Neel Sanghvi – Lab 12

Link to Github: NeelSanghvi/APPM-4600 (github.com)

The python solver took 246600 nanoseconds to solve the system.

The LU factorization itself took 361700 nanoseconds to run and then the LU solver took 28000 nanoseconds. Overall, the LU process was slower than the python solver.

However, when N is increased to 5000,

the time took for the python solver was 1.9879s

the time took for the LU factorization was now 1.4613s and the time taken for the LU solver was 0.0106s.

The difference between the python solver and the total time taken for the LU factorization and solving it is 0.5160s. This results in the LU factorization being 25% faster than the python solver which does make sense. However, it does not make sense why LU factorization is only faster for a large N.

Lab 12 code is uploaded to the Github