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20208067

EXP-1

AIM:

Logic gate verification using different ICs.

SOFTWARE USED:

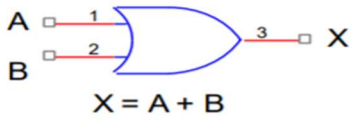
LTSpice.

THEORY:

AND, OR and NOT gates are basic gates. XOR and XNOR are universal gates. Basically, logic gates are electronic circuits because they are made up of number of electronic devices and components. Inputs and outputs of logic gates can occur only in two levels. These two levels are term HIGH and LOW, or TRUE and FALSE, or ON AND off, OR SIMPLY 1 AND 0. A table which lists all possible combinations of input variables and the corresponding outputs is called a “truth table”. It shows how the logic circuit’s output responds to various combinations of logic levels at the inputs

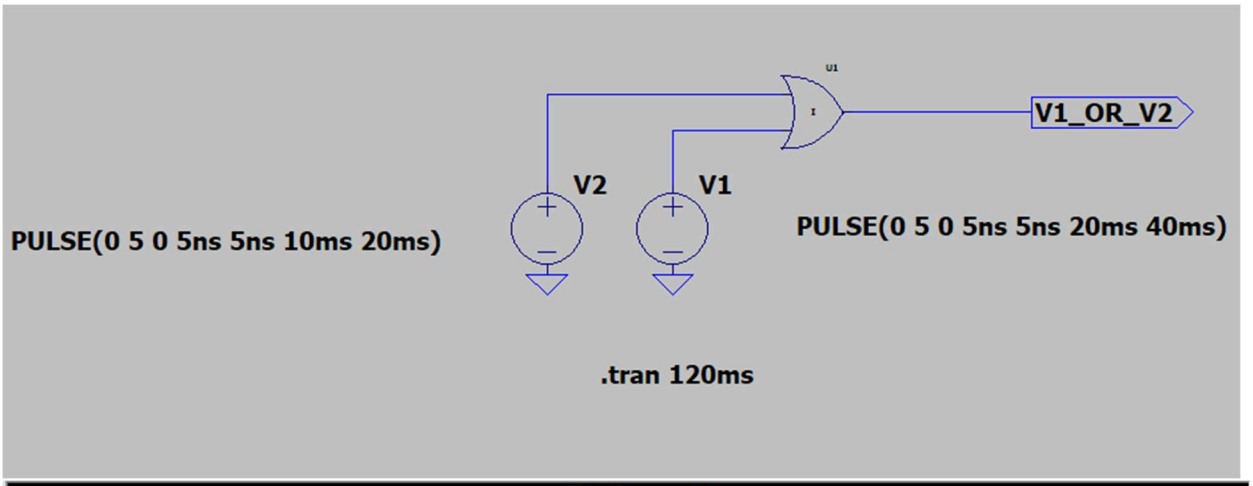
OR

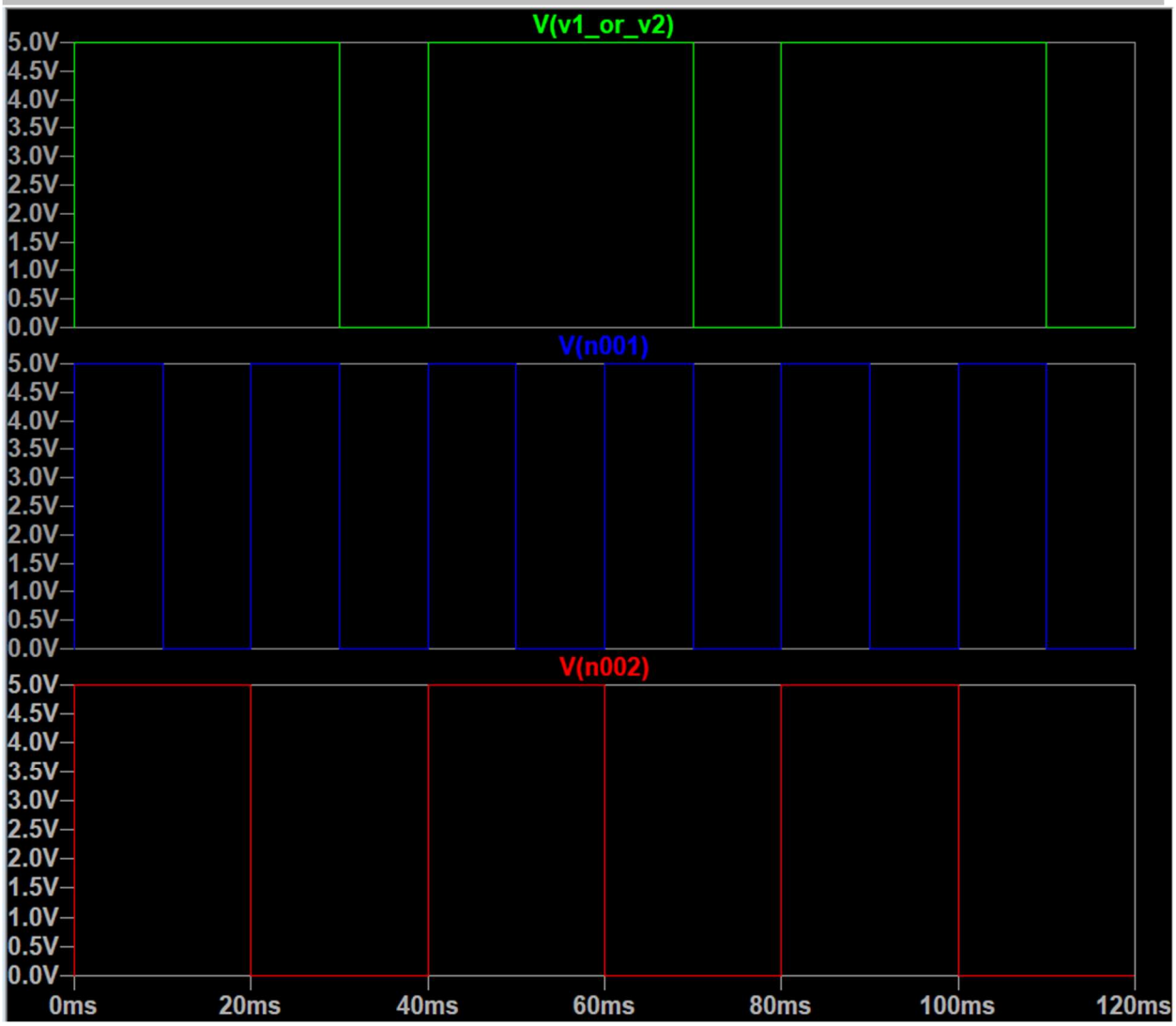
Logic symbol:



Truth table:

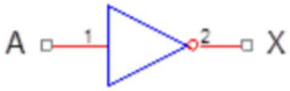
Input		Output
A	B	X
0	0	0
0	1	1
1	0	1
1	1	1





