INF3580 – Semantic Technologies – Spring 2010

Lecture 6: RDFS and RDFS design patterns

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Today's Plan

1. Inference rules
2. RDFS basics
3. RDFS design patterns
4. Domains, ranges and open worlds

Outline

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We shall see in lecture 7 that these flaws do not carry over to OWL.

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I. Type propagation:
   - "The beetle is a car, and a car is a motorised vehicle, so ..."

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RDFS supports three principal kinds of reasoning pattern:

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RDFS in a nutshell

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III. Domain and range reasoning:
   - "Only people have birth certificates. Martin has one, therefore ..."

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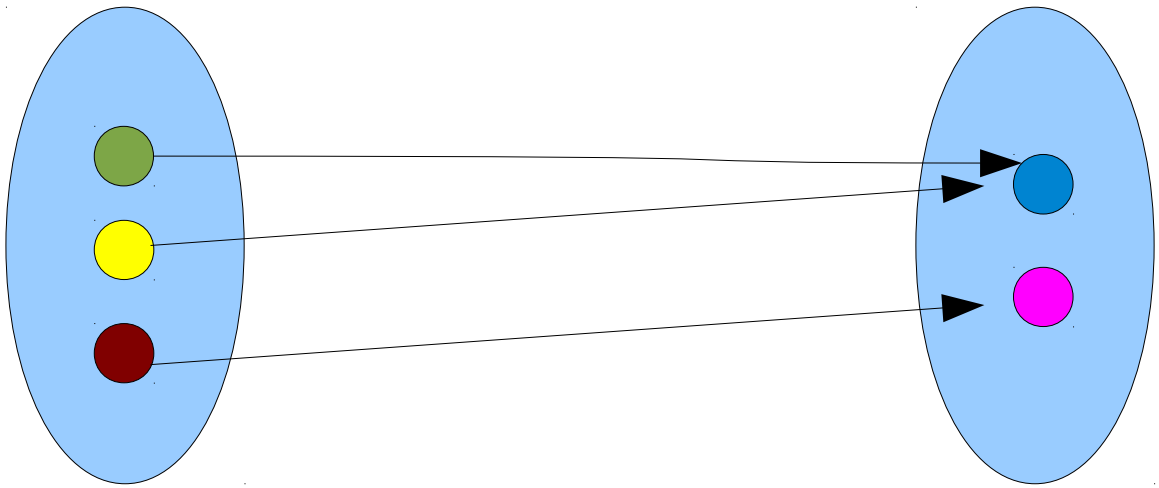

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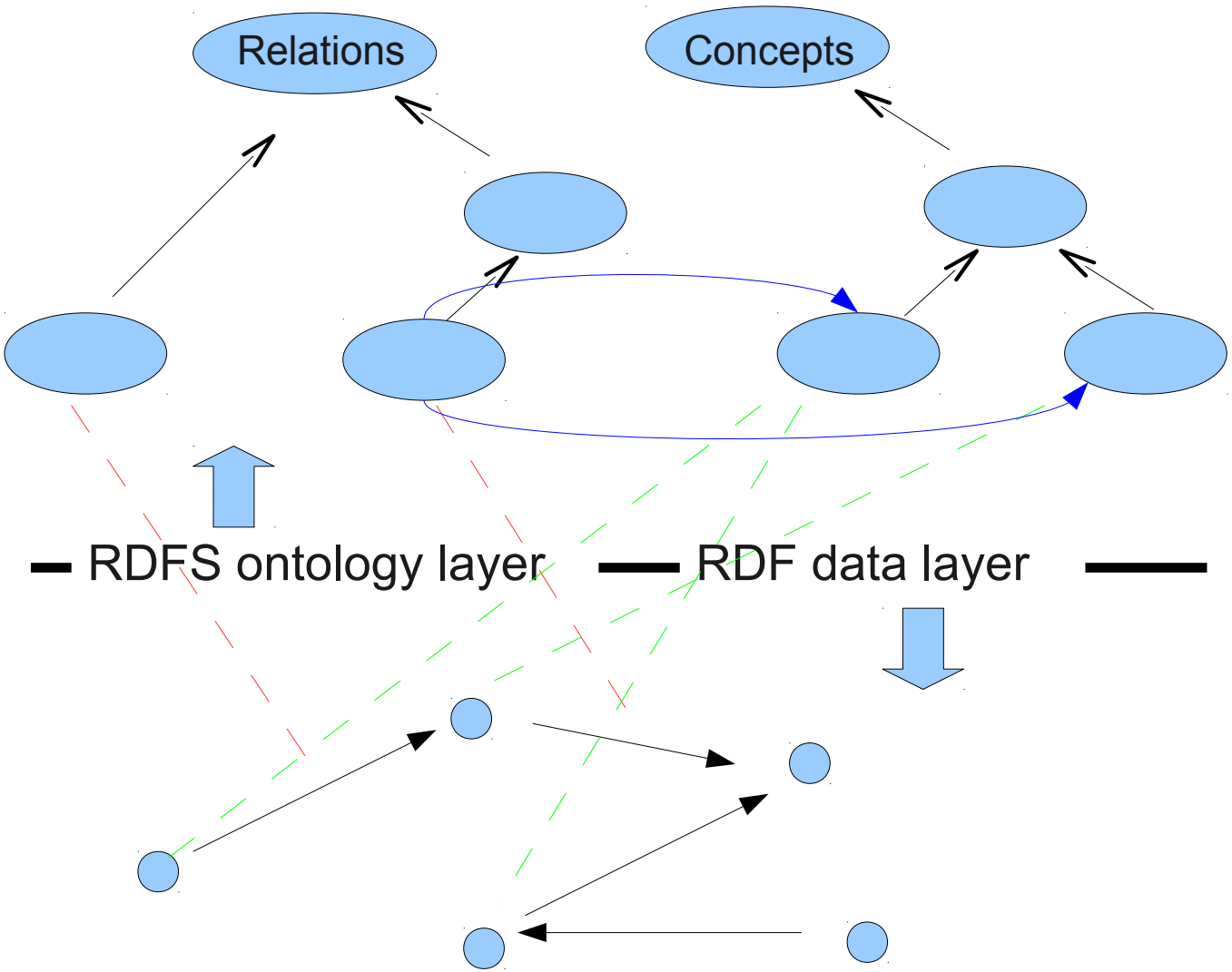
An RDFS knowledge base



