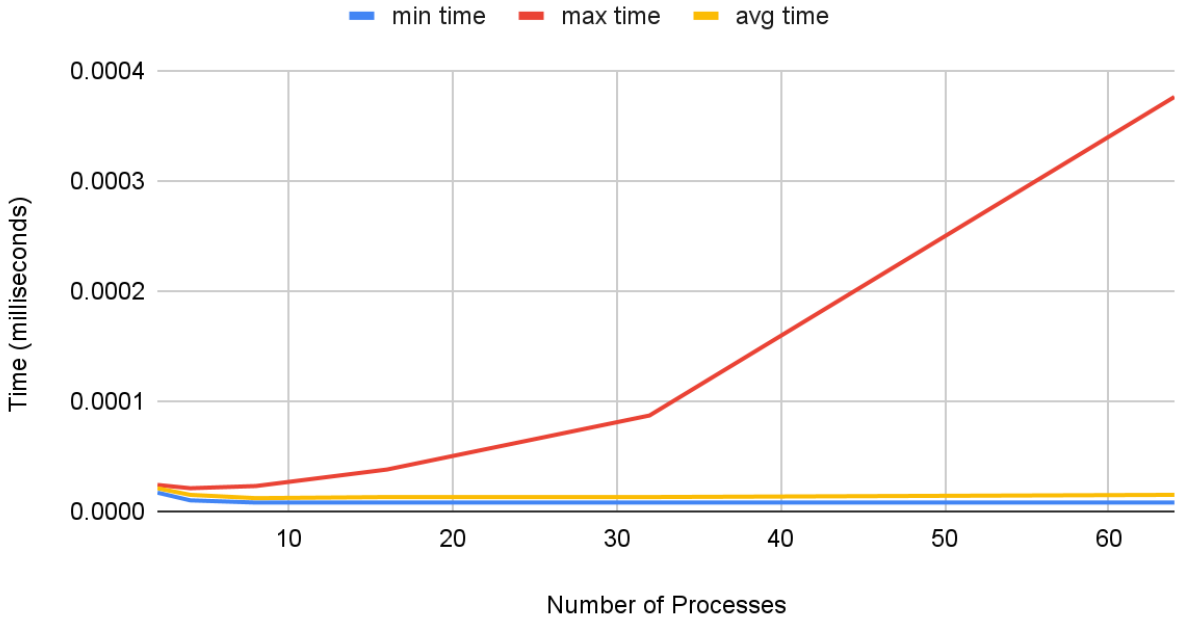




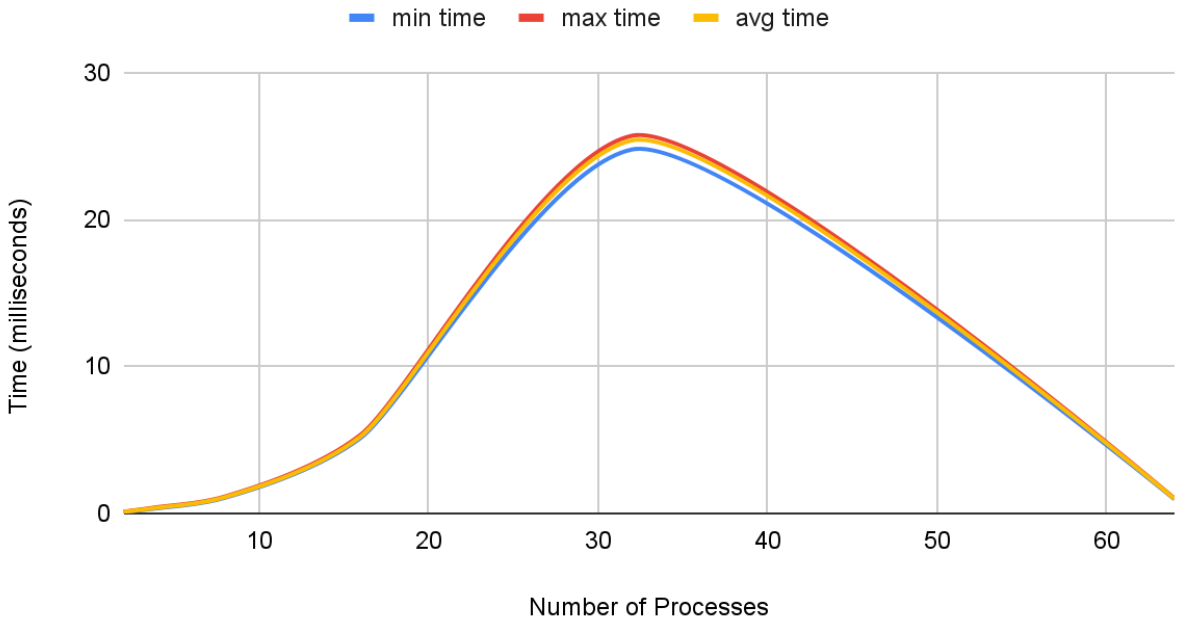
2^16 Random Comp large times



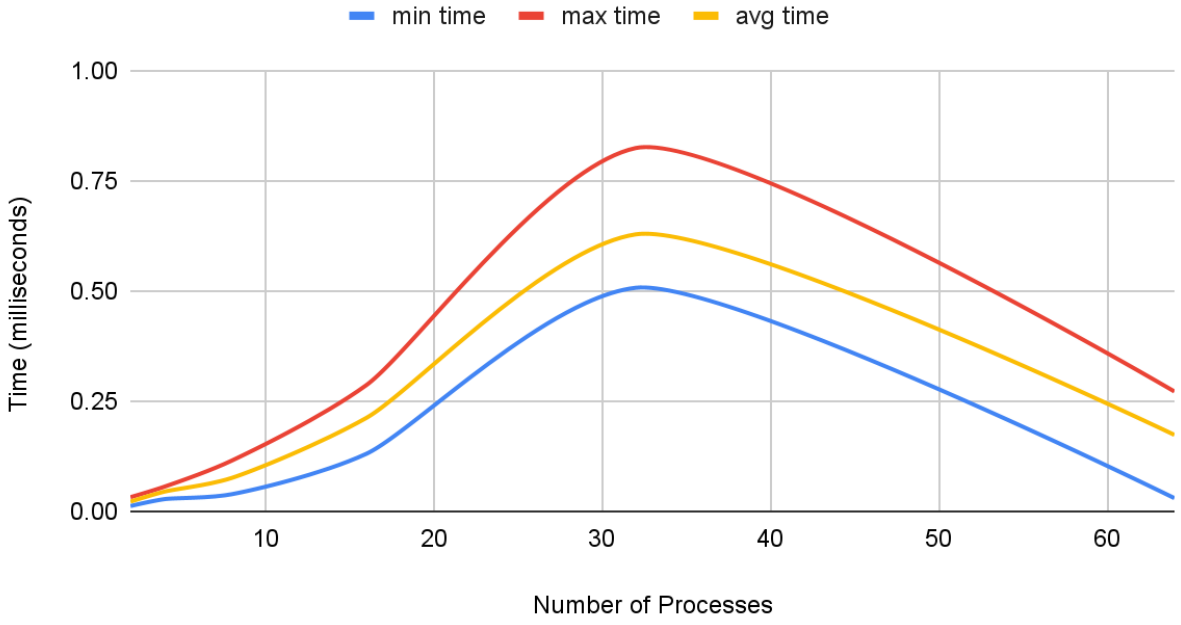
2^16 Random Comp small times



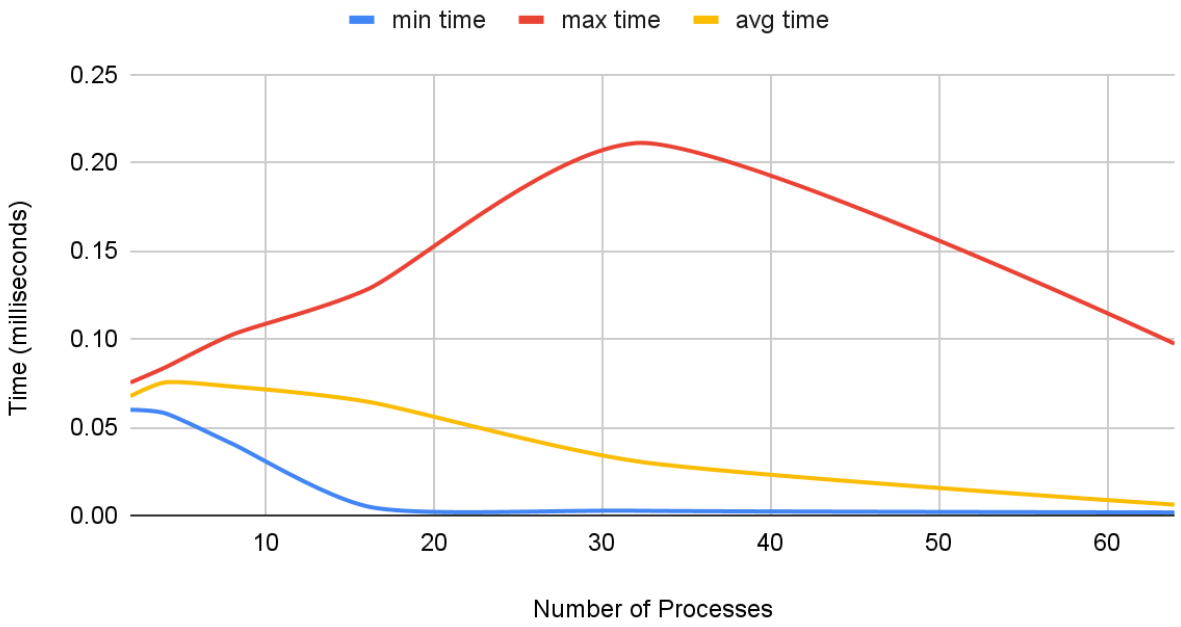
