

Data Science 1 - SS 2020

start um 13:15 Uhr

Dr. Karsten Tolle

Team Steckbriefe (Abgabe über OLAT)

Wird nicht benotet! Es geht darum zu verstehen, wer was macht, um:

- Die Teambildung zu unterstützen.
- Zu verstehen, wer Hilfe beim Definieren der Ziele und Finden von Datenquellen braucht.
- Die Mentoring-Treffen vorzubereiten.

Jeder der ein Projekt bearbeiten möchte (also CPs erhalten will), sollte eine Datei hochladen (oder erstellen).

1. Falls ihr noch keinen Partner/Team habt, ladet bitte eine leere .txt-Datei mit dem Namen: ohneTeam.txt hoch.
2. Wer einen Partner/Team hat:
 - a) Wählt für Euer Team einen kurzen Namen (ein Wort)!
 - b) Einer vom Team (ihr entscheidet wer) lädt einen Steckbrief des Teams hoch (entsprechend der Vorlage unten). Die Datei soll dabei wie folgt benannt werden:
<Team-Name>_Steckbrief.txt
 - c) Alle anderen vom Team laden eine leere Datei hoch mit dem Namen: <Team-Name>.txt

Beispiel-Steckbrief für ein Team mit dem Teamnamen: XYZ

Dateiname: **XYZ_Steckbrief.txt**

Inhalt:

Vorname, Name, Matrikelnummer, email (optional)

Karten, Tolle, 1234, tolle@dbis.cs.uni-frankfurt.de

Max, Mustermann, 5678,

Maria, Musterfrau, 9101, test@testmail.com

Goal (max. 100 words) :

We don't know yet!

Datasources (2-3 URLs) :

Not defined yet!

Die eingetragenen Informationen können über die Zeit verändert werden. Sollten sich Teams nicht mehr teilnehmen wollen, bitte die Dateien löschen!

Übersicht ...

- Themen: Semantic Web, RDF, SPARQL, Ontology, LOD, 5-Star, Wikidata, Nomisma.org
- Tools: Fuseki, ~~Protegé, D2R, Openrefine~~ (schaffen wir heute nicht)
- Dafür: Kaggle

Datenaustauschformate

- CSV
- XML
- JSON
- Excel
- ...

<https://offenedaten.frankfurt.de/dataset>

OffeneDaten.FRANKFURT.de



Start Datensätze Organisationen Gruppen Was sind Offene Daten? Datensätze suchen...

/ Datensätze

▼ Organisationen

- Bürgeramt, Statist... (62)
- Stadtvermessungsamt (10)
- Gutachterausschuss ... (6)
- Stadtökonomie (4)
- Straßenverkehrsamt (3)
- Grünflächenamt (1)
- Standesamt (1)
- Umweltamt (1)

▼ Gruppen

- Politik und Wahlen (37)
- Bevölkerung (12)
- Infrastruktur, Baue... (12)
- Geographie, Geologi... (11)
- Transport und Verkehr (6)
- Wirtschaft und Arbeit (6)
- Soziales (5)

Datensätze suchen... 

88 Datensätze gefunden Sortieren nach: Relevanz

Straßenverzeichnis der Stadt Frankfurt am Main
Das gesamte Frankfurter Straßenverzeichnis mit Bezug auf Zugehörigkeiten zu Polizeirevieren, Stadtteilen, Ortsbezirken, Sozialräumen, Schiedsleuten und Postleitzahlen.
[XLS](#) [CSV](#) [PDF](#)

WMS Bodenrichtwerte 2020
Dieser Web Map Service (WMS) liefert den Datenbestand Bodenrichtwerte zum Stichtag 01.01.2020 als Rasterbild in den gängigen Bildformaten (jpeg, png, tiff)
[Link](#) [PDF](#)

Hauskoordinaten der Stadtgrundkarte Frankfurt
Hauskoordinaten des Stadtgebietes Frankfurt (Straßenname, Straßenschlüssel, Hausnummer). ca, 90.000 Datensätze. Datensatzbeschreibung: Die amtlichen Hauskoordinaten Deutschland...
[CSV](#) [TXT](#) [PDF](#)

WMS Laufende Bodenordnungsverfahren
Dieser Web Map Service (WMS) liefert den Datenbestand Laufende Bodenordnungsverfahren als

▼ Formate

- json (41)
- pdf (41)
- xls (40)
- PDF (31)
- csv (25)
- tsv (17)
- CSV (13)
- XLS (12)
- JSON (11)
- Link (10)

Mehr Formate anzeigen

Bevölkerungsbewegungen Stadtteile

Bevölkerungsbewegungen geordnet nach Stadtteilen "Strukturdaten Stadtteile".

[XLS](#) [PDF](#) [JSON](#) [TSV](#) [CSV](#)

Verkehrsmeldungen

Diese Publikation enthält Informationen zu den Bau Main, die Einfluss auf den Verkehrsablauf haben.

[XML](#) [PDF](#)

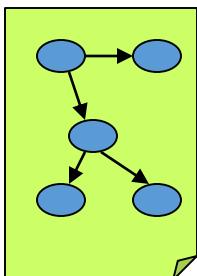
Parkdaten dynamisch

Die Publikation enthält dynamische Parkdaten der der Status des Parkhauses (offen oder geschlossen

[XML](#) [PDF](#)

Semantic Web

- "The Semantic Web is an extension of the current web in which information is given well-defined meaning, better enabling computers and people to work in cooperation." -- *Tim Berners-Lee, James Hendler, Ora Lassila, The Semantic Web, Scientific American, May 2001*

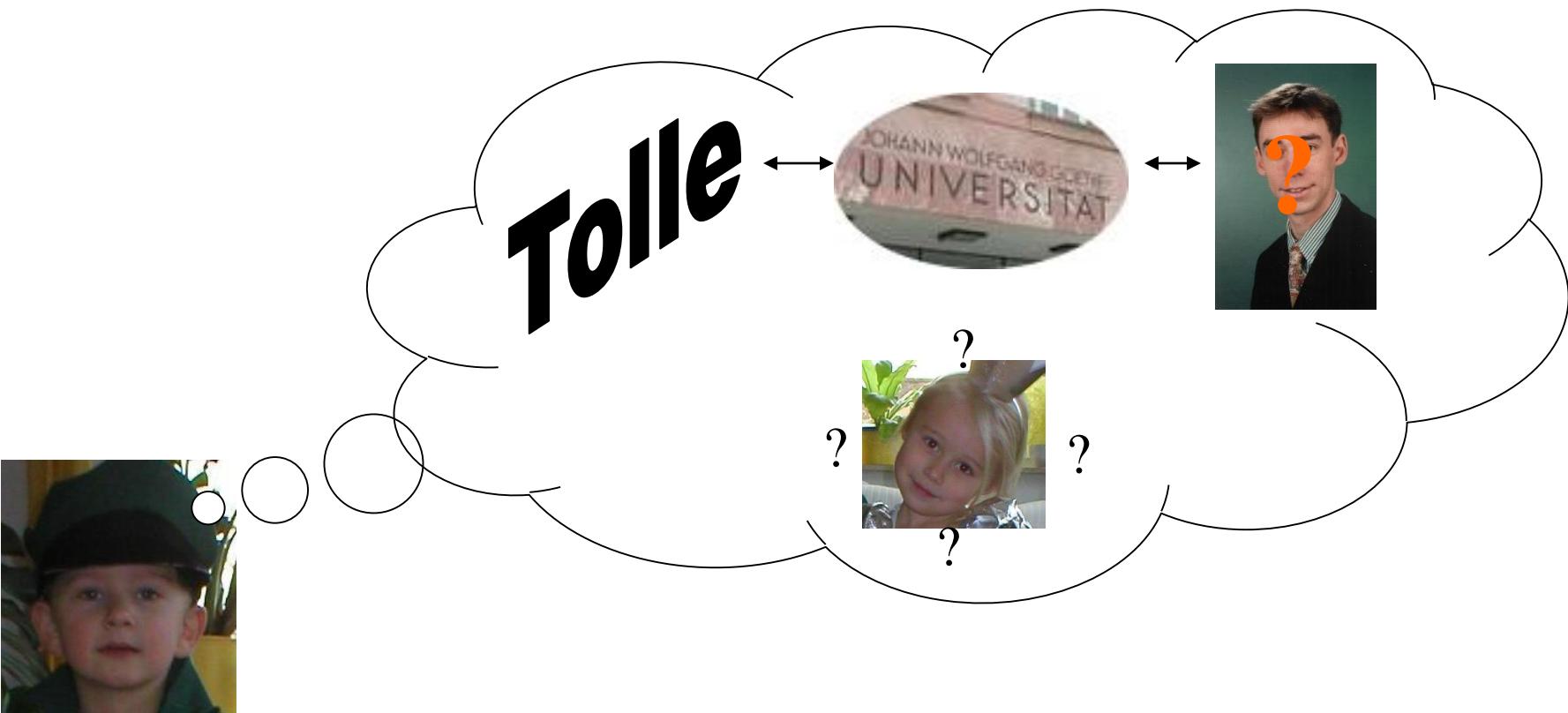


Maschinenverständliche Informationen

- Nicht durch KI
- Möglichkeit: Maschinen sollen fähig sein ein definiertes Problem mit definierten Operationen auf existierenden, definierten Daten zu lösen!
- Voraussetzung: von maschinenlesbaren Daten zu maschinenverständlichen Daten
- Nutzung von **Metadaten** (Daten über Daten)

Die Situation im Internet

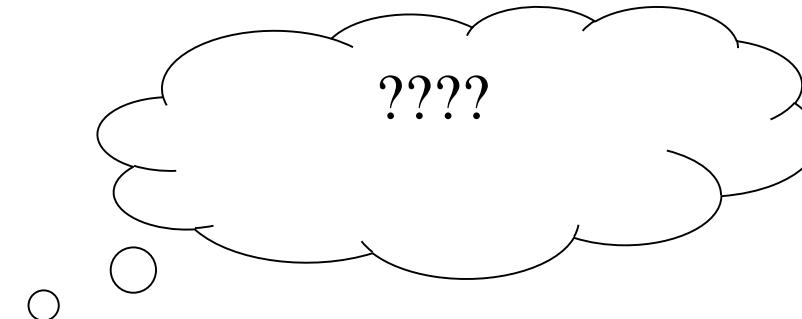
- Möglichkeiten heutiger Internetsuchmaschinen sind begrenzt.



Die Situation im Internet

- Mögliche Suchanfrage:
Tolle Universität

→ führte bei Google zu mehr als **143.000 Treffern**



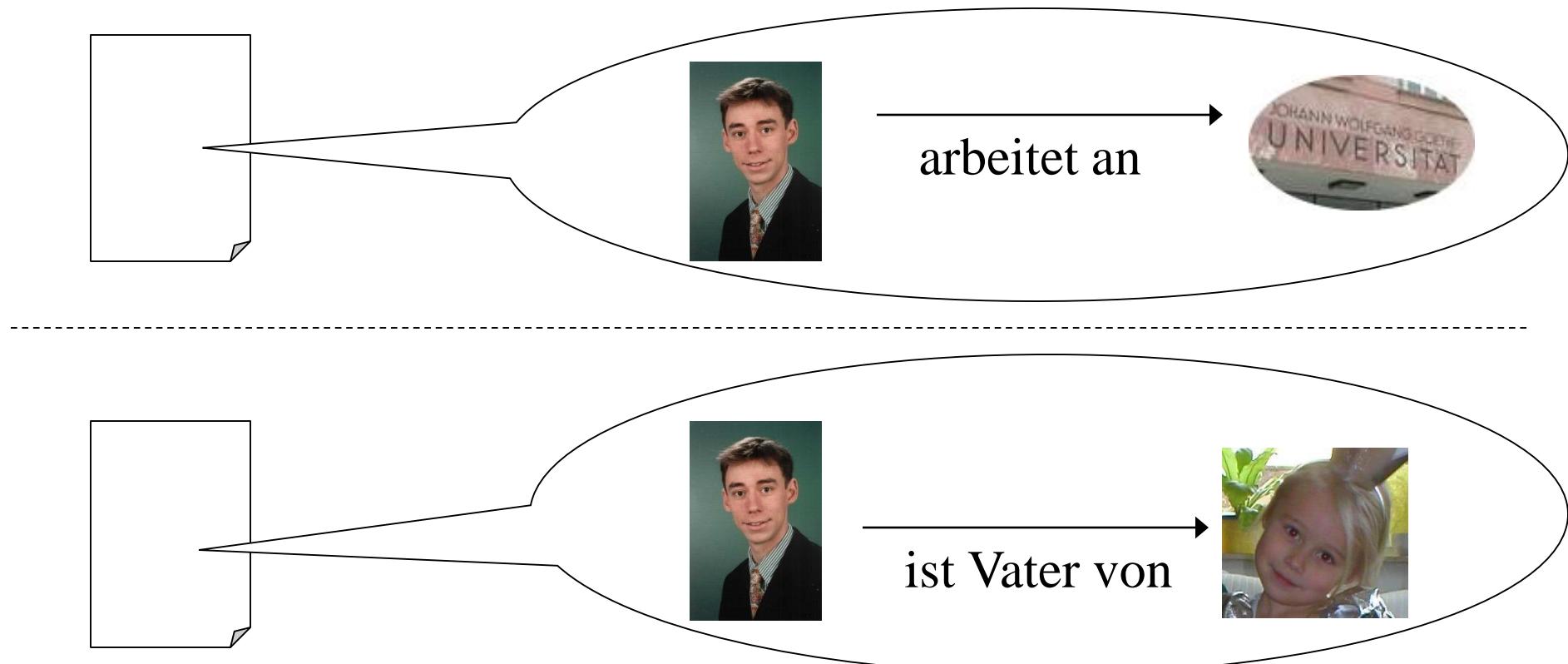
Ende 2005

Jan. 2007: 1.210.000 Treffer

Mai 2020: ungefähr 32.900.000 Ergebnisse (0,55 Sekunden)

