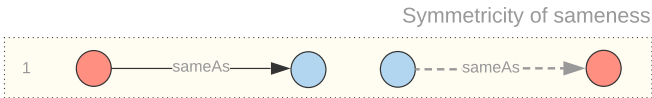
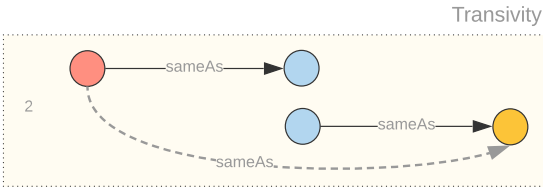


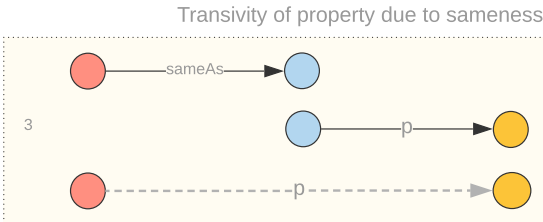
ENTAILMENT RULES - COMPACT VERSION



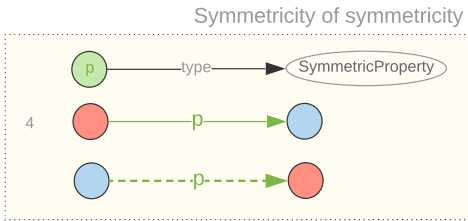
1. $v \text{ owl:sameAs } w \iff w \text{ owl:sameAs } v$



2. $u \text{ owl:sameAs } v$
 $v \text{ owl:sameAs } w \iff u \text{ owl:sameAs } w$

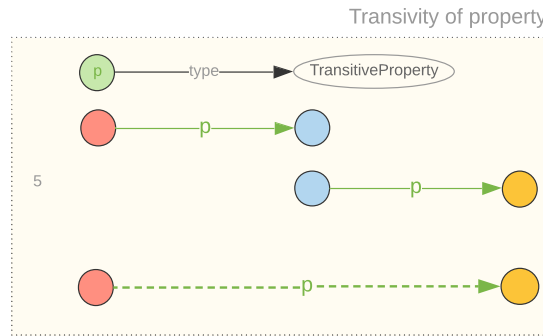


3. $v \text{ owl:sameAs } v$
 $v \text{ p } w \iff w \text{ p } v$



4. $p \text{ rdf:type } \text{owl:SymmetricProperty}$
 $v \text{ p } w \implies w \text{ p } v$

This is an extension of the RDF inference rule: A class is always a subclass of itself.



5. $p \text{ rdf:type } \text{owl:TransitiveProperty}$
 $u \text{ p } v$
 $v \text{ p } w \implies u \text{ p } w$

6. $v \text{ owl:equivalentClass } w \iff v \text{ rdfs:subClassOf } w$
 $w \text{ rdfs:subClassOf } v$

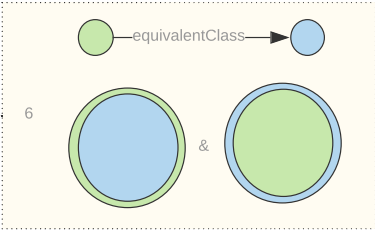
7. $p \text{ owl:equivalentProperty } q \iff p \text{ rdfs:subPropertyOf } q$
 $q \text{ rdfs:subPropertyOf } p$

8. $p \text{ rdf:type } \text{owl:FunctionalProperty}$
 $x \text{ p } v$
 $x \text{ p } w \implies v \text{ owl:sameAs } w$

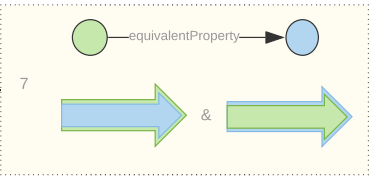
9. $p \text{ rdf:type } \text{owl:InverseFunctionalProperty}$
 $v \text{ p } x$
 $w \text{ p } x \implies v \text{ owl:sameAs } w$

10. $r \text{ owl:propertyChainAxiom } (p \text{ q})$
 $v \text{ p } w$
 $w \text{ q } x \implies v \text{ r } x$

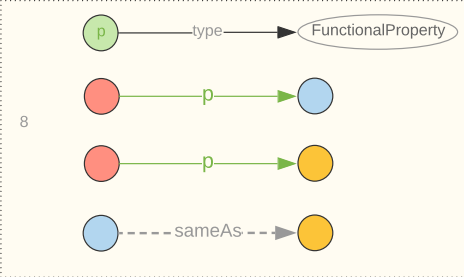
"Subclassness" of each other due to equivalence



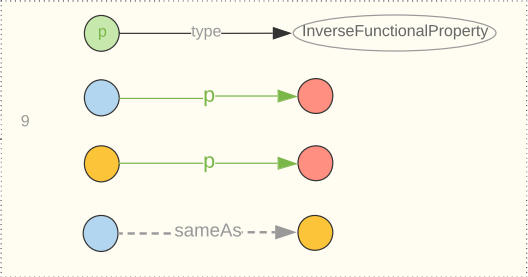
"Subpropertyness" of each other due to equivalence



Sameness of range due to "functionality"



Sameness of domain due to "inverse functionality"



Novel relationship due to property chain

