

Rules for Modeling with RDFS

Type Propagation Rule (an inference pattern):

If A `rdfs:subClassOf` B and x `rdf:type` A then x `rdf:type` B

Set Intersection and Set Union

$C \subseteq A \cup B$ by making C a subclass of A and of B .

$C \supseteq A \cap B$ by making both A and B subclasses of C .

Property Transfer

Given property P in one source and property Q in another, we can say that all uses of P are to be considered uses of Q with

P `rdfs:subPropertyOf` Q .

Now we have

Given x P y infer x Q y .

Property Union

If two sources use properties P and Q similarly, a single amalgamated property R can be defined as

P `rdfs:subPropertyOf` R .

Q `rdfs:subPropertyOf` R .

Then (for resources x and y),

Given x P y or x Q y , infer x R y .

Typing Data by Usage—`rdfs:domain` and `rdfs:range`

For property P and classes D and R , we have

If P `rdfs:domain` D and x P y , then x a D .

If P `rdfs:range` R and x P y , then y a R .

Combination of Domain and Range with `rdfs:subClassOf`

Where P is a property and D and C classes,

If P `rdfs:domain` D and D `rdfs:subClassOf` C , then P `rdfs:domain` C .

If P `rdfs:range` D and D `rdfs:subClassOf` C , then P `rdfs:range` C .