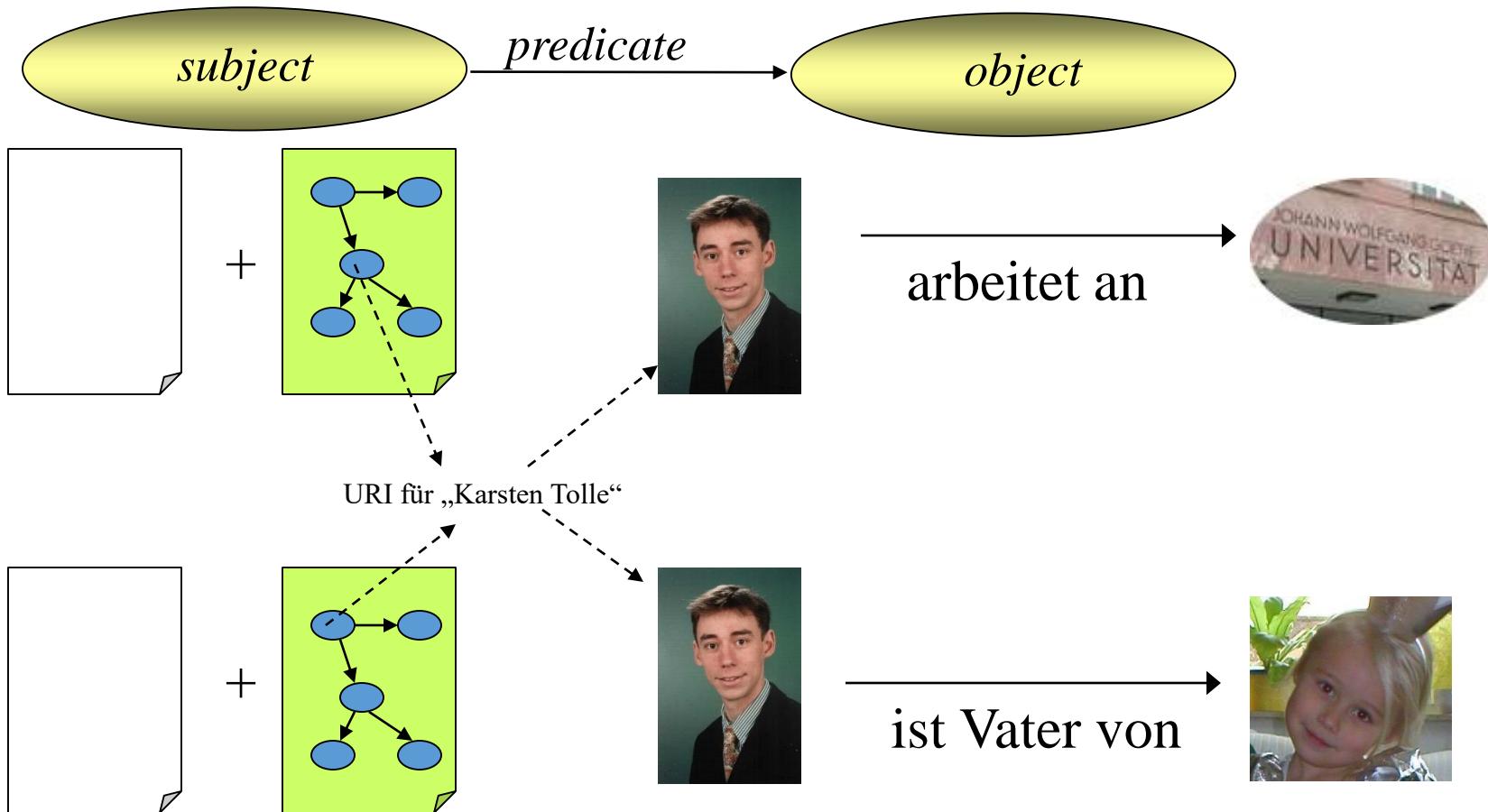
Die Situation im Internet

- Keine Vernetzung der Informationen!



Die Situation mit dem Semantischen Web

- Vernetzung der Informationen!





RDF als Grundlage

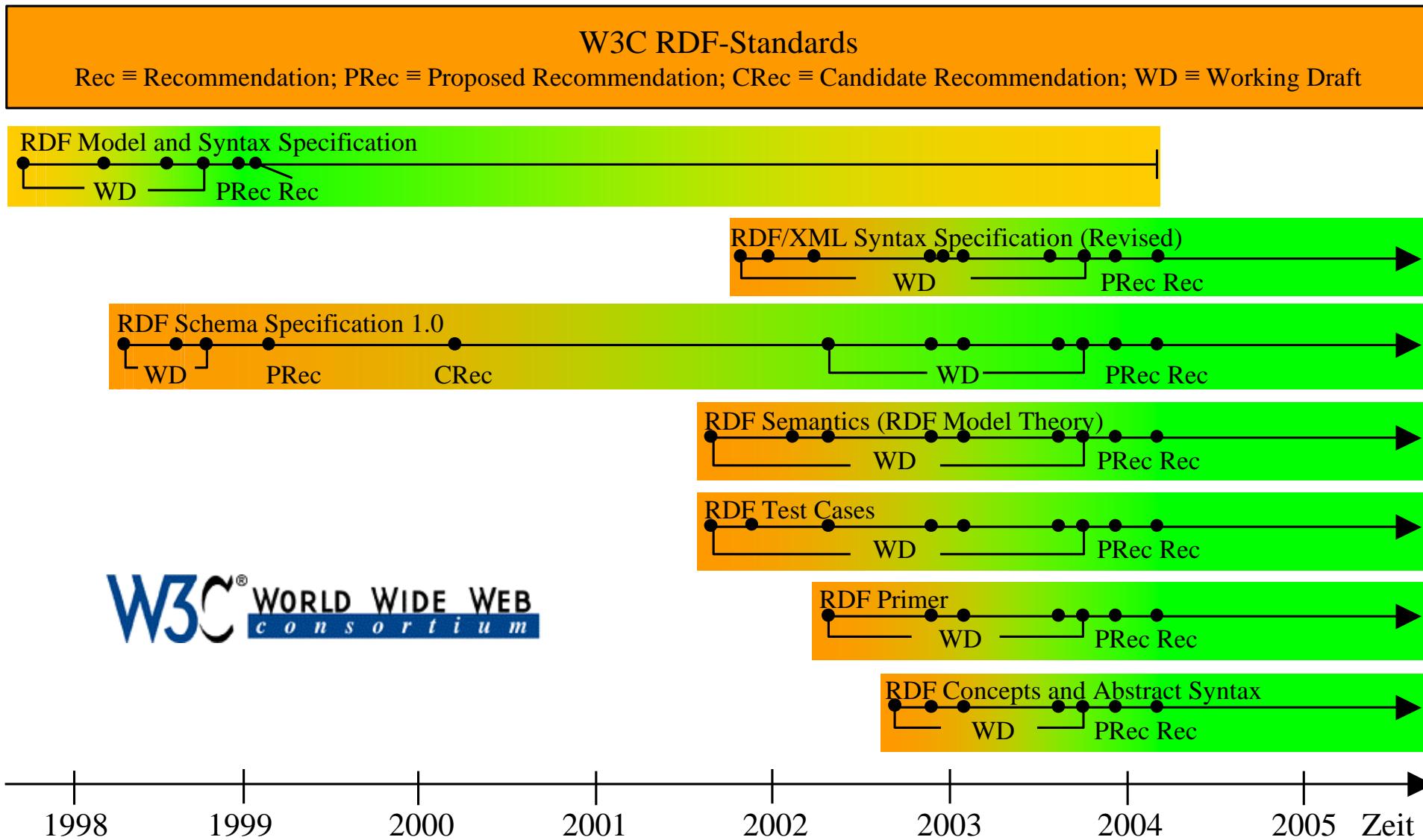
- RDF – Resource Description Framework



Framework zur Beschreibung von (Web)
Ressourcen, bietet einheitliche Konventionen für:

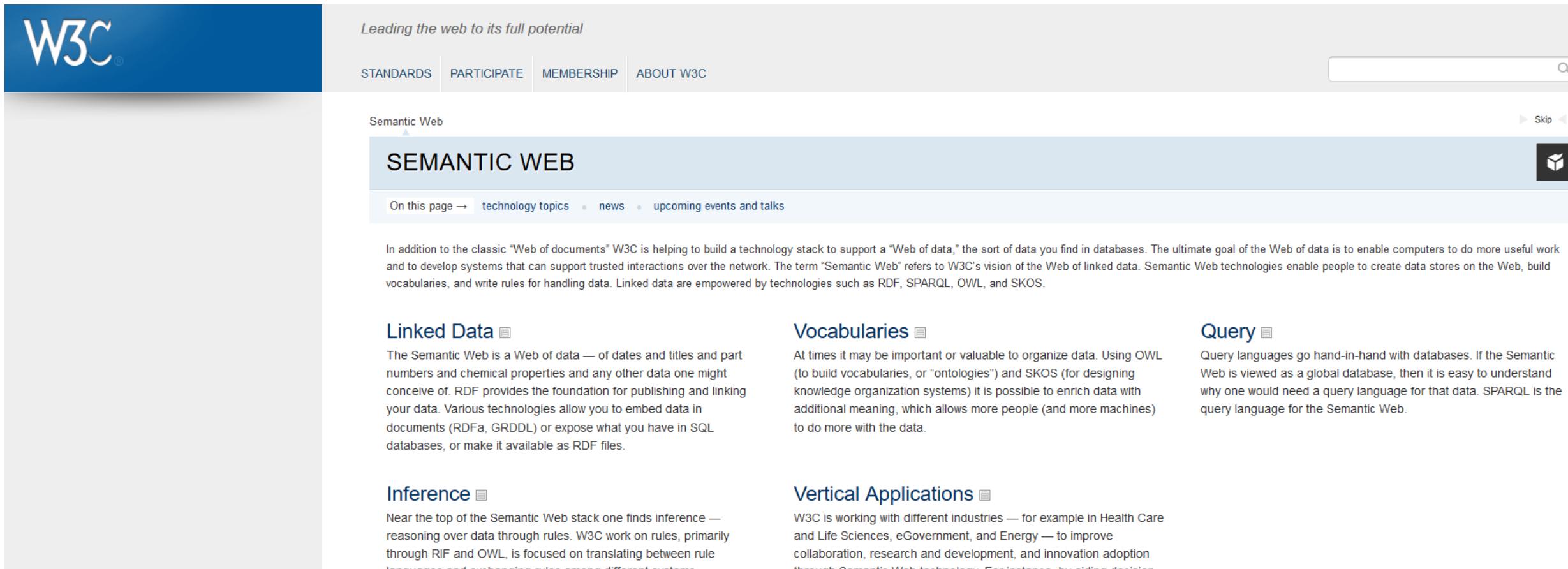
- Syntax
- Struktur
- Semantik

zeitliche Entwicklung



... Weiterentwicklungen insb. 2006 und 2014 gab es neue Recommendations ...

<https://www.w3.org/standards/semanticweb/>



The screenshot shows the W3C website's "Semantic Web" page. The header features the W3C logo and the tagline "Leading the web to its full potential". Navigation links include STANDARDS, PARTICIPATE, MEMBERSHIP, and ABOUT W3C. A search bar is on the right. The main content area has a blue header "SEMANTIC WEB". Below it, a breadcrumb navigation shows "On this page → technology topics • news • upcoming events and talks". The page content discusses the "Web of data" and how W3C is building a technology stack to support it. It covers four main topics: Linked Data, Vocabularies, Inference, and Vertical Applications, each with a brief description and a small icon.

Leading the web to its full potential

STANDARDS PARTICIPATE MEMBERSHIP ABOUT W3C

Semantic Web Skip

SEMANTIC WEB

On this page → technology topics • news • upcoming events and talks

In addition to the classic "Web of documents" W3C is helping to build a technology stack to support a "Web of data," the sort of data you find in databases. The ultimate goal of the Web of data is to enable computers to do more useful work and to develop systems that can support trusted interactions over the network. The term "Semantic Web" refers to W3C's vision of the Web of linked data. Semantic Web technologies enable people to create data stores on the Web, build vocabularies, and write rules for handling data. Linked data are empowered by technologies such as RDF, SPARQL, OWL, and SKOS.

Linked Data

The Semantic Web is a Web of data — of dates and titles and part numbers and chemical properties and any other data one might conceive of. RDF provides the foundation for publishing and linking your data. Various technologies allow you to embed data in documents (RDFa, GRDDL) or expose what you have in SQL databases, or make it available as RDF files.

Vocabularies

At times it may be important or valuable to organize data. Using OWL (to build vocabularies, or "ontologies") and SKOS (for designing knowledge organization systems) it is possible to enrich data with additional meaning, which allows more people (and more machines) to do more with the data.

Query

Query languages go hand-in-hand with databases. If the Semantic Web is viewed as a global database, then it is easy to understand why one would need a query language for that data. SPARQL is the query language for the Semantic Web.

Inference

Near the top of the Semantic Web stack one finds inference — reasoning over data through rules. W3C work on rules, primarily through RIF and OWL, is focused on translating between rule languages and exchanging rules among different systems.

Vertical Applications

W3C is working with different industries — for example in Health Care and Life Sciences, eGovernment, and Energy — to improve collaboration, research and development, and innovation adoption through Semantic Web technology. For instance, by aiding decision

Repräsentationsformen

- Graph – zum Lesen durch den Menschen
- RDF/XML, [N-Triples](#), [Turtle](#) ... – für den Datenaustausch

Aus <http://www.w3.org/TR/2014/REC-rdf11-concepts-20140225/>:

1.8 RDF Documents and Syntaxes

An RDF document is a document that encodes an [RDF graph](#) or [RDF dataset](#) in a concrete RDF syntax, such as Turtle [[TURTLE](#)], RDFa [[RDFA-PRIMER](#)], JSON-LD [[JSON-LD](#)], or TriG [[TRIG](#)]. RDF documents enable the exchange of RDF graphs and RDF datasets between systems.

