LAB #15(OpenEndedLab2)

Orcad Program Explanation:

First line of our source code is for comments which will not play any role in our code. Then we describe current value, resistor values and describing there place according to Nodes specify in figure.Then simple ".Print" statement is used to print the answeres, and ".options nopage" statement is used to delete unnecessary pages, while ".End" is used tell that here program is finish.

Matlab Program Explanation:

display() function:

It is simply used to print or we can say display the statement which is inside its Paranthesis in single quotes.

Syntax: display('Type message here……');

input() function:

It is used to take input from user and inside its paranthesis we can add prompt msg.

Syntax: no(Variable in which input desired)= input('Type message here……');

abs() function:

It is used to return absolute value i.e modulus of a number.

Syntax: abs(-4)

If-elseif-else Statements:

if statement - executes some code if one condition is true.

if...else statement - executes some code if a condition is true and another code if that condition is false.

if...elseif...else statement - executes different codes for more than two conditions.

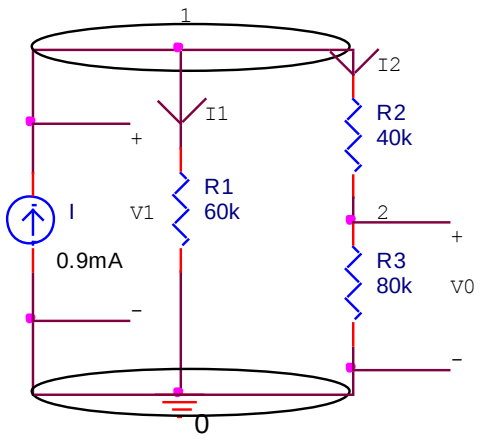
Syntax:
```
if(condition)
    // code to be executed when if condition becomes true.
    elseif(condition)
   // code to be executed when if condition becomes false.
    else
     // code to be executed when all conditions becomes false.
    end
```

Exercise#01: Find V1, V0, I1, I2 using PSPICE and also verify by manual calculations.

Source code:

Name: Ahmad Baseer Roll no: 124

```
I 1 0 0.9mA
R1 1 0 60kohms
R2 1 2 40kohms
R3 2 0 80kohms
.DC I 0 0.9mA 0.9mA
.PRINT DC V(I) V(R3)
.PRINT DC I(R1) I(R2)
.options nopage
.END
```



Output:

```
**** 05/24/21 04:30:56 ********* PSpice 9.2 (Mar 2000) ******** ID# 1 ********
 Name: Ahmad Baseer        Roll no: 124
 ****     CIRCUIT DESCRIPTION
******************************************************************************
I 1 0 0.9mA
R1 1 0 60kohms
R2 1 2 40kohms
R3 2 0 80kohms
.DC I 0 0.9mA 0.9mA
.PRINT DC V(I) V(R3)
.PRINT DC I(R1) I(R2)
 **** 05/24/21 04:30:56 ********* PSpice 9.2 (Mar 2000) ******** ID# 1 ********
 Name: Ahmad Baseer        Roll no: 124
 ****     DC TRANSFER CURVES            TEMPERATURE =   27.000 DEG C
******************************************************************************
 I               V(I)            V(R3)
  0.000E+00    0.000E+00    0.000E+00
  9.000E-04   -3.600E+01   -2.400E+01
**** 05/24/21 04:30:56 ********* PSpice 9.2 (Mar 2000) ******** ID# 1 ********
 Name: Ahmad Baseer        Roll no: 124
 ****     DC TRANSFER CURVES            TEMPERATURE =   27.000 DEG C
******************************************************************************
 I               I(R1)         I(R2)
  0.000E+00   0.000E+00   0.000E+00
  9.000E-04   -6.000E-04  -3.000E-04
       JOB CONCLUDED
       TOTAL JOB TIME            .02
```

Exercise#02: **Write a script to find the sign and magnitude of number using if, elseif, else statements.**

Source Code:

```
display('Showing mod and sign of input number:');
no=input('Enter the number:');
display('Absolute i.e mod of a number is:');
display(abs(no));
if(no<0)
display('Sign is negative:');
elseif(no>0)
display('Sign is positive:');
else
display('You entered Zero');
end
```

Output:

```
Openended
Showing mod and sign of input number:
Enter the number:
-4
Absolute i.e mod of a number is:
4
Sign is negative:
```

Running again:

openended
Showing mod and sign of input number:
Enter the number:
0
Absolute i.e mod of a number is:
0
You entered Zero

Manual Calculation of orcad Question: