

Topic Page: [logic gate](#)

Summary Article: **logic gate**

From *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*

In electronics, one of the basic components used in building integrated circuits. The five basic types of gate make logical decisions based on the functions NOT, AND, OR, NAND (NOT AND), and NOR (NOT OR). With the exception of the NOT gate, each has two or more inputs.

Information is fed to a gate in the form of binary-coded input signals (logic value 0 stands for 'off' or 'low-voltage pulse', logic 1 for 'on' or 'high-voltage'), and each combination of input signals yields a specific output (logic 0 or 1). An **OR** gate will give a logic 1 output if one or more of its inputs receives a logic 1 signal; however, an **AND** gate will yield a logic 1 output only if it receives a logic 1 signal through both its inputs. The output of a **NOT** or **inverter** gate is the opposite of the signal received through its single input, and a **NOR** or **NAND** gate produces an output signal that is the opposite of the signal that would have been produced by an OR or AND gate, respectively. The properties of a logic gate, or of a combination of gates, may be defined and presented in the form of a diagram called a **truth table**, which lists the output that will be triggered by each of the possible combinations of input signals. The process has close parallels in computer programming, where it forms the basis of binary logic.

US computer scientists announced the construction of logic gates from DNA in 1997. Rather than responding to an electronic signal their DNA gates respond to nucleotide sequences.

essays

Logic Gates

Designing a timer

images

logic gate

APA

Chicago

Harvard

MLA

Logic Gate. (2018). In Helicon (Ed.), *The Hutchinson unabridged encyclopedia with atlas and weather guide*. Abington, UK: Helicon. Retrieved from https://search.credoreference.com/content/topic/logic_gate



© RM, 2018. All rights reserved.



© RM, 2018. All rights reserved.

APA

Logic Gate. (2018). In Helicon (Ed.), *The Hutchinson unabridged encyclopedia with atlas and weather guide*. Abington, UK: Helicon. Retrieved from https://search.credoreference.com/content/topic/logic_gate

Chicago

"logic gate." In *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*, edited by Helicon. Helicon, 2018. https://search.credoreference.com/content/topic/logic_gate

Harvard

Logic Gate. (2018). In Helicon (Ed.), *The Hutchinson unabridged encyclopedia with atlas and weather guide*. [Online]. Abington: Helicon. Available from: https://search.credoreference.com/content/topic/logic_gate [Accessed 20 October 2019].

MLA

"logic gate." *The Hutchinson Unabridged Encyclopedia with Atlas and Weather Guide*, edited by Helicon, 2018. *Credo Reference*, https://search.credoreference.com/content/topic/logic_gate. Accessed 20 Oct. 2019.