AN OVERVIEW OF WEB: HIERARCHY CLASSIFICATION

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Keywords:	Abstract
Web 2.0, Semantic Web, RDF, RDFS OWL, XML and URI.	The paper presents an analysis and overview of the Internet. The Internet has brought into three stages. The first stage, Web 1.0 was about connecting information and getting on the net .The second stage Web 2.0 is about share content and social networking .The next stage ,Web 3.0(Semantic Web) is to make data located anywhere on the web accessible and understandable ,both human and machines. The paper focuses on the comparison between Web 2.0 and Semantic Web and also on various aspects like: Architecture layers of RDF,RDF Schema ,Ontology,XML,XML Schema and Uniform Resource Identifier(URI). The meaning of the metadata is not relevant to the users on the Web. The URI representation is a problem on Web. In the Semantic Web, URI representation is not based on identifier or other file extension instead, it identifies another URI. The URI construction is based on "Hierarchy" and using this Hierarchy, users can easily access the web.

1 INTRODUCTION

The current Web was started by Tim Berners-Lee in the year of 1990. The purpose of starting the organization is to develop open standards So that the Web evolves in a single direction. Tim Berners-Lee visions the next generation of the World Wide Web (WWW) is the Semantic Web. He defined the Hyper Text Markup Languages (HTML) and
served up pages over the Internet using Hyper Text transfer Protocol (HTTP) .The success of the Internet and World Wide Web (WWW) has been astounding. The information available on the Web is enormous and it is interlinked with one another. The Web growing is explosively and will reach multiple times in the next few years. The searches will not yield required resources, and the searches based on statistics, will no longer give suitable pages. So current web is "lack of exactness". The Semantic is Web to overcome existing problem in web.

2 BACKGROUND

2.1 World Wide Web (WWW)

The World Wide Web is working on external mechanism .It is based on the text. But the Semantic Web which generates a machine accessible, readable meaningful construction.

2.2 Working of WWW sequence.

The web user wants definition and/or description of a particular topic. If users want to know about the Database Design', First to know about definition of Database Design, The Web provide the definition of Web. But not give additional topics such as relational database design, tables, programming, relationship, entity relationship diagram, data modeling etc. These additional topics can be obtained using search engines only. Like Google, AltaVista, Yahoo and others

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2.3 Web 2.0 and Semantic Web

The comparison between web 2.0 and semantic web is given in below (Table.1)

S.No	Web 2.0	Semantic Web
1	The Social Web	The Semantic Web
2	Read and Write Web	Read ,Write and execute Web
3	Interaction	Immersion
4	Participation	Understanding ifself
5	Connect the people	Connect the knowledge
6	People publish content that other people can consume, companies build platforms that let people publish content for other people(e.g.Flickr,YouTube,Wikipedia)	People build application that people can interact with, companies build platforms that let people publish service by leveraging the association between people or special content (e.g.FaceBook, Google Maps).
7	Web 2.0 is more about two way communications through social networking, blogging, wikis, tagging, user generated content and video.	Web 3.0 is curiously undefined .AI and the web learning what you want and delivering you a personalized web experience.
8	Blogs, Google scholar, Book search.	SemanticBlogs: Semiblog, Haystack, Semblog, structured Blogging Semantic Digital Libraries.
9	Online social networks	Semantic Social Networks: FOAF and People Aggregator

3 SEMANTIC WEB

It primarily focuses on hypertexts that use Web browsers. So the current Web is "lack of exactness". The Semantic Web is to overcome existing problem in Web. The searches will not yield required resources, and the searches based on statistics, will no longer give suitable pages. Semantic Web is the future of World Wide Web". It is an extension of the current Web in which information is given for well-defined meaning, enabling computers and user's to work in cooperation. The Semantic Web will bring structure to the meaningful content of Web pages, creating an environment where software agents roaming from page to page can readily carry out sophisticated tasks for users.
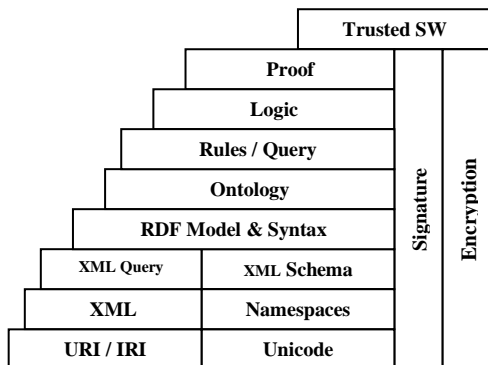

Fig 1 Semantic Web Layer

Semantic Web is the future of World Wide Web". It is an extension of the current Web in which information is given for well-defined meaning, enabling computers and user's to work in cooperation. It primarily focuses on hypertext that the use Web browsers. So the current Web is "lack of exactness". The Semantic Web is to overcome existing problem in Web

3.1. RDF and RDF Schema.

The Resources Description Frame (RDF) work is a part of World Wide Web consortium specification. The RDF defines only basic syntax for Semantic Web content, has an XML serialization that allows users to share models on the Web.

