

Deductive Databases & Knowledge Based Systems

Sheet I I

Exercise 1

Try to answer **briefly**, precisely and understandable.

1. What are upper ontologies and why are they useful?
2. What does Dublin Core do?
3. Why should we bother to define formal semantics for RDF?
4. Is RDF more expressive than Datalog? Is it more expressive than first order logic? Or is first order logic more expressive than RDF?

Exercise 2

For this exercise, you will model some aspects of the computer science department using RDF/S and RDF. Please use the XML representation of RDF. You may use any tool you like to perform this task (text editor, XML editor, RDF editor?, ontology editor?, ...)

Following concepts should be included and modeled within a RDF/S schema:

Student, Professor, Assistant, Lecture, Exam, Certificate (->Schein), Lecture, Seminar,
Lab (-> Praktikum), Room, Semester, Building

Please model important relationships between those concepts (e.g. “A student attends a lecture which is given by a Professor and an Assistant...”). Also, you may add additional concepts if it is necessary or useful.

Please use the schema to further model following entities:

Wolf-Tilo Balke, Christoph Lofi, yourself (both of you if you are a team of two), the current KBS lecture, your final exam(s) resulting in a certificate with an excellent grade

Provide a short SPARQL query to find all students who are attending the KBS lecture.