# Boolean logic

Boolean logic is named after the nineteenth-century mathematician George Boole, Boolean logic is a form of algebra in which all variable are reduced to either TRUE or FALSE. Boolean logic is among the most important principles of modern computers. Thus, most people consider Boole to be the father of computer science. As add, subtract, multiply and divide are the primary operations of arithmetic, AND, OR and NOT are the primary operations of Boolean logic. Boolean logic may be practically implemented by using electronic logic gates. A logic gate is an elementary building block of a digital circuit that regulates the current. Also a logic gate is an idealized or physical device performs a Boolean function. Seven of the most common types of logic gates are: NOT, AND, OR, NAND, NOR, XOR, and NXOR. In electronic circuits that implement logic, binary values are represented by voltage levels. In the most common convention, a binary value of one is represented by +5 V (also called HIGH), and a binary zero is represented by 0 V (also called LOW). Logical operations (also called logical functions) are functions that can be applied to one or more logic inputs and produce a single logic output.