A [concrete RDF syntax](#) may offer many different ways to encode the same [RDF graph](#) or [RDF dataset](#), for example through the use of [namespace prefixes](#), relative IRIs, [blank node identifiers](#), and different ordering of statements. While these aspects can have great effect on the convenience of working with the [RDF document](#), they are not significant for its meaning.

aus: <https://www.w3.org/TR/rdf11-new/>

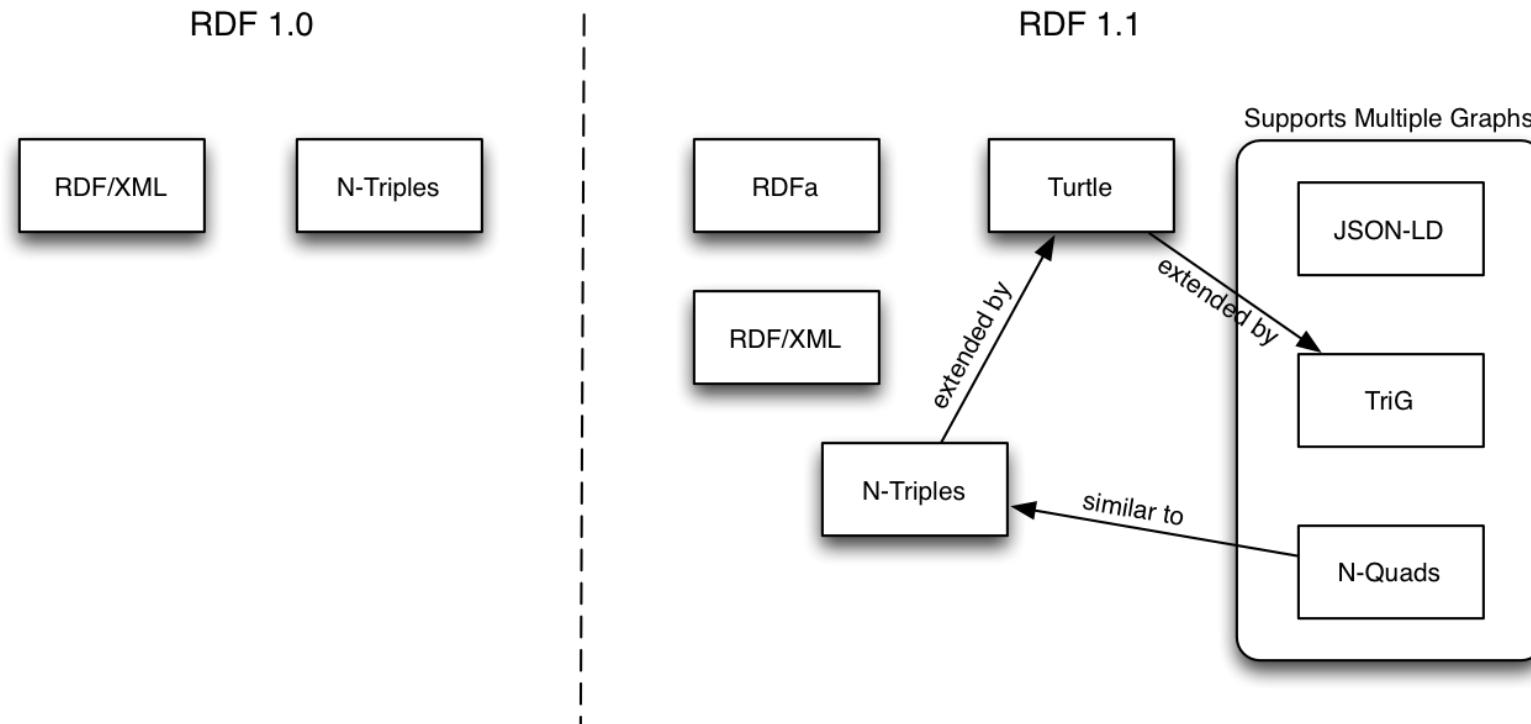


Fig. 1 RDF 1.0 and 1.1 serialization formats

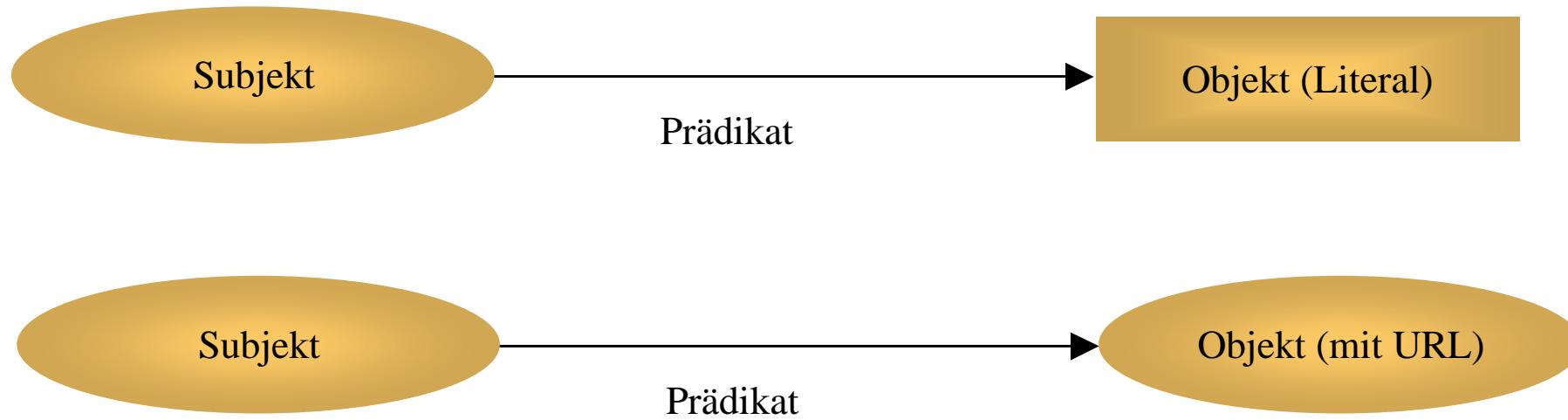
... aus meiner Sicht wichtig ...

- <http://www.w3.org/TR/rdf11-primer/> - Primer als Einführung
- <http://www.w3.org/TR/rdf11-concepts/> - zum Verstehen der Konzepte
- <https://www.w3.org/TR/2014/REC-rdf-schema-20140225/> - RDF Schema
- <http://www.w3.org/TR/rdf-syntax-grammar/> - Basics
- <http://www.w3.org/TR/rdf11-mt/> - RDF 1.1 Semantics
- ...

RDF Datenmodell

- RDF Data Model is based on the notions of **resource**, **property**, **literal** and **statement**
 - **resource** ≡ everything is a resource!
 - **property** ≡ specific characteristics of a resource; properties are resources!
 - **literal** ≡ constant value represented by character strings
 - **statement** ≡ a specific *resource* together with a *property* and a *value* (either a resource or a literal), respectively called *subject*, *predicate* and *object*
- *Bemerkung: Früher waren Literale und Resourcen getrennt!*

Grafische Darstellung von RDF-Aussagen



Tripeldarstellung:

[<http://www.dbis.cs.uni-frankfurt.de/~tolle/RDF/index.html> [http://www.my.de/vok#creator „Karsten Tolle“](#)]

Graf:



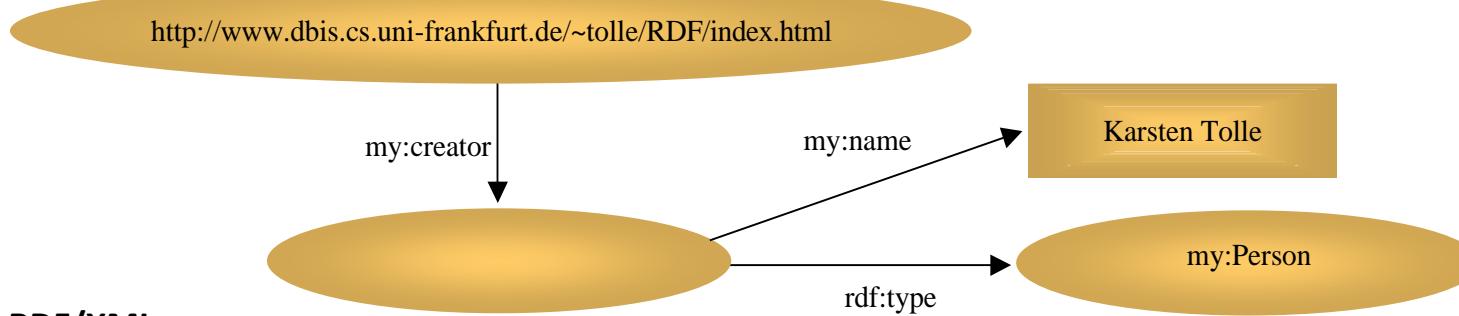
RDF/XML:

```
<?xml version="1.0"?>
<rdf:RDF
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
    xmlns:my="http://www.myns.de/vok#" >
<rdf:Description rdf:about="http://www.dbis.cs.uni-frankfurt.de/~tolle/RDF/index.html">
    <my:creator>Karsten Tolle</my:creator>
</rdf:Description>
</rdf:RDF>
```

Tripeldarstellung:

```
[ http://www.dbis.cs.uni-frankfurt.de/~tolle/RDF/index.html my:creator _:1 ]  
[ _:1 rdf:type my:Person ]  
[ _:1 my:name "Karsten Tolle" ]
```

Graf:

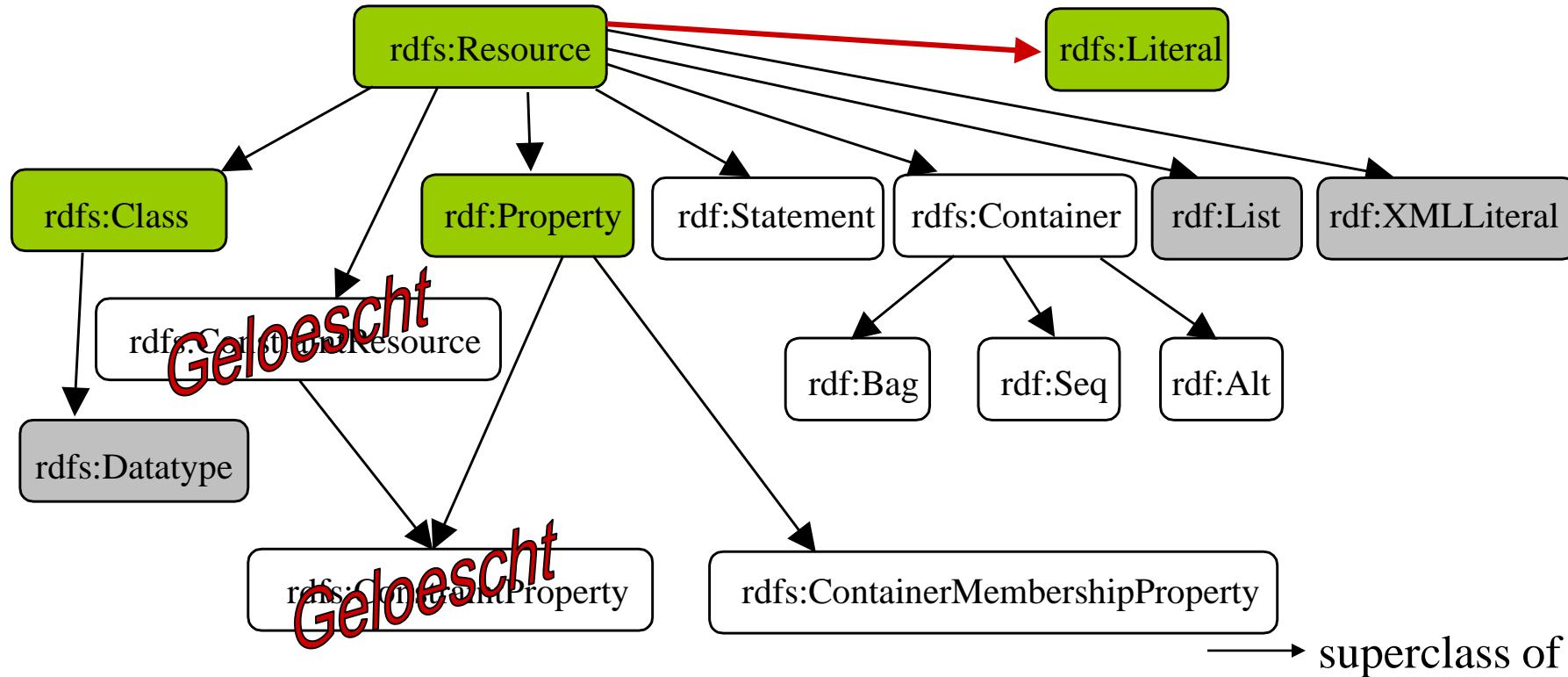


RDF/XML:

```
<?xml version="1.0"?>  
<rdf:RDF  
    xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"  
    xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"  
    xmlns:my="http://mytestnamespace#">  
    <rdf:Description rdf:about="http://www.dbis.cs.uni-frankfurt.de/~tolle/RDF/index.html">  
        <my:creator>  
            <my:Person>  
                <my:name>Karsten Tolle</my:name>  
            </my:Person>  
        </my:creator>  
    </rdf:Description>  
</rdf:RDF>
```

RDF Schema mechanism (classes)

War in der 1999 Spezifikation anders!



