CMPUT 340 PA1 Writeup

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Question 2D.

Given a linear system as follows:

- Matrix ‘A’ (nxn)
- Result vector ‘b’ (nx1)

And a goal to find unknown vector ‘**x**’ (nx1) such that **Ax = b**, we can use the functions I wrote as follows:

1. Call [L, U] = myLU(A) in order to get the LU decomposition of **A**, with the lower triangular component in **L** and the upper triangular component in **U**.
2. Call y = fwdSubst(L, b) in order to get the solution vector (**y**) for the system **Ly = b**
3. Call x = backSubst(U, y) in order to get the solution vector (**x**) for the system **Ux = y** and therefore the solution to the original system **Ax = b**
4. Check answer to the original system by calling **A * x** and notice that it is equal to **b**

An example of carrying out this procedure for a 2x2 matrix exists inside the attached pa1_2D.m script.