Day 02: questions from the course on RDF.

Q2.0 What is the mathematical structure built by the RDF triples? (give the type of structure and its definition/explanation)

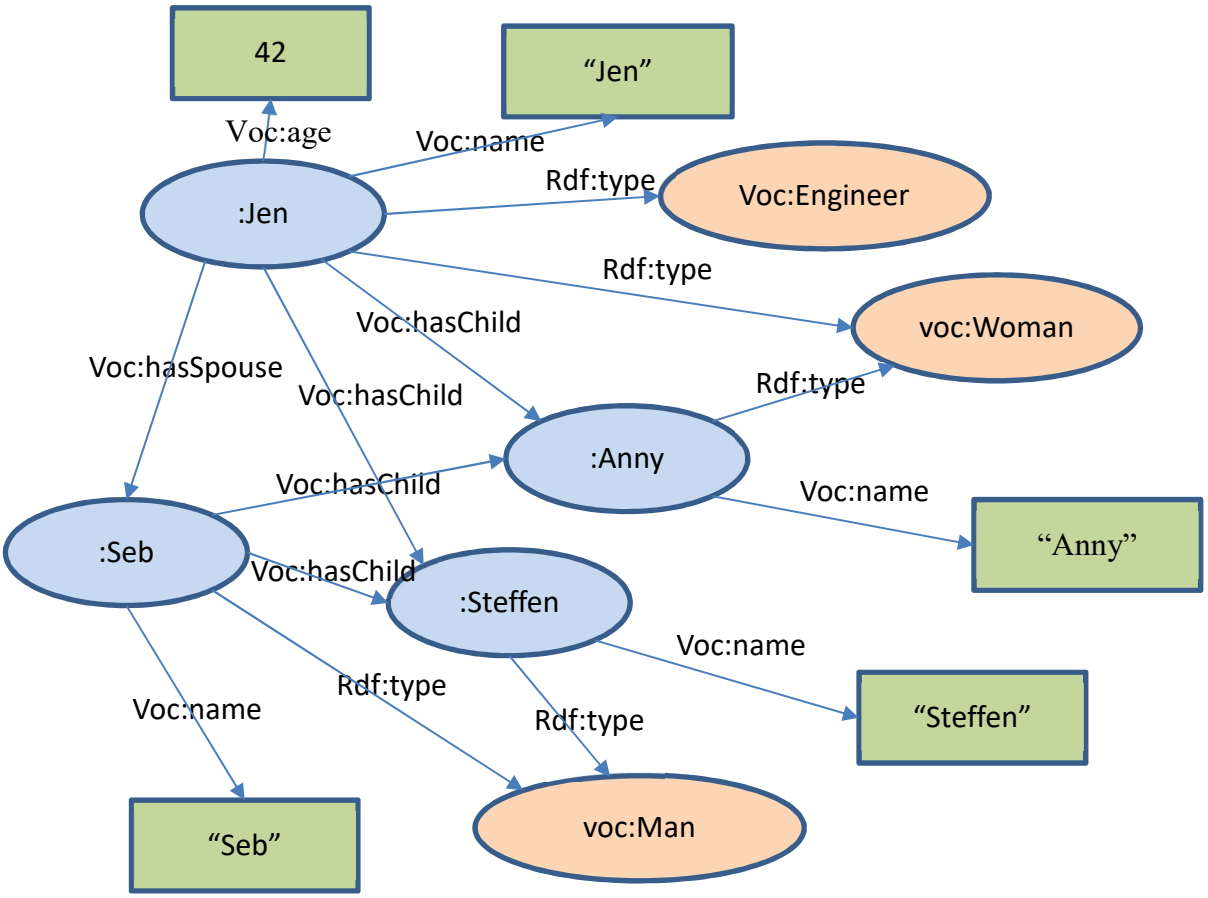
Answer

RDF is a model for directed labeled multigraphs.
Graph model to link the description for resources. With resource as node and predicate as edge.

