Web Ontology Language

OWL 2

What is an Ontology?
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Ontology

An ontology is a set of precise descriptive statements about some part of the world (the domain of interest or the subject matter of the ontology).
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Precise Descriptive Statements?

- Avoid misunderstandings in (human) communication
- Ensure software behaves in a uniform and predictable way
- Establish software interoperability
OWL 2 is a knowledge representation language, designed to *formulate*, *exchange* and *reason* with knowledge about a domain of interest.
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OWL 2 – Basic Notions

OWL 2 is a knowledge representation language, designed to formulate, exchange and reason with knowledge about a domain of interest.

Basic Building Blocks

- Entities: elements to refer to real world objects
  ~ Classes, Properties and Individuals
- Expressions: combinations of entities to form complex descriptions
  ~ Using logical constructors, e.g. Female and Professor
- Axioms: the basic statements an OWL ontology expresses
  ~ A Lecturer is someone who teaches a Course
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OWL 2 – Basic Notions

Student

satya
ibrahim
richard
ricardo

Lecturer

lukas
sebastian

Courses

deduction-systems
logical-modeling
sw-tech
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OWL 2 – Basic Notions

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- satya
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Thing
teaches
takes
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More on the blackboard ;) And have a look at:

- https://www.w3.org/TR/owl2-overview/
- https://protege.stanford.edu/
- http://www.hermit-reasoner.com/
- Lecture material:
  https://iccl.inf.tu-dresden.de/web/Seminar:_Logical_Modelling_(SS2020)