Übungen zu Information Retrieval, Sommersemester 2015
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Übungsblatt 2

Aufgabe 3: Predicate Logic

Klaus and Horst made the following observations during their stay in the Ruhrgebiet area:

(a) Female residents of Duisburg will only marry other residents of Duisburg. Male residents may get married to other residents of Duisburg as well as to residents of Essen. Residents of Mülheim never get married (because they always answer a very meaningful question with no).

(b) A resident of the Ruhrgebiet area lives in Essen if the father is from Duisburg and the mother is from Essen.

Describe the statements from above with predicate logic. Hint: You need to define predicates and functions.

Aufgabe 4: Datalog

A set of facts for the following predicates is given:

\[\text{male}(X): \text{Person } X \text{ is male}\]
\[\text{female}(X): \text{Person } X \text{ is female}\]
\[\text{married}(X,Y): \text{Person } X \text{ and } Y \text{ are married}\]
\[\text{child}(X,Y): \text{Person } X \text{ is person } Y\text{’s child}\]
\[\text{alive}(X): \text{Person } X \text{ is not dead (yet)}\]

Create rules for the following relationships: Daughter, brother, niece, cousin, only child (singleton), brother-in-law, male ancestor, orphan, widow.

Aufgabe 5: Web Ontology Language (OWL)

Take a look at the price comparison website Heise Preisvergleich and browse to the hardware category.

Choose a sub-category and create an OWL representation of the products including classes, literals and data types. You may use OWL2 Functional Syntax or OWL2 XML Syntax. Pay close attention to cardinalities.

1http://www.heise.de/preisvergleich/?m=1