- WebPIE, a massively scalable inference engine for the ter Horst fragment of OWL (roughly OWL2 RL), developed by VU University Amsterdam. See http://www.few.vu.nl/~jui200/webpie.html.

Exercises and Projects

1. Read the online specification of OWL.
2. Give three different ways of stating that two classes are disjoint.
3. Express the fact that all mathematics courses are taught by David Billington only (no other lecturer may be involved). Also express the fact that the mathematics courses are exactly the courses taught by David Billington. Is the difference clear?
4. Strictly speaking, the notion of owl:SymmetricProperty was not needed in OWL because it could have been expressed in terms of other language primitives. Explain how this can be done. (*Hint:* Consider the inverse, too.)
5. Similar question for owl:FunctionalProperty and owl:NegativePropertyAssertion. Show how they can be expressed using other OWL language constructions.
6. Determine in general which features of OWL are necessary and which are only convenient but can be simulated by other modeling primitives.
7. Explain the relationship between the concepts FunctionalProperty, InverseFunctionalProperty, and InverseOf.
8. Explain why it is necessary to declare owl:Class as a subclass of rdfs:Class.
9. In section 2.7, we presented an axiomatic semantics for RDF. A similar axiomatic semantics can be developed for OWL. Define the axiomatic semantics