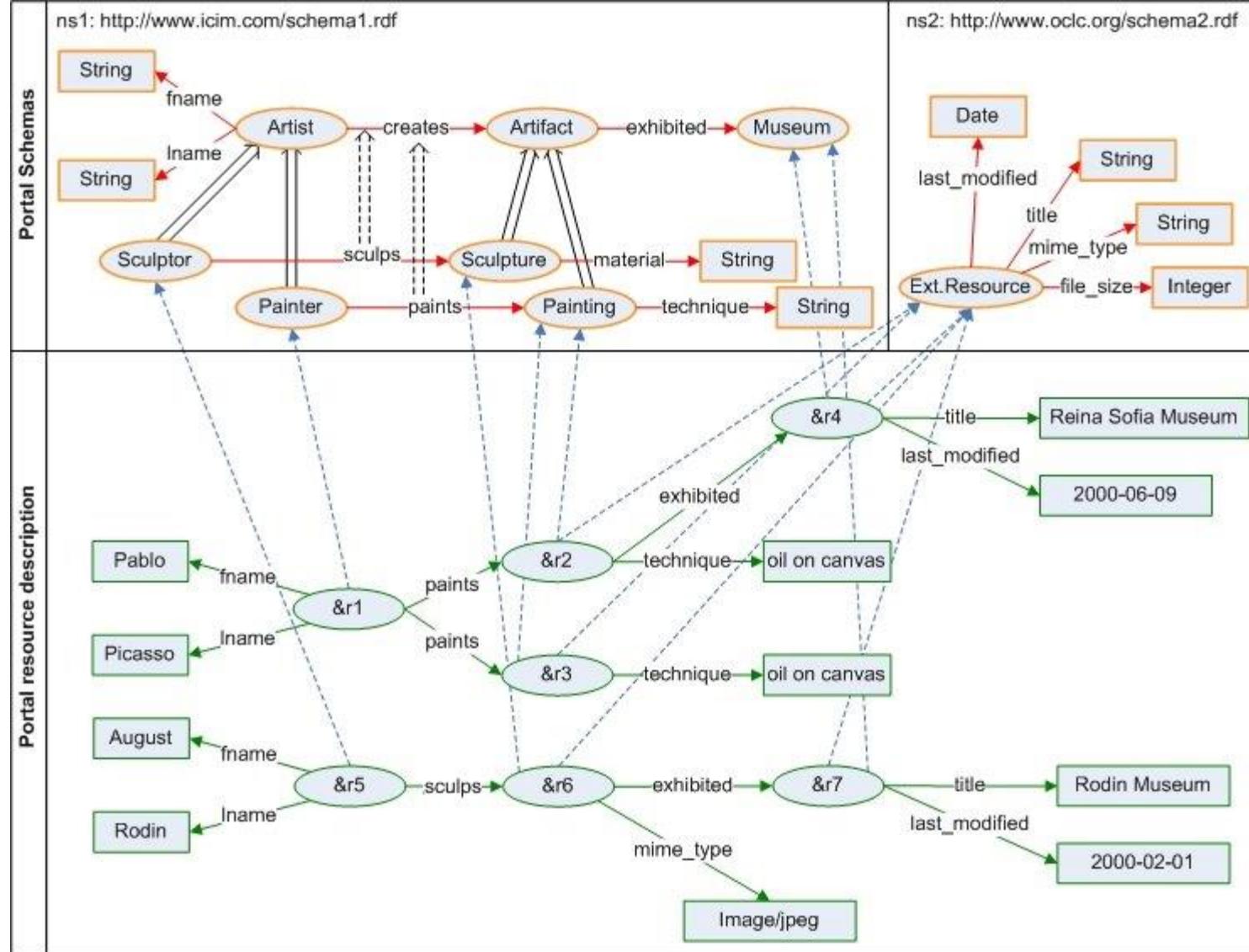
- There are two namespaces defined for RDF that can be viewed as the core vocabulary. We abbreviate them by the prefix:

 rdf = "http://www.w3.org/1999/02/22-rdf-syntax-ns#"

 rdfs = "http://www.w3.org/2000/01/rdf-schema#"

RDF Schema mechanism (core properties)

- **rdf:type** – instantiates a resource into a class
- **rdfs:subClassOf** – used to define a class hierarchy
- **rdfs:subPropertyOf** – used to define a property hierarchy
- **rdfs:domain** – constraints defines a property to be used with subject-resources of a specified class
- **rdfs:range** – constraints defines a property to be used with object of a specified class
- ...



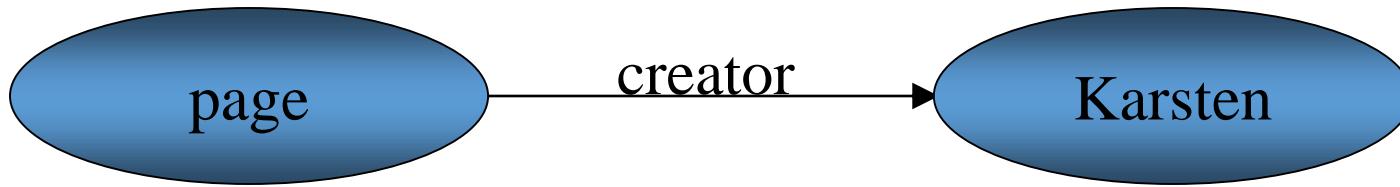
-----> typeOf (instance)

=====> subClassOf (isA)

-----> subPropertyOf (isA)

r1: http://www.culture.net/picasso132
 r2: http://www.museum.es/guernica.jpg
 r3: http://www.museuzm.es/woman.qtl
 r4: http://www.museum.es
 r5: http://www.culture.net/rodin424
 r6: http://artchive.com/crucifixion.jpg
 r7: http://www.rodin.fr

RDF vs XML



How to represent this information in XML?

```
<document>
  <uri>page</uri>
  <creator>Karsten</creator>
</document>
<uri ID="page" type="document">
  <creator ID="Karsten"/>
</uri>
<document uri="page" creator="Karsten" />
```

<creator ID="Karsten">
 <document uri="page"/>
</creator>

<creator ID="Karsten"/>

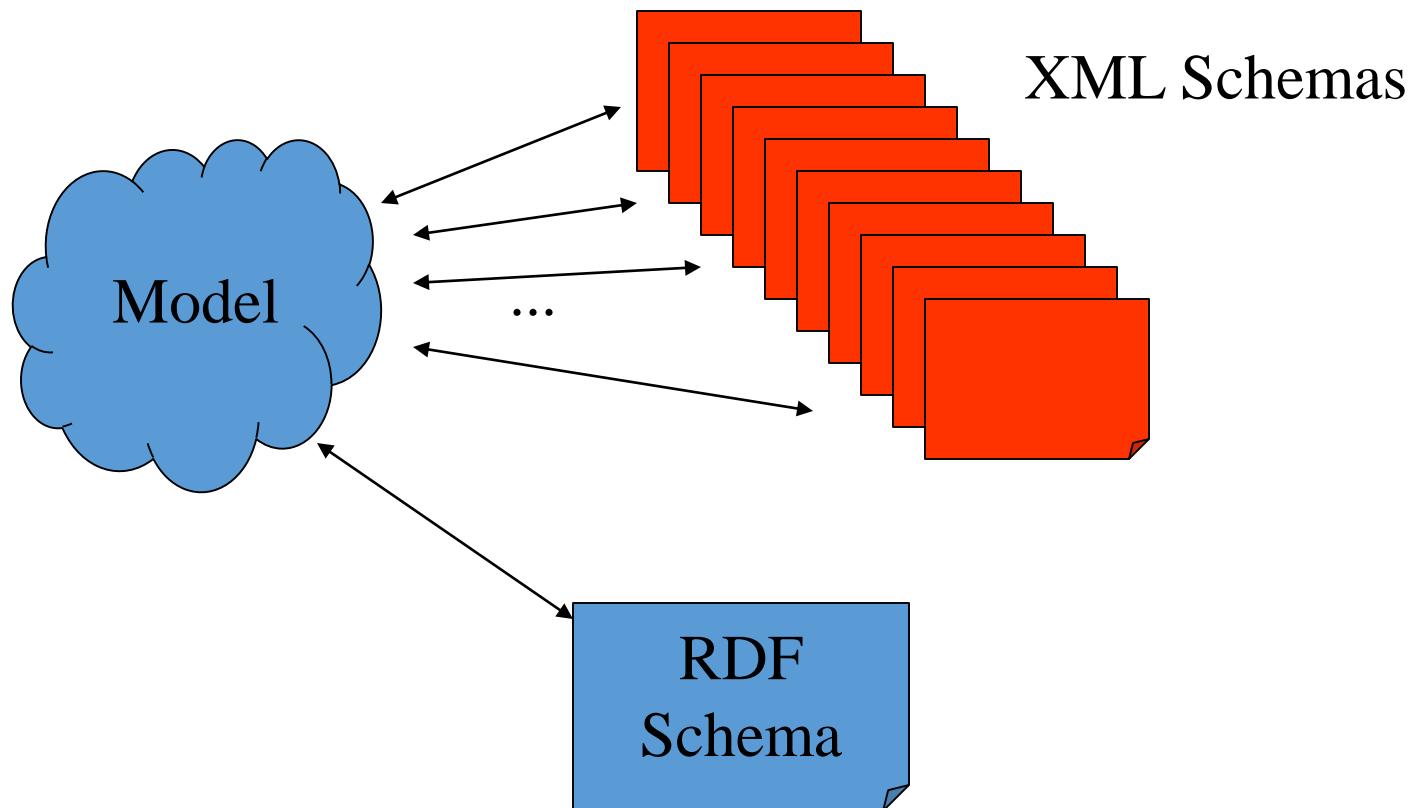
<document uri="page" creator="Karsten" />

XML

```
<a>
  <b attr1="344">
    <c>ttttttt</c>
    <d>uuuuu</d>
  </b>
  <e attr2="vvvvvvv"/>
</a>
```

Without knowing the schema you only have a tree!
... the same meaning could also be represented by various
other trees! ☹

RDF vs XML



RDF vs XML

In XML you have

- A many to one mapping.
- You need to know the schema.
- Limited to a tree.
- No inference defined.
- No default constructs like in RDF
like classes and hierarchies, containers, ...)
- ...

Extensions for RDF

- OWL – Web Ontology Language
 - OWL lite
 - OWL DL (description logics)
 - OWL full
- Namespace:
`xmlns:owl = "http://www.w3.org/2002/07/owl#"`

OWL (some examples)

OWL = Web Ontology Language (WOL fand man wohl blöd😊)

(In)Equality:

- *equivalentClass*
- *equivalentProperty*
- *sameAs*
- *differentFrom*
- *allDifferent*

Property Characteristics:

- *inverseOf*
- *TransitiveProperty*
- *SymmetricProperty*
- *FunctionalProperty*
- *InverseFunctionalProperty*

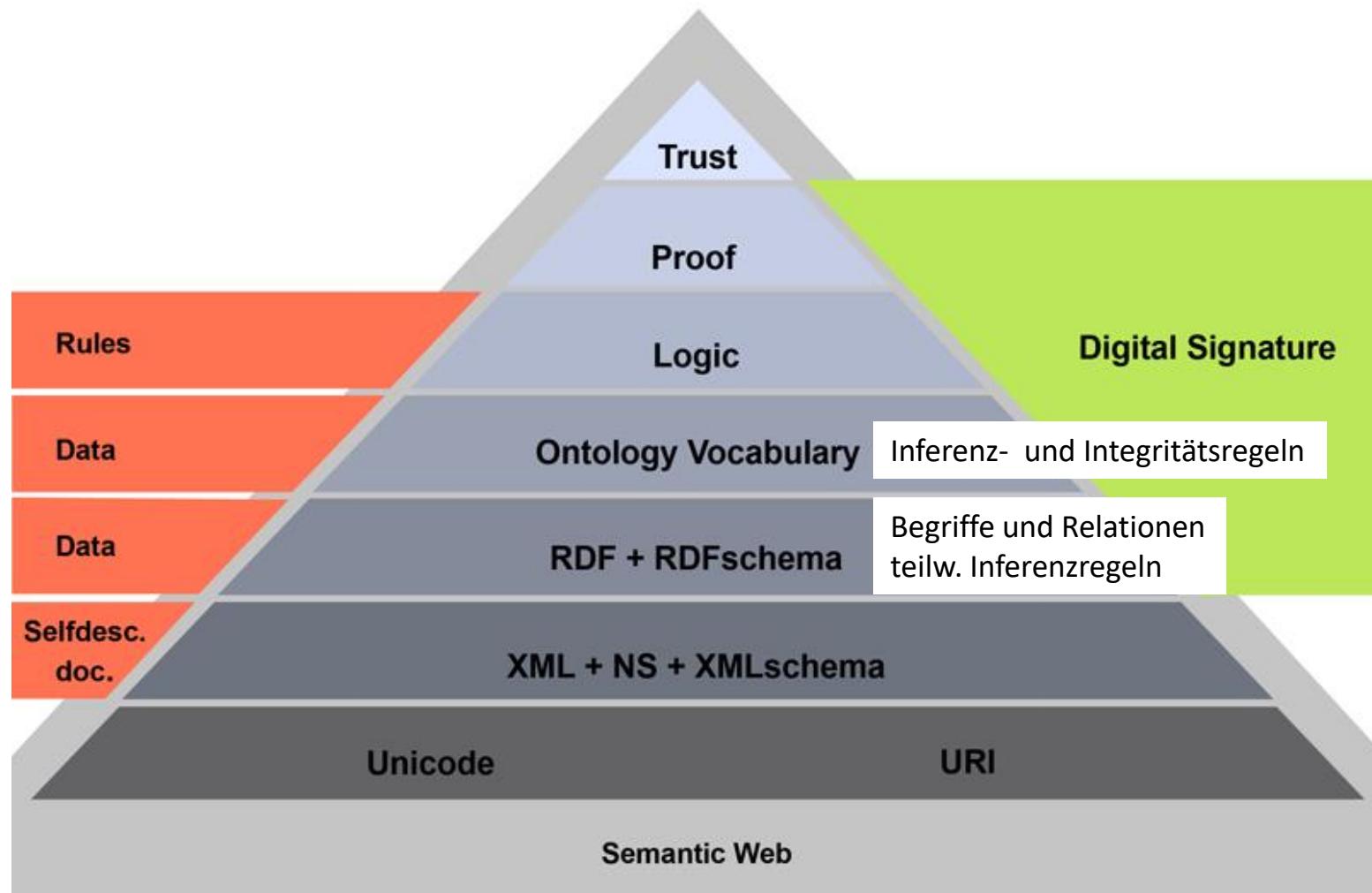
<https://www.w3.org/TR/owl-ref/>

... neue Version: OWL 2

<http://www.w3.org/TR/owl2-overview/>

Ontologie

- Unter einer **Ontologie** versteht man ein formal definiertes System von *Begriffen* und *Relationen*. Zusätzlich enthalten Ontologien *Inferenz-* und *Integritätsregeln*, das heißt, Regeln der Schlussfolgerung und zur Gewährleistung ihrer Gültigkeit.
- Formalisiertes Modell der (Sub-)Welt!
- Informatik, insb. Wissensmanagement



Linked Open Data



stelle deine Daten im *Web* unter einer offenen Lizenz bereit. Das Format ist dabei egal

stelle Daten in einem strukturierten Format bereit (z. B. Excel anstelle eines eingescannten Bildes einer Tabelle)

verwende offene, nicht proprietäre Formate (z. B. CSV statt Excel)

verwende URIs um Dinge zu bezeichnen, damit deine Daten verlinkt werden können (RDF Standards)

verlinke deine Daten mit anderen Daten um Kontexte herzustellen

Kaggle – Challenges, Daten, Kurse ...

kaggle

Search

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Recently Viewed

Between Our Worlds: A...

Help us better understand COVID-19

There is a large body of research and data around COVID-19. Help the global community better understand the disease by getting involved on Kaggle.