Q2.1 Fill the blanks

"Jen is an engineer woman, 42-year old, married to Seb who is a man with whom she had two children: Anny who is a woman and Steffen who is a man". For each person we also explicitly specify the name.
To fill the blanks we use the values: `:Seb, :Stefan, voc:name, voc:hasChild, voc:age, voc:hasSpouse, rdf:type, voc:Engineer, voc:Man, "Jen", "Seb", "Anny", "Steffen"`
For each person we also explicitly specify the name

Answer



Q2.2 Fill the blanks (RDF/XML)

Answer

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE rdf:RDF [   <!ENTITY vocab "http://www.unice.fr/voc">
<!ENTITY xsd "http://www.w3.org/2001/XMLSchema#"> ]>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:voc="&vocab;#" xml:base="http://www.unice.fr/data">
```

```
 <voc:Woman rdf:about="#Jen">
    <voc:name>Jen</voc:name>
    <voc:age rdf:datatype=http://www.w3.org/2001/XMLSchema#integer>42
</voc:age>
    <voc:hasSpouse rdf:resource="#Seb"></voc:hasSpouse>
    <voc:hasChild rdf:resource="#Steffen"></voc:hasChild>
    <voc:hasChild>
      <rdf:Description rdf:about="#Anny">
        <voc:name>Anny</voc:name>
        <rdf:type rds:resource="&vocab;#Woman"></rdf:type>
      </rdf:Description>
    </voc:hasChild>
    <rdf:type rdf:resource="&vocab;#Engineer"></rdf:type>
 </voc:Woman>
 <voc:Man rdf:about="#Seb">
    <voc:name>Seb</voc:name>
    <voc:hasChild rdf:resource="#Steffen"></voc:hasChild>
    <voc:hasChild rdf:resource="#Anny"></voc:hasChild>
  </voc:Man>
  <voc:Man rdf:about="#Steffen">
    <voc:name>Steffen</voc:name>
  </voc:Man>
</rdf:RDF>
```

Q2.3 Fill the blanks (N3/Turtle)

Answer

