$$x_i^{(k+1)} = \frac{1}{a_{ii}}\left[b_i - \sum_{j=1}^{i-1} a_{ij} x_j^{(k)} - \sum_{j=i+1}^{n} a_{ij} x_j^{(k)}\right]$$

$$\begin{bmatrix} 4 & -1 & 0 \\ -1 & 4 & -1 \\ 0 & -1 & 4 \end{bmatrix} x = \begin{bmatrix} 2 \\ 4 \\ 10 \end{bmatrix}$$

FOR PYTHON

$x_i^{(k+1)} = x[i, \emptyset]$ $\quad a_{ij} = [i, j]$

$a_{ii} = A[i, i]$

$b_i = b[i, \emptyset]$ ... $\quad x_j^{(k)} = x] = \emptyset$

SOLVED @ k = k

ANALOGIZE EXAMPLE

$4x_1 - x_2 = 2 \longrightarrow x_1^{(k+1)} = \frac{1}{4}(2 + x_2^{(k)})$

$-x_1 + 4x_2 - x_3 = 4 \longrightarrow x_2^{(k+1)} = \frac{1}{4}(4 + x_1^{(k)} + x_3^{(k)})$

$-x_2 + 4x_3 = 10 \longrightarrow x_3^{(k+1)} = \frac{1}{4}(10 + x_2^{(k)})$

$x_j^{(0)} = \emptyset$

| k | $x_1^{(k)}$ | $x_2^{(k)}$ | $x_3^{(k)}$ |
|---|---|---|---|
| $\emptyset$ | $\emptyset$ | $\emptyset$ | $\emptyset$ |
| 1 | 1/2 | 1 | 10/4 |
| 2 | | | |

$x_1^{(1)} = \frac{1}{4}(2 + \emptyset) = \frac{1}{2}$

$x_2^{(1)} = \frac{1}{4}(4 + 0 + 0) = 1$

$x_3^{(1)} = \frac{1}{4}(10 + 0) = 10/4$

$x[i, 0] = \frac{1}{A[i,i]}(b[i, x] - A[i, j][$

DO A FEW MORE ITS, THEN DÉCJOE

ANTI
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MAKE CALL 2 MCC