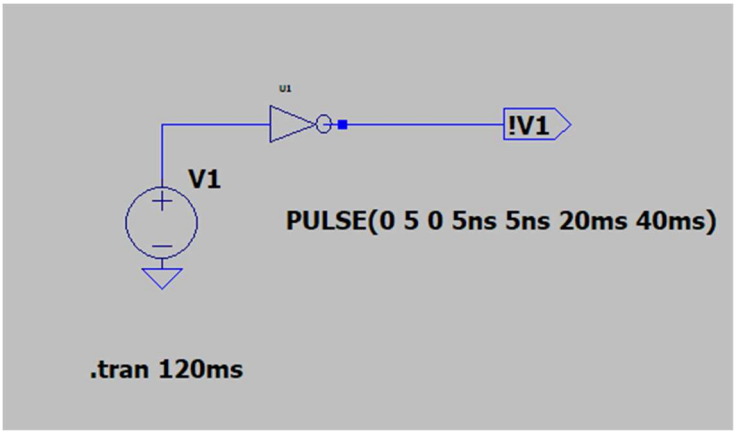
NOT

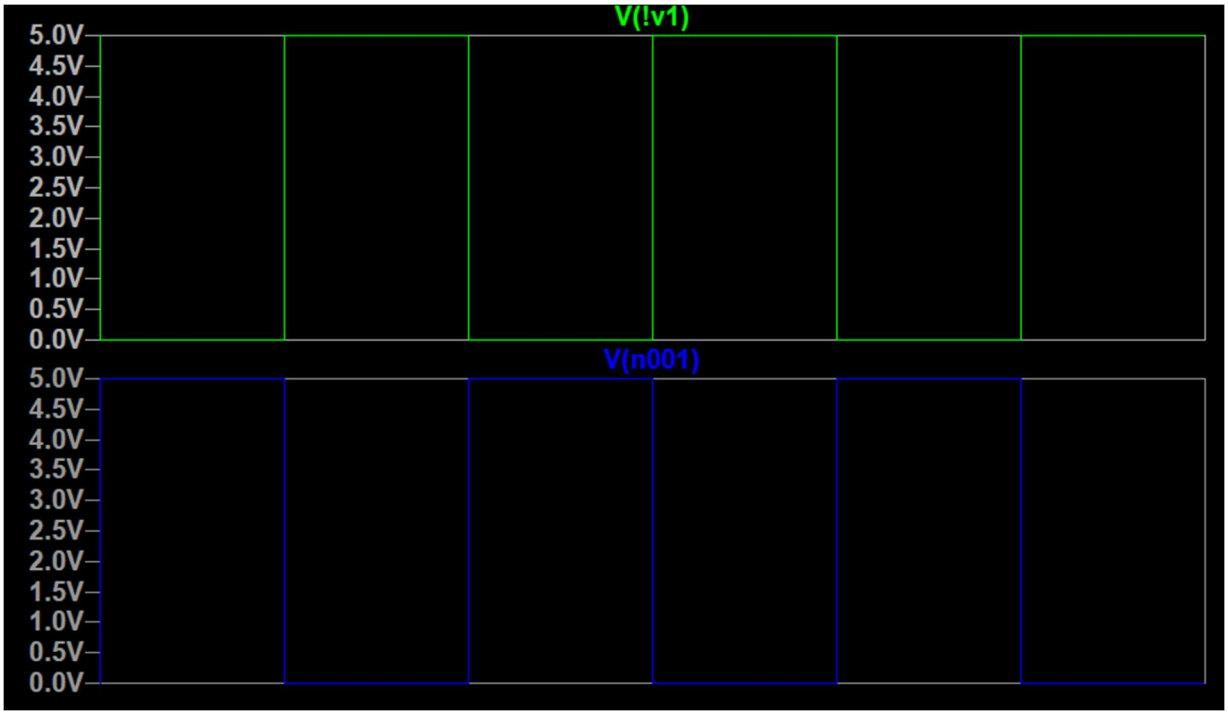
Logic symbol:



Truth table:

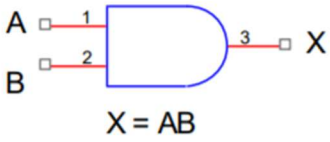
Input	Output
A	X
0	1
1	0





AND

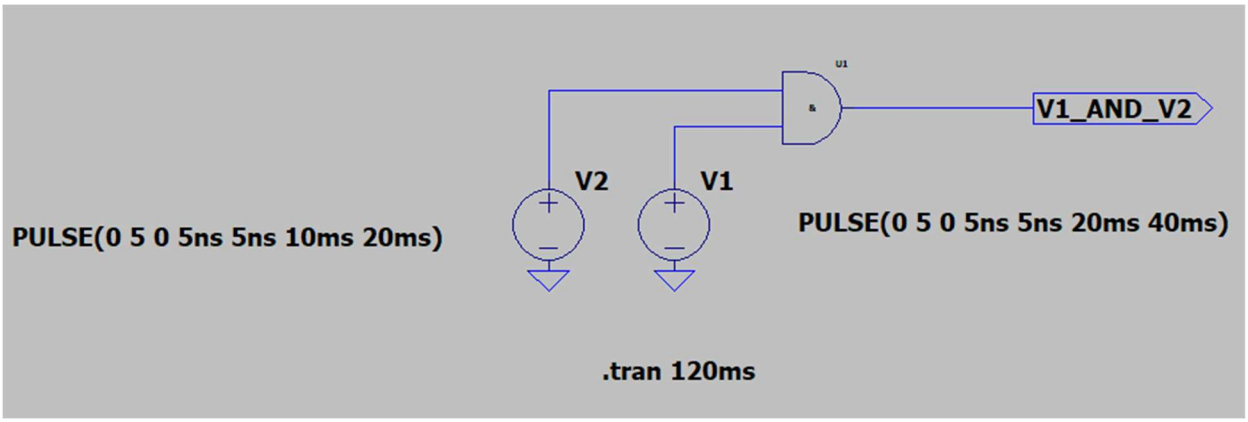
Logic symbol:

