PROJECT 1

Write a code that solves an upper triangular system by back substitution. Your program should solve the system $A\mathbf{x} = \mathbf{b}$ by back substitution and overwrite the vector $\mathbf{b}$ by the solution $\mathbf{x}$. Define your solver as a function, which should work for any proper A and $\mathbf{b}$. Use your code to solve the following example for verification:

$$
\begin{bmatrix} 1 & -1 & 1 \\ 0 & 1 & 1 \\ 0 & 0 & 2 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 1 \\ 0 \\ 6 \end{bmatrix}.
$$

Matlab or Python is suggested. Email your code to xlwan@math.lsu.edu with the subject **math4064_Project_01**.