

WEB SEMANTICS

VELIB DATA PROJECT



Project By:

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Year 4 IBO 2

Lyon_velos_data.owl - Notepad

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```
<?xml version="1.0" encoding="utf-8" ?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:ns0="http://www.owl-ontologies.com/bike_details.owl#">

  <rdf:Description rdf:about="http://www.owl-ontologies.com/10013">
    <ns0:available_bikes rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">12</ns0:available_bikes>
    <ns0:available_docks rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">48</ns0:available_docks>
    <ns0:capacity rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">60</ns0:capacity>
    <ns0:coordinate rdf:datatype="http://www.w3.org/2001/XMLSchema#float">4.8871044052E1</ns0:coordinate>
    <ns0:coordinate rdf:datatype="http://www.w3.org/2001/XMLSchema#float">2.36610446199E0</ns0:coordinate>
    <ns0:name rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Alibert - Jemmapes</ns0:name>
    <ns0:status rdf:datatype="http://www.w3.org/2001/XMLSchema#string">OUI</ns0:status>
    <ns0:ville rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Paris</ns0:ville>
  </rdf:Description>

  <rdf:Description rdf:about="http://www.owl-ontologies.com/6108">
    <ns0:available_bikes rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">8</ns0:available_bikes>
    <ns0:available_docks rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">9</ns0:available_docks>
    <ns0:capacity rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">17</ns0:capacity>
    <ns0:coordinate rdf:datatype="http://www.w3.org/2001/XMLSchema#float">4.88470815908E1</ns0:coordinate>
    <ns0:coordinate rdf:datatype="http://www.w3.org/2001/XMLSchema#float">2.32137478888E0</ns0:coordinate>
    <ns0:name rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Saint-Romain - Cherche-Midi</ns0:name>
    <ns0:status rdf:datatype="http://www.w3.org/2001/XMLSchema#string">OUI</ns0:status>
    <ns0:ville rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Paris</ns0:ville>
  </rdf:Description>

