

infer: algebraic evaluation.  
 how: reasoning  $\llbracket Q \rrbracket . G \rightarrow \text{answer}$   
 graph completion  
 derivation of facts

$G \models \varphi$  "entailment"

based on a model theory  
 take an existing MT (FOL)  $\rightarrow$  HOL  
 define a new one?

FOL not sufficient for RDFs

Jun 12-10:05

Transitivity axiom

$\forall P: \text{Transitive}(P) \leftrightarrow \forall x, y, z: (P(x, y) \wedge P(y, z)) \rightarrow P(x, z)$

$\uparrow$   
 2nd order Quantifier / Variable

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DataLog Rule for rdfs:range:

$\text{holds}(Y, \text{ref:type}, C) \leftarrow \text{holds}(P, \text{rdfs:range}, C),$   
 $\text{holds}(X, P, Y)$ .

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