Find the LU-factorization of A.

$$A = \begin{bmatrix} 2 & 2 & 3 \\ 5 & 9 & 10 \\ 4 & 1 & 2 \end{bmatrix}$$

Goal A = Lower triangular Matrix × Upper T.M

$$A = \begin{bmatrix} 1 & 0 & 0 \\ x & 1 & 0 \\ x & x & 1 \end{bmatrix} \begin{bmatrix} x & x & x \\ 0 & x & x \\ 0 & 0 & x \end{bmatrix}$$

x = any real number

Important Equations:

Replace R_i by $R_i - kR_j$

where R is the row and k is a scalar value.