```
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix voc: <http://www.unice.fr/voc#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .
<http://www.unice.fr/data#Jen> a voc:Engineer ,voc:Women ;
    voc:age "42"^^xsd:string ;
    voc:hasChild <http://www.unice.fr/data#Anny>,
<http://www.unice.fr/data#Steffen>;
    voc:hasSpouse <http://www.unice.fr/data#Seb> ;
    voc:name "Jen" .
<http://www.unice.fr/data#Seb> a voc:Man ;
    voc:hasChild <http://www.unice.fr/data#Anny>,
        <http://www.unice.fr/data#Steffen> ;
    voc:name "Seb" .
<http://www.unice.fr/data#Anny> a voc:Woman ;
    voc:name "Anny" .
< http://www.unice.fr/data#Steffen> a voc:Man ;
    Voc:name "Steffen".
```

Q2.4 Visit me please

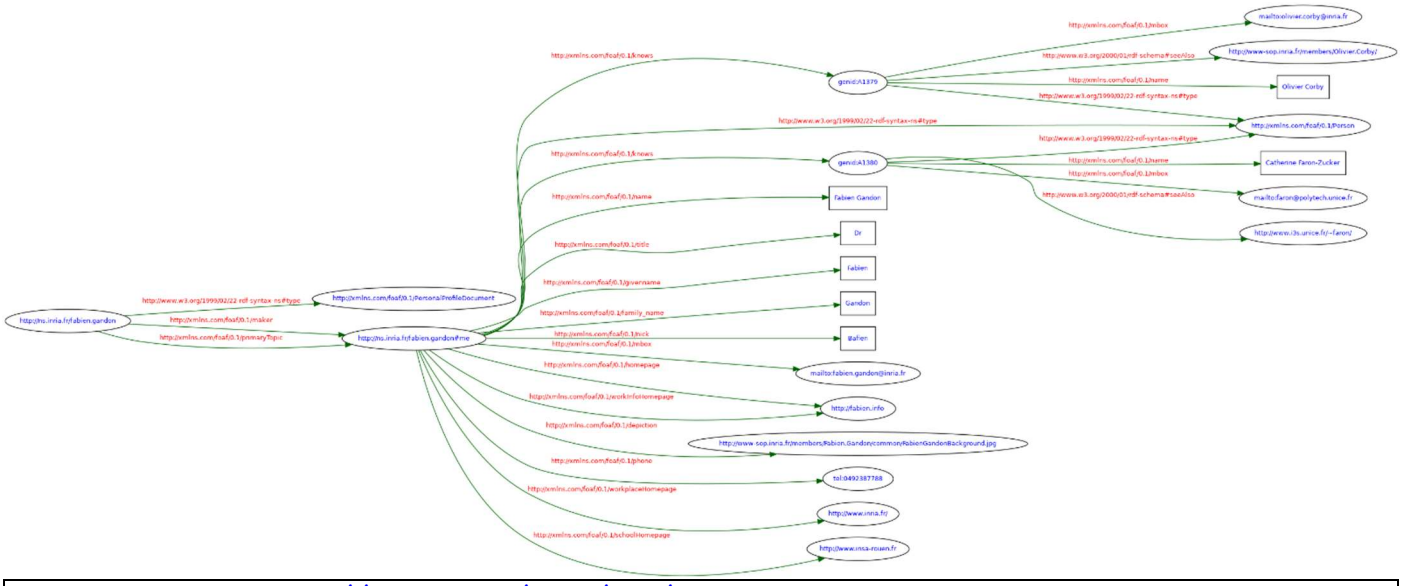
Get the RDF data from: http://ns.inria.fr/fabien.gandon#me

1. Get the RDF data from: http://ns.inria.fr/fabien.gandon#me
2. What is the syntax used?
3. Validate it and see the graph:
   http://www.w3.org/RDF/Validator/
4. Translate into Turtle/N3:
   http://rdf-translator.appspot.com/
   http://www.easyrdf.org/converter

5. Visualize it also with:
http://cltl.nl/visualrdf/
http://www.easyrdf.org/converter (PNG, SVG)
6. Adapt to your data and do it again

Answer

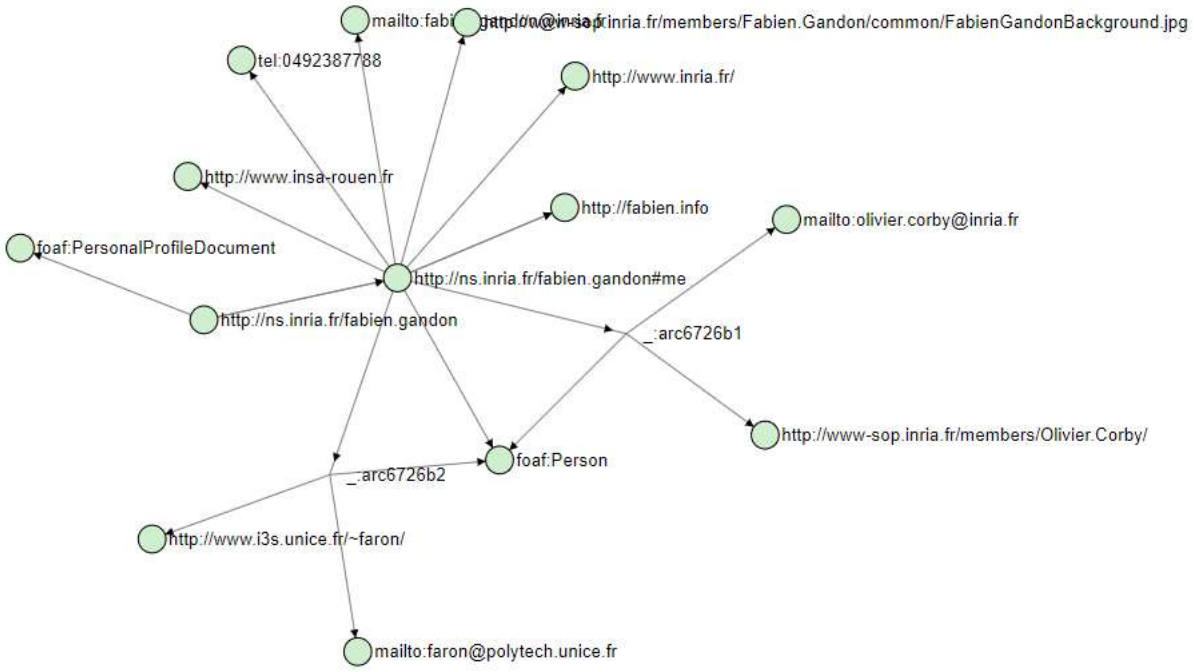
- Rdf xml