Get Started View Contributions



Welcome Karsten T

This is your personal newsfeed. As we learn what you like, we'll update you on cool Kaggle stuff that matches your interests. You can also choose to follow topics, notebooks, and people you want to keep up with.

Gaurav Ahuja • Follow
ran a notebook 2 days ago

Neural Network to predict Diabetes
Python Notebook on Pima Indians Diabetes Database

3s to run | 248 lines | 68 views | 3 visualizations

Karsten T
Joined an hour ago

Novice

Jobs

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 Between Our Worlds: A...

 Dataset

Between Our Worlds: An Anime Ontology

A Linked Open Dataset of Over 390,000 Anime

 Rachael Tatman • updated 3 years ago (Version 1)

Data Tasks Kernels Discussion (1) Activity Metadata Download (97 MB) New Notebook 

 Usability 8.2  License Other (specified in description)  Tags computing, internet, anime and manga, popular culture, information technology

Description

Context:

Linked data: "Linked open data is linked data that is open content. In computing, linked data (often capitalized as Linked Data) is a method of publishing structured data so that it can be interlinked and become more useful through semantic queries. It builds upon standard Web technologies such as HTTP, RDF and URIs, but, rather than using them to serve web pages for human readers, it extends them to share information in a way that can be read automatically by computers. This enables data from different sources to be connected and queried." -- "[Linked Open Data](#)" on Wikipedia

Anime: "Anime is a Japanese term for hand-drawn or computer animation. The word is the abbreviated pronunciation of "animation" in Japanese, where this term references all animation. Outside Japan, anime is used to refer specifically to animation from Japan or as a Japanese-disseminated animation style often characterized by colorful graphics, vibrant characters and fantastical themes." -- "[Anime](#)" on Wikipedia

This dataset is a linked open dataset that contains information on 391706 anime titles.

Content:

This dataset contains two files. The first is the native [N-Triples format](#), which is suitable for tasks. The second is a .csv containing three columns:

- Anime: the title of the anime
- Content: the content

Acknowledgements:

This dataset has been collected and maintained by Pieter Heyvaert. It is © Between Our Worlds and reproduced here under an [MIT license](#). You can find more information on this dataset and the most recent version [here](#).

„The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.”

The MIT License

License Copyright: Unknown.

License License: Unknown.

License Contact: Unknown.

SPDX short identifier: MIT

[Further resources...](#)



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End license text.

kaggle

Search

Data Tasks Kernels Discussion (1) Activity Metadata Download (97 MB) New Notebook :

Data (97 MB)

Data Sources

- anime-ontology.csv 3 columns
- 2017-09.nt

About this file

An N-Triples file with information on different anime.

2017-09.nt (60.92 MB)

```

<https://betweenourworlds.org/anime/1000-years-later> <http://dbpedia.org/ontology/numberOfEpisodes> "1" .
<https://betweenourworlds.org/anime/1000-years-later> <http://dbpedia.org/ontology/title> "10000 Years Later" .
<https://betweenourworlds.org/anime/1000-years-later> <http://dbpedia.org/ontology/title> "10000 Years Later"@en .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/description> "Hundreds of thousands of years after the collapse of the Roman Empire" .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/endDate> "2015-03-27"^^<http://schema.org/Date> .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/mainEntityOfPage> "https://kitsu.io/anime/1000-years-later"^^<http://schema.org/Text> .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/mainEntityOfPage> "https://myanimelist.net/anime/35432"^^<http://schema.org/Text> .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/name> "10000 Years Later" .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/name> "10000 Years Later"@en .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/numberOfEpisodes> "1" .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/startDate> "2015-03-27"^^<http://schema.org/Date> .
<https://betweenourworlds.org/anime/1000-years-later> <http://schema.org/trailer> <https://betweenourworlds.org/trailer/1000-years-later> .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://dbpedia.org/ontology/Anime> .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://dbpedia.org/ontology/Cartoon> .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://dbpedia.org/ontology/Work> .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://schema.org/CreativeWork> .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://schema.org/Movie> .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/1999/02/22-rdf-syntax-ns#type> <http://schema.org/Thing> .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/2000/01/rdf-schema#comment> "Hundreds of thousands of years after the collapse of the Roman Empire" .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/2000/01/rdf-schema#label> "10000 Years Later" .
<https://betweenourworlds.org/anime/1000-years-later> <http://www.w3.org/2000/01/rdf-schema#label> "10000 Years Later"@en .
<https://betweenourworlds.org/anime/100-pascal-sensei> <http://dbpedia.org/ontology/numberOfEpisodes> "6" .
<https://betweenourworlds.org/anime/100-pascal-sensei> <http://dbpedia.org/ontology/title> "100% Pascal-sensei" .

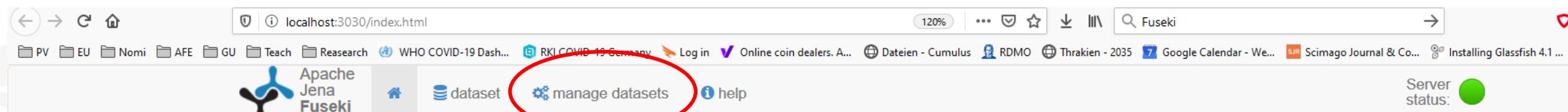
```

We use cookies on Kaggle to deliver our services, analyze web traffic, and improve your experience on the site. By using Kaggle, you agree to our use of cookies.

Fromm ▲ ▼ Alle hervorheben Groß-/Kleinschreibung Akzente Ganze Wörter 1 von 2 Übereinstimmungen Das Seitenende wurde erreicht, Suche vom Seitenanfang fortgesetzt

How to handle ...

1. Download .nt file
2. Install Fuseki (<https://jena.apache.org/documentation/fuseki2/>)
3. Start Fuseki (normally runs local under port 3030) ... open Fuseki in a browser (see below)
4. Generate a new dataset (database) ... „manage datasets“

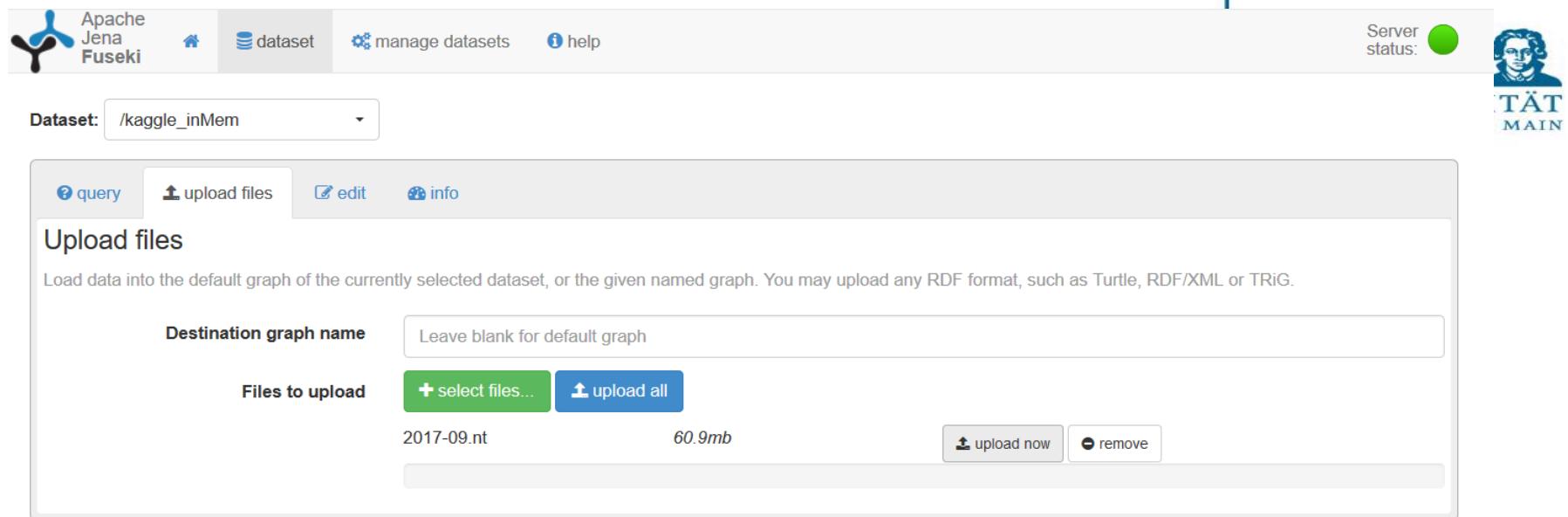


Apache Jena Fuseki

Version 3.9.0. Uptime: 1h 0m 13s

Datasets on this server

| dataset name | actions |
|----------------|---|
| /afe_pl_inMem | query add data info |
| /afe_rgk | query add data info |
| /cnt_inMem | query add data info |
| /inMem_CNT_NLP | query add data info |
| /kaggle_inMem | query add data info |
| /nomisma_inMem | query add data info |



Apache Jena Fuseki

dataset manage datasets help

Server status: 

Dataset: /kaggle_inMem

query upload files edit info

Upload files

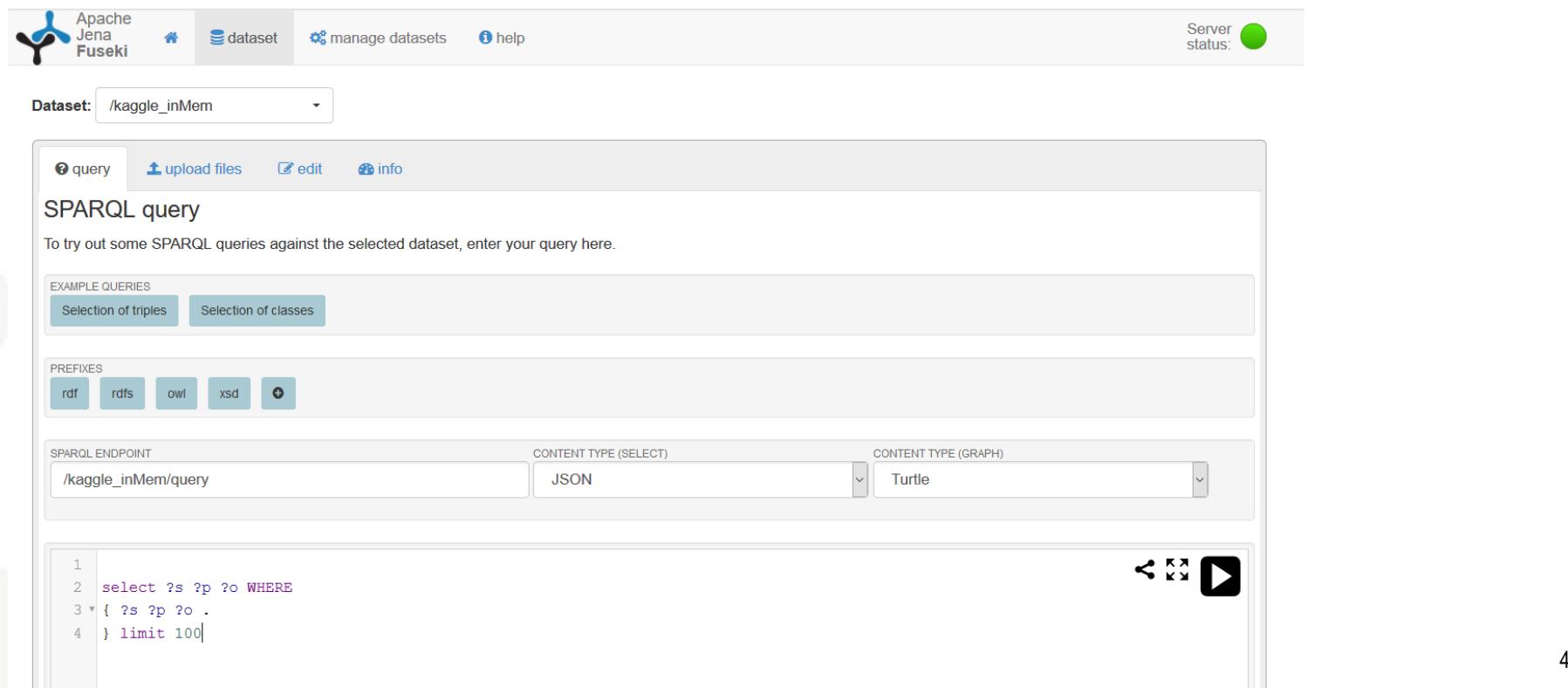
Load data into the default graph of the currently selected dataset, or the given named graph. You may upload any RDF format, such as Turtle, RDF/XML or TRIG.

Destination graph name

Files to upload

2017-09.nt 60.9mb

5. Upload data



Apache Jena Fuseki

dataset manage datasets help

Server status: 

Dataset: /kaggle_inMem

query upload files edit info

SPARQL query

To try out some SPARQL queries against the selected dataset, enter your query here.

