

## MATLAB assignment 10

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Introduction to Linear Algebra (The last assignment)

Fall, 2019

1. In the assignment 7, we have dealt with a function file that changes a matrix  $A$  into the reduced row echelon form **only if** ‘the row interchange operation’ is **not** needed during the *rref* process.

But in this assignment, we are going to take it one step further. We will write a function file `my_rref.m` to find the reduced row echelon form of a **general**  $m \times n$  matrix  $A$  by performing Gauss-Jordan elimination. In other words, the `my_rref.m` can change  $A$  into *rrefA* even if the ‘the row interchange operation’ is necessary in the *rref* process.

Check your result by applying your function for the augmented matrix given in the Example 5 of the Section 2.2 of the textbook.

- To make the function file `my_rref.m` which is described as the problem, you should begin with the function defining line.
- We have already learned how to implement the Gauss-Jordan elimination process in MATLAB. The only additional part is the ‘row interchange’ part.  
(See assignment 7.)
- It should be very helpful to do the Gauss-Jordan process by your own hands and find **the circumstance** under which row interchange should occur during the process.
- There is no guide code. Start with an empty script to write your code. Do not copy someone else’s code. It’s nice to reference each other, but if you submit exactly the same codes, you get a zero point.
- To validate and score your code, we will run the code on several random matrices.

**Due date : Dec 13 (Fri) 10:55 a.m.**

**Late submission will not be allowed.**