```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

<http://ns.inria.fr/fabien.gandon> a foaf:PersonalProfileDocument ;
    foaf:maker <http://ns.inria.fr/fabien.gandon#me> ;
    foaf:primaryTopic <http://ns.inria.fr/fabien.gandon#me> .

<http://ns.inria.fr/fabien.gandon#me> a foaf:Person ;
    foaf:depiction <http://www-
sop.inria.fr/members/Fabien.Gandon/common/FabienGandonBackground.jpg> ;
    foaf:family_name "Gandon" ;
    foaf:givenname "Fabien" ;
    foaf:homepage <http://fabien.info> ;
    foaf:knows [ a foaf:Person ;
            rdfs:seeAlso <http://www.i3s.unice.fr/~faron/> ;
            foaf:mbox <mailto:faron@polytech.unice.fr> ;
            foaf:name "Catherine Faron-Zucker" ],
        [ a foaf:Person ;
            rdfs:seeAlso <http://www-sop.inria.fr/members/Olivier.Corby/> ;
            foaf:mbox <mailto:olivier.corby@inria.fr> ;
            foaf:name "Olivier Corby" ] ;
    foaf:mbox <mailto:fabien.gandon@inria.fr> ;
    foaf:name "Fabien Gandon" ;
    foaf:nick "Bafien" ;
    foaf:phone <http://ns.inria.fr/tel:0492387788> ;
    foaf:schoolHomepage <http://www.insa-rouen.fr> ;
    foaf:title "Dr" ;
    foaf:workInfoHomepage <http://fabien.info> ;
    foaf:workplaceHomepage <http://www.inria.fr/> .
```




```
My Data:
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

<http://ns.inria.fr/yuhsuan.ting> a foaf:PersonalProfileDocument ;
    foaf:maker <http://ns.inria.fr/yuhsuan.ting#me> ;
    foaf:primaryTopic <http://ns.inria.fr/yuhsuan.ting#me> .

<http://ns.inria.fr/yuhsuan.ting#me> a foaf:Person ;
    foaf:depiction <http://www-
sop.inria.fr/members/yuhsuan.ting/common/FabienGandonBackground.jpg> ;
    foaf:family_name "TING" ;
    foaf:givenname "Yu-Hsuan" ;
    foaf:homepage <http://yuhsuan.info> ;
    foaf:knows [ a foaf:Person ;
            rdfs:seeAlso <http://www.i3s.unice.fr/~faron/> ;
            foaf:mbox <romain.poupon@polytech.unice.fr> ;
            foaf:name "Romain Poupon" ],
        [ a foaf:Person ;
            rdfs:seeAlso <http://www-sop.inria.fr/members/Olivier.Corby/> ;
            foaf:mbox <alix@inria.fr> ;
            foaf:name "Alix" ] ;
    foaf:mbox <mailto:yuhsuan.ting@inria.fr> ;
    foaf:name "Yu-Hsuan TING" ;
    foaf:nick "Sandy" ;
    foaf:phone <http://ns.inria.fr/tel:0640305607> ;
    foaf:schoolHomepage <http://www.insa-rouen.fr> ;
    foaf:title "Student" ;
    foaf:workInfoHomepage <http://yuhsuan.info> ;
    foaf:workplaceHomepage <http://www.inria.fr/> .
```

Q2.5 what is the meaning of this RDF? What is this description saying?

<?xml version="1.0"?>