EXAMPLE QUERIES

PREFIXES

SPARQL ENDPOINT CONTENT TYPE (SELECT) CONTENT TYPE (GRAPH)

```
1 select ?s ?p ?o WHERE
2 { ?s ?p ?o .
3 } limit 100|
```

◀ ▶

6. Query data

SPARQL – Query Language for RDF

<https://www.w3.org/TR/sparql11-query/>



The screenshot shows a web page from nomisma.org. At the top, there is a navigation bar with links for "Browse IDs", "Research Tools", "APIs", "Documentation", and "Ontologies". The main title "SPARQL Query" is prominently displayed. Below it, a subtext reads: "For examples, see [SPARQL Examples](#). A basic tutorial on SPARQL is available from [Apache Jena](#)." A large code block displays a SPARQL query:

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX dcterms: <http://purl.org/dc/terms/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
PREFIX nm: <http://nomisma.org/id/>
PREFIX nmo: <http://nomisma.org/ontology#>
PREFIX org: <http://www.w3.org/ns/org#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>

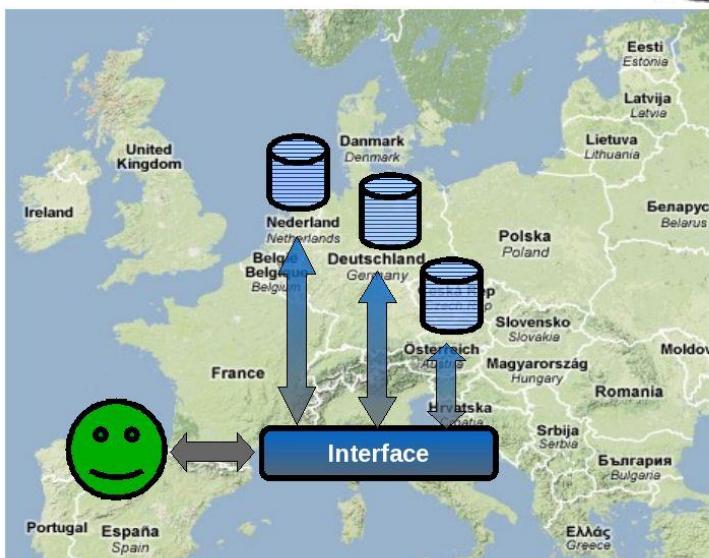
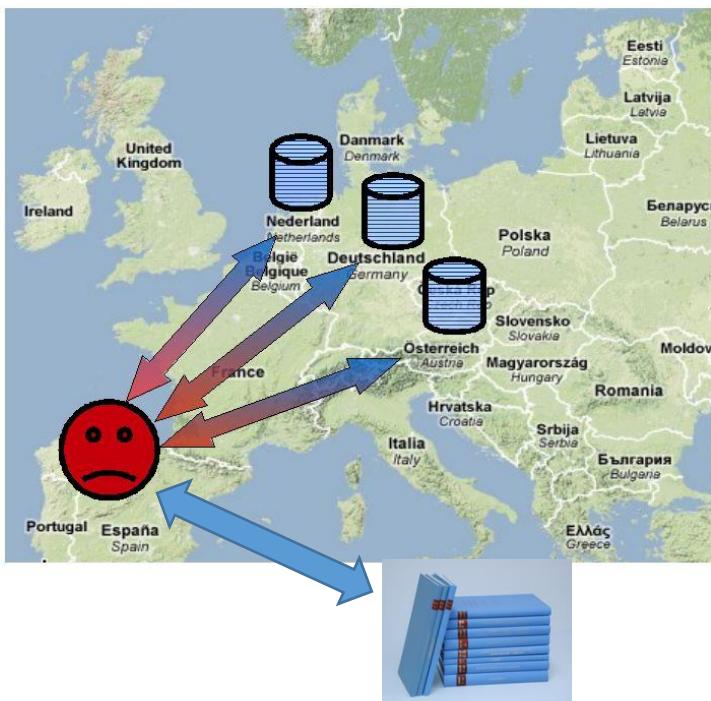
SELECT ?uri ?label WHERE {
?uri a foaf:Person ;
    skos:prefLabel ?label ;
    org:hasMembership ?membership .
?membership org:role nm:roman_emperor .
FILTER(langMatches(lang(?label), "EN"))
} limit 10
```

Antike Münzen:
... wo gefunden?
... Gemeinsamkeiten?
... wo sind die gef. Exemplare?

Denar von Kaiser Nero:



Wo finde ich Denari von Nero?



Denari Nero



A screenshot of a Google search results page. The search query "Denari Nero" is visible in the address bar. The results page features a large image of an ancient Roman coin at the top. Below it, there are several links and images. One prominent image shows multiple pairs of legs in black pantyhose. A link to a product page for "Sauber Classic Collant 70 denari Nero" from "Farmacia online Statuto" is displayed, along with a snippet of text about the product.



Contributors

The following institutions have contributed data, specialist advice and/or financial support to the Nomisma project:



The British
Museum



Arts & Humanities
Research Council



Münzkabinett
Staatliche Museen zu Berlin



GOETHE
UNIVERSITÄT
FRANKFURT AM MAIN

Alexander von Humboldt
Stiftung/Foundation

Nomisma.org

Nomisma

Nomisma.org is a collaborative project to provide stable digital representations of numismatic concepts according to the principles of [Linked Open Data](#). These take the form of http URIs that also provide access to reusable information about those concepts, along with links to other resources. The canonical format of nomisma.org is RDF/XML, with serializations available in JSON-LD (including geoJSON-LD for complex geographic features), Turtle, KML (when applicable), and HTML5+RDFa 1.1.

While the URIs provided by nomisma.org are stable, the project is in progress and subject to constant expansion and ongoing correction. This is particularly the case for the information provided about each nomisma.org identifier.

The information provided by nomisma.org has been provided by a wide community of scholars and institutions.

The project is steered by a committee currently consisting of:

- Rahel Ackermann, Swiss Inventory of Coin Finds
- Florence Codine, [Ecole Pratique des Hautes Etudes](#)
- Karsten Dahmen, [MK Berlin](#)
- Frédérique Duyrat, [BnF](#)
- Ethan Gruber, [ANS](#)
- Sebastian Heath, [NYU ISAW](#)
- Jerome Mairat, [Ashmolean Museum, Oxford](#)
- Andrew Meadows, [New College, Oxford University](#)
- Ulrike Peter, [Berlin-Brandenburg Academy of Sciences and Humanities](#)
- Karsten Tolle, [DBIS, University of Frankfurt](#)
- David Wigg-Wolf, [DAI RGK](#)

Nomisma.org also hosts the [Numismatic Description XML Schema](#)

There are two Github repositories associated with the project. The application code is available in <https://github.com/nomisma/framework>. The RDF/XML data and ontology versions are in <https://github.com/nomisma/data>.

Example Nomisma.org URLs

Nomisma.org focuses on URIs for concepts that are unique to numismatics or which have a distinct meaning within the discipline. Examples are:

Data Export

Nomisma Linked Data

[Linked Data: JSON-LD, TTL, RDF/XML](#)

Pelagios Annotations

[Void for Concepts: RDF/XML](#)

[Void for Partner Objects: RDF/XML](#)

Atom Feed

[Feed](#)

[Documentation](#)

Contributors

The following institutions have contributed data, specialist advice and/or financial support to the Nomisma project:

The British Museum
www.finds.org.uk

Arts & Humanities
Research Council

Münzkabinett
Staatliche Museen zu Berlin

<http://www.acad.ro/>

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UNIVERSITÄT
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47



Quantitative Analysis

julius_caesar (foaf:Person)

skos:prefLabel

Гай Юлий Цезарь (ab), Julius Caesar (af), ଯୁଲିସ କୀସର (am), Chulio César (an), يوليوس قيصر (ar), ଜୁଲିଆସ ଚିଜାର (as), Qay Yuli Sezar (az), Юлий Цезарь (ba), Гай Юлій Цезар (be), Юлий Цезар (bg), Julius Caesar (bi), Julius Caesar (bm), ଜୁଲିଆସ ସିଜାର (bn), ଶ୍ରୀମତୀ କୁମାରୀ ପାତେଣ୍ଡା (bo), Caius Julius Caesar (br), Julije Cezar (bs), Juli Cèsar (ca), Гай Юлий Цезарь (ce), Gaiu Giuliu Cesare (co), Ръпъръ Ултънъръ (cr), Julius Caesar (cs), Iwl Cesar (cy), Julius Cæsar (da), Gaius Iulius Caesar (de), Julius Caesar (dv), Julius Caesar (ee), Ιούλιος Καίσαρας (el), Julius Caesar (en), Julio Cezaro (eo), Julio César (es), Julius Caesar (et), Julio Zesar (eu), زواليوس سزار (fa), Julius Caesar (fi), Julius Cæsar (fj), Julius Cæsar (fo), Jules César (fr), Julius Caesar (fy), Iúil Caesar (ga), Iulius Caesar (gd), Xulio César (gl), ଜୁଲିସ ସୀଜାର (gu), Jool Kaesar (gv), Julius Caesar (ha), ରୋଇ କିଲି (he), ଜୁଲିସ ସୀଜାର (hi), Gaj Julije Cezar (hr), Julius Caesar (ht), Caius Iulius Caesar (hu), Յովհնոս Կեսար (hy), Julio Cesare (ia), Julius Caesar (id), Julius Caesar (ie), Julius Caesar (ig), Julius Cezaro (io), Július Caesar (is), Gaio Giulio Cesare (it), ରୂଦ୍ଧାରୀ (iu), ガイウス・ユリウス・カエサル (ja), Julius Caesar (iv), ଓ୍ରୁଲ୍ଲାଇସ କ୍ରେଇଟର୍ନ୍ (ka), Julius Caesar (ki), Гай Юлий Цезарь (kk), କୁମ୍ହିଙ୍ଗ ଚେଷତା (km), ଜାଲିଯାନ୍ଦା ସେଇଜର୍ (kn), 올리우스 카이사르 (ko), Julius Caesar (ku), Gaius Iulius Caesar (la), Gaius Iulius Caesar (lb), Julius Caesar (li), Julius Caesar (ln), Gaius Julijus Cezaris (lt), Jūlijs Cēzars (lv), Joliosy Kaisara (mg), ଗାଜ ଜୁଲି ଚେଜାର (mk), ଜୁଲିସ ଚେଜାର (ml), ଯୁଲି ଚେଜାର (mn), ଜୁଲିସ ସୀଜାର (mr), Julius Caesar (ms), ମିଲିଯନ୍ ହେଲ୍ଫିଟ୍ (my), Julius Caesar (na), Julius Cæsar (nb), ଜୁଲିସ ସିଜାର (ne), Julius Caesar (nl), Julius Cæsar (nn), Juli Cesar (oc), Julius Caesar (om), କୁଳିଆସ ସାଜର (or), ଚାଲୀଅମ ମୀଜର (pa), Gajusz Juliusz Cezar (pl), Júlio César (pt), Gaius Iulius Caesar (qu), Iulius Cezar (ro), ଗାଯ ଯୁଲି ଚେଜାର (ru), ଜୁଲିସ କୈସର (sa), Gaius Octavius Caesar (sc), Julius Caesar (sr), Gaius Iulius Caesar (th), ଏବି ଏବି ଫ୍ରେଙ୍କ୍ (vi), Gaius Iulius

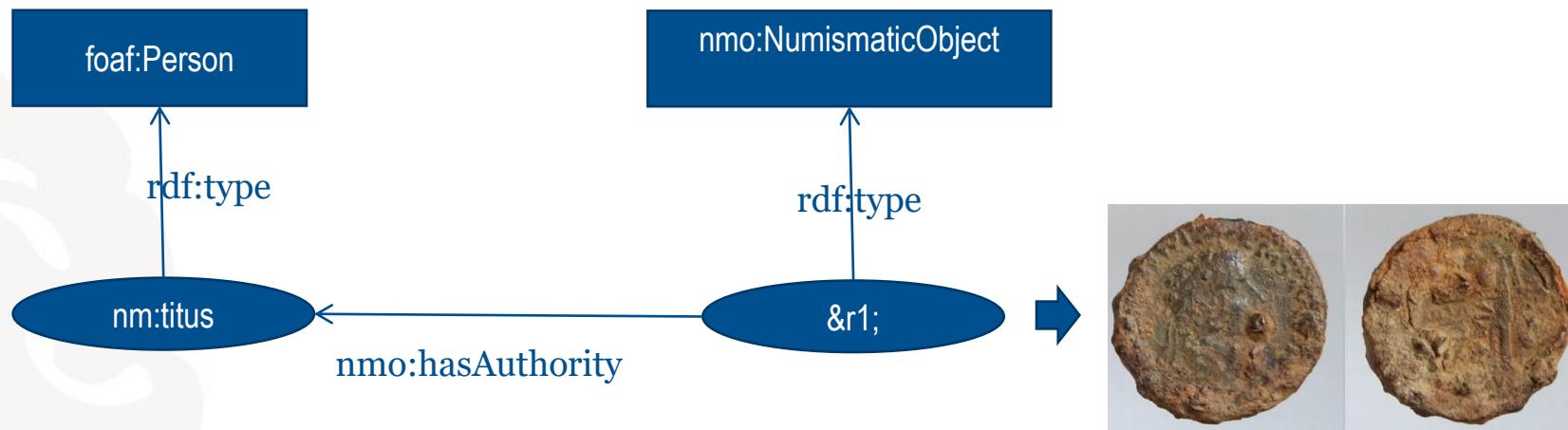
Explore

Linked Data

Geography



RDF – Resource Description Framework

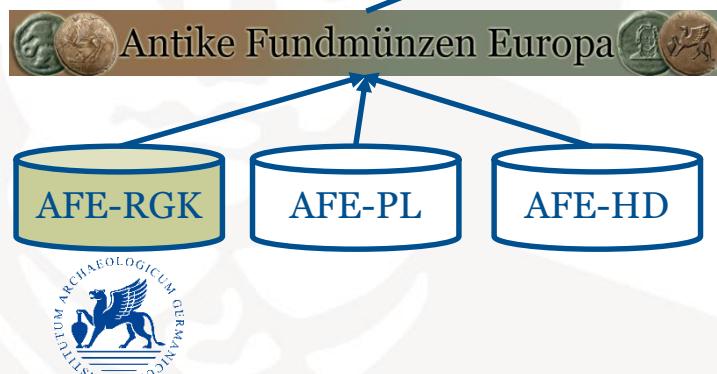
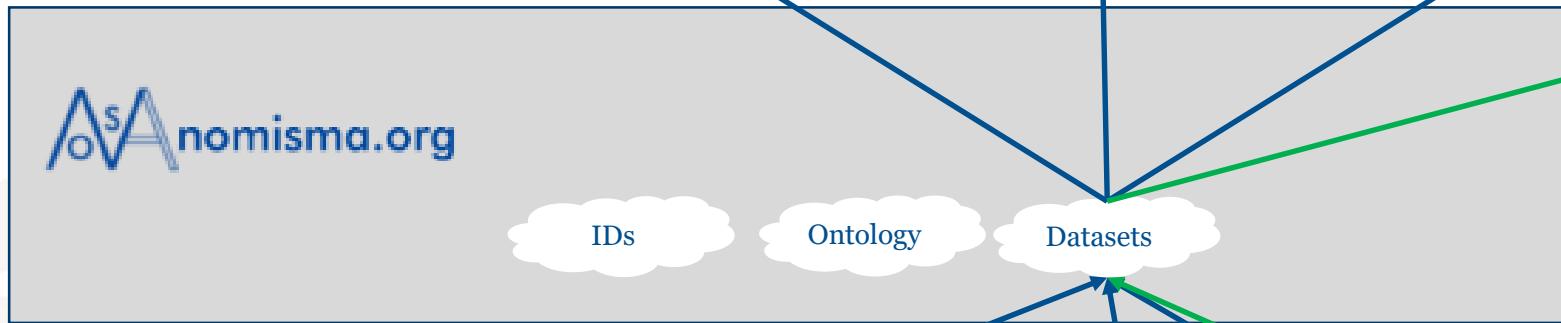
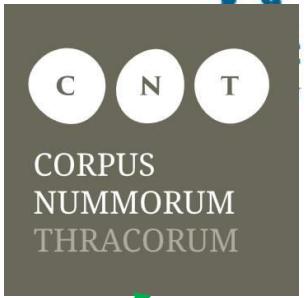
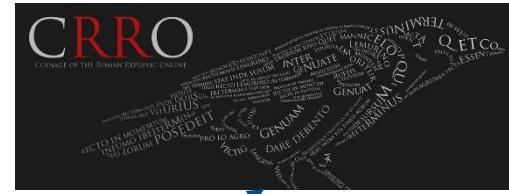
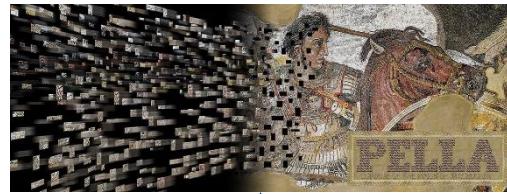


nm:titus = <http://nomisma.org/id/titus>
&r1; = http://afe.dainst.org/rdf/resource/AFE_coin_1679

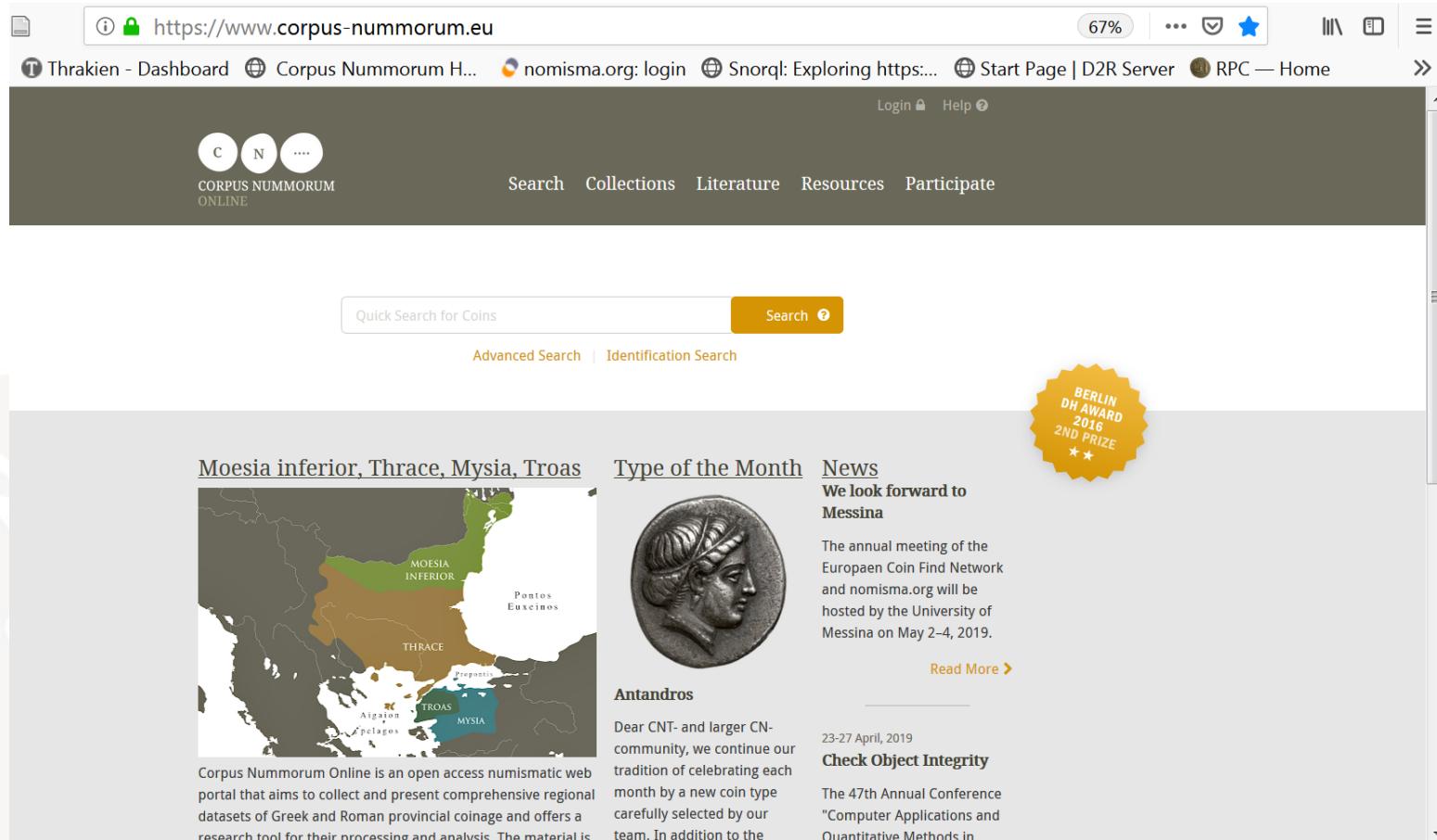
[Anomisma.org](#)
Browse IDs
Research Tools ▾
APIs
Documentation ▾
Ontology
SPARQL
Datasets
Search

Datasets

| Dataset | Description | Publisher | License | Count | Data Dump |
|---|---|---|--------------------------|-------|-----------|
| American Numismatic Society | MANTIS: A Numismatic Technologies Integration Service | American Numismatic Society | ODC-ODbL | 56722 | |
| Art of Devastation | The Art of Devastation (AoD) is a new research tool designed to help in the identification, cataloguing, and contextualization of the abundant and varied types of non-monetary numismatic items issued during and immediately after the First World War (1914-1918). | American Numismatic Society | ODC-ODbL | 1990 | |
| Coin Hoards of the Roman Republic | Coin Hoards of the Roman Republic (CHRR) is an actively updated index of gold and silver hoards mainly composed of coins of the Roman Republican period. | American Numismatic Society | | 493 | |
| Coinage of the Roman Republic Online | An online type corpus based upon the numbering system defined in Michael Crawford's 1974 publication, Roman Republican Coinage (RRC). | American Numismatic Society | ODC-ODbL | 2295 | |
| Inventory of Greek Coin Hoards | Data from the American Numismatic Society-published Inventory of Greek Coin Hoards (1973). | American Numismatic Society | | 2387 | |
| Online Coins of the Roman Empire | A corpus of coin types from the Roman Empire, from Augustus (27 B.C.) to Zeno (A.D. 491). | American Numismatic Society | ODC-ODbL | 50691 | |
| PELLA | PELLA is a coin type corpus of Macadonian kings of the Argead dynasty (c. 700-310 B.C.). | American Numismatic Society | ODC-ODbL | 4573 | |
| Archäologisches Museum der Westfälischen Wilhelms-Universität | The coin collection of the Archaeological Museum of Münster University consists of more than 5,500 objects covering all historical periods in antiquity: Greek coins (of the archaic, classical and hellenistic periods), coins of the Roman Republic and empire, | Archäologisches Museum der Westfälischen Wilhelms-Universität | | 234 | |



