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Report

Modeling knowledge with
Resource Description Framework (RDF)

Group: Wednesday 8:00
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1. Warm-up: Well-formedness of the XML

- a) Why is the node for „<http://www.w3.org/>” *oval* and the node for „World Wide Web Consortium” *rectangular*? What's the difference between these two resources?

"http://www.w3.org/" is an URI and "World Wide Web Consortium" is a literal. In RDF standard URIs are drawn in ovals and literals in rectangles.

- b) What's the meaning of the nodes for `genid:A15816` and `genid:A15815` objects?

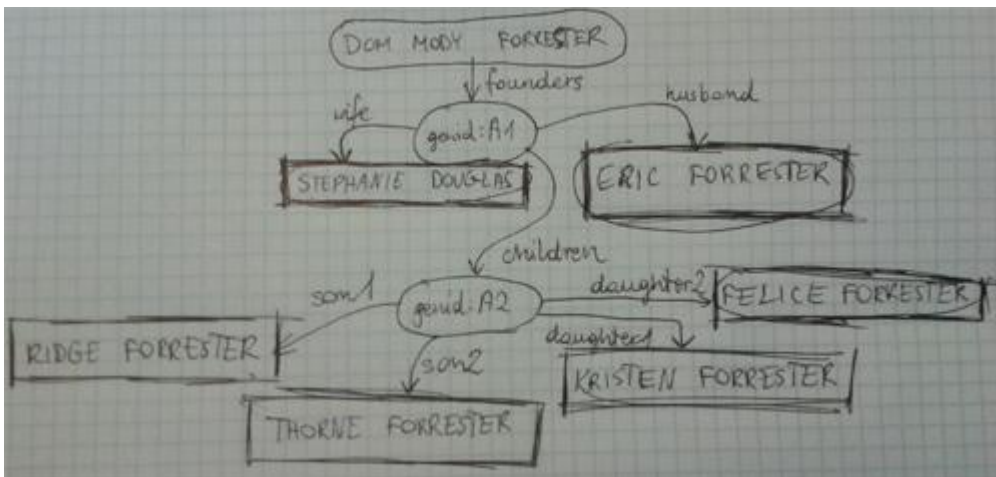
Nodes `genid:A15816` and `genid:A15815` are blank nodes. Their names are generated dynamically. Their meaning is to group some information into group.

2. Modeling knowledge with RDF graphs

- a) How can you represent relations with more than 2 resources involved? If you can, put such an information in your graph?

To represent relations with more than 2 resources involved, we need to create new resource - which is typically represented as a blank node - which takes the role of the "glue".

- b) Put the sketch (a scan/picture) of the graph in your report.



3. Modeling knowledge with RDF triples

- a) Include both documents (`.ttl` and `.rdf`) in the report archive.

plik *.ttl

```
@prefix forr: <http://forrester.house.com/> .
```

```
forr:founders forr:family _:found .
_:found forr:wife "Stephanie Douglas" .
```

```
_:found forr:husband "Eric Forrester" .
_:found forr:children _:children .
_:children forr:son1 "Ridge Forrester" .
_:children forr:son2 "Thorne Forrester" .
_:children forr:daughter1 "Kristen Forrester" .
_:children forr:daughter2 "Felice Forrester" .
```

plik *.rdf

```
<?xml version="1.0"?>
<rdf:RDF xmlns:forr="http://forrester.house.com/"
xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#">
  <rdf:Description rdf:about="http://forrester.house.com/founders">
    <forr:family>
      <rdf:Description>
        <forr:wife>Stephanie Douglas</forr:wife>
        <forr:husband>Eric Forrester</forr:husband>
        <forr:children>
          <rdf:Description>
            <forr:son1>Ridge Forrester</forr:son1>
            <forr:son2>Thorne Forrester</forr:son2>
            <forr:daughter1>Kristen
Forrester</forr:daughter1>
            <forr:daughter2>Felice
Forrester</forr:daughter2>
          </rdf:Description>
        </forr:children>
      </rdf:Description>
    </forr:family>
  </rdf:Description>
</rdf:RDF>
```

