NAME:VODINA EFEM

MAT NO: 16/ENG03/020

DEPT: CIVIL ENGINEERING

CODE:

Commandwindow

clear

clc

format short g

syms m1 m2 m3

A =[10 -2 1

-2 10 -2

-2 -5 10]

x =[m1;m2;m3]

B =[9;12;18]

C= [ 0 -A(1,2)/A(1,1) -A(1,3)/A(1,1)

-A(2,1)/A(2,2) 0 -A(2,3)/A(2,2)

-A(3,1)/A(3,3) -A(3,2)/A(3,3) 0]

D= [B(1,1)/A(1,1); B(2,1)/A(2,2);B(3,1)/A(3,3)]

x = [0;0;0]

for i=1:inf

normB = norm(x)

x= (C\*x)+D

normA =norm(x)

error = abs(normA -normB)

if error<=1E-15

break

end

end

i'

x'

error'

tableau =[i', x', error']

%

COMMAND WINDOW:

A =

10 -2 1

-2 10 -2

-2 -5 10

x =

m1

m2

m3

B =

9

12

18

C =

0 0.2 -0.1

0.2 0 0.2

0.2 0.5 0

D =

0.9

1.2

1.8

x =

0

0

0

Warning: Too many FOR loop iterations. Stopping after 9223372036854775806 iterations.

> In Jacobi\_assignment (line 17)

normB =

0

x =

0.9

1.2

1.8

normA =

2.3431

error =

2.3431

normB =

2.3431

x =

0.96

1.74

2.58

normA =

3.2566

error =

0.91355

normB =

3.2566

x =

0.99

1.908

2.862

normA =

3.5793

error =

0.32271

normB =

3.5793

x =

0.9954

1.9704

2.952

normA =

3.6861

error =

0.10681

normB =

3.6861

x =

0.99888

1.9895

2.9843

normA =

3.7231

error =

0.036997

normB =

3.7231

x =

0.99947

1.9966

2.9945

normA =

3.7353

error =

0.012185

normB =

3.7353

x =

0.99987

1.9988

2.9982

normA =

3.7395

error =

0.0042271

normB =

3.7395

x =

0.99994

1.9996

2.9994

normA =

3.7409

error =

0.0013884

normB =

3.7409

x =

0.99999

1.9999

2.9998

normA =

3.7414

error =

0.0004829

normB =

3.7414

x =

0.99999

2

2.9999

normA =

3.7416

error =

0.00015816

normB =

3.7416

x =

1

2

3

normA =

3.7416

error =

5.5172e-05

normB =

3.7416

x =

1

2

3

normA =

3.7416

error =

1.8013e-05

normB =

3.7416

x =

1

2

3

normA =

3.7417

error =

6.3043e-06

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.0512e-06

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

7.2049e-07

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.3354e-07

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

8.2356e-08

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.6584e-08

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

9.4157e-09

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

3.0253e-09

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.0767e-09

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

3.4421e-10

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.2315e-10

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

3.9152e-11

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.409e-11

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

4.4516e-12

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.6125e-12

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

5.0626e-13

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

1.843e-13

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

5.7732e-14

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.176e-14

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

5.7732e-15

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

2.2204e-15

normB =

3.7417

x =

1

2

3

normA =

3.7417

error =

8.8818e-16

ans =

34

ans =

1 2 3

ans =

8.8818e-16

tableau =

34 1 2 3 8.8818e-16

>>