und viele andere ...



The screenshot shows the homepage of the Corpus Nummorum Online website. At the top, there is a navigation bar with links for "Search", "Collections", "Literature", "Resources", and "Participate". Below the navigation bar, there is a search bar with the placeholder "Quick Search for Coins" and a "Search" button. To the right of the search bar, there are links for "Advanced Search" and "Identification Search". On the left side of the main content area, there is a map of the Roman provinces of Moesia Inferior, Thrace, Mysia, and Troas. In the center, there is a coin profile of Antandros. To the right, there is a news section about the "Type of the Month" featuring Antandros, and a section about the "News" regarding the annual meeting of the Europaen Coin Find Network and nomisma.org at the University of Messina. A yellow circular badge on the right indicates a "BERLIN DH AWARD 2016 2ND PRIZE".

www.corpus-nummorum.eu

Gefördert durch
 Deutsche
Forschungsgemeinschaft



Bundesministerium
für Bildung
und Forschung

GEFÖRDERT VOM



Nicht angemeldet Diskussionsseite Beiträge Beiträge

Artikel Diskussion Lesen Quelltext anzeigen Versionsgeschichte Wikipedia durchsuchen

Gaius Iulius Caesar

Caesar, Cäsar, Julius Caesar und Julius Cäsar sind Weiterleitungen auf diesen Artikel. Für weitere Bedeutungen, siehe [Caesar \(Begriffsklärung\)](#) und [Julius Caesar \(Begriffsklärung\)](#).

Gaius Iulius Caesar [ˈgaijʊs ˈju:lɪjʊs ˈkae̯sər] (deutsch: [Gaius Julius Cäsar](#) [ˈtse:za̯r]) * 13. Juli^[1] 100 v. Chr. in Rom; † 15. März 44 v. Chr. in Rom) war ein römischer Staatsmann, Feldherr und Autor, der maßgeblich zum Ende der Römischen Republik beitrug und dadurch an ihrer späteren Umwandlung in ein Kaiserreich beteiligt war.

Der patrizischen Familie der Julier entstammend, absolvierte er die Ämterlaufbahn und gelangte durch ein Bündnis mit dem reichen Marcus Licinius Crassus und dem erfolgreichen Militär Gnaeus Pompeius Magnus im Jahr 59 v. Chr. zum Konsulat. In den folgenden Jahren ging Caesar als Prokonsul in die nördlichen Provinzen Illyrien und Gallia Cis- und Transalpina, von wo aus er in den Jahren 58 bis 51 v. Chr. ganz Gallien bis zum Rhein eroberte. Im anschließenden Römischen Bürgerkrieg von 49 bis 45 v. Chr. setzte er sich gegen seinen ehemaligen Verbündeten Pompeius und dessen Anhänger durch und errang die Alleinherrschaft. Nach seiner Ernenntung zum Diktator auf Lebenszeit fiel er einem Attentat zum Opfer. Sein Großneffe und Haupterbe Gaius Octavius (später Kaiser Augustus) setzte das Prinzipat als neue Staatsform des Römischen Reiches endgültig durch.

Der Name Caesars wurde zum Bestandteil des Titels aller nachfolgenden Herrscher des römischen Kaiserreichs. In der römischen Spätantike und im Byzantinischen Reich bezeichnete der Titel „Caesar“ einen Mitherrschler oder Thronfolger. In den entlehnten Formen Kaiser und Zar wurde der Name später auch zum Titel der Herrscher des Heiligen Römischen, des Österreichischen, des Deutschen, des Bulgarischen, des Serbischen und des Russischen Reiches.

Inhaltsverzeichnis [Verbergen]

- 1 Leben
 - 1.1 Herkunft
 - 1.2 Erste Schritte in die Politik
 - 1.3 Caesars Aufstieg
 - 1.3.1 Triumvir und Konsul
 - 1.3.2 Prokonsul in Gallien
 - 1.3.3 Bürgerkrieg

Grüner C Jahrhundert Berlin

About: Gaius Iulius Caesar

An Entity of Type : [Person](#), from Named Graph : <http://dbpedia.org>, within Data Space : [dbpedia.org](#)

Gaius Iulius Caesar ['ga:jus 'ju:lju:s 'kaesar] (deutsch: Gaius Julius Cäsar ['tsε:zae]; * 13. Juli 100 v. Chr. in Rom; † 15. März 44 v. Chr. in Rom) war ein römischer Staatsmann, Feldherr und Autor, der maßgeblich zum Ende der Römischen Republik beitrug und dadurch an ihrer späteren Umwandlung in ein Kaiserreich beteiligt war.

| Property | Value |
|------------------------------|---|
| dbo:abstract | <p>■ Gaius Julius Caesar (Classical Latin: ['ga:i.us 'ju.li.us 'kae:sar]; 13 July 100 BC – 15 March 44 BC), known as Julius Caesar, was a Roman politician, general, and notable author of Latin prose. He played a critical role in the events that led to the demise of the Roman Republic and the rise of the Roman Empire. In 60 BC, Caesar, Crassus, and Pompey formed a political alliance that dominated Roman politics for several years. Their attempts to amass power as Populares were opposed by the Optimates within the Roman Senate, among them Cato the Younger with the frequent support of Cicero. Caesar's victories in the Gallic Wars, completed by 51 BC, extended Rome's territory to the English Channel and the Rhine. Caesar became the first Roman general to cross both when he built a bridge across the Rhine and conducted the first invasion of Britain. These achievements granted him unmatched military power and threatened to eclipse the standing of Pompey, who had realigned himself with the Senate after the death of Crassus in 53 BC. With the Gallic Wars concluded, the Senate ordered Caesar to step down from his military command and return to Rome. Caesar refused the order, and instead marked his defiance in 49 BC by crossing the Rubicon with the 13th Legion, leaving his province and illegally entering Roman Italy under arms. Civil war resulted, and Caesar's victory in the war put him in an unrivalled position of power and influence. After assuming control of government, Caesar began a programme of social and governmental reforms, including the creation of the Julian calendar. He centralised the bureaucracy of the Republic and was eventually proclaimed "dictator in perpetuity", giving him additional authority. But the underlying political conflicts had not been resolved, and on the Ides of March (15 March) 44 BC, Caesar was assassinated by a group of rebellious senators led by Marcus Junius Brutus. A new series of civil wars broke out, and the constitutional government of the Republic was never fully restored. Caesar's adopted heir Octavian, later known as Augustus, rose to sole power after defeating his opponents in the civil war. Octavian set about solidifying his power, and the era of the Roman Empire began. Much of Caesar's life is known from his own accounts of his military campaigns, and from other contemporary sources, mainly the letters and speeches of Cicero and the historical writings of Sallust. The later biographies of Caesar by Suetonius and Plutarch are also major sources. Caesar is considered by many historians to be one of the greatest military commanders in history. (en)</p> <p>■ Gaius Iulius Caesar ['ga:jus 'ju:lju:s 'kaesar] (deutsch: Gaius Julius Cäsar ['tsε:zae]; * 13. Juli 100 v. Chr. in Rom; † 15. März 44 v. Chr. in Rom) war ein römischer Staatsmann, Feldherr und Autor, der maßgeblich zum Ende der Römischen Republik beitrug und dadurch an ihrer späteren Umwandlung in ein Kaiserreich beteiligt war. Der patrizischen Familie der Julier entstammend, absolvierte er die Ämterlaufbahn und gelangte durch ein Bündnis mit dem reichen Marcus Licinius Crassus und dem erfolgreichen Militär Gnaeus Pompeius Magnus im Jahr 59 v. Chr. zum Konsulat. In den folgenden Jahren ging Caesars als Prokonsul in die nördlichen Provinzen Illyrien und Gallia Cis- und Transalpina, von wo aus er in den Jahren 58 bis 51 v. Chr. ganz Gallien bis zum Rhein eroberte. Im anschließenden Römischen Bürgerkrieg von 49 bis 45 v. Chr. setzte er sich gegen seinen ehemaligen Verbündeten Pompeius und dessen Anhänger durch und errang die Alleinherrschaft. Nach seiner Ernennung zum Diktator auf Lebenszeit fiel er einem Attentat zum Opfer. Sein Großneffe und Hauptherbe Gaius Octavius (später Kaiser Augustus) setzte das Prinzipat als neue Staatsform des Römischen Reiches endgültig durch. Der Name Caesars wurde zum Bestandteil des Titels aller nachfolgenden Herrscher des</p> |



Item Discussion

Read View history

Julius Caesar (Q1048)

Roman politician and general

Caesar | Gaius Julius Caesar IV | Gaius Iulius Caesar | Imperator Gaius Julius Gaii filius Gaii nepos Caesar Patris Patriae | Divus Julius | Gayo Julio Cesar | Gaius Julius C. f. C. n. Caesar | Caio Giulio Cesare | Gaio Giulio Cesare | Gaius Julius Caesar | Juliusz Cezar | Iulius Caesar

In more languages

Configure

| Language | Label | Description |
|----------|---------------------|----------------|
| English | Julius Caesar | Roman pol... |
| German | Gaius Iulius Caesar | römischer S... |
| French | Jules César | homme pol... |
| Bavarian | No label defined | No descrip... |

All entered languages

Wikipedia (203 entries)

- ab Гай Иулии Цезар
- af Julius Caesar
- als Gaius Julius Cäsar
- am ወለየ ቅዱር
- ang Gaius Iulius Caesar

https://www.wikidata.org/wiki/Q1048

0 references

Nomisma ID [julius_caesar](#)
0 references

LibriVox author ID [2012](#)
1 reference

Nomisma [nomisma.org/id/julius_caesar](#)

Alle hervorheben Groß-/Kleinschreibung Ganze Wörter 1 von 1 Übereinstimmung

bxr Юпий Цезарь
ca Juli César
cbk_zam Julius Caesar
cdo Julius Caesar

Statements

instance of [human](#)

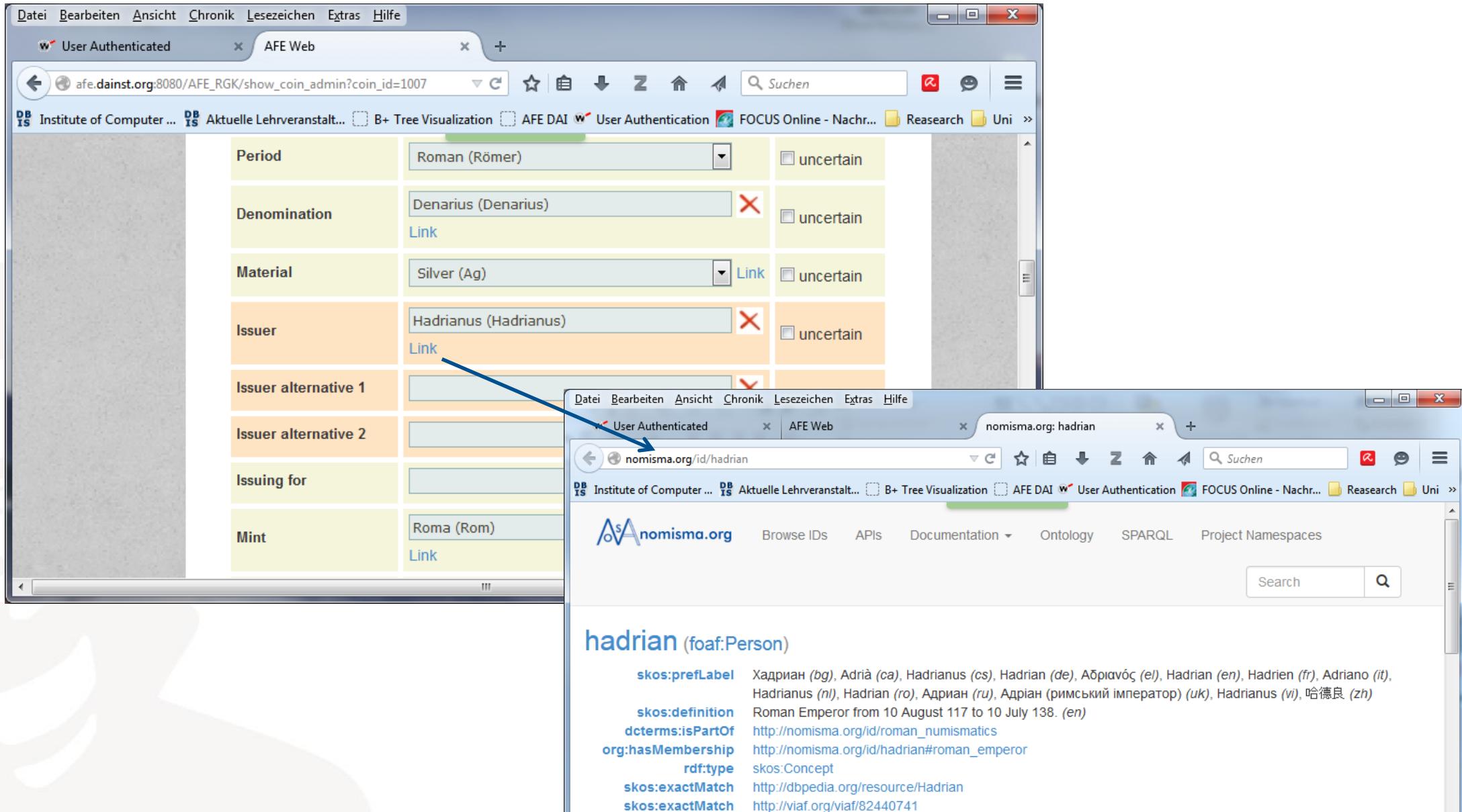
Wikidata Anfrage SPARQL

The screenshot shows the Wikidata Query Service interface at <https://query.wikidata.org>. The query editor contains the following SPARQL code:

