

rdf:Property a refs:Class .
:age a refs:Property .
:john a :Person .
:Person a refs:Class

database "ABox" describes first-order "things".
 via their properties and class memberships
 describe via 2nd order notions
 built-in, predefined :
 :age refs:domain :Person
 :capital refs:range :city

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F-logic:

berlin : City [name → "Berlin",
 pop → "..."]
 germany : County [name → "germany",
 capital → berlin,
 hasCity → {berlin, hanky, ...}]

County [name ⇒ String,
 capital ⇒ City,
 hasCity ⇒ City]

Query:
 ? - County [P ⇒ D], Q ⇒ E.
 answers: P/name D/string, Q/cap E/city

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transitivity in 2nd order:

transitive (P) \rightarrow

$$\forall x, y, z: P(x, y) \wedge P(y, z) \rightarrow P(x, z)$$

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