Project Plan

Numerical Linear Algebra

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I will be implementing 3 different iterative solvers for the problem Ax =b, namely Gauss-Seidel, Jacobi, and SOR. I will get the pseudo code from Wiki for the implementation.

I will test the code on random matrices with the dominant and non-dominant diagonal, symmetric and non-symmetric tri-diagonal and FEA type matrices.

I will do timing tests for each of the solvers based on how fast the system converges to a given tolerance and compare which one works best.

I will not try to make the code blazing fast to keep the basic form of the implementation the same as listed online. I will also use as many built in functions to make the code easier to read/write. The basic code will be tested against the built in solvers to make sure it’s working correctly.