

ISIT315

LAB WEEK 7 – Using Protégé to run SPARQL

Complete the following exercises.

Task 1

Open Protégé

Select File, Open From URL

You will see a dialog box: “Do you want to open ontology into the current window?” Select Yes.

Enter the following URI: <http://www.daml.org/2003/01/periodictable/PeriodicTable.owl>

Before you start working on the following exercises, you may want to explore the PeriodicTable ontology such as its classes, properties and individuals.

Click on SPARQL Query tab (if you do not see the tab, go to the menu, select Window, Tab and select SPARQL Query)

Enter the following SPARQL query that displays the name, symbol, atomic number and color.

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX table: <http://www.daml.org/2003/01/periodictable/PeriodicTable#>
SELECT *
    WHERE { ?element table:name ?name .
            ?element table:symbol ?symbol .
            ?element table:atomicNumber ?number .
            optional {?element table:color ?color . }
    }
order by ?element
```

Click Execute the query, what is the result?

Modify the query in Task 1 to display results:

- For elements with atomicNumber > 50
- For elements with symbols begin with A.
- For elements with atomicNumber between 50 and 100, display the output in ascending order by atomicNumber
- All elements with color yellow.
- How many elements have symbols begin with N?
- The first 10 elements in alphabetical order of names.
- The elements with the 10 highest atomic number below 200.
- All elements with colour “metallic” or “metallic grey”.
- For elements with atomicNumber less than 5 but greater than 100, display the output in ascending order by atomicNumber.

Task 2

Go to the the website <http://librdf.org/query>

Let the dataset be: <http://dig.csail.mit.edu/2008/webdav/timbl/foaf.rdf>

- a). Find all the name in this dataset.
- b). Find a list of name that contains the name John
- c). Find me all the people in Tim Berners-Lee's FOAF file that have names and email addresses. Return each person's URI, name, and email address.
- d). Find me the homepage of anyone known by Tim Berners-Lee.

Task 3

The purpose of this exercise is to use a SPARQL endpoint using SPARQL query editor.

Goto <http://bnb.data.bl.uk/flint-sparql>

Work through the sample queries given in this page

Click on the query. SPARQL query should appear in the query editor below, now click the SUBMIT button in the query editor window. You should see the output.

In this case, pay attention to the SPARQL query shown in the Query tab and learn how the SPARQL queries are written.

After you have completed the sample queries, change some of the queries given to create new queries.

Question: Do you think the sample queries shown in this page is more suitable for human-processable or machine-processable. Explain your answer.