

Search in e-Learning Systems with Semantic Web Technologies

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Problem:

The traditional view of learning puts most of the emphasis on face-to-face teaching and curriculum. It is very slow and expensive. Many people try to find e-Learning systems and learning objects on the Web. But that can be very difficult to find what we need with the actual search engines.

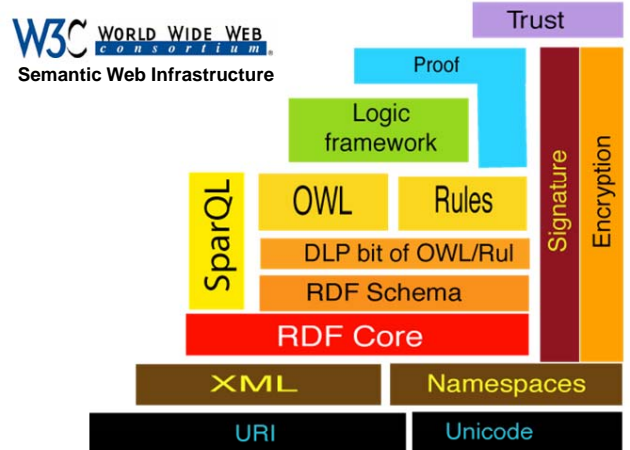
How can someone quickly find and with meaning the learning objects existing in the Web?

Proposal:

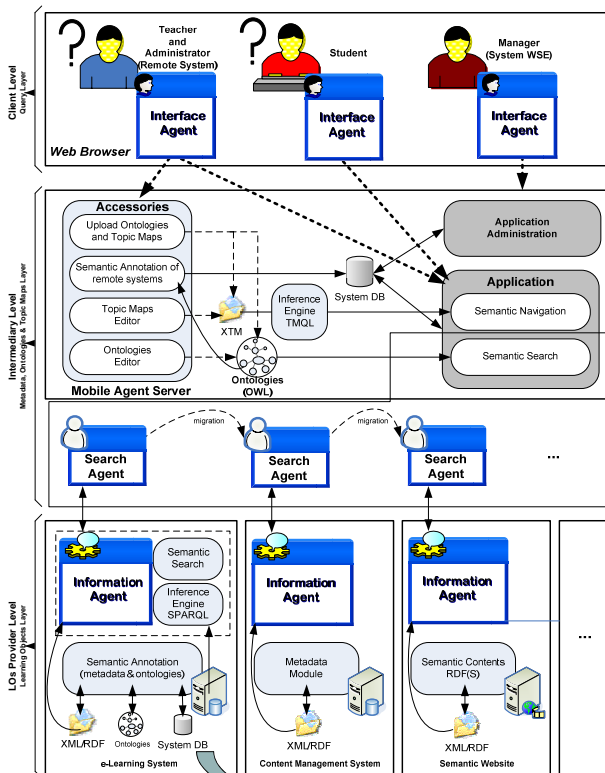
Use Semantic Web technologies and software agents to develop an search engine for the Semantic Web Infrastructure learning environments.

Project goals:

- Use Semantic Web technologies in learning environments;
- Implement search engines with Semantic Web technologies;
- Evaluate the advantages of their integration in open-source e-Learning platforms;
- Analyze the influence of these technologies in the description, organization, reutilization, sharing and interoperability of new media contents.



Semantic Web Architecture for Education:



e-Learning technologies and standards:

- Open Source e-Learning platforms: Moodle, Atutor and so one;
- Sharable Content Object Reference Model (SCORM);
- IMS Content Packing (IMS-CP);
- IMS Learning Design (IMS-LD);
- Learning Object Metadata (LOM);
- Dublin Core Metadata (DCM).

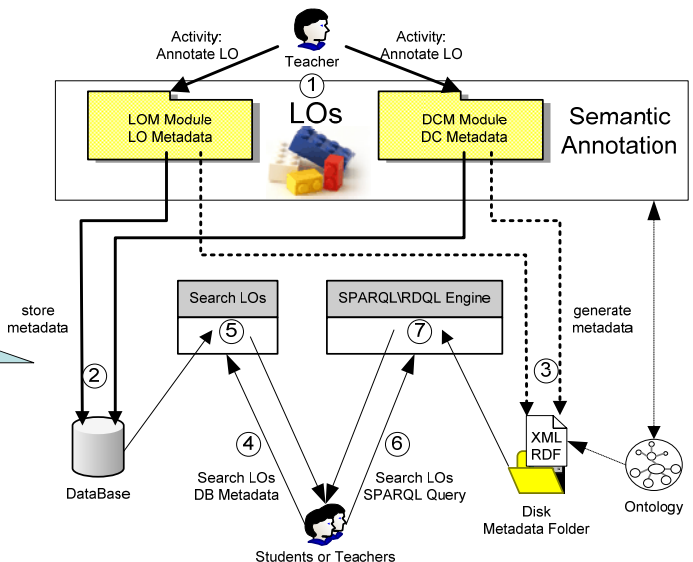
Semantic Web technologies:

- XML and metadata schemas;
- RDF (Resource Description Framework);
- Expressing Metadata in RDF/XML (LOM/RDF and DCM/RDF);
- Ontologies: Web Ontology Language (OWL) and Topic Maps (XTM);
- Rules: SWRL (Semantic Web Rule Language);
- Inference: SPARQL (RDF Query Language and Protocol).

Agent technologies:

- Voyager Edge (Recursion Software).

Semantic Web Technologies in open-source e-Learning platforms:



For more information and bibliography:

Gonçalves, V., 2007. A Web Semântica no Contexto Educativo, PhD dissertation, FEUP.