

# Logical Modeling

## The Web Ontology Language (OWL)

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`https://iccl.inf.tu-dresden.de/web/Seminar:  
\_Logical\_Modelling\_\(SS2020\)`

# Web Ontology Language

## OWL 2

What is an 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

# Web Ontology Language

## OWL 2 – Basic Notions

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

# Web Ontology Language

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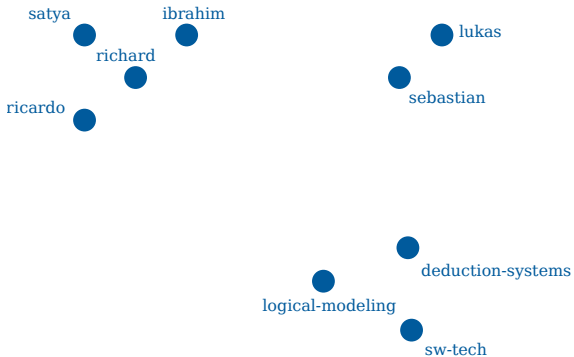
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### Basic Building Blocks

- ▶ 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

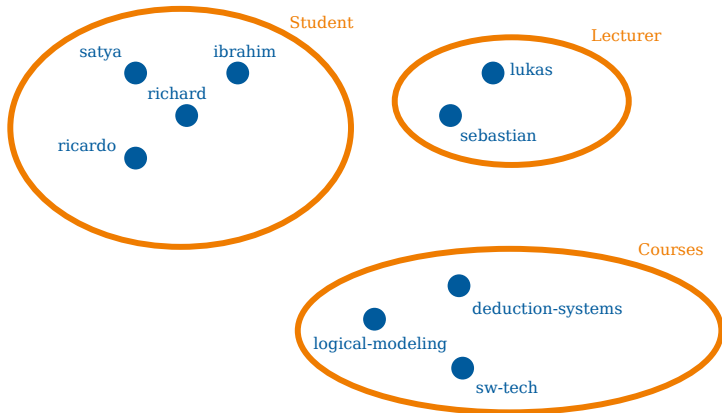
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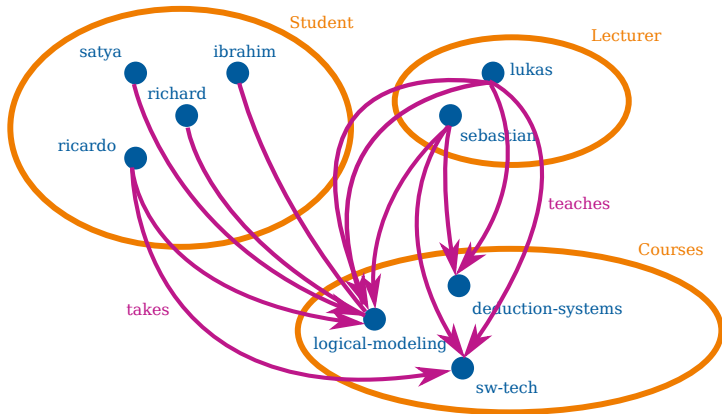
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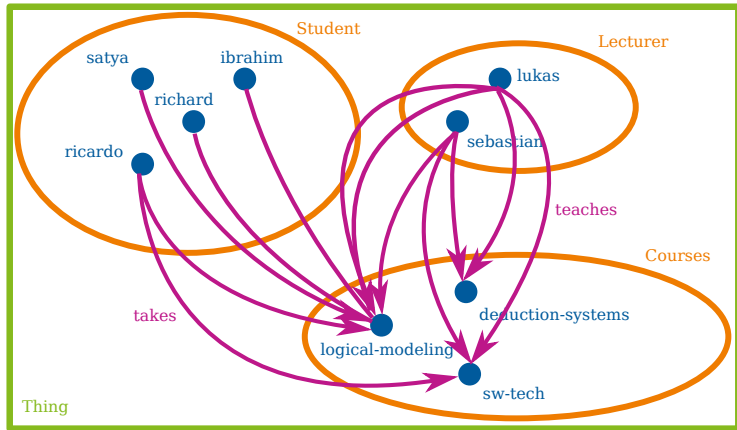
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↪ More on the blackboard ;) And have a look at:

- ▶ <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:  
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