Report Web DataMining

# Modeling the Ontology

For this project, we have chosen the vélib' dataset. In this dataset we can observe all velib’ stations, with latitude and longitude, how many bikes are available, how many places are available and some other information.

We define differents classes in our protege project:

The class station with the information on each one

The class user with the name, the age and his favorite station

The class Trajet who links two vélib’ station with a average time of travel

Finally we add a subclass named “big Station” if a station has a capacity of more than 40.

# Populating the ontology

To populate this, we use the data on the website :

<https://opendata.paris.fr/explore/dataset/velib-disponibilite-en-temps-reel/table/?disjunctive.name&disjunctive.is_installed&disjunctive.is_renting&disjunctive.is_returning&disjunctive.nom_arrondissement_communes>

But at the beginning, we created the individuals one by one in Protege so we can start coding quickly.

We tried to use a triplestore (we tried to use Fuseki) but unfortunately it did not work, it seems our RDF files could not be read from the triplestore.

# Querying the ontology

We put the queries we made in the [Appendix](#_fpf2ysl6341p)

# Manipulating the ontology

The final goal of the project is to determine a route for someone who wants to move from a POI to another in paris. To achieve that goal, we started by showing someone all the POI, and if there are bikes and borns available, then he can choose from where to where he wants to go. This has been coded in Java, using Eclipse.

# Appendix

Here we can see all the queries we have done with Jena :

Name of all stations :

SELECT ?Station\_names

WHERE {

?stat a ns:Velib\_Station .

?stat ns:name ?Station\_names

}

All stations and their city :

SELECT ?Station\_names ?city

WHERE {

?stat a ns:Velib\_Station .

?stat ns:name ?Station\_names .

?stat ns:city ?city

}

People who are more than 45 years :

SELECT ?name ?age

WHERE {

?people a ns:Users .

?people ns:user\_name ?name .

?people ns:user\_age ?age .

FILTER(?age>=45) .

}

Routes with "Harpes" as departure station:

SELECT ?route ?nb\_bike\_free

WHERE {

?departure ns:departure ?route .

?route a ns:Velib\_Station .

?route ns:name "Harpes" .

}

Number of free borns at "Harpes" :

SELECT ?nb\_free\_born

WHERE {

?stat a ns:Velib\_Station .

?stat ns:name "Harpes" .

?stat ns:nb\_born\_free ?nb\_free\_born .

}