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Nevertheless, this tends to be a convenient way to think about it.

Outline

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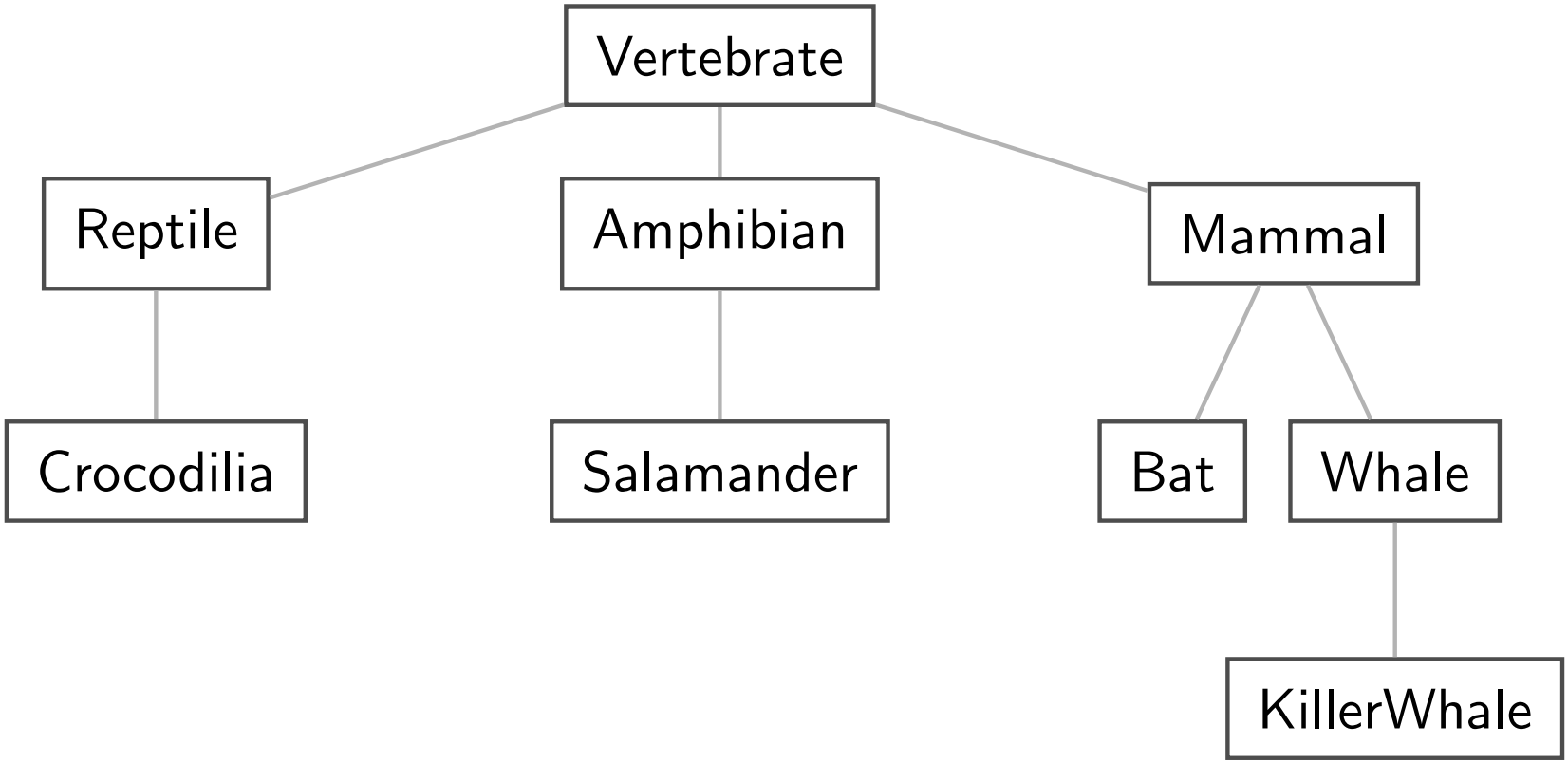

