IF ABS(A[n+1, 0]) > 1e-10

M = IDENTITY 3×3

$$A = \begin{bmatrix} -5 & 2 & -1 \\ 1 & 0 & 3 \\ 3 & 1 & 6 \end{bmatrix}$$

FOR i IN RANGE(3):

i = ∅ ABS(A[0, 0]) < ABS(A[1, 0]) ?

5 < 1 ? ⟶ FALSE

i = 1 ABS([1, 0]) < ABS([2, 0]) ?

1 < 3 ⟶ TRUE

SWITCH = A[1] = [1., 0., 3.]

A[1] = A[2] = [3., 1., 6.]

A[2] = SWITCH = [1., 0., 3.]

$$A = \begin{bmatrix} -5 & 2 & -1 \\ 3 & 1 & 6 \\ 1 & 0 & 3 \end{bmatrix}$$

i = 2

n = 0 ABS(A[1, 0]) > 1e-10 ✓

↳ @ M[n+1, 0]

STORE

$$m_{ij} = - \frac{A[n+1, 0]}{A[n, 0]}$$

n = ∅

$$m_{ij} = - \frac{A[1, 0]}{A[0, 0]} = \frac{1}{5}$$

2. SUB DIA ZERO?

FOR n IN RANGE(2)

IF ABS(A[n+1, 0]) > 1e-10

*(DETERMINE M_{ij} SUCH THAT $A_{ij} \neq \emptyset \longrightarrow A_{ij} = \emptyset$)

$$m_{ij} = \frac{-A[n+1, 0]}{A[n, 0]}$$

$$M \begin{bmatrix} 1 & 0 & 0 \\ m_{ij} & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} -5 & 2 & -1 \\ 1 & 0 & 3 \\ 3 & 1 & 6 \end{bmatrix}$$

~~M[...]~~

$$\underbrace{M[n+1, 0]}_{\text{WANT} = M_{ij}} \cdot A[n, 0] + M[n+1, 1] \cdots \cdot A[n+1, 0] = \emptyset$$