It is a general method modeling and it uses variety of syntax formats. The RDF metadata in the form of Subject-Predicate-Object expression is called RDF expression. It is particularly intended for representing metadata about Web resources, such as the title, author, and modification date of a Web page. The URIs used in the RDF, identify the resources.

The Resources Description Framework Schema (RDFS) represents classes, sub classes, properties, datatypes and instances in a Web compliant format

3.2 Web Ontology Languages (WOL)

Web Ontology Languages (OWL) is set of XML elements and attributes which have a standard meaning and are used to define to provide a common way to process the content of web information as well as to read by the computers. Ontology Language is used for construction of Semantic Web. Gruber defined ontology as "an explicit specification of conceptualization"

Borst slightly modified Gruber's definition as "An Ontology is a formal explicit specification of shared conceptualization" where

- Formal-Machine readable
- Explicit specification – concepts, properties, relation, functions, constraints, axioms are defined shared-represents a specific community's consensual knowledge.
- Conceptualization-Abstract model and simplified view of something we want to represent

The Ontologies will play an important role in the Web. OWL can be used to explicitly represent the meaning of terms in vocabularies and the relationships between those terms. This representation of terms and their interrelationships is called ontology. OWL has more facilities for expressing meaning and semantics than XML, RDF, and RDF-S, and thus OWL goes beyond these languages in its ability to represent machine interpretable content on the Web.

3.3. Activity of Semantic Web Work:
(i) A URI identifies anything.
(ii) That URI is related to the URI of the document.

3.4. Semantic Web and URI:

Given only a URI, machines and users should be able to retrieve a description about this URI from the web. Such as look- up mechanism is important to establish shared understanding of what a URI identifies. Machines should get RDF data and users should get HTML. The standard web transfer protocol, HTTP should be used URI's is very important as the link between RDF and Web. On the Semantic web, all information has to be expressed as statements about resources like the members of a company or their telephone numbers or who made this web page. The Uniform Resource Identifiers identifies recourses.

4 Semantic URI

The Semantic URI is based on Hierarchy. Ontology has been generated based on the Semantic URI-Hierarchy Classification. In the

Semantic URI, we can cutoff the Web page extensions like asp, aspx, php, xml, html, identifier and others. The semantic VET hierarchy is shown in the fig.2
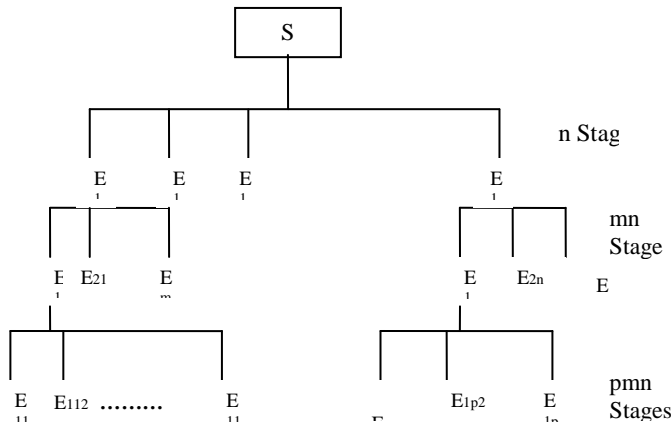
Examples of Semantic URI –Hierarchy:

www.colleges.com

www.colleges.com\india

www.colleges.com\india\tn

www.colleges.com\india\tn\drmcet

5 Conclusion

This paper highlights the three stages of web. It lists out the major differences between today's and tomorrow's web. Also this paper discusses about architecture of Semantic Web. It underlines the significance of Semantic Hierarchy Classification .Use of this method improves the security of Semantic Web by identifying the URI

6 REFERENCES

[1] The Semantic Web, A Guide to the future of XML, web

   services, and knowledge management. Michael

   C.Daconta Leo J.Obrst Kevin T.Smith

[2] http://semanticweb.org/

[3] http://www.w3.org/TR/1999/REC- rdf-
   Syntax-19990222/.

 [4] Resource Description Framework (RDF)
   Model and Syntax Specification. W3C
   Recommendation 22 February 1999.

[5]Towards the Semantic Web: Knowledge Representation in

   Dynamic, Distributed Environment. Jeffrey Douglas,

   Doctor of Philogopy, 2001.

[6] Three Thesis of Representation in the Semantic Web –

  "IEEE Knowledge Representation Formalism and

   Methods" Pages 39-46.

[7] W.N .Borst. Construction of Engineering Ontologies,

    PhD Thesis, University of Tweenty, Enschede, NL-

   Center for Telematica and Information Technology

[8] Service Naming In Large-Scale and
    Multi-Domain Network. IEEE
    Communication Surveys & Tutorial "
    Pages 42-45 2005.

[9]http://www.practicalecommerce.com/articles/464-Basic-

   Definitions-Web-1-0-Web-2-0-Web