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Q For

Q For given matrix A in the pdf & vector b (last 2 digits of roll no. + 2) ~~b=40~~ b(i) = 40 find the Solution of system of linear equations AX = b using Jacobi's iteration & gauss seidel method.

Sol

Jacobi iteration Method.

$$X^{K+1}(i) = \left(b(i) - \sum_{j=1}^{i-1} A(i,j)\, X^{K+1}(j) - \sum_{j=i+1}^{n} A(i,j)\, X^{K}(j)\right) / A(i,$$

Crouss Seidel Method.

$$X^{K+1}(i) = \left(b(i) - \sum_{j=1}^{i-1} A(i,j)\, X^{K}(j) - \sum_{j=i+1}^{n} A(i,j)\, X^{K}(j)\right) / A(i,$$

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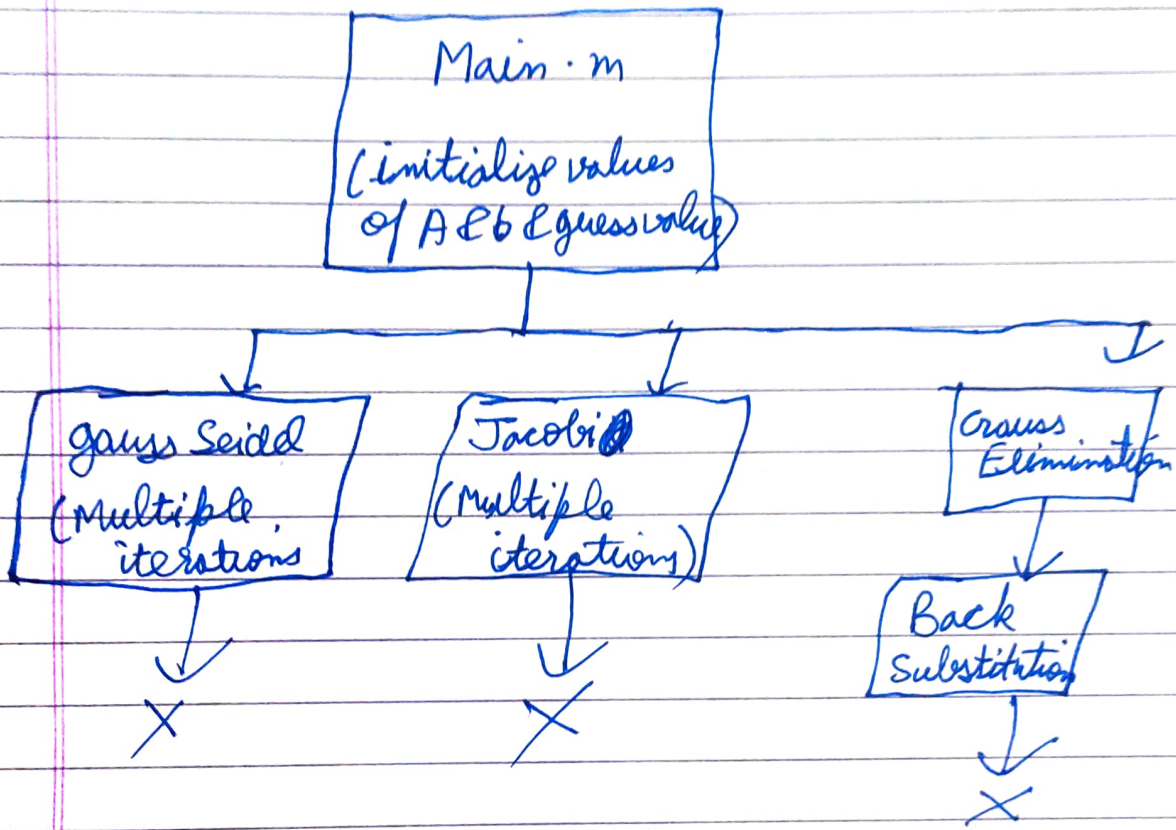
FLOWCHART



In gauss Seidel ~~Multiple~~ values of X are changed ~~10~~ n-times even in single iteration.

Number of Operations

Jacobi's
594645
↳ diverged to infinity

Crauss Seidel
70724910

Crauss Elimination
~~2870~~
2570