4. RDF/XML document: Datatypes

- a) Include your RDF/XML document in the report archive.

```
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns="http://example.org/mylibrary#">
  <rdf:Description rdf:about="http://example.org/mylibrary#book-semwebprimer">
    <author>Grigoris Antoniou</author>
    <author>Frank van Harmelen</author>
    <title>A Semantic Web Primer</title>
  </rdf:Description>
  <rdf:Description rdf:about="http://example.org/mylibrary#cd-opeth_damnation">
    <artist>Opeth</artist>
    <title>Damnation</title>
  </rdf:Description>
  <rdf:Description rdf:about="http://example.org/mylibrary#book-wind-sower">
    <author>Maja Lidia Kossakowska</author>
    <title rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Siewca
Wiatru</title>
    <seriesPart
rdf:datatype="http://www.w3.org/2001/XMLSchema#int">1</seriesPart>
  </rdf:Description>
  <rdf:Description rdf:about="http://example.org/mylibrary#book-dark-elf-
daughter">
```

```

    <author>Ellaine Cunningham</author>
    <title rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Corka Mrocznego
Elfa</title>
  </rdf:Description>
  <rdf:Description rdf:about="http://example.org/mylibrary#book-faith-
consideration">
    <author>ks. Tadeusz Dajczer</author>
    <title rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Rozwazanie o
Wierze</title>
    <publication rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2008-02-
13</publication>
  </rdf:Description>
  <rdf:Description rdf:about="http://example.org/mylibrary#book-hut">
    <author>William P. Young</author>
    <title rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Chata</title>
    <translation>Anna Rzeszka</translation>
  </rdf:Description>
  <rdf:Description rdf:about="http://example.org/mylibrary#cd-nightwish-dark-
passion-play">
    <artist>Nightwish</artist>
    <title rdf:datatype="http://www.w3.org/2001/XMLSchema#string">Dark Passion
Play</title>
    <tracks rdf:datatype="http://www.w3.org/2001/XMLSchema#int">13<tracks>
  </rdf:Description>
</rdf:RDF>

```

5. RDF Visualization

- a) Are there any problems/limitations with the tool? Write your observations in the report.

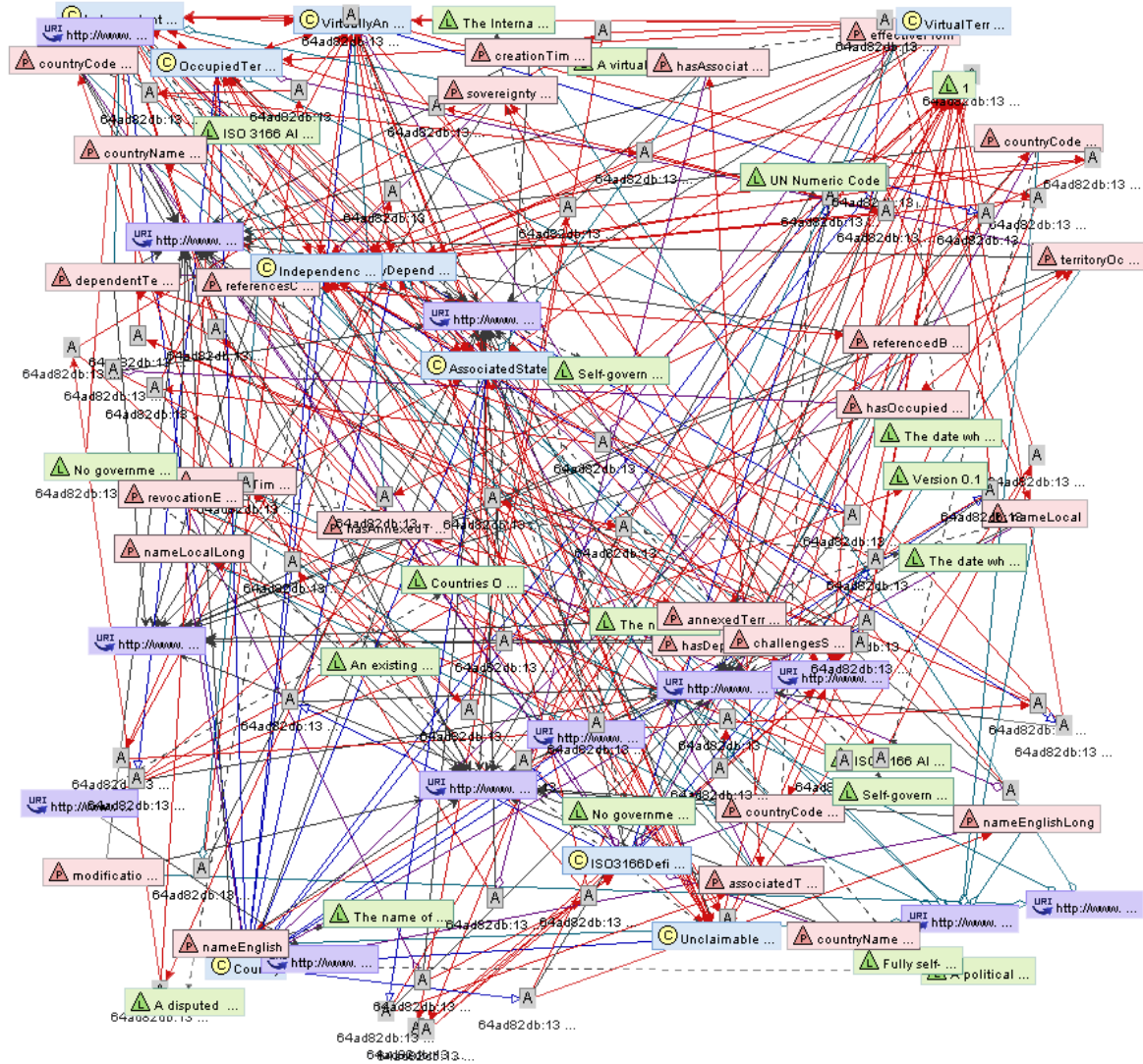
Opening complex files with RDF Gravity creates very chaotic and confusing graphs (Pic. 1). To be able of understanding anything one must use filters and still, It is hard to create clear structure.

