

Semantic Web

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Semantic web, known as the third generation of the web, is an extension of the traditional web that aims at converting the current web dominated by unstructured and semi-structured documents into a web of data. It has been originally proposed by Tim Berners-Lee with the vision of information that can be interpreted by machines, so that machines can perform most of the tedious work involved in finding, combining and acting upon information on the web not only for display purposes, but also for automation, integration, and reuse of data across various applications [W3C]. The idea goes beyond hyperlinks that define the relationship between a source page and a target one. Here are some facts about semantic web:

- In semantic web everything is treated as a resource with unique ID; Universal Resource Identifier (URI). A page, a node, a link, and even content type are considered resources.
- The most important thing is to be able to define and describe the relations among resources. Resource Description Framework (RDF), a W3C specification, is the core representation format for semantic web that aims at organizing data on the web.
- Resources are connected through relationships whose names and roles can be understood by machines not just by humans as in the case of traditional web.
- As a result of organizing data, searching data distributed all over the web becomes easier and more efficient using SPARQL Protocol and RDF Query Language (SPARQL); a SQL-like language that is used to query RDF.
- With semantic web support, the utilization and value of the website content is maximized by discovering the deep relations among data.