Lab 4 – More SPARQL

Today, we are going to play more with some of the advanced features of SPARQL. To do that, we will be working on a SPARQL query endpoint and a SPARQL update endpoint providing access to a dataset through a locally installed triple store. First, we need to install that triplestore.

T1: Install blazegraph. Go to `http://blazegraph.com`, go to the download link (bottom of the page), download and install/run the relevant package for your system (e.g. download `blazegraph.jar` and run the command line `java -jar blazegraph.jar`). If it works, you should see the interface of blazegraph at the URL `http://localhost:9999` in your browser. Note that you might have to run it in 'administrator mode' for it to work.

T2: At `https://mdaquin.github.io/d/cheese.ttl` you should find an RDF dataset in the turtle format about cheeses. Download it and open it in a text editor to see if you understand what it means. Load it into blazegraph through the UPDATE tab in the interface, selecting the `cheese.ttl` file in the file upload facility at the bottom of the page. The UPDATE tab of the interface should normally be at the address `http://localhost:9999/blazegraph/#update`.

T3: In the query tab, use SPARQL query to better understand what is in the cheese dataset. In particular :

1. What are the classes used in the dataset ?
2. What are the predicates that apply to things of type Cheese.
3. For each of those predicates, how many times are they used on average per resource of type cheese?
4. How many of the objects of triples using each of those predicates are IRIs and how many are literals?
5. What languages are used in the dataset for string literals?

T4: Unacceptably, Gruyere is written as being from France in this dataset. Using the Update endpoint (UPDATE TAB) write a query that removes the triple stating this, and write another query that insert a triple that states that it is from Switzerland.

T5: Unacceptably too, Cancoillote[1] is not included in the dataset. Write and run a SPARQL update query to add it with the relevant information.

T6: French cheese is obviously best of all, and Italian cheese are second. Write and run the insert queries to add triples of the form

```
<XX> <http://example.org/mathieustaste/rank> "first" .
```

when `XX` is a cheese from France, triples of the form

```
<YY> <http://example.org/mathieustaste/rank> "second" .
```

when `YY` is a cheese from Italy, and triples of the form

```
<ZZ> <http://example.org/mathieustaste/rank> "rest" .
```

when `ZZ` is a cheese from neither France nor Italy.

[1] `https://en.wikipedia.org/wiki/Cancoillotte`