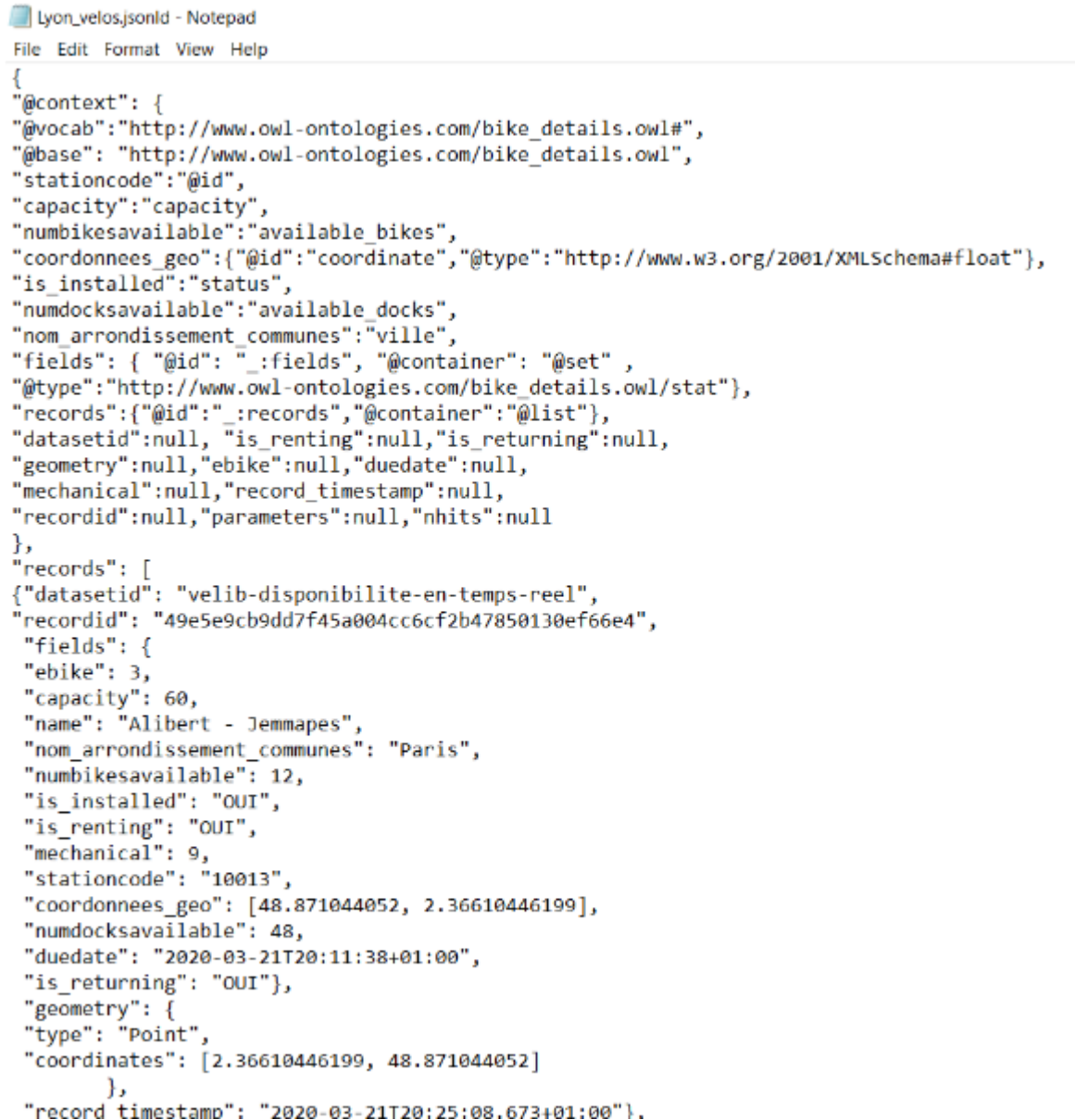
  <rdf:Description rdf:about="http://www.owl-ontologies.com/33006">
    <ns0:available_bikes rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">12</ns0:available_bikes>
    <ns0:available_docks rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">20</ns0:available_docks>
    <ns0:capacity rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">31</ns0:capacity>
    <ns0:coordinate rdf:datatype="http://www.w3.org/2001/XMLSchema#float">4.89103987576E1</ns0:coordinate>
    <ns0:coordinate rdf:datatype="http://www.w3.org/2001/XMLSchema#float">2.38513559103E0</ns0:coordinate>
    <ns0:name rdf:datatype="http://www.w3.org/2001/XMLSchema#string">André Karman - République</ns0:name>
    <ns0:status rdf:datatype="http://www.w3.org/2001/XMLSchema#string">OUI</ns0:status>
    <ns0:ville rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Aubervilliers</ns0:ville>
  </rdf:Description>

  <rdf:Description rdf:about="http://www.owl-ontologies.com/11037">
    <ns0:available_bikes rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">12</ns0:available_bikes>
    <ns0:available_docks rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">26</ns0:available_docks>
    <ns0:capacity rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">38</ns0:capacity>
    <ns0:coordinate rdf:datatype="http://www.w3.org/2001/XMLSchema#float">4.88678724847E1</ns0:coordinate>
```

Fig 1.2 : Owl Data from Protege

Part 2:

We have converted the data into JSON-LD using the parameter @context, @vocab and @base and other parameters according to our protégé ontology.