2^18 Random Comm large times



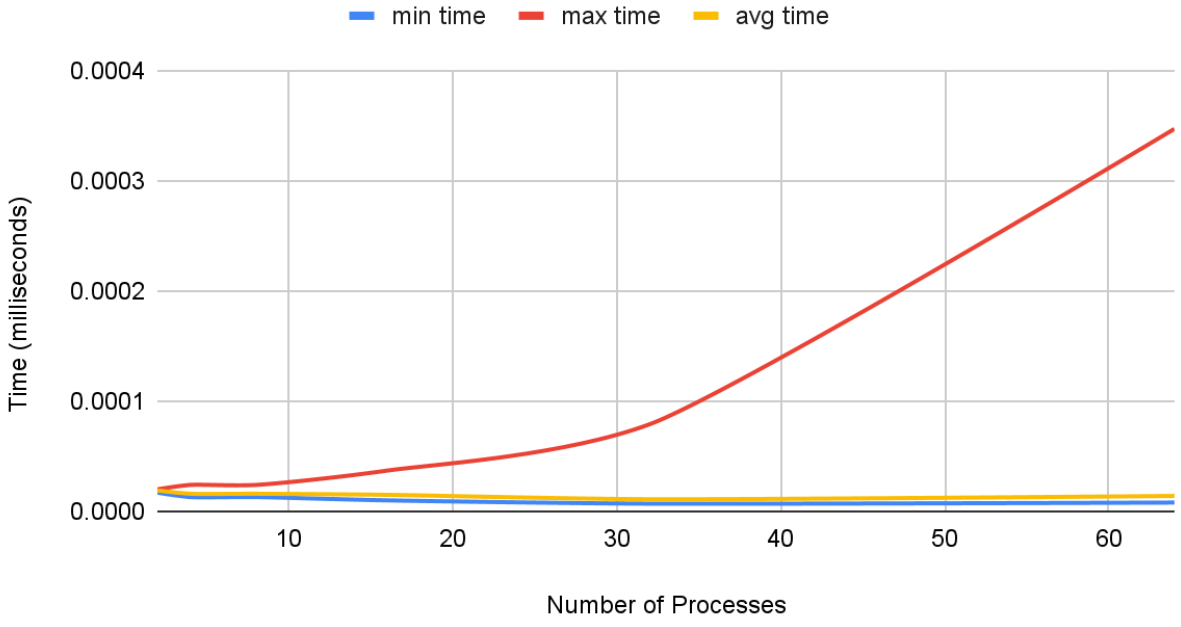
2^18 Random Comm small times



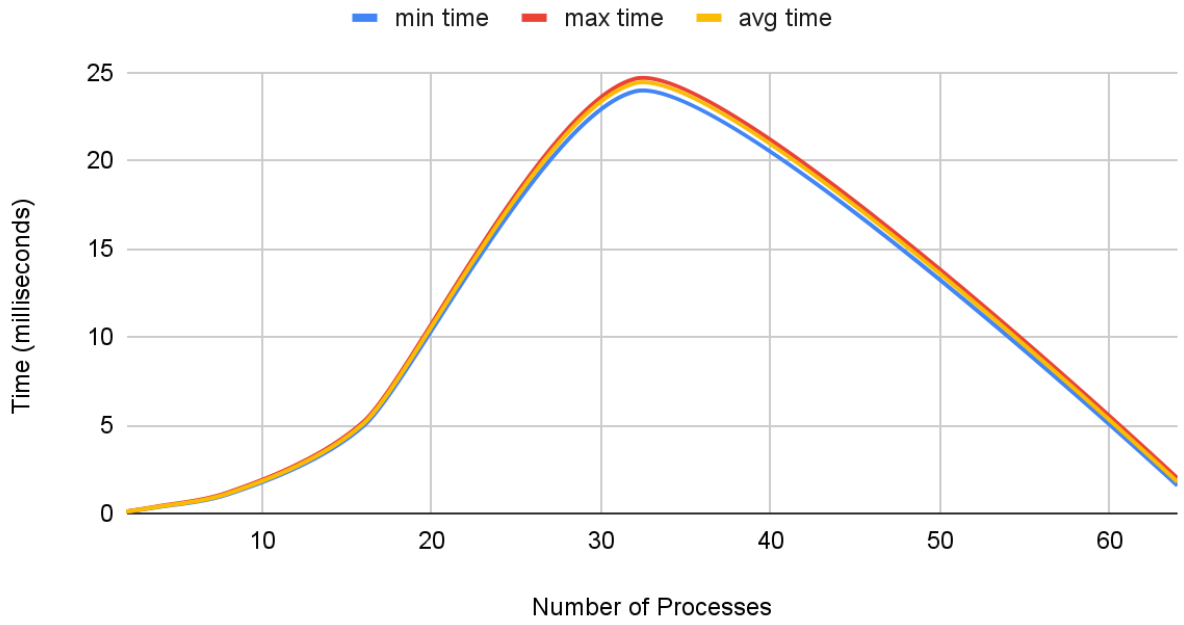
2^18 Random Comp large times



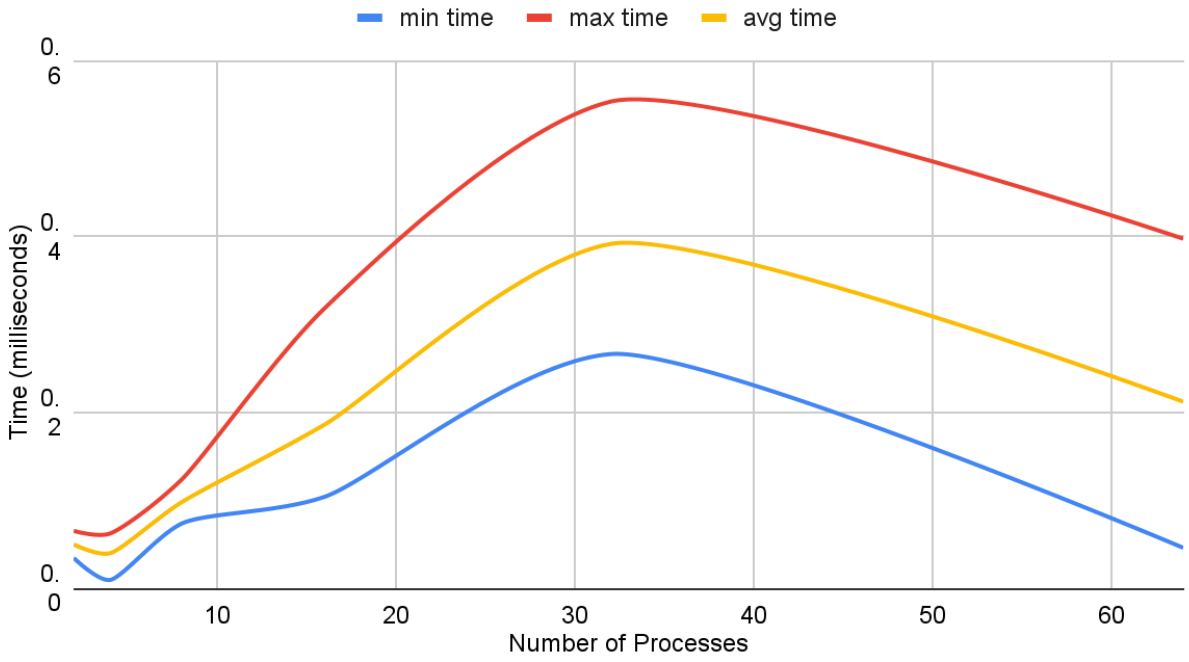
