

Clase 2 de Web Semántica

Libreta: Curso Web Semántica - Mag

Creado: 14/02/2019 8:51 p. m.

Actualizado: 15/02/2019 12:01 a. m.

Autor: Miguel Angel Niño Zambrano

URLOrigen: https://www.google.com/search?rlz=1C1AWFC_enCO811CO811&biw=1536&bih=754&ei=0t9IXLW4Ns4_Abnzq_gDQ&q=t...

Clase 14/02/2019 - Introduction to Semantic Web

- I hope you have read "El futuro de la Web".
- In the previous session, we were working in basic concepts of Semantic Web.
- We were looking the problems at the current Web
- Those problems were related to semantic interoperability.

Questions to resolve in the session:

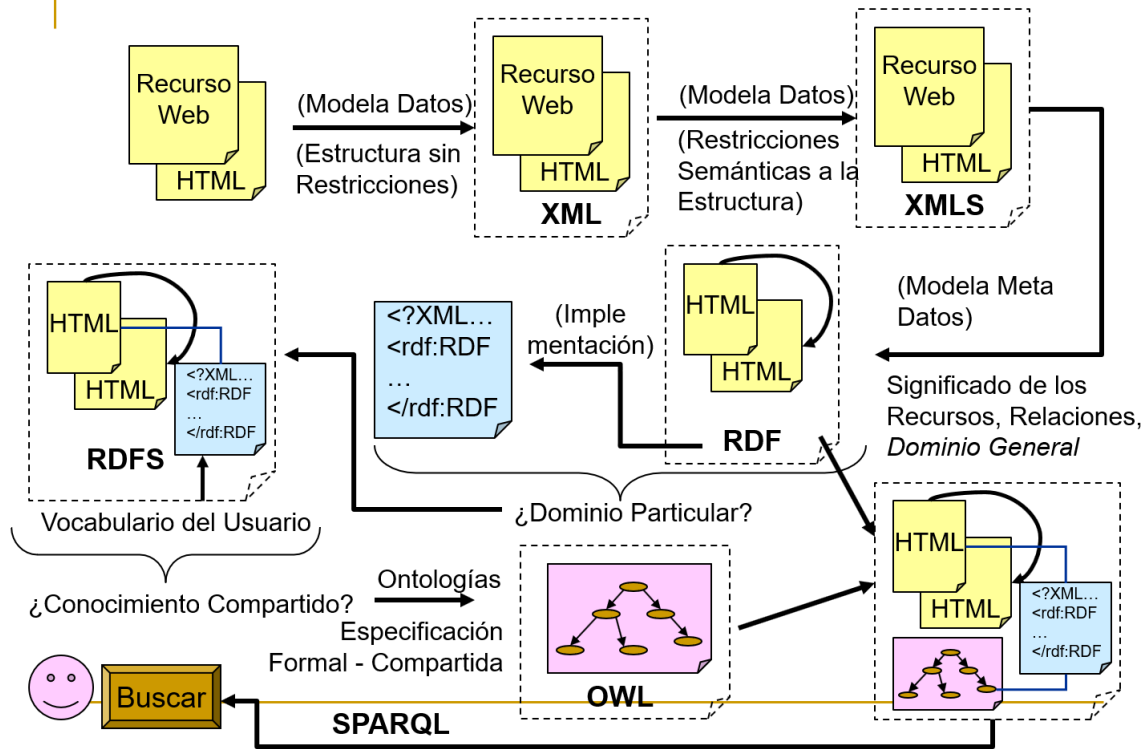
- What is the problems of the current Web?
- What is the Semantic Web for you?
- What tools the semantic web provides us to solve the problem of the current web?
- If the semantic web were a reality. What would it be like to live in that world?

