

REASONING ON THE SEMANTIC WEB

The paradigm that is the basis on which the overwhelming majority of the Web still functions today, is based around **documents**.

It is a rather simple net of interconnected files –the connections and relations between them are always defined manually by humans. This means that they are arbitrary and contingent, allowing no systematic – let alone automatic – analysis that would generate new knowledge.

The meaning-based paradigm that the Semantic Web hopes to promote is on the opposite side of the spectrum.

The connections between items are not declared, but rather *inferred* from their properties on basis of assumed logical principles defined in ontologies. There can be talk of actual reference – between URIs and their referents. No such thing takes place within the traditional Web of documents, which from the machine point of view is a giant set of semantically neutral pieces whose main computable value can be reduced to similarities in sequences of characters.

Reasoning in the Semantic Web takes place on basis of these references. A single, separate resource does not carry any value for the computer, however, when it is bound by logical relations to other resources, which are in turn bound even further, there appears space for action -- for obtaining new knowledge. Given the enormous amounts of data that semantic methods are to deal with, this provides results that humans would be incapable of producing.