

```

21 - c=[0 (-a12/a11) (-a13/a11); (-a21/a22) 0 (-a23/a22); (-a31/a33) (-a32/a33)]
22 - % x=[c*x]+d
23 - % x=[c*x]+d
24 - % x=[c*x]+d
25 - % x=[c*x]+d
26 - % x=[c*x]+d
27 - % x=[c*x]+d
28 - % x=[c*x]+d
29 - % x=[c*x]+d
30 - % x=[c*x]+d
31 - % x=[c*x]+d
32 - for i=1:10
33 -     normb= norm(x)
34 -     x=[c*x]+d
35 -     norma= norm(x)
36 -     Error= abs(norma-normb)
37 -     if Error<= 1E-15
38 -         break
39 -     end
40 - end
41 - tablo= [i' x' Error']

```

Untitled4annojo.h.m

extra.m

Eng381.m

Newmatlab.m

classJACOBI.m

Euler.m

Assign

```

1 - commandwindow
2 - clear
3 - clc
4 - a11= 10
5 - a12=-2
6 - a13=1
7 - a21=-2
8 - a22=10
9 - a23=-2
10 - a31=-2
11 - a32=-5
12 - a33=10
13 - x1=0
14 - x2=0
15 - x3=0
16 - d1=9
17 - d2=12
18 - d3=18
19 - x=[x1;x2;x3]
20 - d=[(d1/a11); (d2/a22); (d3/a33)]
21 - c=[0 (-a12/a11) (-a13/a11); (-a21/a22) 0 (-a23/a22); (-a31/a33) (-a32/a33) 0]
22 - % x=[c*x]+d
23 - % x=[c*x]+d
24 - % x=[c*x]+d
25 - % x=[c*x]+d
26 - % x=[c*x]+d
27 - % x=[c*x]+d

```

Name : Ebienyie Semaediong.

Matric : 161EN1A04/016

DEPARTMENT : Electrical electronics

$$10m_1 - 2m_2 + m_3 = 9$$

$$-2m_1 + 10m_2 - 2m_3 = 12$$

$$-2m_1 - 5m_2 + 10m_3 = 18$$

$$m_1 = m_2 = m_3 = 0 \quad \therefore m = [0 \ 0 \ 0]$$

Solution

$$\begin{bmatrix} 10 & -2 & 1 \\ -2 & 10 & -2 \\ -2 & -5 & 10 \end{bmatrix} \begin{bmatrix} m_1 \\ m_2 \\ m_3 \end{bmatrix} = \begin{bmatrix} 9 \\ 12 \\ 18 \end{bmatrix}$$

$$\begin{bmatrix} m_1 \\ m_2 \\ m_3 \end{bmatrix} = \begin{bmatrix} 0 & (-2/\omega) & -1/\omega \\ -(-2/\omega) & 0 & -(-2/\omega) \\ -(-2/\omega) & -(-5/\omega) & 0 \end{bmatrix} \begin{bmatrix} m_1 \\ m_2 \\ m_3 \end{bmatrix} + \begin{bmatrix} 9/\omega \\ 12/\omega \\ 18/\omega \end{bmatrix}$$

$$\begin{bmatrix} m_1 \\ m_2 \\ m_3 \end{bmatrix} = \begin{bmatrix} 0 & 0.2 & -0.1 \\ 0.2 & 0 & 0.2 \\ 0.2 & 0.5 & 0 \end{bmatrix} \begin{bmatrix} m_1 \\ m_2 \\ m_3 \end{bmatrix} + \begin{bmatrix} 0.9 \\ 1.2 \\ 1.8 \end{bmatrix}$$

$$\begin{bmatrix} m_1 \\ m_2 \\ m_3 \end{bmatrix} = \begin{bmatrix} 0 & 0.2 & -0.1 \\ 0.2 & 0 & 0.2 \\ 0.2 & 0.5 & 0 \end{bmatrix} \begin{bmatrix} 0 \\ 0 \\ 0 \end{bmatrix} + \begin{bmatrix} 0.9 \\ 1.2 \\ 1.8 \end{bmatrix} = \begin{bmatrix} 0.9 \\ 1.2 \\ 1.8 \end{bmatrix}$$

$$\begin{bmatrix} m_1 \\ m_2 \\ m_3 \end{bmatrix} = \begin{bmatrix} 0 & 0.2 & -0.1 \\ 0.2 & 0 & 0.2 \\ 0.2 & 0.5 & 0 \end{bmatrix} \begin{bmatrix} 0.9 \\ 1.2 \\ 1.8 \end{bmatrix} + \begin{bmatrix} 0.9 \\ 1.2 \\ 1.8 \end{bmatrix} = \begin{bmatrix} 0.96 \\ 1.24 \\ 2.58 \end{bmatrix}$$

$$\begin{bmatrix} M_1 \\ M_2 \\ M_3 \end{bmatrix} = \begin{bmatrix} 0 & 0.2 & -0.1 \\ 0.2 & 0 & 0.2 \\ 0.2 & 0.5 & 0 \end{bmatrix} \begin{bmatrix} 0.9 \\ 1.2 \\ 1.8 \end{bmatrix} = \begin{bmatrix} 0.99 \\ 1.91 \\ 2.86 \end{bmatrix}$$