

Semantic Web

OWL – Web Ontology Language

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- 1 Motivation
- 2 Basic Ideas of OWL
- 3 The OWL Language

For *Basic Ideas of OWL* and *The OWL Language* we use the slides from Chapter 4, Section 1/2 from “A Semantic Web Primer” by G. Antoniou, F. v. Harmelen:

http://www.personal-reader.de/semweb08/slides/08_owl.ppt
(Slides 1-58)

- OWL - Web Ontology Language
 - Guus Schreiber (regarding the acronym *OWL*): *"Why not be inconsistent in at least one aspect of a language which is all about consistency?"*
- W3C Recommendation since February 10, 2004¹
- based on RDF(S)
 - instances in RDF
 - ontologies mixture of RDFS and OWL: *OWL uses RDF Schema language constructs and extends RDF Schema with additional constructs.*
- Just another Ontology language?

¹<http://www.w3.org/TR/owl-features/>

Which statements can be expressed in RDFS?

- cats and dogs are animals
- cats and dogs are animals, Hector is a dog
- only cats and dogs have a name, fishes not
- an animal can either be a dog, a cat or a fish
- all pets are dogs, cats or fishes

Which statements can be expressed in RDFS?

- cats and dogs are animals: **Yes**
- cats and dogs are animals, Hector is a dog: **Yes**
- only cats and dogs have a name, fishes not: **No**
- an animal can either be a dog, a cat or a fish: **No**
- all pets are dogs, cats or fishes: **No**

Why OWL?

Sometime expressivity of RDF Schema is not sufficient → We need the Web Ontology Language (OWL)!

Chapter 4, Section 1 from

“A Semantic Web Primer” by G. Antoniou, F. v. Harmelen

http://www.personal-reader.de/semweb08/slides/08_owl.ppt

(Slides 3-19)

Chapter 4, Section 2 from

“A Semantic Web Primer” by G. Antoniou, F. v. Harmelen

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(Slides 21-58)