even though it would allow us to infer that because :Paul lives in dbpedia:Amsterdam, he must live in dbpedia:Netherlands as well.

4.4.5 Class Axioms

Classes are defined by asserting a resource to be of type owl:Class. There are two predefined classes that play an important role in reasoning: owl:Thing and owl:Nothing. The former is the most *general* class; every possible OWL2 individual is a member of this class, and every instance of owl:Class is a subclass of owl:Thing. The owl:Nothing class is the *empty* class; it has no members, and every instance of owl:Class is a superclass of that class. Inconsistent classes cannot have any members, and are therefore equivalent to owl:Nothing. Note that restrictions on owl:Thing have very far-reaching consequences: they hold for every class and individual in the ontology.

Subclass Relations Subclass relations are defined as in RDF Schema. For example, we can define a class :LuxuryApartment as follows:

```
:LuxuryApartment rdf:type        owl:Class ;
                 rdfs:subClassOf :Apartment .
```

Class Equivalence Equivalence of classes means that every member of a class must also be a member of the equivalent class, and vice versa. In other words, both classes cover exactly the same set of individuals. Class equivalence can be defined using an owl:equivalentClass property:

```
:Apartment    owl:equivalentClass dbpedia:Apartment .
```

This states that the :Apartment class in our apartment ontology is equivalent to the dbpedia:Apartment imported from DBPedia. Asserting an equivalence relation between classes is equivalent to asserting subclass relations in both directions: