ECE 4822
Homework 1
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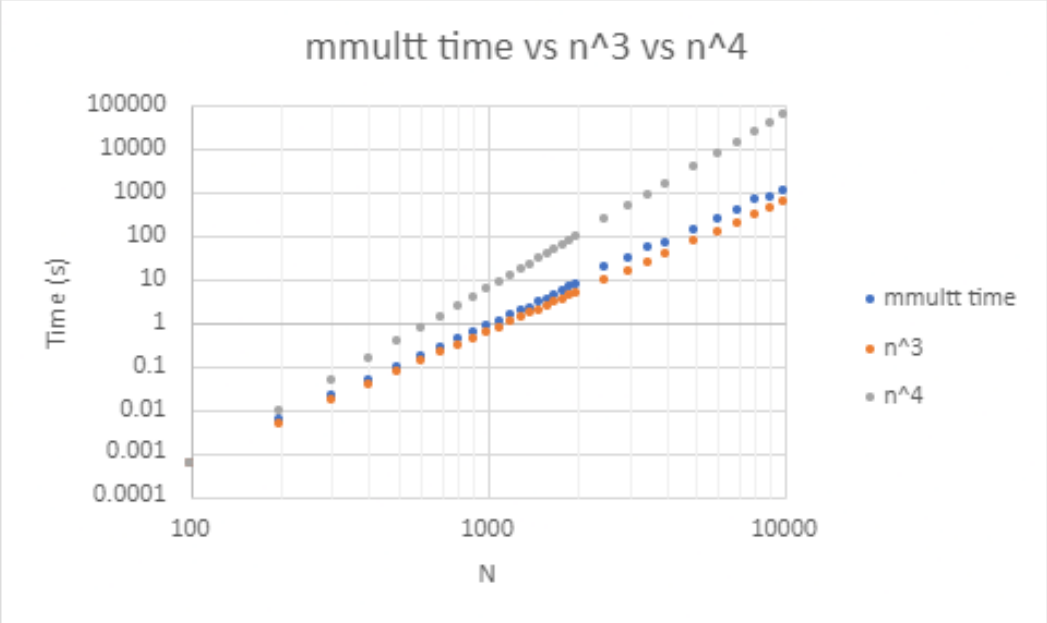
P01:

In p01, we were tasked with creating a plot showcasing the time taken to preform matrix matrixes on square matrices with width/height n= [1:10000]. I used a different number of iterations for each n value. At low n's, i used a high number of iterations (500), and at high n's I used a low number of iterations (5-1) to get these results on time. Below is a plot of the time taken on the mmult function, as a function of matrix size vs time, compared to n^3 and n^4. Via visual inspection, we can see that mmult time complexity is slightly greater than n^3, which is what we would expect from a basic algorithm with no improvements made. We see at high N values there is some slight variance, this is likely due to there being no iterations done.



P02:

In p02 I made an auto correlation function, where we varied over different values of N with K constant. If we increased N and K we would see something closer to n^2, but since we only increase one, we should see a somewhat linear increase in time as N increased, which is what we see.