

# Algorithm: Gauss Seidel Method

- Read number of equations say  $n$

// Read equation

- For  $i = 0$  to  $(n - 1)$  in steps of 1 do
  - For  $j = 0$  to  $n$  in steps of 1 do
    - Read  $a[i][j]$End for

- Read  $\text{maxIteration}$  and error

- For  $k = 0$  to  $(\text{maxIteration}-1)$  in steps of 1 do
  - $\text{big\_error} = 0.0$

- For  $i = 0$  to  $(n-1)$  in steps of 1 do
    - $\text{sum} = 0.0$
    - For  $j = 0$  to  $(n-1)$  in steps of 1 do
      - If  $(i \neq j)$  then
        - ◆  $\text{sum} += a[i][j] * x[j]$End ifEnd for
- $\text{temp} = \frac{a[i][n] - \text{sum}}{a[i][i]}$
  - $E = \text{abs}\left(\frac{\text{temp} - x[i]}{\text{temp}}\right)$
  - $x[i] = \text{temp}$
  - If  $(E > \text{big\_error})$  then
    - $\text{big\_error} = E$

End for

- If  $(\text{rel\_error} \leq e)$  then
  - Print "Solution is convergent. It converges in (k) iterations"
  - Print  $x$
  - STOP

End if

End for

- Print "Solution is not convergent in  $\text{maxIteration}$ "
- Print  $x$

END