ASSIGNMENT-03

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Direct power method
INPUT:
No of equations:
3

Input Matrix :
[8.0 -1.0 -1.0
-1.0 4.0 -2.0
-1.0 -2.0 10.0]

Max. Iteration :
100

Max Error :
0.001

Input 1 for Direct Power Method:
Input 2 for Inverse Power Method:
Input 3 for Shifted Power Method:
Input 4 for QR Method:
1

OUTPUT:
Direct power method
Eigenvalue
   10.7787

Eigenvector
   -0.2675

-0.2556
1.0000

Iterations
  30

Inverse power method
INPUT:
No of equations:
3

Input Matrix :
[8.0 -1.0 -1.0
-1.0 4.0 -2.0
-1.0 -2.0 10.0]

Max. Iteration :
100

Max Error :
0.001

Input 1 for Direct Power Method:
Input 2 for Inverse Power Method:
Input 3 for Shifted Power Method:
Input 4 for QR Method:
2

OUTPUT:
Inverse power method
Eigenvalue
   3.0749

Eigenvector
   0.2696
   1.0000
   0.3277

Iterations
   12

Shifted power method
INPUT:
No of equations:
3

Input Matrix :
[8.0 -1.0 -1.0
-1.0 4.0 -2.0
-1.0 -2.0 10.0]

Max. Iteration :
100

Max Error :
0.001

Input 1 for Direct Power Method:
Input 2 for Inverse Power Method:
Input 3 for Shifted Power Method:
Input 4 for QR Method:
3

Value of shift:
8.0

OUTPUT:

Shifted power method
Eigenvalue
    8.1461

Eigenvector
    1.0000
   -0.3298
    0.1836

Iterations
    6

QR method
INPUT:
No of equations:
3

Input Matrix :
[8.0 -1.0 -1.0
-1.0 4.0 -2.0
-1.0 -2.0 10.0]

Max. Iteration :
100

Max Error :
0.001

Input 1 for Direct Power Method:
Input 2 for Inverse Power Method:
Input 3 for Shifted Power Method:
Input 4 for QR Method:
4

OUTPUT:

Eigenvalues are:
10.7789
8.1461
3.0749