```
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
xmlns:exs="http://example.org/schema#">
 <rdf:Description rdf:about="http://example.org/doc.html">
  <rdf:type rdf:resource="http://example.org/schema#Report"/>
  <exs:theme rdf:resource="http://example.org#Music"/>
  <exs:theme rdf:resource="http://example.org#Danse"/>
  <exs:nbPages rdf:datatype="http://www.w3.org/2001/XMLSchema#int">73</exs:nbPages>
 </rdf:Description>
</rdf:RDF>
```

Answer

This RDF is about theme Music and Danse with 73 pages.

Q2.6 Visit to Victor Hugo

1. See HTML data from: http://id.loc.gov/authorities/names/n79091479.html
2. Get RDF data from: http://id.loc.gov/authorities/names/n79091479.rdf
3. What is the syntax?
4. Translate into Turtle/N3: http://rdf-translator.appspot.com/
5. Any remark about the values of the properties of Victor Hugo?

Answer

The RDF is in XML format.

Japanese name of Victor Hugo is actually in English

Q2.7 What is the syntax of the following RDF statement? What does it mean?

```
@prefix dcterms: <http://purl.org/dc/terms/>.
GRAPH  <http://inria.fr/topics/algebra>
{
  <http://inria.fr/rr/doc.html>
    dcterms:subject
      <http://data.bnf.fr/ark:/12148/cb121105993> .
}
```

Answer

TriG (to replace turtle)

Saying that

```
  <http://inria.fr/rr/doc.html>
    dcterms:subject
      <http://data.bnf.fr/ark:/12148/cb121105993> .
```

Belongs to graph <http:// inria.fr/topics/algebra>

Q2.8 Visit Leukocyte surface antigen CD53

1. See HTML data from: http://www.uniprot.org/uniprot/Q61451
2. Get RDF data from: http://www.uniprot.org/uniprot/Q61451.rdf
3. What is the syntax?
4. Translate into Turtle/N3: http://rdf-translator.appspot.com/
5. Any remark about the structure of the data?

Answer

XML syntax

They use reflication they haven’t use the name graph yet

PRACTICAL SESSIONS

Day 02: Answers to the practical session on RDF.

Software requirements

- A real text editor (e.g. Notepad++, Gedit, Sublime Text, Emacs, etc.)
- The RDF XML online validation service by W3C: https://www.w3.org/RDF/Validator/
- The RDF online translator: http://rdf-translator.appspot.com/
- The SPARQL Corese engine: http://wimmics.inria.fr/corese

Create RDF

Read carefully the following statements:

> "Jen is a 42-year old woman and she has a shoe size of 36 and trouser size of 38. She is, married to Seb who is a man with whom she had two children: Anny who is a woman and Steffen who is a man. Jen is also an engineer and Catherine and Fabien are her colleagues. Jen's father is a man named Thomas"

1. Use your text editor and write the above statements in RDF in N3 syntax inventing your own vocabulary. Save you file as "Jen.ttl"
2. Use your favorite text or XML editor and write the above statements in RDF in XML syntax reusing the same vocabulary "Jen.rdf"
3. Use the RDF XML online validation service to validate your XML and see the triples https://www.w3.org/RDF/Validator/
4. In the validator use the option to visualize the graph
5. Use the RDF online translator to validate your N3 and translate it into RDF/XML: http://rdf-translator.appspot.com/
6. Compare your RDF/XML with the result of the N3 translation
7. Translate in other formats to see the results.

Code of validated RDF in N3 syntax:

```
@prefix voc: <http://www.unice.fr/voc#> .

<http://www.unice.fr/data#Jen> a voc:Engineer ,voc:Women ;
   voc:age "42";
   voc:hasChild <http://www.unice.fr/data#Anny>, <http://www.unice.fr/data#Steffen>;
   voc:hasSpouse <http://www.unice.fr/data#Seb> ;
   voc:name "Jen";
   voc:hasParent <http://www.unice.fr/data#Thomas>;
   voc:hasColleague <http://www.unice.fr/data#Fabien>, <http://www.unice.fr/data#Catherine>;
   voc:trouserSize "38";
   voc:shoesSize "36".
<http://www.unice.fr/data#Seb> a voc:Man ;
   voc:hasChild <http://www.unice.fr/data#Anny>,
      <http://www.unice.fr/data#Steffen> ;
   voc:name "Seb";
   voc:hasChild <http://www.unice.fr/data#Anny>, <http://www.unice.fr/data#Steffen>.

