

Exercises for

Knowledge Representation for the Semantic Web

Pascal Hitzler
Winter 2010
<http://www.semantic-web-book.org>
(January 18, 2011)

Exercise 1.1 Write the following part of an RDF document in Turtle syntax:

```
<owl:Class rdf:about="Parent">
  <owl:equivalentClass>
    <owl:Restriction>
      <owl:onProperty rdf:resource="hasChild"/>
      <owl:someValuesFrom rdf:resource="Person"/>
    </owl:Restriction>
  </owl:equivalentClass>
</owl:Class>
```

Exercise 1.2 Write the following part of an RDF document in Turtle syntax:

```
<rdf:Description rdf:about="Jack">
  <rdf:type>
    <owl:Class>
      <owl:intersectionOf rdf:parseType="Collection">
        <owl:Class rdf:about="Person"/>
        <owl:Class>
          <owl:complementOf rdf:resource="Parent"/>
        </owl:Class>
      </owl:intersectionOf>
    </owl:Class>
  </rdf:type>
</rdf:Description>
```

Exercise 1.3 Display the part of an RDF document from Exercise 1.1 as a graph.

Exercise 1.4 Write the following Turtle triple in RDF/XML syntax:

```
:Person rdfs:comment "Represents the set of all people."^^xsd:string .
```

Exercise 1.5 Write the following Turtle triples in RDF/XML syntax: ([] can be used in Turtle for a blank node.)

```
[ ] rdf:type owl:NegativePropertyAssertion ;  
 owl:sourceIndividual :Bill ;  
 owl:assertionProperty :hasDaughter ;  
 owl:targetIndividual :Susan .
```

Exercise 1.6 Model the following sentences in XML:

1. Mary is a woman.
2. Every mother is a woman.
3. Mary is John's wife.
4. Mothers are women who are also parents.
5. At least one child of a grandparent has also a child.

Exercise 1.7 Model the sentences from Exercise 1.6 in RDF.