```
1 SELECT * WHERE { SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO_LANGUAGE],en". } }
2 LIMIT 100
```

The interface includes a sidebar with icons for various query components like filters, annotations, and limits. A large blue play button is visible on the left. At the bottom, there are buttons for previewing results, code, download, and links.

Zero Star – existierende LOD nutzen



The screenshot illustrates the integration of LOD data from the nomisma.org ontology into a local application. The top window shows a form for a coin record, specifically for a Denarius of Hadrian. The bottom window shows the detailed description of the person 'hadrian' from the nomisma.org ontology.

Top Window (Local Application):

- Period:** Roman (Römer)
- Denomination:** Denarius (Denarius) [Link](#)
- Material:** Silver (Ag) [Link](#)
- Issuer:** Hadrianus (Hadrianus) [Link](#)
- Issuer alternative 1:** (empty)
- Issuer alternative 2:** (empty)
- Issuing for:** (empty)
- Mint:** Roma (Rom) [Link](#)

A blue arrow points from the 'Issuer' field in the top window to the 'nomisma.org: hadrian' entry in the bottom window, indicating a link or lookup operation.

Bottom Window (nomisma.org):

hadrian (foaf:Person)

Properties and Values:

- skos:prefLabel:** Хадриан (bg), Adrià (ca), Hadrianus (cs), Hadrian (de), Αδριανός (el), Hadrian (en), Hadrien (fr), Adriano (it), Hadrianus (nl), Hadrian (ro), Adrián (ru), Адриан (uk), Hadrianus (vi), 哈德良 (zh)
- skos:definition:** Roman Emperor from 10 August 117 to 10 July 138. (en)
- dcterms:isPartOf:** http://nomisma.org/id/roman_numismatics
- org:hasMembership:** http://nomisma.org/id/hadrian#roman_emperor
- rdf:type:** skos:Concept
- skos:exactMatch:** <http://dbpedia.org/resource/Hadrian>
- skos:exactMatch:** <http://viaf.org/viaf/82440741>

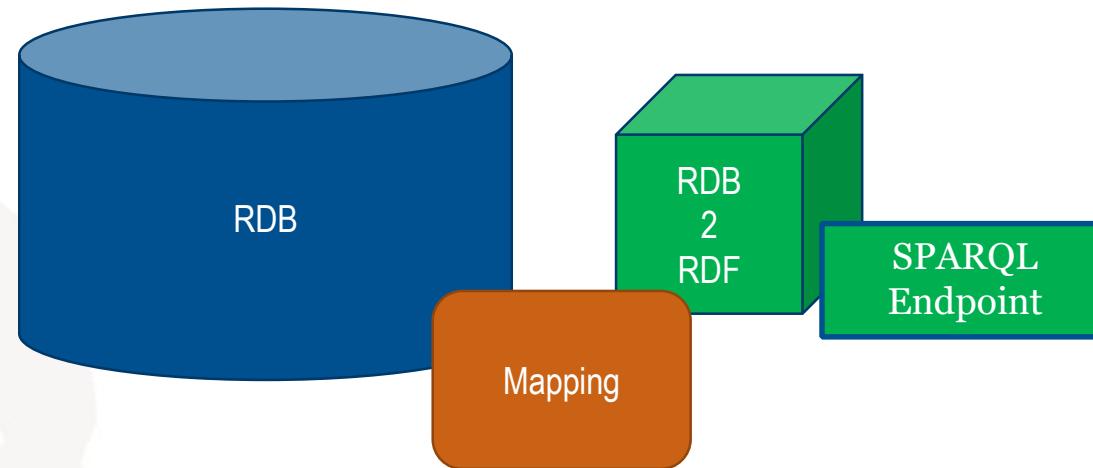
Zero Star – existierende LOD nutzen

| id | name | Nomisma | active from | active to |
|-----|--------------------------|---------------------|-------------|-----------|
| 158 | Magnentius | magnentius | 350 | 353 |
| 161 | Iulianus II. | julian_the_apostate | 355 | 363 |
| 162 | Valentinianus I. | valentinian_i | 364 | 375 |
| 163 | Valens | valens | 364 | |
| 165 | Gratianus | gratian | | 383 |
| 167 | Valentinianus II. | valentinian_ii | 375 | 392 |
| 168 | Valentinianische Dyna... | | 364 | 392 |
| 169 | Magnus Maximus | magnus_maximus | 383 | 388 |
| 170 | Honorius | honorius | 393 | 423 |
| 171 | Theodosianische Dynastie | | | |
| 173 | Valentinianus III. | valentinian_iii | 425 | 455 |
| 174 | Iustinianus I. | justinian_i | 527 | 565 |
| 182 | Macrinus | macrinus | 217 | 218 |
| 183 | Flavisch | | 69 | 96 |
| 187 | Maximinus II. | maximinus_daia | 305 | 313 |
| 189 | Licinius I. | licinius | 308 | 324 |
| 194 | Constantius I. | constantius_chlorus | 293 | 306 |
| 200 | Domitianus II. | domitianus | 271 | 271 |
| 202 | Aemilianus | aemilianus | 253 | 253 |
| 203 | Allectus | allectus | 293 | 296 |
| 205 | Anastasius I. | anastasius | 461 | 518 |
| 207 | Antehmius | anthemius | 467 | 472 |
| 208 | Arcadius | arcadius | 383 | 408 |
| 209 | Avitus | avitus | 455 | 456 |

<http://nomisma.org/id/valens>

Existiert nicht unter Nomisma.org

Von einer SQL-Datenbank zu 4-Star LOD (oder mehr)



RDB 2 RDF: <http://www.w3.org/2001/sw/rdb2rdf/wiki/Implementations>

D2R (<http://d2rq.org/>)

Description of http://afe.dainst.org:8080/d2rq/resource/AFE_coin_1678

Resource URI: http://afe.dainst.org:8080/d2rq/resource/AFE_coin_1678

[Home](#) | [All coinfnd](#)

| Property | Value |
|-----------------------|---|
| skos:exactMatch | < http://afe.dainst.org:8080/AFE_RGK/show_coin?coin_id=1678 > |
| nmo:hasDenomination | nm:denarius |
| nmo:hasEndDate | 75 (xsd:string) |
| nmo:hasFindspot | db:AFE_place_131 |
| nmo:hasIssuer | nm:vespasian |
| nmo:hasMaterial | nm:ar |
| nmo:hasMint | nm:rome |
| nmo:hasObjectType | nm:coin |
| nmo:hasStartDate | 75 (xsd:string) |
| nmo:hasTypeSeriesItem | < http://numismatics.org/ocre/id/ric.2_1(2).ves.777 > |
| rdf:type | nmo:NumismaticObject |

The server is configured to display only a limited number of values (limit per property bridge: 100).

Metadata

```

<http://afe.dainst.org:8080/d2rq/data/AFE_coin_1678>
dc:date      2015-03-26T15:39:47.027Z
prv:containedBy <http://afe.dainst.org:8080/d2rq/dataset>
void:inDataset <http://afe.dainst.org:8080/d2rq/dataset>
rdf:type      prv:Datalitem
rdf:type      foaf:Document

```

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

w User Authenticated AFE Web Description of http://... Program CAA 2015 - ... +

DB DB Institute of Computer ... DB DB Aktuelle Lehrveranstalt... B+ Tree Visualization AFE DAI w User Authentication

Detailed description of the coin with ID: 1678.

Images:

- AFE_001678.jpg



| Name | Value |
|----------------------|---------------------------|
| Admin Division | Wetzlar |
| Place | Wetzlar-Niedergirmes |
| Function | Coin (Münze) |
| Period | Roman (Römer) |
| Denomination | Denarius (Denarius) |
| Material | Silver (Ag) |
| Issuer | Vespasianus (Vespasianus) |
| Issuer alternative 1 | |

Maschinen verstehbare Schnittstelle