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2. The cpu is faster in the first three configurations with degree 1,10 and 100. But the Gpu is faster in the last 1000 degree configuration. The reason might be that in the initial configurations with degrees 1,10 and 100 the computation on the gpu is less compared to that with 1000 degree. In the initial cases, the overhead of sending data on to the gpu and copying the data back into the cpu after computation is higher than the computation but the in the final case there is considerable amount of computation to be done on each gpu, the overhead is minimized by the far less computation time on the gpu with thousands of threads.

I was getting an out of memory error for the 10^9 so instead I have done the experiment for 10^8 . This might be because of memory availability on the cluster. The error occurred even after passing -l mem=6gb option in the queue_gpu.sh file. Please consider the below analysis for the 2b part.