

1. Data Modeling in RDF

The goals of this lab are

1. to model data in RDF with your own vocabulary and existing vocabularies,
2. to validate RDF data, and
3. to serialize RDF data in different formats.

1.1 Modeling Personal Data in RDF

You are asked to write an RDF document in Turtle¹ describing yourself (or a fictional person) using the FOAF vocabulary². FOAF collects a variety of terms; some describe people, some groups, some documents. Different kinds of application can use or ignore different parts of FOAF. Essentially, FOAF is used to describe basic information about people.

Your task is to represent the following data about yourself in RDF. Feel free to augment FOAF with your own vocabulary³:

1. Title (Mr, Mrs, Dr, etc)
2. First Name
3. Last Name
4. Email Address
5. Homepage
6. Photo
7. Phone Number
8. People You Know
9. Favorite Food
10. Favorite Movie

¹<http://www.w3.org/TR/turtle/>

²<http://xmlns.com/foaf/spec/>

³Your own vocabulary might be identified by the namespace URI <http://example.org/>.

Please add other kinds of personal information (min. 3 facts).

Your RDF document should finally be validated. To do so, submit it to the Sindice Web Data Inspector at <http://inspector.sindice.com>.

Finally, convert your RDF document in Turtle to other serializations such as XML and JSON using the Apache Any23 at <http://any23.org/>.

1.2 Modeling Tourism Information of Bolzano in RDF

You are given a project by the City of Bolzano to develop a Semantic Web backend for tourism in Bolzano and a Semantic Web application on top of it. The Semantic Web backend would include an RDF triple store, a SPARQL query server and an OWL reasoner engine.

Now, your first task by the city is to model in RDF tourism information of Bolzano such as hotels, attractions and restaurants⁴.

What you need to do is the following:

1. Choose to model either hotels, attractions or restaurants.
2. Depending on your choice, you can list what information should be captured. All tourism object types should have an address, a short description, a website, a phone number and photos. Furthermore, each object type can have its own specific information: star-rating for hotels, admission fees for attractions and menus for restaurants.
3. Try to reuse terms from an existing vocabulary. A good one is the Schema.org⁵.
4. Provide an RDF document containing descriptions for three tourism objects of your choice.
5. Make sure that your RDF modeling includes all the techniques you learned from the lectures such as blank nodes, language tags, literals and n -ary properties (e.g., for modeling addresses).
6. Do not forget to validate your RDF documents.

As a starting point, you might want to model the following tourism information in RDF (choose one between the hotel, restaurant or attraction):

Hotel Laurin (<http://www.laurin.it/en/hotel/>) is a 4-star hotel, located on Via Laurin 4 - 39100, Bolzano. The latitude of the hotel is 46.498378, whereas the longitude is 11.356807. The hotel facilitates free-breakfast, swimming pools, wheelchair access and is pet-friendly. To book the hotel, we can call +39 0471 311000. The hotel's review score on TripAdvisor is 91%. The hotel has a restaurant called Restaurant Laurin.

For information about Restaurant Laurin, you can look it up on its website⁶. The description of the restaurant must include the restaurant's chef, the opening hours, the phone number, the email address and the menu (at least two dishes).

⁴TripAdvisor is a good place to start looking for tourism information.

⁵<http://schema.org/>

⁶<http://www.laurin.it/en/restaurant/restaurant-laurin/>

Close to the hotel, there is an interesting tourism attraction, called the Renon Cablecar, located on Via Renon 12 - 39100, Bolzano. Its phone number is +39 0471 356100. Its description is “The new Ritten cable car: The new system with two suspension cables and one traction cable, will be particularly useful for commuters.” The tickets cost EUR 3,50 for a round-trip. The opening hours are from 06:30 a.m. to 09:00 p.m.