```
Lyon_velos.jsonld - Notepad
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{
  "@context": {
    "@vocab": "http://www.owl-ontologies.com/bike_details.owl#",
    "@base": "http://www.owl-ontologies.com/bike_details.owl",
    "stationcode": "@id",
    "capacity": "capacity",
    "numbikesavailable": "available_bikes",
    "coordonnees_geo": { "@id": "coordinate", "@type": "http://www.w3.org/2001/XMLSchema#float" },
    "is_installed": "status",
    "numdocksavailable": "available_docks",
    "nom_arrondissement_communes": "ville",
    "fields": { "@id": "_:fields", "@container": "@set",
    "@type": "http://www.owl-ontologies.com/bike_details.owl/stat" },
    "records": { "@id": "_:records", "@container": "@list" },
    "datasetid": null, "is_renting": null, "is_returning": null,
    "geometry": null, "ebike": null, "duedate": null,
    "mechanical": null, "record_timestamp": null,
    "recordid": null, "parameters": null, "nhits": null
  },
  "records": [
    { "datasetid": "velib-disponibilite-en-temps-reel",
      "recordid": "49e5e9cb9dd7f45a004cc6cf2b47850130ef66e4",
      "fields": {
        "ebike": 3,
        "capacity": 60,
        "name": "Alibert - Jemmapes",
        "nom_arrondissement_communes": "Paris",
        "numbikesavailable": 12,
        "is_installed": "OUI",
        "is_renting": "OUI",
        "mechanical": 9,
        "stationcode": "10013",
        "coordonnees_geo": [48.871044052, 2.36610446199],
        "numdocksavailable": 48,
        "duedate": "2020-03-21T20:11:38+01:00",
        "is_returning": "OUI",
        "geometry": {
          "type": "Point",
          "coordinates": [2.36610446199, 48.871044052]
        }
      },
      "record_timestamp": "2020-03-21T20:25:08.673+01:00" }
  ]
}
```

Fig 2.1

NOTE: Similarly we have modified the data's for Paris and Toulouse as well

Part 3:

Web Application:

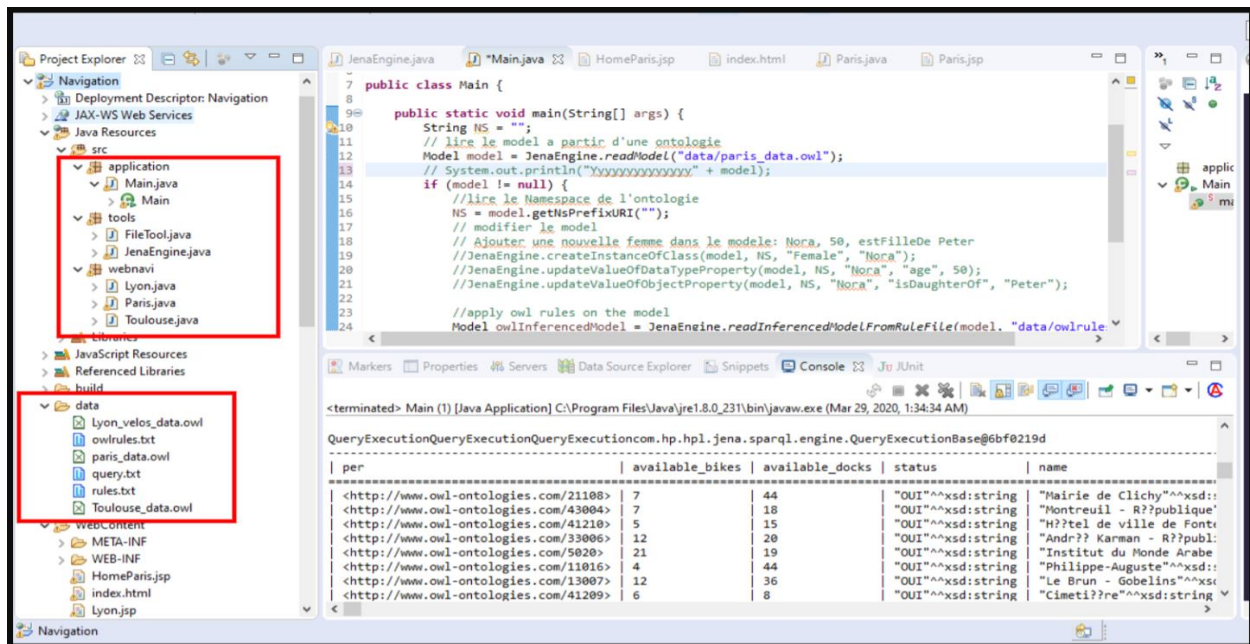


Fig 3.1

Part 4:

Displaying the Web Application

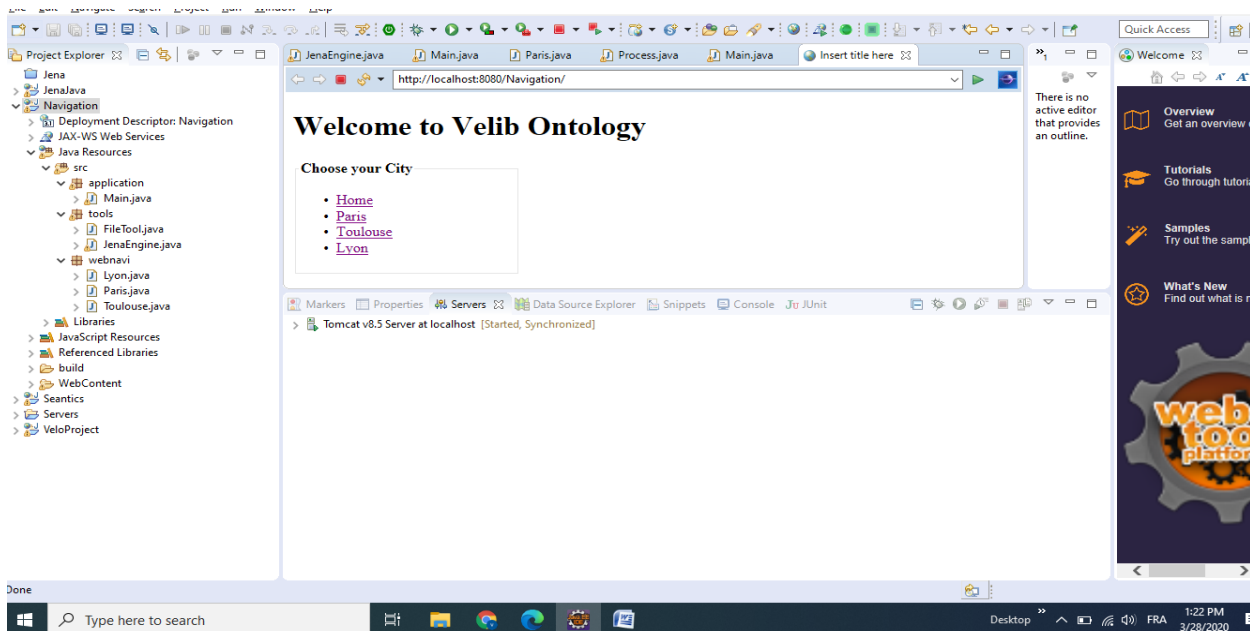


Fig 4.1

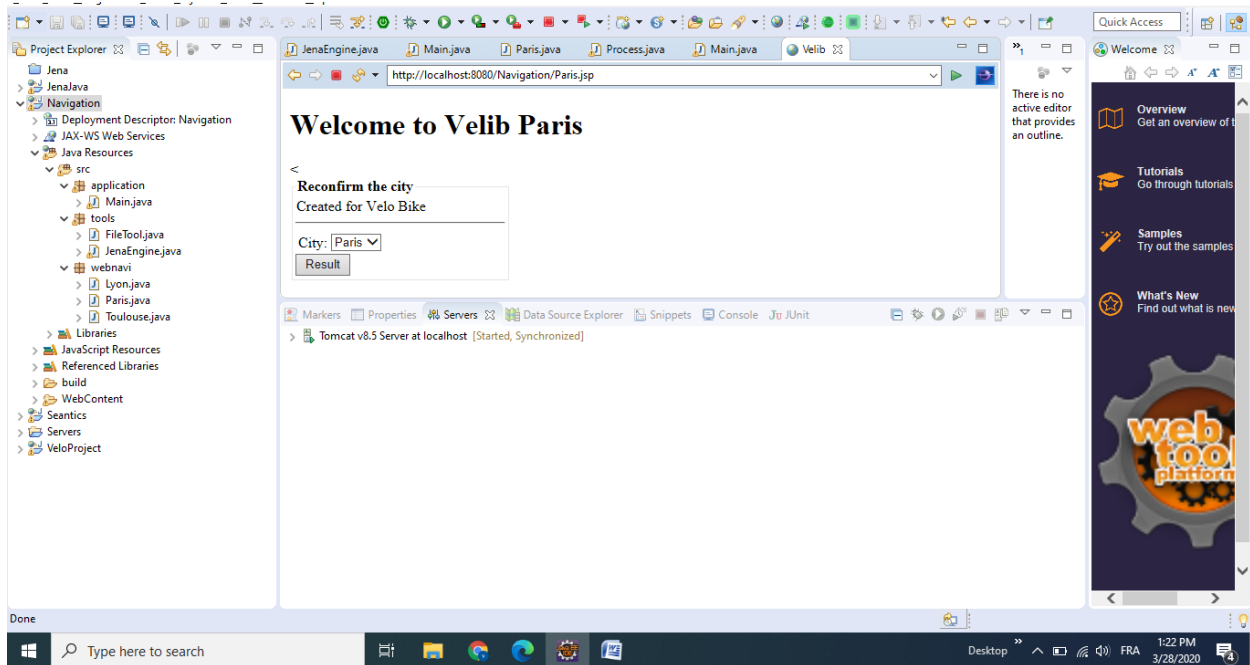


Fig 4.2

Note: Not able to connect the output page to the JSP

Part 5:

Use the sparql Query when we run the same Queries in Jena Fseuki, we are getting the same output:

SPARQL ENDPOINT: /Bikes_data/query

CONTENT TYPE (SELECT): JSON

CONTENT TYPE (GRAPH): Turtle