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Organising the properties

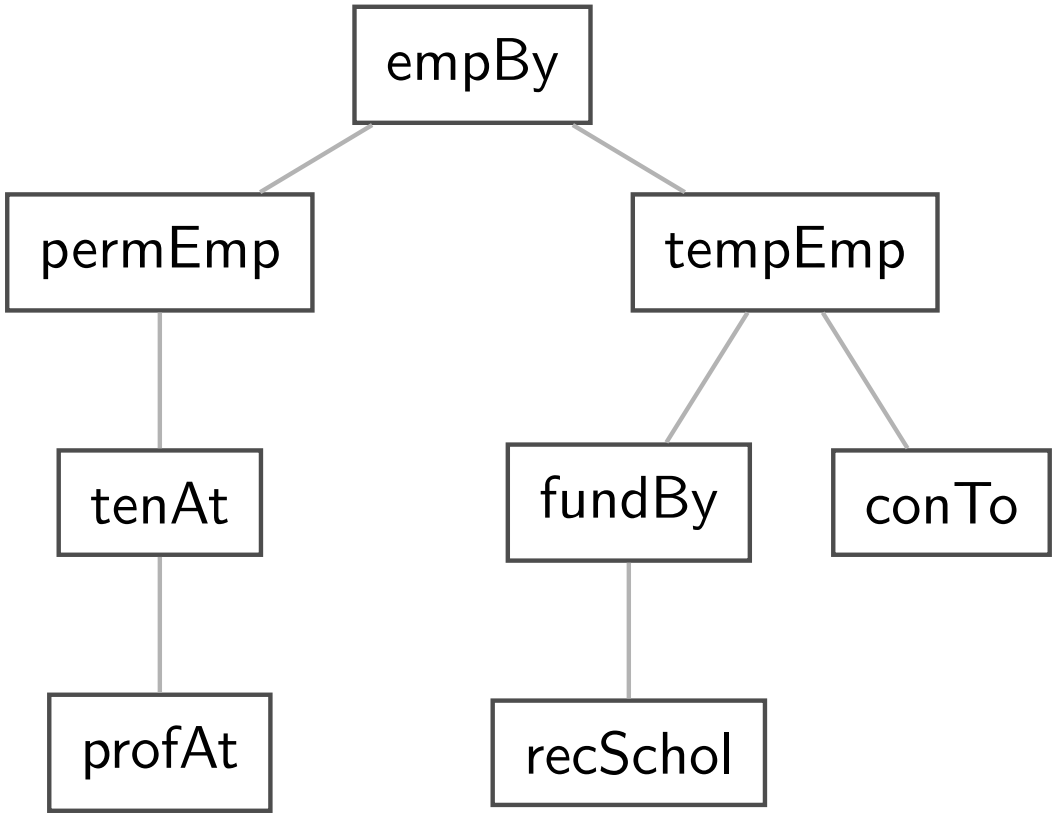

Figure: A hierarchy of employment relations

