Create a function to solve a system of simultaneous equations using Gauss elimination. The function should accept a matrix as the argument and return a vector of results. Recall that Gauss elimination begins at row 1, column 1 and converts a matrix to upper triangular form. Be sure to swap rows so that the largest absolute value is in the pivot position. Beginning with the last row of the upper triangular matrix, calculate the value of each unknown and back substitute to determine the value of each remaining unknown.

Use the functions from the previous homework problems to help with this project. You have a function written to determine the row with the largest value, a function to swap rows so you can put the row with the largest value in the pivot position. You have also created a function to form a linear combination of rows. Use that function to put a 0 value in the rows below the pivot column. The functions you use in your main function should be local functions (see zyBook section 10.2); they are included in the same script as the main function.

function [ outputArgs ] = MainFunctionName ( inputArgs )

% Comment providing function summary.

% Comments explaining inputs, outputs, and detailed behavior if necessary.

% Statements go here. The function should assign all outputArgs.

end

% Local function definition

function [ outputArgs ] = LocalFunctionName( inputArgs )

% Comment providing function summary.

% Comments explaining inputs, outputs, and detailed behavior if necessary.

% Statements go here. The function should assign all outputArgs.

end

% Additional local function definitions

**Note:** Your function should be written to handle matrices of any size. Test your function with matrices of different sizes for which you know the solution to ensure that your function works correctly.

Use variable names that relate to their function and include comments that explain your program logic. Include all the functions your main function uses as local functions in the same script. We must be able to run your function to determine if it works correctly.

**Do not use any built-in MATLAB functions except size() and abs(). Do not use the colon operator for indexing arrays (example B(: , 2)). Other MATLAB operations such as inv() and or where and are matrices are not allowed. If you have questions what can be used, ask or email me.**