

Due on: Tuesday 25.07.2006 (in lecture (only definition type questions) & via email (coding type questions))

Exercise 6.1

- a) [2 points] Explain why DL is used in Semantic Web instead of FOL when FOL is more expressive?
- b) [4 points] Use DL syntax to describe the RDFS Ontology in Exercise 5.1. (use the "company.n3" available on the department website.)

Exercise 6.2

- a) [3 points] Use the RDF example from the SPARQL lecture, slide (9/21 – A Fresh Example)
 - 1) Write a SPARQL query that returns all persons having at least 2 children.
 - 2) Write a SPQRAL query that returns all persons without children.
- b) Given the following text:

Professor Lars teaches courses: "XML&Semantic Web", "Advanced Artificial Intelligence" and seminars: "Ontology Learning", "Predictive Modeling" and "Recommender Systems".

*"XML& Semantic Web" has 3 assignments: xml, rdf and owl.
"Ontology Learning" has 2 assignments: text classification and Wordnet.*

*Karen attends "XML&Semantic Web" course.
Leandro attends "Ontology Learning" seminar.
Mary attends "Predictive Modeling" seminar.*

Professor Lars supervises Karen, John and Leandro.

- 1) [2 points] Write a RDF in N3 Notation, representing the text given above.
- 2) Write SPARQL queries for the following questions. Please also provide the answer of these queries.
 - a) [2 points] Which courses and seminars does Professor Lars teach?
 - b) [2 points] How many assignments does the course "XML&Semantic Web" have?
 - c) [2 points] Which assignments do Karen, Leandro and Mary have to do?
 - d) [3 points] Which students are supervised by Professor Lars and are attending either a course or seminar?