

Logical Operations (NOT, AND, OR, XOR)

Tags: Boolean algebra, Logic Gate,

*In mathematical logic, **Boolean algebra** is the branch of algebra in which the values of the variables are the truth values true and false, usually denoted 1 and 0, respectively*

Logic Gate

- combination of transistors in various configurations
- an idealized or physical device implementing a **logical operation** performed on one or more binary inputs that produces a single binary output.

NOT Gate



Input A	Input B	Output (NOT A)
FALSE		TRUE
TRUE		FALSE

AND Gate



Input A	Input B	Output (A AND B)
FALSE	FALSE	FALSE
FALSE	TRUE	FALSE
TRUE	FALSE	FALSE
TRUE	TRUE	TRUE

OR Gate



Input A	Input B	Output (A OR B)
FALSE	FALSE	FALSE
FALSE	TRUE	TRUE
TRUE	FALSE	TRUE
TRUE	TRUE	TRUE

XOR(Exclusive OR) Gate



Input A	Input B	Output (A XOR B)
FALSE	FALSE	FALSE
FALSE	TRUE	TRUE
TRUE	FALSE	TRUE
TRUE	TRUE	FALSE