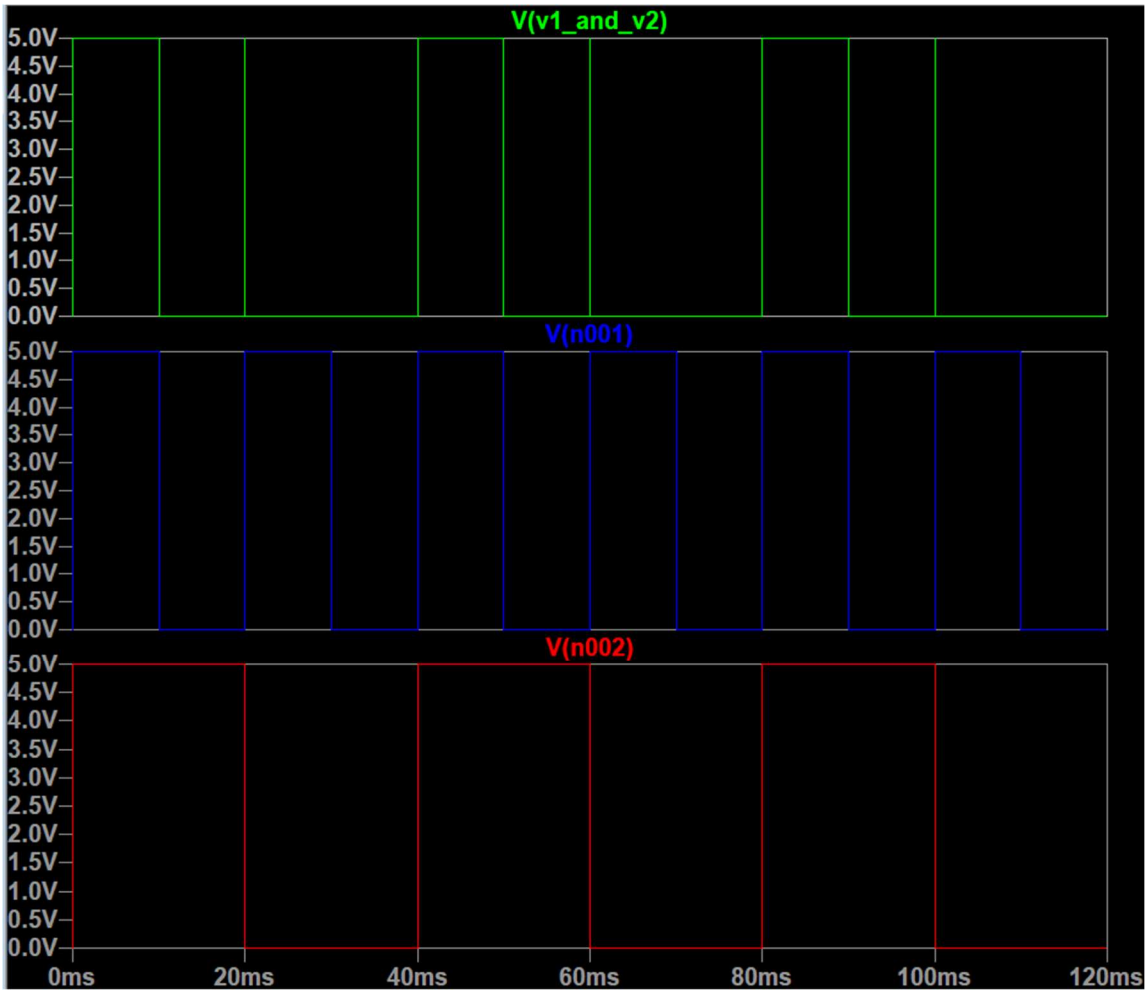


X = AB

Truth table:

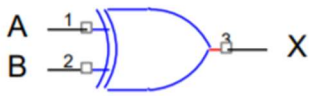
Input		Output
A	B	X
0	0	0
0	1	0
1	0	0
1	1	1