#Child
<http://www.unice.fr/data#Anny> a voc:Women ;
   voc:name "Anny".
<http://www.unice.fr/data#Steffen> a voc:Man ;
   voc:name "Steffen".

#Father
```

```
<http://www.unice.fr/data#Thomas> a voc:Man ;
   voc:name "Thomas".

#Colleague
<http://www.unice.fr/data#Catherine> a voc:Women ;
   voc:name "Catherine".
<http://www.unice.fr/data#Fabien> a voc:Man ;
   voc:name "Fabien".
```

Code of validated RDF in XML syntax:

```
<?xml version="1.0" encoding="UTF-8"?>
<rdf:RDF
   xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
   xmlns:voc="http://www.unice.fr/voc#"
>
  <rdf:Description rdf:about="http://www.unice.fr/data#Steffen">
    <rdf:type rdf:resource="http://www.unice.fr/voc#Man"/>
    <voc:name>Steffen</voc:name>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.unice.fr/data#Jen">
    <voc:hasChild rdf:resource="http://www.unice.fr/data#Anny"/>
    <rdf:type rdf:resource="http://www.unice.fr/voc#Engineer"/>
    <voc:age>42</voc:age>
    <rdf:type rdf:resource="http://www.unice.fr/voc#Women"/>
    <voc:hasParent rdf:resource="http://www.unice.fr/data#Thomas"/>
    <voc:shoesSize>36</voc:shoesSize>
    <voc:hasChild rdf:resource="http://www.unice.fr/data#Steffen"/>
    <voc:hasColleague rdf:resource="http://www.unice.fr/data#Catherine"/>
    <voc:hasColleague rdf:resource="http://www.unice.fr/data#Fabien"/>
    <voc:trouserSize>38</voc:trouserSize>
    <voc:hasSpouse rdf:resource="http://www.unice.fr/data#Seb"/>
    <voc:name>Jen</voc:name>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.unice.fr/data#Thomas">
    <rdf:type rdf:resource="http://www.unice.fr/voc#Man"/>
    <voc:name>Thomas</voc:name>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.unice.fr/data#Fabien">
    <rdf:type rdf:resource="http://www.unice.fr/voc#Man"/>
    <voc:name>Fabien</voc:name>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.unice.fr/data#Anny">
    <voc:name>Anny</voc:name>
    <rdf:type rdf:resource="http://www.unice.fr/voc#Women"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.unice.fr/data#Seb">
    <rdf:type rdf:resource="http://www.unice.fr/voc#Man"/>
    <voc:name>Seb</voc:name>
    <voc:hasChild rdf:resource="http://www.unice.fr/data#Steffen"/>
    <voc:hasChild rdf:resource="http://www.unice.fr/data#Anny"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://www.unice.fr/data#Catherine">
    <rdf:type rdf:resource="http://www.unice.fr/voc#Women"/>
    <voc:name>Catherine</voc:name>
  </rdf:Description>
```

</rdf:RDF>

Json format:


