# MATLAB assignment 5

**Introduction to Linear Algebra (Week 6)** **Fall, 2020**

1. *Row Echelon Form*

   (a) Consider the items below, write a function file to find the row echelon form of an $m \times n$ matrix $A$ of rank($A$)=$m$ such that $A$ can be reduced to row echelon form by Gaussian elimination `without row interchanges`. Check your result by applying this function for the augmented matrix given in the Example 6 of the Section 2.1 of the textbook.

   - Make a new function file with a function name `my_ref`. It takes a input $A$ and returns the row echelon form of $A$.
   - Note that when you use the command `break` together with a `if` statement n a loop(`for` or `while` loop), it terminates the execution of the loop.

2. *LU decomposition*

   (a) Consider the items below, write a function file to find the $LU$-decomposition of an invertible $n \times n$ matrix $A$ such that $A$ can be reduced to row echelon form by Gaussian elimination `without row interchanges`. Check your result by applying this function for the augmented matrix given in the Example 2 of the Section 3.7 of the textbook.

   - Make a new function file with a function name `my_LU`. It takes a input $A$ and returns $L$ and $U$.

3. Read the section in the *'MATLAB basic (Lee, Jeon)'* that corresponds to the this week class and practice by your self.