XOR

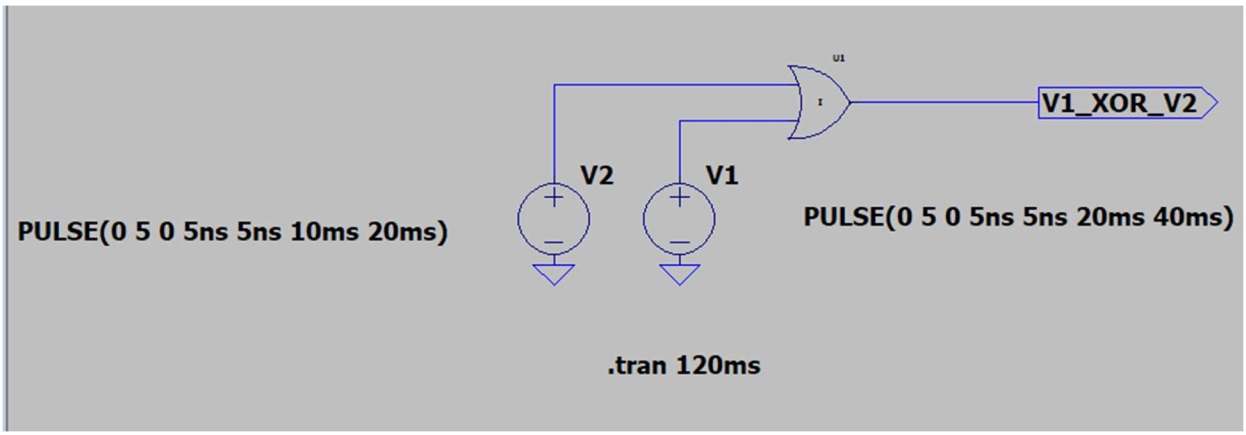
Logic symbol:

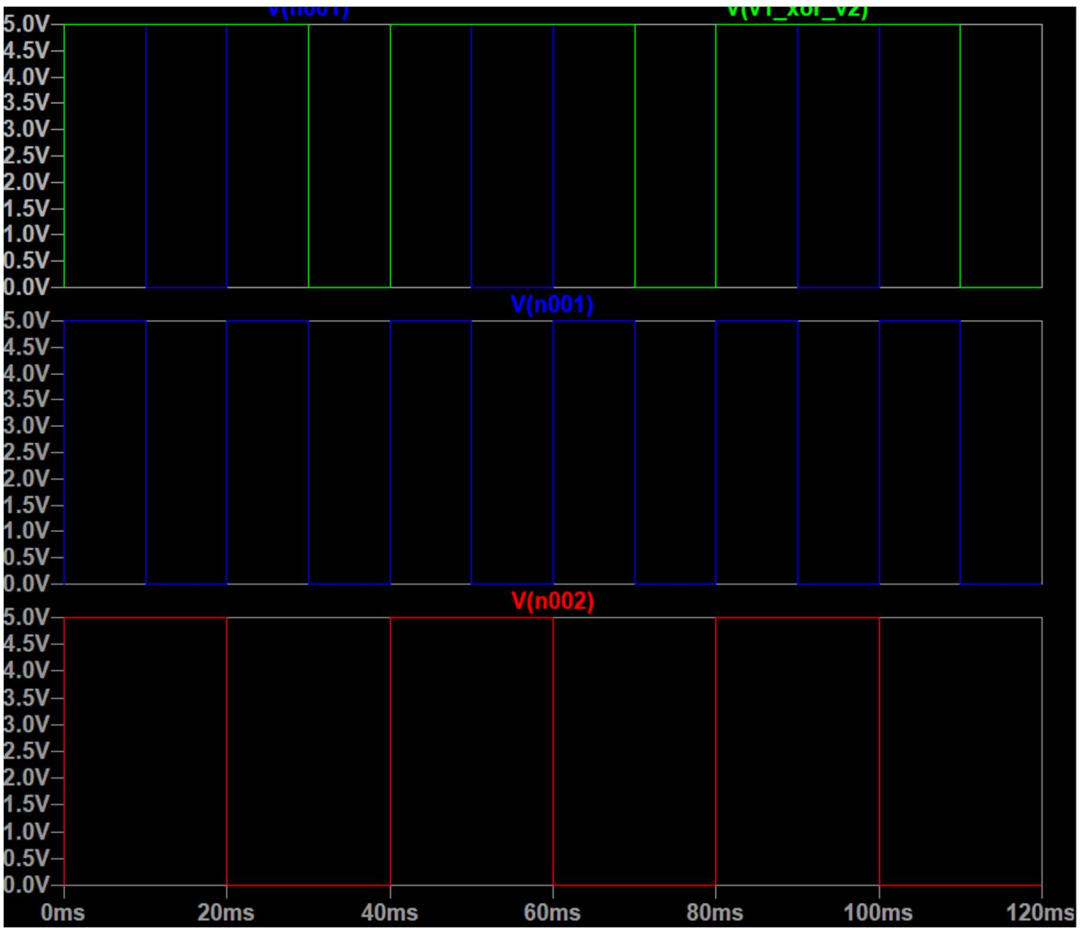


$X = A \oplus B$

Truth table:

Input		Output
A	B	X
0	0	0
0	1	1
1	0	1
1	1	0





CONCLUSION:

Verification done successfully.