

IF        E contains the triples  $(?x, \text{rdf} : \text{type}, ?u)$   
          and  $(?u, \text{rdfs} : \text{subClassOf}, ?v)$   
THEN    E also contains the triple  $(?x, \text{rdf} : \text{type}, ?v)$

which is the essential definition of the meaning of `rdfs:subClassOf`.

A final example often comes as a surprise to people first looking at RDF Schema:

IF        E contains the triples  $(?x, ?p, ?y)$   
          and  $(?p, \text{rdfs} : \text{range}, ?u)$   
THEN    E also contains the triple  $(?y, \text{rdf} : \text{type}, ?u)$

This rule states that any resource  $?y$  which appears as the value of a property  $?p$  can be inferred to be a member of the range of  $?p$ . This shows that range definitions in RDF Schema are not used to *restrict* the range of a property, but rather to *infer* the membership of the range.

The total set of these closure rules is no larger than a few dozen and can be efficiently implemented without sophisticated theorem-proving technology.

## 2.9 Summary

- RDF provides a foundation for representing and processing machine understandable data.
- RDF has a graph-based data model. Its key concepts are resource, property, statement, and graph. A statement is a resource-property-value triple.
- RDF has three standard syntaxes (Turtle, RDF/XML, and RDFa) to support syntactic interoperability.
- RDF has a decentralized philosophy and allows incremental building of knowledge, and its sharing and reuse.