Next Topic:

- Current Web Problems
 - Large amount of loose redundant information of dubious quality
 - Interoperability problems (heterogeneity and formats)
 - Cost of time in the search
 - Rapid change of information an link structures
- Semantic Web
 - Extended Web with greater meaning
 - Any user can find answers to their questions
 - Better defined information
- What is the Semantic Web for?
 - It allows to organize the large amount of information and loose data existing on the web
 - Allows you to use a method to integrate resources with different formats

- Allows interoperability between different devices and platforms
- How the semantic web works?
 - The web builds a **knowledge base** about its users
 - It has related data and information with its **meaning**
 - He is able to **understand** exactly what he is being asked to look for
 - **well-defined problems** through **well-defined operations** that were carried out on **well-defined existing data**.
- What is the cornerstone of the semantic web?
 - The metadata
 - information about internet resource
 - Internet resource
 - html, images, videos and different documents
 - Purpose of the metadata
 - Describe, identify and locate
 - Metadata requirements
 - Contain structured information
 - Understandable for machines
- What is metadata made of?
 - resource - property - value
 - subject - predicate - object
 - Recursivity is that the three concepts can be resources too
- Where can we store the metadata?
 - Office documents
 - In pdf, images, sound o video documents.
 - Folksonomies (tags)
 - <https://del.icio.us/manzamb/>
 - Microformats (hidden tangs in marked language)
 - <http://microformats.org/wiki/code-tools>
 - <http://gmpg.org/xfn/creator-es> (XFN (XHTML Friends Network))
- Metadata coding
 - XHTML (<meta name="property" content="value">)
 - Schema (Document with tags that can be used as metadata). Example: dublinCore
 - Profiles (URL with Specification). Example: FOAF
 - Relational Links (use profiles in tags: <a> <link>)
 - Custom definition of metadata (several profiles)
 - RDF files (external file with metadata)

- Technologies to define resources
 - XML (eXtensible Markup Language)
 - RDF (Resource Description Framework)
 - SPARQL (Simple Protocol and RDF Query Language)
 - OWL (Web Ontology Language)
 - RDFa (different areas)
- Explain the related technologies of the Semantic Web.



- XML
 - Define the grammar of a language
 - DTD (Document Type Definition)
 - XMLS (XML Schema)
 - <https://www.w3schools.com/xml/default.asp>
 - <https://sites.google.com/site/todoxmldtd/ejercicios/enunciados/ejercicios-xml-basicos>
- RDF
 - Allows describe web resources.
 - Can process metadata
 - Give interoperability
 - Automatized process

```

<?xml version="1.0" encoding="utf-8"?>
<rdf:RDF xmlns:dc="http://purl.org/dc/elements/1.1/"
xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-
ns#">
  <rdf:Description
    rdf:about="http://www.example.org/">
    <dc:title>Mi vida de escritora</dc:title>
  </rdf:Description>
</rdf:RDF>

```

-
- Validator: <https://validator.w3.org>
- SPARQL
 - Allows to search the resources of the Semantic Web using different data sources.
 - Examples tools:
 - file RDF: <http://www.dajobe.org/foaf.rdf>
 - SPARQL By Example: <https://www.w3.org/2009/Talks/0615-qbe/>
 - General purpose processor: <http://sparql.org/sparql.html>
 - OpenLink Virtuoso SPARQL Query Editor: <http://demo.openlinksw.com/sparql>
 - Redland Rasqal RDF Query Demonstration: <http://librdf.org/query/>
- Other Web Semantic elements
 - Controlled vocabularies: closed list of terms
 - Example: <http://www.wikipedia.com>
 - Taxonomies - Thesaurus: controlled vocabulary nested
 - Examples:
 - taxonomic search engine: <http://www.dmoz.org>
 - <https://www.visualthesaurus.com>
 - <http://wiki.dbpedia.org/>
 - SKOS: Simple Knowledge Organization System
 - Ontologies: Encompasses a representation, formal naming, and definition of the categories, properties, and relations between the concepts, data, and entities that substantiate one, many, or all domains
 - RDFa - OWL

- WebServices