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Jenny	Jenny	
Martin		Martin
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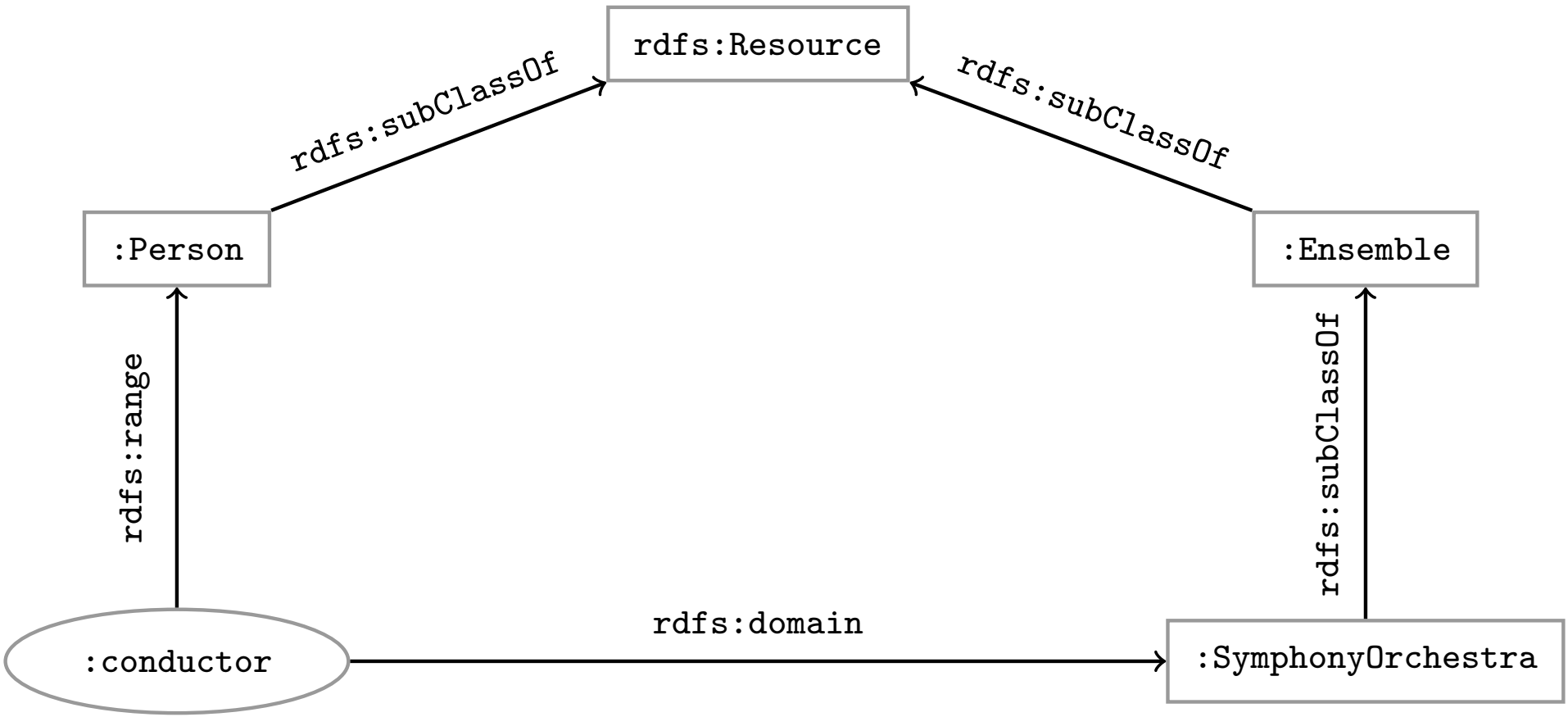