```
{"@context": {
   "rdf": "http://www.w3.org/1999/02/22-rdf-syntax-ns#",
   "rdfs": "http://www.w3.org/2000/01/rdf-schema#",
   "voc": "http://www.unice.fr/voc#",
   "xsd": "http://www.w3.org/2001/XMLSchema#"},
  "@graph": [
   {"@id": "http://www.unice.fr/data#Jen",
    "@type": ["voc:Engineer", "voc:Women" ],
    "voc:age": "42",
    "voc:hasChild": [
      {"@id": "http://www.unice.fr/data#Steffen"
      {"@id": "http://www.unice.fr/data#Anny"}],
    "voc:hasColleague": [
      {"@id": "http://www.unice.fr/data#Catherine"},
      {"@id": "http://www.unice.fr/data#Fabien"}],
    "voc:hasParent": {"@id": "http://www.unice.fr/data#Thomas"},
    "voc:hasSpouse": {"@id": "http://www.unice.fr/data#Seb"},
    "voc:name": "Jen",
    "voc:shoesSize": "36",
    "voc:trouserSize": "38"},
   {"@id": "http://www.unice.fr/data#Seb",
    "@type": "voc:Man",
    "voc:hasChild": [
      {"@id": "http://www.unice.fr/data#Steffen"},
      {"@id": "http://www.unice.fr/data#Anny"}],
    "voc:name": "Seb"},
   {"@id": "http://www.unice.fr/data#Catherine",
    "@type": "voc:Woman",
    "voc:name": "Catherine },
   {"@id": "http://www.unice.fr/data#Fabien",
    "@type": "voc:Man",
    "voc:name": "Fabien"},
   {"@id": "http://www.unice.fr/data#Anny",
    "@type": "voc:Woman",
    "voc:name": "Anny"},
   {"@id": "http://www.unice.fr/data#Thomas",
    "@type": "voc:Man",
    "voc:name": "Thomas" },
   {"@id": "http://www.unice.fr/data#Steffen",
    "@type": "voc:Man",
    "voc:name": "Steffen"}]}
```

Query your data

Download the Corese.jar library and start it as a standalone application: On Window double-click the file ".jar". If it does not work or on other platforms, run the command " java -jar -Dfile.encoding=UTF8 " followed by the name of the ".jar" archive. Notice that you need java on your machine and proper path configuration.
This interface provides two tabs: (1) one to load input files and see traces of execution, and (2) the default tab to start loading or writing queries and see their result. Load the annotations contained in the file "Jen.rdf" you created and validated before. The interface contains a default SPARQL query:

```
Select ?x ?t where { ?x rdf:type ?t}
```

The SPARQL language will be presented in the next course. Just know that this query can find all of the resources referred to in the data you loaded and their types. Launch the query and check the results.

Understand existing data

1, Get the RDF/XML about http://ns.inria.fr/fabien.gandon#me and translate the RDF/XML into Turtle/N3
Code of validated RDF in N3 syntax:

```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

<http://ns.inria.fr/fabien.gandon> a foaf:PersonalProfileDocument ;
   foaf:maker <http://ns.inria.fr/fabien.gandon#me> ;
   foaf:primaryTopic <http://ns.inria.fr/fabien.gandon#me> .

<http://ns.inria.fr/fabien.gandon#me> a foaf:Person ;
   foaf:depiction <http://www-sop.inria.fr/members/Fabien.Gandon/common/FabienGandonBackground.jpg> ;
   foaf:family_name "Gandon" ;
   foaf:givenname "Fabien" ;
   foaf:homepage <http://fabien.info> ;
   foaf:knows [ a foaf:Person ;
         rdfs:seeAlso <http://www-sop.inria.fr/members/Olivier.Corby/> ;
         foaf:mbox <mailto:olivier.corby@inria.fr> ;
         foaf:name "Olivier Corby" ],
      [ a foaf:Person ;
         rdfs:seeAlso <http://www.i3s.unice.fr/~faron/> ;
         foaf:mbox <mailto:faron@polytech.unice.fr> ;
         foaf:name "Catherine Faron-Zucker" ] ;
   foaf:mbox <mailto:fabien.gandon@inria.fr> ;
   foaf:name "Fabien Gandon" ;
   foaf:nick "Bafien" ;
   foaf:phone <http://ns.inria.fr/tel:0492387788> ;
   foaf:schoolHomepage <http://www.insa-rouen.fr> ;
   foaf:title "Dr" ;
   foaf:workInfoHomepage <http://fabien.info> ;
   foaf:workplaceHomepage <http://www.inria.fr/> .
```

Can you guess the link between http://ns.inria.fr/fabien.gandon and http://ns.inria.fr/fabien.gandon#me
http://ns.inria.fr/fabien.gandon#me is the person who is the maker of the document (http://ns.inria.fr/fabien.gandon)

2, Get the Turtle data of Paris on DBpedia.org then in the file find the triple that declares it as a capital in Europe.
The triple is:

