

MESH ANALYSIS

TWO LOOPS

```
V1=input('Enter Voltage (Volts) : ');
R1=input('Enter Resistance 1 (Ohms) : ');
R2=input('Enter Resistance 2 (Ohms) : ');
R3=input('Enter Resistance 3 (Ohms) : ');
R=[(R1+R2)  -R2; -R2  (R2+R3)];
V=[V1; 0];
I=R\V;
i1=I(1);
i2=I(2);
Total_I=abs(i1)+abs(i2);
fprintf('MESH ANALYSIS (Two Loops) : \n');
```

MESH ANALYSIS (Two Loops) :

```
fprintf('Mesh Current i1 : %.2f A\n',i1);
```

Mesh Current i1 : 3.75 A

```
fprintf('Mesh Current i2 : %.2f A\n',i2);
```

Mesh Current i2 : 1.25 A

```
fprintf('Total Current : %.2f A\n',Total_I);
```

Total Current : 5.00 A

THREE LOOPS

```
V1=input('\nEnter Voltage 1 (Volts) : ');
V2=input('Enter Voltage 2 (Volts) : ');
R1=input('Enter Resistance 1 (Ohms) : ');
R2=input('Enter Resistance 2 (Ohms) : ');
R3=input('Enter Resistance 3 (Ohms) : ');
R4=input('Enter Resistance 4 (Ohms) : ');
R5=input('Enter Resistance 5 (Ohms) : ');
R=[(R1+R2)  -R2  0; -R2  (R2+R3+R4)  -R4; 0  -R4  (R4+R5)];
V=[V1; 0; -V2];
I=R\V;
i1=I(1);
i2=I(2);
i3=I(3);
Total_I=abs(i1)+abs(i2)+abs(i3);
fprintf('MESH ANALYSIS (Three Loops) : \n');
```

MESH ANALYSIS (Three Loops) :

```
fprintf('Mesh Current i1 : %.2f A\n',i1);
```

Mesh Current i1 : 1.90 A

```
fprintf('Mesh Current i2 : %.2f A\n',i2);
```

Mesh Current i2 : -0.29 A

```
fprintf('Mesh Current i3 : %.2f A\n',i3);
```

Mesh Current i3 : -1.52 A

```
fprintf('Total Current : %.2f A\n',Total_I);
```

Total Current : 3.71 A

WITH CURRENT SOURCE

```
V1=input('\nEnter Voltage (Volts) : ');
I1=input('Enter Current (Ampere) : ');
R1=input('Enter Resistance 1 (Ohms) : ');
R2=input('Enter Resistance 2 (Ohms) : ');
R3=input('Enter Resistance 3 (Ohms) : ');
R=[(R1+R2) -R2; -R2 (R2+R3)];
V=[V1; 0];
I=R\V;
i1=I(1);
i2=I(2);
Total_I=abs(i1)+abs(i2);
fprintf('MESH ANALYSIS (With Current Source) : \n');
```

MESH ANALYSIS (With Current Source) :

```
fprintf('Mesh Current i1 : %.2f A\n',i1);
```

Mesh Current i1 : 2.25 A

```
fprintf('Mesh Current i2 : %.2f A\n',i2);
```

Mesh Current i2 : 0.75 A

```
fprintf('Total Current : %.2f A\n',Total_I);
```

Total Current : 3.00 A

RLC CIRCUIT

```
V1=input('\nEnter Voltage (Volts) : ');
R=input('Enter Resistance (Ohms) : ');
L=input('Enter Inductance (Henry) : ');
C=input('Enter Capacitance (Farad) : ');
XL=2*pi*60*L;
XC=1/(2*pi*60*C);
Z=[(R+XL) -XL; -XL (XL+XC)];
V=[V1; 0];
```

```
I=Z\V;  
i1=I(1);  
i2=I(2);  
Total_I=abs(i1)+abs(i2);  
fprintf('MESH ANALYSIS (With RLC) : \n');
```

MESH ANALYSIS (With RLC) :

```
fprintf('Mesh Current i1 : %.2f A\n',i1);
```

Mesh Current i1 : 5.00 A

```
fprintf('Mesh Current i2 : %.2f A\n',i2);
```

Mesh Current i2 : 5.00 A

```
fprintf('Total Current : %.2f A\n',Total_I);
```

Total Current : 10.00 A