Team Information

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Submitted To :

Dr/Hassan Mostafa

- CAD (Computer Aided Design) tool to simulate simple AC circuits that contains only (independent voltage sources, independent current sources, resistors, capacitors, and inductors).

- It can solve ANY NUMBER OF NODES & ANY NUMBER OF LOOPS ...

- It shows the voltages at all nodes and the currents in all branches

- It's required to Enter Your "Circuit NetList" From a Text File ...

Some Instructions to be able to deal easily with the Tool and solve your circuit successfully :

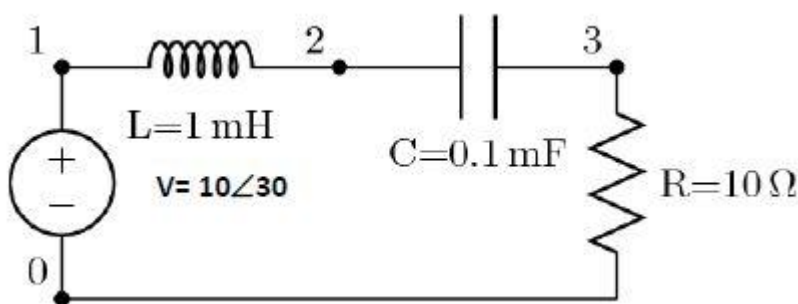1- Enter your circuit Netlist file name without writing ".txt"

2- At the beginning of The Netlist , you must write ω (Omega) as input at this form " ω Value " ,,, ω is a small Letter & Value may be any +num.

3- Any Capacitor(C) , Inductor(L) or Resistor(R) must be written as input at this form

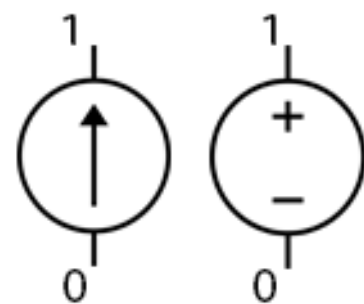|	Type	Node0	Node1	Value
For Example	L1	1	2	0.001
	C1	2	3	0.0001
	R1	3	0	10

4- Any Voltage (Vs) or Current (Is) Source must be written as input at this form

	Type	+Node	−Node	Magnitude	phase
For Example	Vs1	1	0	10	30

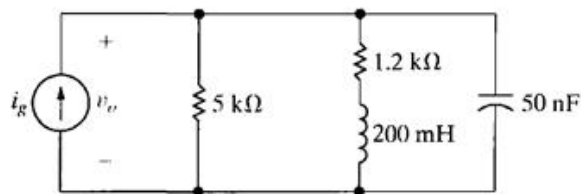5- All The Values Must be at SI Units (Henry, Farad, Ohm, Volt, Ampere)

6- it's assumed that V(0) = 0V

7- The output will Be in the form of Magnitude and Phase

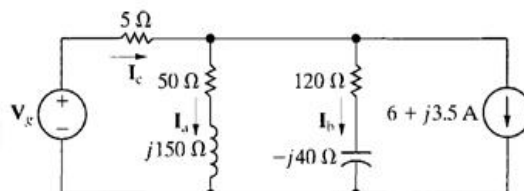8- The Output may Be in The Form " ……e – value " ,, just approximate it to 0

Test Cases:

w 8000

Is 1 0 0.0025 0

R1 1 0 5000

R2 1 2 1200

L 2 0 0.2

C 1 0 0.00000005

```
C:\Users\pc\Desktop\Circuit_Modified.exe
Enter File Name
Cir1

V1          5      0
V2          4      36.8699

I01 Is    0.0025    0
I10 R1    0.001     0
I12 R2    0.0025   -53.1301
I20 L     0.0025   -53.1301
I10 C     0.002     90
Press any key to continue . . .
```


w 1

Vs 1 0 358.4689666 67.011

R1 2 3 50

R2 2 4 120

R3 1 2 5

L 3 0 150

C 4 0 0.025

Is 0 2 6.946221995 30.256437

```
C:\Users\pc\Desktop\Circuit_Modified.exe
Enter File Name
Cir2

V1          358.469    67.0113
V2          316.228    71.5651
V3          300        90
V4          100        0

I01 Vs    10      36.8699
I23 R1    2       2.45182e-09
I24 R2    2.5     90
I12 R3    10      36.8699
I30 L     2       0
I40 C     2.5     90
I20 Is    6.94622  30.2564
Press any key to continue . . .
```

- Kindly Send Your Feedback & any questions to: