



STI · INNSBRUCK

Semantic Web Services PS

Exercise Sheet 5 – 29.04.2014

Please answer the following questions. Provide your elaborated answers in a PDF or a plain text file. If you make use of references when elaborating your answers, please add the proper citations to your document. The deadline for submissions to the tutors (ioan.toma@sti2.at and jose.garcia@sti2.at) is 05th May 2014 at 20:00 CET.

Exercise 1 (12 points)

Please answer these questions to the best of your knowledge.

- a) Which novelty and advantages does Semantic Web bring comparing to Web 1.0 and Web 2.0?
- b) We learned about several concepts to represent data in the “Semantic Web” lecture. What are the conceptual differences between the data model of XML and the data model of RDF? Compare the features and application areas of supporting APIs for XML and RDF.
- c) Compare query languages XPATH and SPARQL. What are the main concepts and similarities, what are the main differences? Can you recognize relations to Relational Database Query languages such as SQL?
- d) What does OWL add on top of RDF/RDFS? In what sense is OWL DL more restrictive than RDFS?

Exercise 2 (8 points)

Find an OWL ontology, for instance using Swoogle Semantic Web search engine (<http://swoogle.umbc.edu>), and explain at least five different concepts and properties in the ontology by using the relations and axioms you can find in the ontology itself. Pick an ontology which uses some constructs not expressible in RDFS.