

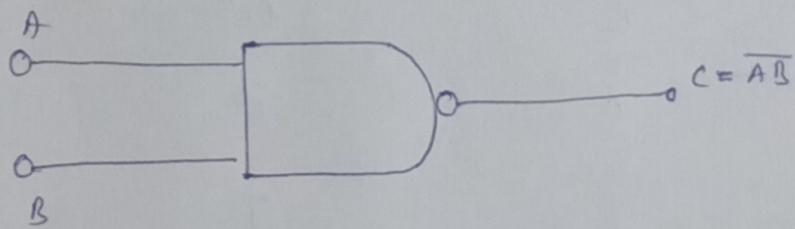
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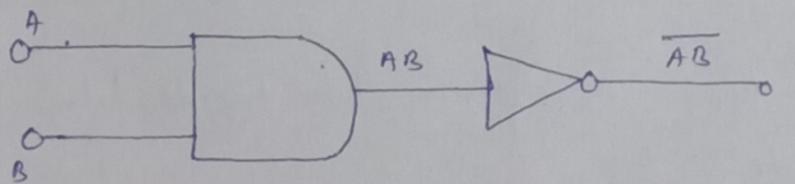
NAND gate is a combination of AND gate and a NOT gate connected together in series.

NAND gate has an output that is normally at logic level "1" and only goes "Low" to logical level "0", when all of its inputs are at logic level "1". The logic gate NAND is the reverse or complementary form of the AND gate.

NAND gate circuit diagram



NAND gate equivalence circuit



NAND Gate Truth Table

NAND Gate means "not AND gate", hence the output of the gate is just reverse of that of a similar AND gate. Hence output is only logical 0 when and only when all inputs of the gate are 1's and in other cases, the output of NAND gate is high or 1.

So, the Truth Table of a 2 input NAND gate can be represented as

Inputs		Output
A	B	$\overline{A \cdot B}$
0	0	1
0	1	1
1	0	1
1	1	0

NAND gate can have more than two inputs, like 3, 4 Input NAND gate.

It is also referred as a UNIVERSAL LOGIC GATE

NAND gate boolean expression is

$$A = (X \cdot Y)^1$$

where A = Output

X = Input

Y = Input

Mult-Input NAND gate boolean expression is

$$A = (X \cdot Y \cdot Z \cdot \dots \cdot Z_n)^1$$