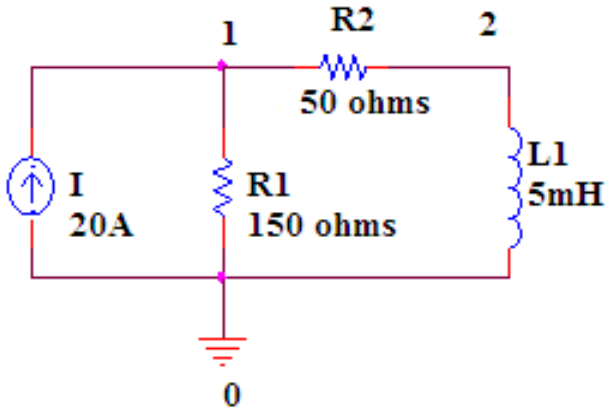
LAB #0

Objective: Implementation of Simple RL Circuits and Finding Its Response.

Exercise#01: Apply the above code in PSpice and show the output and verify the result with manual calculation.

Example #01:

```
I 1 0 20A
R1 1 0 150ohms
R2 1 2 50ohms
L1 2 0 5mH
.DC I 0 20 20
.PRINT DC V(R1) V(R2) V(L1)
.PRINT DC I(R1) I(R2) I(L1)
.options nopage
.END
```



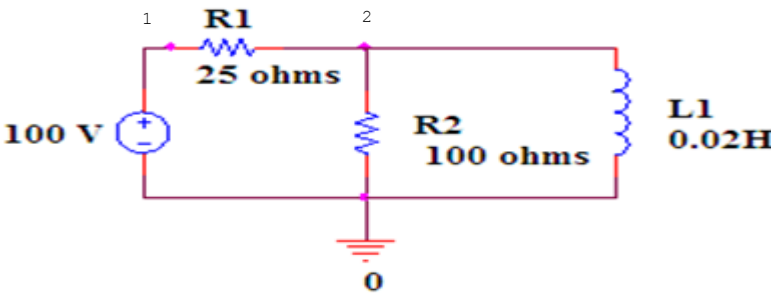
Output:

```
**** 04/17/21 10:31:11 ********* PSpice 9.2 (Mar 2000) ******** ID# 1 ********
Name: Ahmad Baseer       Roll no:124
****     CIRCUIT DESCRIPTION
******************************************************************************
I 1 0 20A
R1 1 0 150ohms
R2 1 2 50ohms
L1 2 0 5mH
.DC I 0 20 20
.PRINT DC V(R1) V(R2) V(L1)
.PRINT DC I(R1) I(R2) I(L1)
.options nopage
.END
****     DC TRANSFER CURVES            TEMPERATURE =   27.000 DEG C
I              V(R1)        V(R2)        V(L1)

0.000E+00   0.000E+00   0.000E+00   0.000E+00
2.000E+01  -7.500E+02  -7.500E+02   0.000E+00
****     DC TRANSFER CURVES            TEMPERATURE =   27.000 DEG C
I              I(R1)        I(R2)        I(L1)

0.000E+00   0.000E+00   0.000E+00   0.000E+00
2.000E+01  -5.000E+00  -1.500E+01  -1.500E+01
```

Exercise#02: Write down the code in PSpice and find the voltage and current across each component (resistors and inductor).

Code:

```
V1 1 0 100
R1 1 2 25ohms
L1 2 0 0.02H
R2 2 0 100ohms
.DC V1 0 100 100
.PRINT DC V(R1) V(R2) V(L1)
.PRINT DC I(R1) I(R2) I(L1)
.options nopage
.END
```



Output:

```
**** 04/17/21 10:46:59 ********* PSpice 9.2 (Mar 2000) ******** ID# 1 ********
Name: Ahmad Baseer        Roll no:124
****     CIRCUIT DESCRIPTION
******************************************************************************
V1 1 0 100
R1 1 2 25ohms
L1 2 0 0.02H
R2 2 0 100ohms
.DC V1 0 100 100
.PRINT DC V(R1) V(R2) V(L1)
.PRINT DC I(R1) I(R2) I(L1)
.options nopage
.END
****     DC TRANSFER CURVES            TEMPERATURE =   27.000 DEG C
V1            V(R1)         V(R2)        V(L1)

0.000E+00   0.000E+00   0.000E+00   0.000E+00
1.000E+02   1.000E+02   0.000E+00   0.000E+00
****     DC TRANSFER CURVES            TEMPERATURE =   27.000 DEG C
V1            I(R1)         I(R2)        I(L1)

0.000E+00   0.000E+00   0.000E+00   0.000E+00
1.000E+02   4.000E+00   0.000E+00   4.000E+00
```