DBTech EXT* Workshop on Database Modeling and Semantic Modeling
Thessaloniki ATEI, 10-11 September 2009

Theory Part II: SPARQL and OWL, instructor José F Aldana (UMA)

- SPARQL query structure and example
- OWL: ontology, RDF/XML syntax, reasoning, constructors, axioms
- OWL:Lite, DL & FULL
- examples

Hands-on workshop part:

Student groups continue the case study of the previous day defining the ontology model

Part I: Semantic modeling using RDF

- Create a RDF schema using Protégé-owl. Same example as in the lab on Thursday.
- Populate the schema.
- Import an existing schema e.g. FOAF and inspect how it would fit to your own schema. Make the needed modifications and additions.
- Test different ways to visualize your ontology.

Part II: Semantic modeling using OWL

- Ontology design (using Protégé-owl)
- SPARQL querying using Pyrrho
- OWL – RDF and RDBMS mappings generation (homework, virtual machine for the homework, VirtualBox for Windows)

Part III: Closing Session

- Workshop summary
- Certificates of attendance

* *The DBTech EXT project has been funded with support from the European Commission. This publication reflects the views only of the author(s), and the Commission cannot be held responsible for any use which may be made of the information contained therein*

- Workshop evaluation form : http://www.webropol.com/P.aspx?id=308524&cid=52292859

The learning outcome:

- Understanding of the basic concepts of ontologies
- working knowledge on basics of RDF, SPARQL and OWL
- experiment of using an ontology authoring tool like Protégé

Day-2 Reference info & bibliography:

Wikipedia: Semantic Web. Online: http://en.wikipedia.org/wiki/Semantic_Web

Tim Berners-Lee, James Hendler and Ora Lassila: The Semantic Web. A new form of Web content that is meaningful to computers will unleash a revolution of new possibilities. Scientific American, May 2001. Available at: http://www.scientificamerican.com/article.cfm?id=the-semantic-web&page=3 (available for Scientific American subscribers, by purchase)

Antoniou, Harmelen: A Semantic Web Primer, 2nd edition, 2008.

Davies, Studer, Warren (eds.): Semantic Web Technologies. Trends and Research in Ontology-based Systems, 2006.

SPARQL Query Language for RDF (W3C Recomendation). Online available: http://www.w3.org/TR/rdf-sparql-query/

RDF Primer (W3C Recomendation). Online available: http://www.w3.org/TR/rdf-primer/

Protégé-owl. Online availabe: http://protege.stanford.edu/overview/protege-owl.html

Kaon2 (description and examples). Online available: http://kaon2.semanticweb.org/

The Pyrrho DBMS (documentation). Online available: http://www.pyrrhodb.com

Post activities:

Students will write their reports of the experiences in the workshops to the Blackboard folder of the workshop (optional)