Linked Data

Bogdan Kostov

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The goal of this seminar is to take triplified data and produce linked data. The exercises will be done over the dataset found at the SPARQL endpoit `http://onto.fel.cvut.cz:7300/repositories/osw2017-teacher`.

Ex. 1 — The first exercise is to understand the content of the dataset. Explore the dataset and determine the nature of the data.
Go to your GraphDB repository open the SPARQL editor and try the query.

```
SELECT * {
  SERVICE <http://onto.fel.cvut.cz:7300/repositories/osw2017-teacher> {
    GRAPH <http://onto.fel.cvut.cz/osw/2017/seminar-05/people>{
      ?s ?p ?o.
    }
  }
}
```

Query to see all the properties in the dataset.

```
SELECT DISTINCT ?p {
  SERVICE <http://147.32.84.199:7300/repositories/osw2017-teacher> {
    GRAPH <http://onto.fel.cvut.cz/osw/2017/seminar-05/people>{
      ?s ?p ?o.
    }
  }
}
```

Ex. 2 — Based on the findings from the previous exercise, determine a suitable shared RDF vocabulary/ontology to represent the data. Visit

- https://protegewiki.stanford.edu/wiki/Protege_Ontology_Library
- http://lov.okfn.org/dataset/lov/

Ex. 3 — Generating Resources URIs. What are the resources in the data? Design a URI pattern and use in construct clause. You might need the some of the SPARQL functions ENCODE_FOR_URI, IRI1, CONCAT (see `https://www.w3.org/TR/sparql11-query/`). To do this fix the following query.

```sparql
        PREFIX ex: <http://example.com/resource/>

  CONSTRUCT{
                ?resource a voc:type.
  }


  } WHERE {
    SERVICE <http://147.32.84.199:7300/repositories/osw2017-teacher> {
      GRAPH <http://onto.fel.cvut.cz/osw/2017/seminar-05/people>{
        ?row ex:rowNumber ?rowNumber;
        #ex:p1 ?p1;
      }
    }
    #BIND (IRI(concat("http://onto.fel.cvut.cz/resource/",?p1) as ?resource )
  }
```

Ex. 4 — Extend the query from the previous exercise to transform all the data according to the selected vocabulary.

Ex. 5 — Link generated resources to existing resources (hint `https://onto.fel.cvut.cz/ontologies/page/kbss/people/bogdan-kostov`)

Ex. 6 — Check what kind of URI pattern you used for your resources, e.g. 303 or hash URIS? Check also the URI pattern of linked resources, e.g. `https://onto.fel.cvut.cz/ontologies/page/kbss/people/bogdan-kostov`?

1 Relevant References

- Friend Of A Friend `http://xmlns.com/foaf/0.1/`