

## 4. Ontology Modeling in OWL

The goals of this lab are

1. to use Protege to load an ontology to understand the content
2. to use a reasoner from Protege
3. to write OWL axioms in DL syntax

### 4.1 Understanding the UOBM ontology

UOBM is an expressive ontology modelling the university domain.

1. The first task is to load the ontology file 'univ-bench-dl.owl' into Protege and try to understand the ontology.
2. The second task is to start the HermiT reasoner from Protege and observe the new-inferred axioms. For instance, in the following screenshot of Figure 1, in the panel for 'Description: Director', there is an 'Employee' in the 'SubClassOf' part, which means that

$$\text{Director} \sqsubseteq \text{Employee}$$

is inferred from the ontology by the reasoner.

### Requirements

Submit a file named 'uobm-reasoning.txt', it should include at least 10 new-inferred axioms in DL syntax and explain the axioms in English. For instance, one new-inferred axiom could be

$$\text{Director} \sqsubseteq \text{Person} \sqcap \exists \text{worksFor}.\text{Organization}$$

and the English description is

A director is a person and works for some organization.

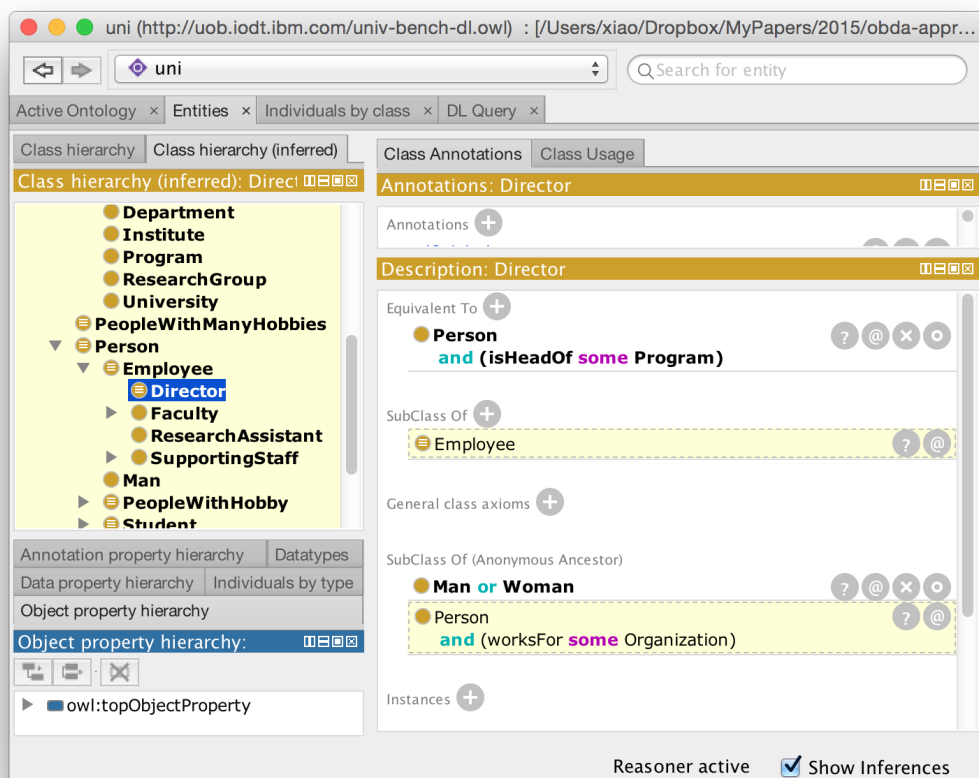


Figure 1: Protege