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Truth as a Mathematical Object

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According to the well established view, in logic the notion of truth can be embodied by the notion of a *truth value*. The notion of a truth value has been explicitly introduced into logic by Gottlob Frege. Frege conceived this notion as a natural component of his language analysis where sentences, being saturated expressions, are interpreted as a special kind of names, which refer to (denote, designate, signify) a special kind of objects: truth values. Moreover, there are, according to Frege, only two such objects: *the True* (das Wahre) and *the False* (das Falsche).

In my talk I will demonstrate how this classical notion of a truth value can be generalized as to obtain a sutable foundational framework for various non-classical (many-valued) logics. It turns out that these logics can be used in computer based reasoning, and more specifically, in reasoning procedures within hierarchically organized computer networks.