Gauss- Seidel IterativeMethod

Algorithm

1. for i=1 to n in steps of 1 and j=1 to n+1 in steps of 1 do read aij end for.

2. Read e, maxit

Note: e is the allowed relative error in the result vector. maxit is maximum number of iterations allowed for the solution to converge.

3. for i=1 to n in steps of 1 xi=0 end for

4. for itr=1 to maxit do

5. big=0

6. for i=1 to n in steps of 1 do

7. sum=0

8. for j=1 to n in steps of 1 do

9. for (j≠i) then sum =sum+aijxj end for

10. temp=(ai(n+1)-sum)/aii

11. relerror=|(xi-temp)/temp|

12. if relerror > big then big=relerror

13. xi=temp

end for

14. if (big<=e) then

begin Write ‘converges to a solution’

for i=1 to n in steps of 1 do Write xi endfor

stop end

end for

15. Write ‘Does nott converge in maxit iteratioins’

16. for i=1 to n in steps of 1 do Write xi end for

17. Stop