

Lab: Jena rule language

The aim of this lab is to manipulate Jena rules language.

Jena : Writing inference rules to generate new instances

Write the following reasoning rules and to test them, write the associated SPARQL query:

1. If a person A is son of B, then A is an instance of Son.
2. If a person A is a daughter of B, then A is an instance of Daughter.
3. If a person A is son of B, then A is also a child of B
4. If a person A is daughter of B, then A is also a child of B
5. If a person A is a child of B then A is an instance of Child
6. If a person A is a child of B then B is a parent of A
7. If a person A is a mother of B, then A is an instance of Mother
8. If a person A is a father of B, then A is an instance of Father
9. If a person A is a mother of B, then A is also a parent of B
10. If a person A is a father of B, then A is also a parent of B
11. If a person A is a parent of B, then A is an instance of Parent
12. Define the object property isUncleOf as a brother of a parent
13. If a person A has parents who have nationality X, then A has nationality X
14. A person A who is older than 60 is aged (instance of Old)

General structure of the jena rules:

@prefix ns: <<http://www.owl-ontologies.com/Ontology1291196007.owl#>>.

[rulename: (<triplet>) -> (<triplet>)]

Some usefull functions: le(?x,?y), ge(?x,?y), lessThan(?x,?y), greaterThan(?x,?y)

For more details: <http://jena.sourceforge.net/inference/#rules>