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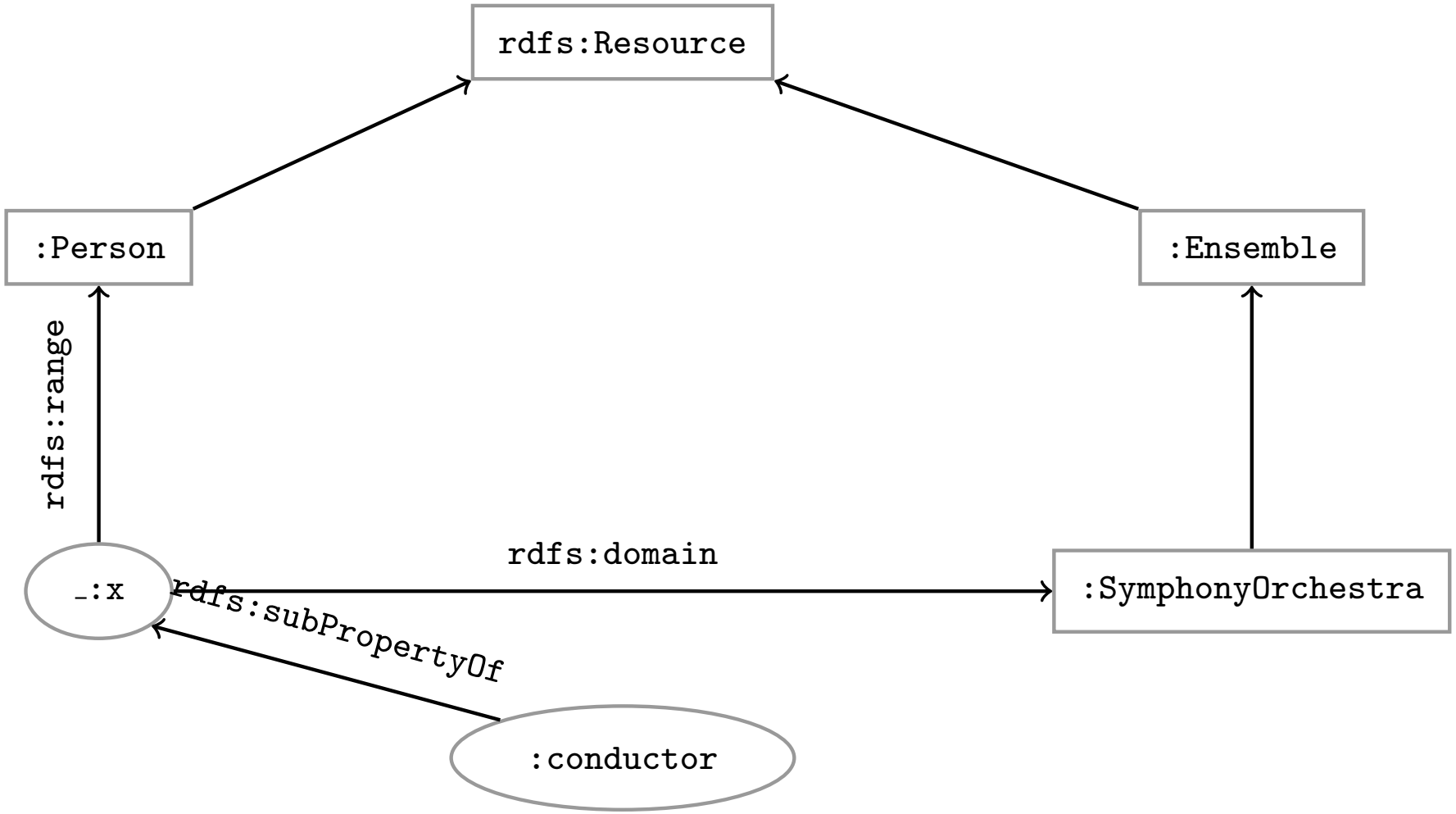
A conspicuous non-pattern

Suppose we elaborate on our music example in the following way:



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We would then want to be able to reason as follows (names abbreviated):

$$\dfrac{\dfrac{\texttt{:Oslo :vis :Abadi .} \qquad \texttt{:vis rdfs:subProp \_:x .}}{\texttt{:Oslo \_:x :Abadi .}}\,\text{rdfs7} \qquad \texttt{\_:x rdfs:domain :Person}}{\texttt{:Abadi rdfs:type :Person}}\,\text{rdfs2}$$

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Outline

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- More about that in the next lecture.

Supplementary reading

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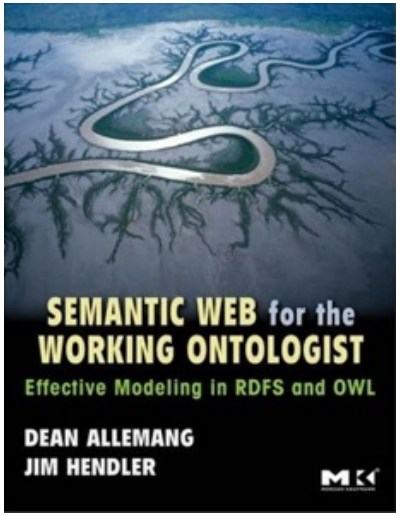
  Read chapter 6.



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- For RDFS semantics:

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