2^18 Random Comp small times

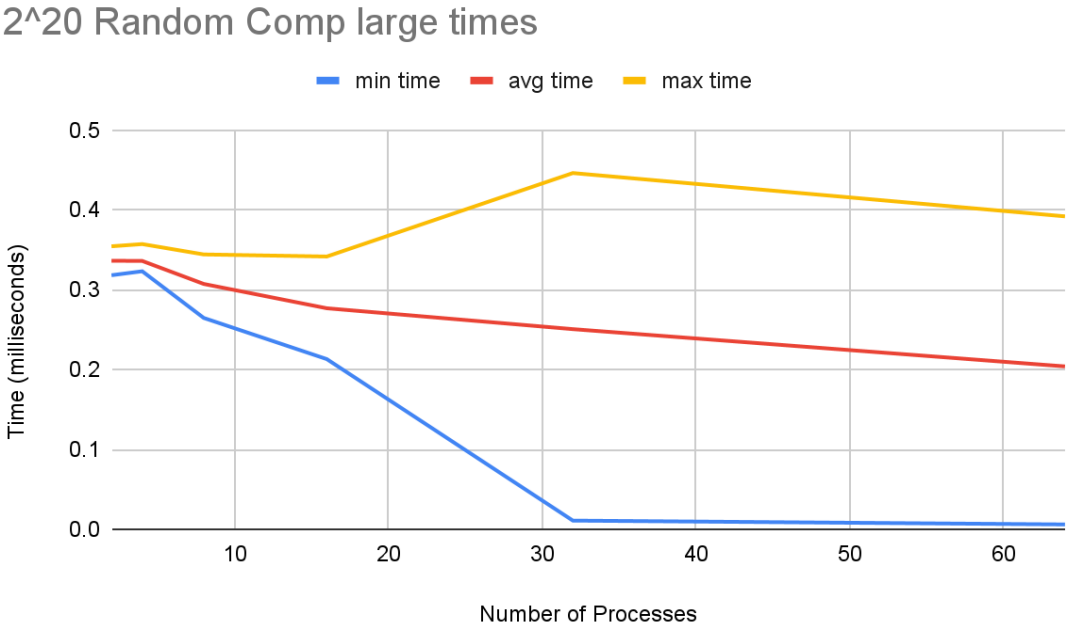


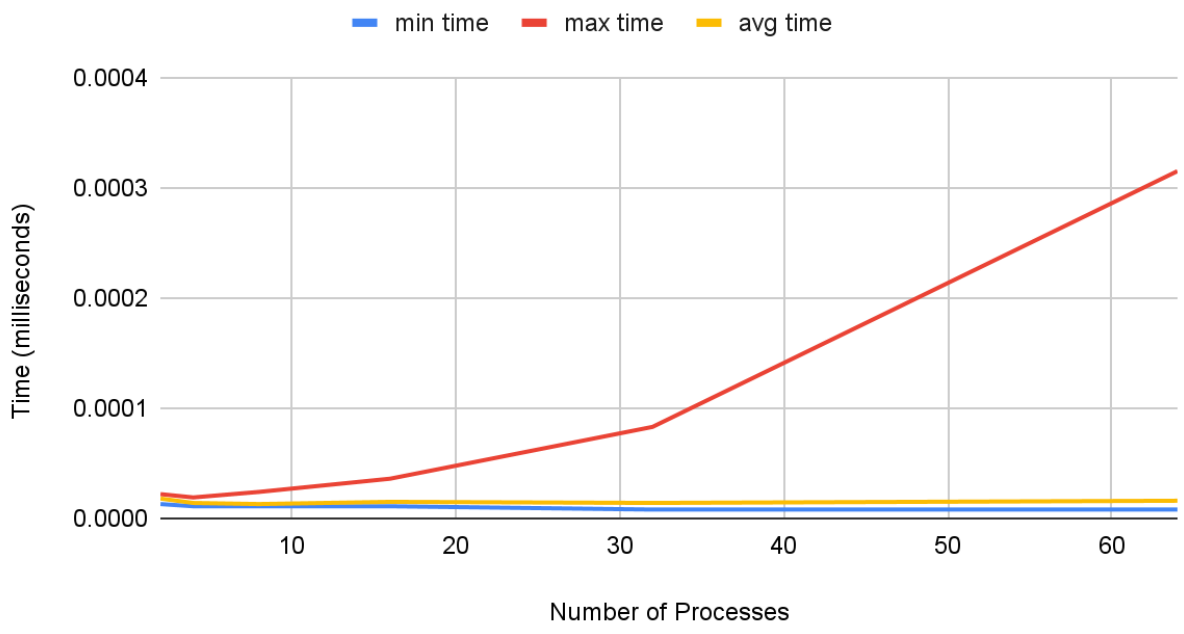
2^20 Random Comm large times



2^20 Random Comm small times







From these different graphs, there is very little correlation between time taken for computations/communications and the number of processes. This can possibly be due to the number of values being sorted being too small. There is a positive correlation between size of array to be sorted and the amount of time communications/computations take. This matches

how the program should behave, since the time it takes to perform sample sort increases with more elements.