OWLCHESTRA: Facilitating the Development and Publishing of Small-Scale Web Ontologies

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Abstract. OWLCHESTRA is a browser-based Web ontology modeler with an integrated publishing system. It eases the collaborative and distributed development of OWL and RDF Schema vocabularies. The publishing tool can be used to generate both machine-readable RDF/XML serializations and human-oriented documentation. The demonstration includes an introduction to OWLCHESTRA's graphical user interface, the modeling of a multi-namespace ontology, and the system's customizable serialization and publishing features. The integrated creation of semantic Web pages can be demonstrated as well.

Web ontologies are the backbone of semantic Web applications. Instead of trying to model a huge central ontology, the Semantic Web is expected to be built on a large number of distributed (rather small) vocabularies, which can be combined and extended. Indeed, most of the current RDF Schema and OWL vocabularies in wider use consist of less than 75 terms[1]. Among other things, the success (i. e. the ability to create a large user base) of a new ontology depends on its documentation, including a description of the terms, code examples, and links to related information. As ontologies usually change over time, it is important to update both the formal serialization and the user-oriented information. Although OWL-capable editors such as Protégé [1] can export a browsable HTML documentation, updates have to be manually initiated. Apart from that, most of the OWL implementations [2] (tracked by the Web Ontology Working Group during the Candidate Recommendation phase of OWL) require Java support and root privileges for installation.

The demonstrated toolkit tries to address the points mentioned above. It cannot compete with Java-based APIs and tools in terms of features or performance. But it may attract those developers who prefer using scripting languages for their applications. OWLCHESTRA is based on PHP and uses a MySQL database for storing ontologies, content and application data. It can be installed on standard LAMP[2] servers and is therefore particularly suitable for hosted Web server environments that don't support Java. It can be used for collaborative modeling, ontology protoyping, and for OWL demonstrations.

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[1] On January 30, 2004, none of the 15 "Hot Schemas" at schemaweb.info had more than 20 classes or more than 50 properties.

[2] LAMP stands for **L**inux, **A**pache, **M**ySql, **P**HP/**P**erl/**P**ython. OWLCHESTRA uses PHP as its scripting language.

OWLCHESTRA is still at a very early stage, but some features can already be demonstrated. Figure 1 shows the browser-based ontology modeler.
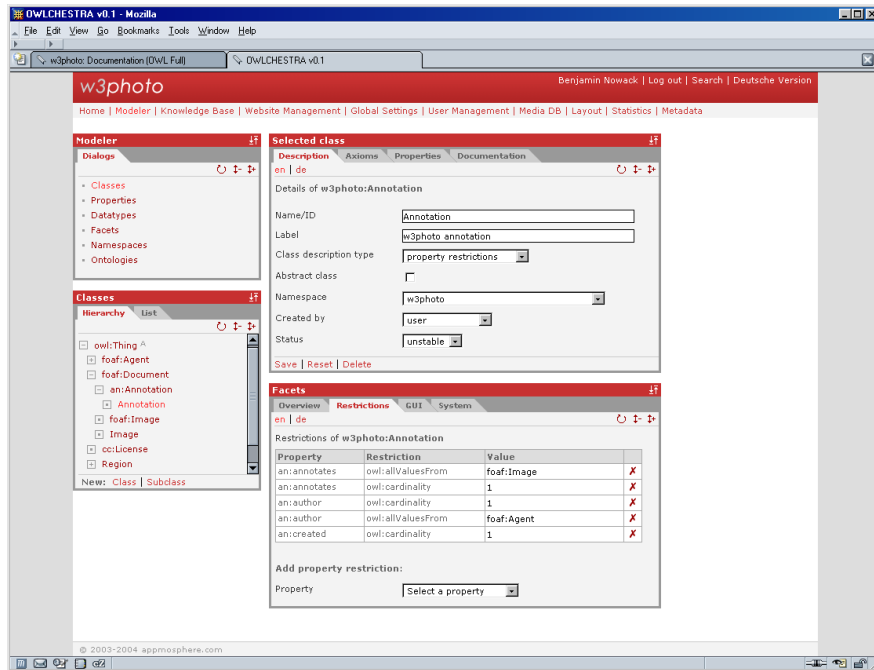

Fig. 1. Class modeler

Dynamically generated documentation can be exported in different languages and can be tailored to different audiences (e.g. RDFS and OWL developers).

Acknowledgements

OWLCHESTRA uses the *term_status* property of Dan Brickley's *SemWeb Vocab Status ontology*[3] to annotate classes and properties. The design of the editor's graphical user interface was inspired by Protégé.

References

1.   Protégé. The Protégé project. http://protege.stanford.edu, 2002.
2.   OWL Implementations.
        http://www.w3.org/2001/sw/WebOnt/impls#Implementations.

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[3] http://www.w3.org/2003/06/sw-vocab-status/ns#