BASICS OF ELECTRIC CIRCUITS

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OVERVIEW

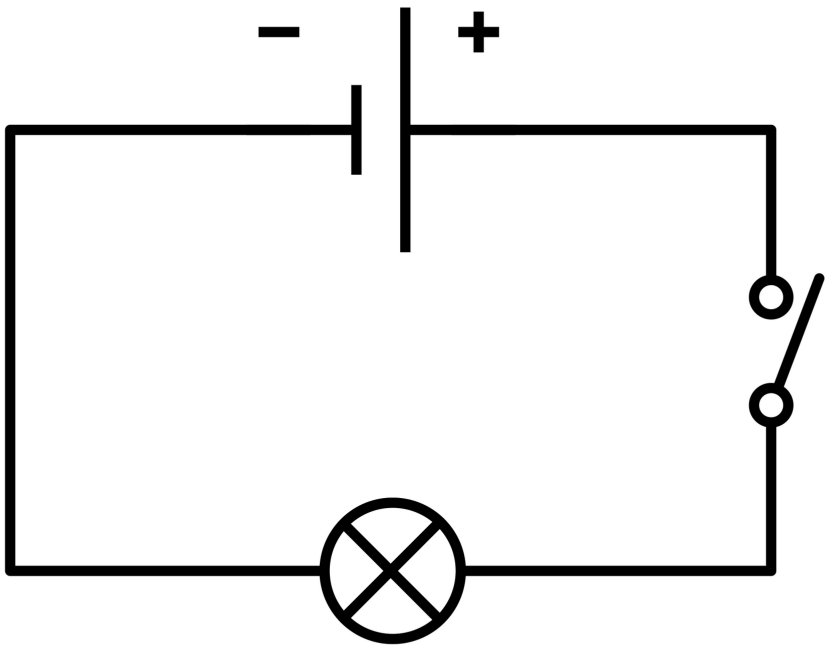
What is an electric circuit?

Electric circuit is a set of components and conductors, which form the closed electric circuit. Basic circuit consists of electric source, a conductor and a user. A battery or a generator can be the source, a wire where electricity flows is a conductor and a component with electric charge (e.g. a light bulb) is a user.

ELECTRIC SCHEME

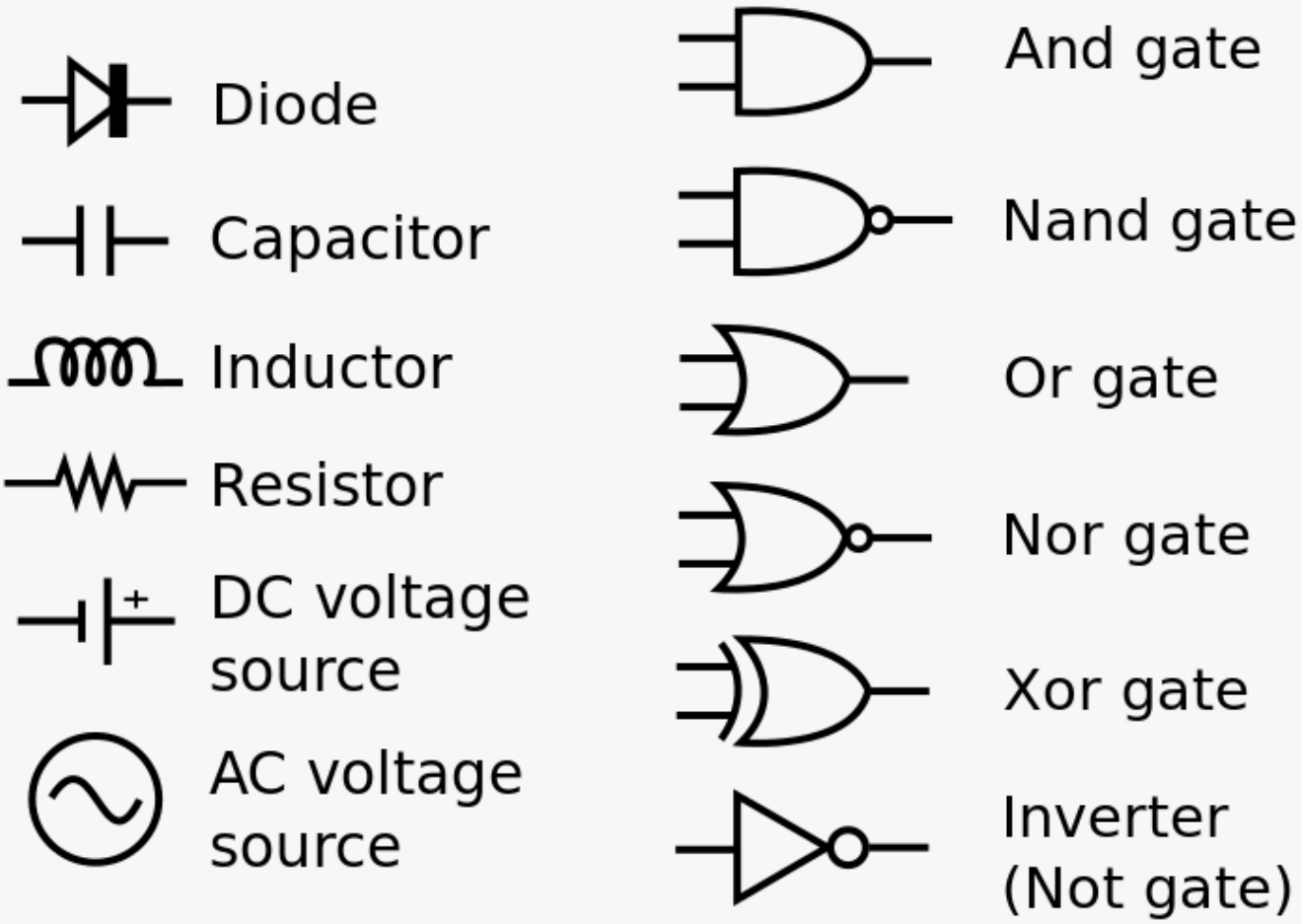
What is an electric scheme?

Schematic diagram shows how components have been connected in a circuit, and is used as a type of a map for making electronic circuits. Electric symbols that represent components and lines that represent the way of their connection are shown on these schemes. The schemes have two basic purposes.



ELECTRICAL SYMBOLS

A symbol in electronics is a pictogram which represents various electric and electronic components or functions (such as wires, batteries resistors and transistors) In a schematic diagram of an electrical or electronic circuit.



TYPES OF CIRCUITS

What are electrical symbols?

Source of electrical energy has a purpose of transforming some other form of energy (mechanical, light, chemical) into electrical, and it represents an active element in the circuit.
Receiver/users purpose is to transform electrical energy into other forms of energy – which is useful to man (light, heat, mechanical...) and all together with connectors represent passive elements in the circuit.

Simple circuits & more sources

imple electric circuit with more users and more sources represent closed chain of various elements, random number of real generators and receivers connected to the circuit. A.C. flows through all elements of the circuit and its constant value is calculated through Ohms law.

Complex Circuit

Complex electric circuit is assembled of more simple electric circuits. In addition to basic components (users, receiver and conductors) there are also knots (a dot in which multiple connectors are connected), branch (one or more elements through which flows the same electricity) and loop (closed line which consists of circuit branches). Values of electrical current in a complex circuit can be calculated applying Kirkhof’s law.