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Webbasierte Informationssysteme
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Fourth Exercise Set: OWL

Exercise 1 (OWL)

Translate the knowledge base

$\text{Human} \sqsubseteq \exists \text{hasMother.Human}$
 $\exists \text{hasMother} . (\exists \text{hasMother.Human}) \sqsubseteq \text{Grandchild}$
 $\text{Human}(\text{AnupriyaAnkolekar})$

into RDFS syntax. Is this knowledge base satisfiable?

Exercise 2 (OWL Reasoning)

Show with the help of the tableau procedure that the knowledge base

$\text{Student} \sqsubseteq \exists \text{besucht.Vorlesung}$
 $\text{Vorlesung} \sqsubseteq \exists \text{besuchtVon}(\text{Student} \sqcap \text{Fleissig})$
 $\text{Student}(\text{einStudent})$
 $\neg \text{Fleissig}(\text{einStudent})$

is satisfiable.

Exercise 3 (OWL Reasoning)

Show with the help of the tableau procedure that $(\exists R.E)(a)$ is a logical consequence of the knowledge base

$C(a)$
 $C \sqsubseteq \exists R.D$
 $D \sqsubseteq E \sqcup F$
 $F \sqsubseteq E$

Exercise 4 (OWL Reasoning)

Validate the fact that every professor is also a person from Exercise 4 on Sheet 3 with the help of the tableau procedure.

Due by: November 17, 2010 before the tutorial starts.