Lab 4 Assignment

Due on 05/29 at noon on Blackboard.

Modify `mySolve.m` to make sure the inputs are valid. Your function should check for each of the following cases: 1. A is not a square matrix; 2. b is not a column vector; 3. Ax and b do not have the same dimension.

Submit your m-file and a diary showing how you tested the code. Only submit the m-file for `mySolve.m`. Do not submit the m-files for `backward.m`, `forward.m`, or `MYLU.m`. Test to show that each error code works and that the program still works using the follow tests.

(1) To test the error of A not being a square matrix use

$$A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \\ 5 & 6 \end{pmatrix}, \qquad b = \begin{pmatrix} 1 \\ 2 \\ 3 \end{pmatrix}.$$

(2) To test the error of b not being a column vector use

$$A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}, \qquad b = \begin{pmatrix} 1 & 2 \end{pmatrix}.$$

(3) To test the error of Ax and b not having compatible dimensions use

$$A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}, \qquad b = \begin{pmatrix} 1 \\ 2 \\ 3 \\ 4 \end{pmatrix}.$$

(4) To test that the program still works given no errors use

$$A = \begin{pmatrix} 1 & 2 \\ 3 & 4 \end{pmatrix}, \qquad b = \begin{pmatrix} 1 \\ 2 \end{pmatrix}.$$

Then make sure that $Ax = b$.