```

1 * PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
2 * PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
3 * PREFIX owl: <http://www.w3.org/2002/07/owl#>
4 * PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
5 * PREFIX ns0: <http://www.owl-ontologies.com/bike_details.owl#>
6
7 select ?stationid ?available_bikes ?name ?available_docks ?capacity ?status ?ville
8 - where {
9
10   ?stationid ns0:available_bikes ?available_bikes.
11   ?stationid ns0:name ?name.
12   ?stationid ns0:available_docks ?available_docks.
13   ?stationid ns0:capacity ?capacity.
14   ?stationid ns0:status ?status.

```

QUERY RESULTS

Showing 1 to 50 of 60 entries

stationid	available_bikes	name	available_docks	capacity	status	ville
<http://www.owl-ontologies.com/46002>	"0"^^xsd:integer	"Rouget de Lisle"	"0"^^xsd:integer	"0"^^xsd:integer	"NON"	"Choisy-le-Roi"

Fig 5.1

← → ↺ ⚙ localhost:3030/dataset.html ☆								
Showing 1 to 50 of 60 entries				Search: <input type="text"/>		Show 50 ▾ entries		
	stationid	available_bikes	name	available_docks	capacity	status	ville	
1	<http://www.owl- ontologies.com/46002 >	"0^^xsd:integer	"Rouget de Lisle"	"0^^xsd:integer	"0^^xsd:integer	"NON"	"Choisy-le-Roi"	
2	<http://www.owl- ontologies.com/26001 >	"7^^xsd:integer	"Gare d'Asnières sur Seine"	"17^^xsd:integer	"24^^xsd:integer	"OUI"	"Asnières-sur-Seine"	
3	<http://www.owl- ontologies.com/21215 >	"7^^xsd:integer	"Verdier - Jean Jaurès"	"26^^xsd:integer	"33^^xsd:integer	"OUI"	"Montrouge"	
4	<http://www.owl- ontologies.com/33006 >	"12^^xsd:integer	"André Karman - République"	"20^^xsd:integer	"31^^xsd:integer	"OUI"	"Aubervilliers"	
5	<http://www.owl- ontologies.com/45003 >	"12^^xsd:integer	"11 Novembre 1918 - 8 Mai 1945"	"24^^xsd:integer	"36^^xsd:integer	"OUI"	"Champigny-sur- Marne"	
6	<http://www.owl- ontologies.com/10013 >	"12^^xsd:integer	"Alibert - Jemmapes"	"48^^xsd:integer	"60^^xsd:integer	"OUI"	"Paris"	
7	<http://www.owl- ontologies.com/11037 >	"12^^xsd:integer	"Faubourg Du Temple - Republique"	"26^^xsd:integer	"38^^xsd:integer	"OUI"	"Paris"	
8	<http://www.owl- ontologies.com/10017 >	"12^^xsd:integer	"Gare de l'Est - Fidélité"	"3^^xsd:integer	"15^^xsd:integer	"OUI"	"Paris"	
9	<http://www.owl- ontologies.com/17004 >	"3^^xsd:integer	"Legendre - Clichy"	"38^^xsd:integer	"40^^xsd:integer	"OUI"	"Paris"	

Fig 5.2