

of owl:intersectionOf.

10. Define the axiomatic semantics of owl:inverseOf.
11. In this exercise you are asked to develop an axiomatic semantics for cardinality restrictions.
 - (a) Define noRepeatsList. L is a “no repeats list” if there is not an element that occurs in L more than once. The concept is not part of the OWL language but will be used to count the elements for cardinality restrictions.
 - (b) Define owl:minCardinality and owl:maxCardinality as properties with domain owl:Restriction and range :NonNegativeInteger.
 - (c) Give an axiom that captures the meaning of minCardinality:
If $onProperty(R, P)$ and $minCardinality(R, n)$ then x is an instance of R if, and only if, there is a “no repeats list” L of length $\geq n$, such that $P(x, y)$ for all $y \in L$.
 - (d) Express the meaning of owl: maxCardinality in a similar way.
12. Look at some ontologies at <http://www.co-ode.org/ontologies/>.
13. Write your own ontologies in OWL2.
14. OWL2 is the latest version of the OWL language. Read the pages about the previous version (see <http://www.w3.org/2004/OWL/>) and some of the example ontologies. Compare the old OWL language to OWL2, paying attention both to commonalities and differences.
15. Compare the online documentation on OWL2 to those for the first version of OWL.