This tool have robust filter options and allows for custom hiding showing objects, but is practically useless for watching big structures. For showing small files it works agreeably (Pic 2.)

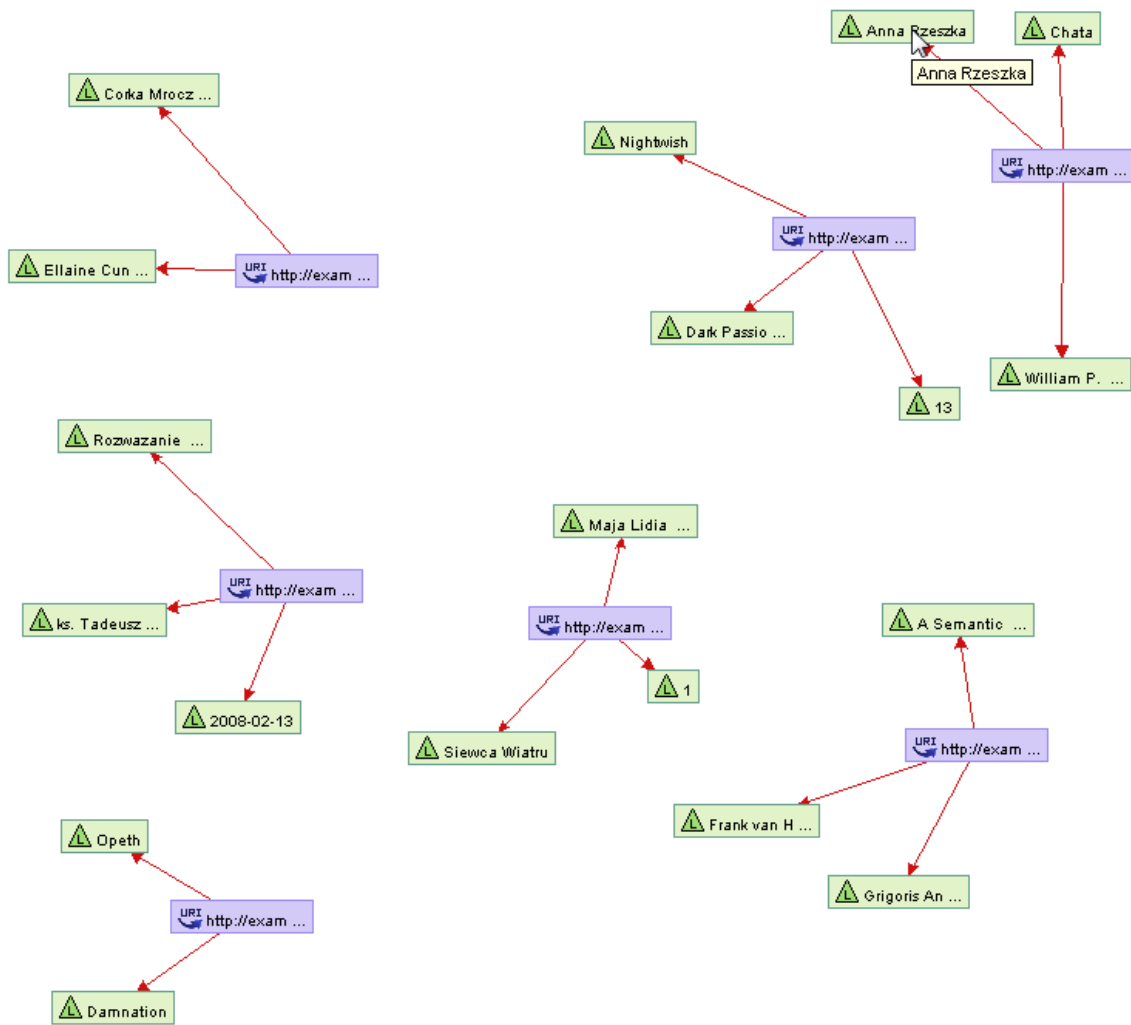
Last file checked was normal image. As we can see file doesn't have any specially formatted data embedded, so graph shows some classes and objects without literal values (Pic. 3).

b) Include the screenshots of your files visualized with RDFGravity (or other RDF visualisation tool if you find one).

Pic. 1



Pic. 2



Pic. 3