```
<http://dbpedia.org/resource/Paris> a <http://dbpedia.org/class/yago/AdministrativeDistrict108491826>,
      <http://dbpedia.org/class/yago/Area108497294>,
      <http://dbpedia.org/class/yago/Capital108518505>,
      <http://dbpedia.org/class/yago/Center108523483>,
      <http://dbpedia.org/class/yago/City108524735>,
      <http://dbpedia.org/class/yago/Commune108541609>,
      <http://dbpedia.org/class/yago/District108552138>,
      <http://dbpedia.org/class/yago/GeographicalArea108574314>,
      <http://dbpedia.org/class/yago/Location100027167>,
      <http://dbpedia.org/class/yago/Municipality108626283>,
      <http://dbpedia.org/class/yago/Object100002684>,
      <http://dbpedia.org/class/yago/PhysicalEntity100001930>,
      <http://dbpedia.org/class/yago/Prefecture108626947>,
```

<http://dbpedia.org/class/yago/Region108630985>,
<http://dbpedia.org/class/yago/Seat108647945>,
<http://dbpedia.org/class/yago/Site108651247>,
<http://dbpedia.org/class/yago/Tract108673395>,
<http://dbpedia.org/class/yago/UrbanArea108675967>,
<http://dbpedia.org/class/yago/WikicatArchaeologicalSitesInFrance>,
<http://dbpedia.org/class/yago/WikicatCapitals>,
<http://dbpedia.org/class/yago/WikicatCapitalsInEurope>,
<http://dbpedia.org/class/yago/WikicatCitiesInFrance>,
<http://dbpedia.org/class/yago/WikicatCitiesWithMillionsOfInhabitants>,
<http://dbpedia.org/class/yago/WikicatPrefecturesInFrance>,
<http://dbpedia.org/class/yago/WikicatWorldHeritageSitesInFrance>,
<http://dbpedia.org/class/yago/YagoGeoEntity>,
<http://dbpedia.org/class/yago/YagoLegalActorGeo>,
<http://dbpedia.org/class/yago/YagoPermanentlyLocatedEntity>,
dbo:Location,
dbo:Place,
dbo:PopulatedPlace,
dbo:Settlement,
<http://schema.org/Place>,
<http://umbel.org/umbel/rc/Location_Underspecified>,
<http://umbel.org/umbel/rc/PopulatedPlace>,
owl:Thing,
geo1:SpatialThing,
<http://www.wikidata.org/entity/Q486972> ;

3, If you don't have the human dataset file yet, at the following address you will find an RDF file containing several annotations:
http://wimmics.inria.fr/doc/tutorial/human_2013.rdf
Download the file and use the RDF XML online validation service to validate the XML and see the triples and the graph.

1. What is the namespace used for instances / resources created in this file?
http://www.inria.fr/2007/09/11/humans.rdfs-instances
2. By which mechanism is the association between instances and namespace done i.e. how was the instance namespace specified?

Base mechanism:

The name space is defined by the !ENTITY, then declare the base of the URI. Then to declare id after the namespace every time we create a new element.

3. What is the namespace of the vocabulary used to describe the resources in the dataset and how is it associated with the tags?

It is call: humans in the entity declaration. We use &humans to call the entity.

4. Explain the code `xmlns="&humans;#"`

It is a default namespace, using the uri of entity humans + #. Which makes the default namespace for not declared objects like "Man" with http://www.inria.fr/2007/09/11/humans.rdfs#

5. Find *everything* about information on John in this file.

all the information:

- John is a person
- Father: Harry
- Mather: Sophie
- Son: Mark
- Wife: Jennifer
- Friend: Alice

- Age: 37
- Shirt size:12
- Shoes size:14
- Trousers size: 44

6. Translate the file in turtle and save it as human_2013.ttl

10 first lines:

```
@prefix : <http://www.inria.fr/2007/09/11/humans.rdfs#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .

<http://www.inria.fr/2007/09/11/humans.rdfs-instances#Eve> a :Lecturer,
      :Person ;
   :hasFriend <http://www.inria.fr/2007/09/11/humans.rdfs-instances#Alice> ;
   :hasSpouse <http://www.inria.fr/2007/09/11/humans.rdfs-instances#David> ;
   :name "Eve" .
```

7. In the turtle version find *everything* about Laura.

all the information:

- Husband: William
- Daughter: Catherine
- She is a Lecturer, a person and a researcher
- Friend: Alice