

Outline

- Introduction
 - Semantic Web
 - Vision
 - From the Web of Documents to the Web Of Data
 - Technologies
 - Advantages
 - Semantic Web and Linguistics
 - RDB2RDF
 - Concepts
 - Sparqlify (SML)
 - PanLex2RDF
 - Demo
 - Discussion
-

About me

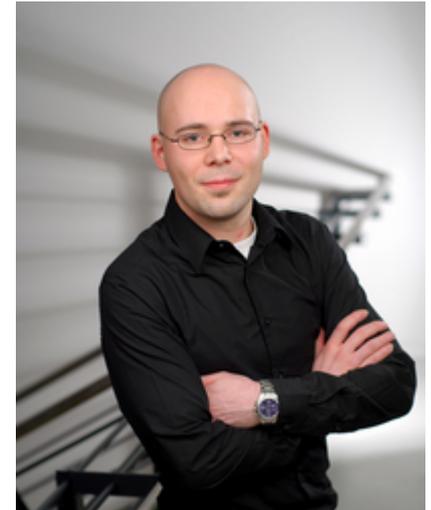
- Claus Stadler
- Austria
- PhD Student at the University of Leipzig since 2011
 - In the Agile Knowledge Engineering and Semantic Web (AKSW) research group, headed by Soeren Auer.
- Research Interests: Spatial Data Management, SPARQL-SQL query rewriting and optimization, Data integration.



UNIVERSITÄT LEIPZIG

About me

- Patrick Westphal
- Germany
- Master Student at the University of Leipzig since 2011
 - In the Agile Knowledge Engineering and Semantic Web (AKSW) research group, headed by Soeren Auer.
- Research Interests: Data Quality, SPARQL-SQL query rewriting and optimization, Data integration



Agile Knowledge Engineering and Semantic Web Research Group

- Founded in 2006
- 25+ Researchers
- 3 Sub groups



- Goals
 - Contributing to the advancement of science in Semantic Web, Knowledge Engineering, Software Engineering
 - Cost efficient, high-impact R&D, which proves usefulness at an early stage
 - Bridge the gap between research results and applications
- Committed to Open Source, Open Access, and Open Knowledge movements



Agile Knowledge Engineering and Semantic Web Research Group

- EU Funded Projects:
 - [GeoKnow](#)
 - Linked Open Data 2 (LOD2)
 - LOD Around the Clock (LATC)
 - Open Data Portal (ODP)
 - Semantic Content Management Systems for Enterprise Knowledge Management and News Mining (SCMS)
 - [OntoWiki](#) - Semantic Collaboration for Knowledge Management, E-Learning and E-Tourism
-

Agile Knowledge Engineering and Semantic Web Research Group

- Further Projects
 - SlideWiki
 - SlideWiki is a collaboration platform which enables communities to build, share and play online presentations.
 - LinkedGeoData
 - Making OpenStreetMap data available in the Semantic Web
 - Motivation for Sparqlify
 - LIMES
 - Very fast tool for interlinking RDF knowledge bases.
 - DBpedia Live
 - Synchronization of DBpedia with Wikipedia
 - ...
 - Find more at
 - <http://aksw.org/Projects>
-

From the Web of Documents to the Web of Data

- Web of Documents

[<http://www.dailycal.org/section/news/>]

CITY

THURSDAY, JULY 25, 2013

Berkeley Food and Housing Project awarded \$1 million to fight veteran homelessness

Local non-profit organization Berkeley Food and Housing Project (BFHP) announced on Friday that they have received about \$1,000,000 from the U.S. Department of Veteran Affairs as part of a \$300 million nationwide effort to eradicate veterans' homelessness. [READ MORE...](#)

CITY

WEDNESDAY, JULY 24, 2013

Postal Service rejects appeal of main Berkeley branch sale

The US Postal Service announced a final decision Thursday to sell Berkeley's main post office despite city and community appeals. [READ MORE...](#)

CITY

SUNDAY, JULY 21, 2013

Irish students on work visas gravitate to Berkeley for the summer

Every year, hundreds of Irish students spend their summer in Berkeley. Recognizable to many by



From the Web of Documents to the Web of Data

- Web of Documents

```
<h2>Berkeley Food and Housing Project awarded $1 million to fight veteran homelessness</h2>
```

```
<div>
```

```
<p>Local non-profit organization Berkeley Food and Housing Project (BFHP) announced on Friday that they have received about $1,000,000 from the U.S. Department of Veteran Affairs as part of a $300 million nationwide effort to eradicate veterans' homelessness.
```

```
<a href="http://...">Read More...</a></p>
```

```
</div>
```

From the Web of Documents to the Web of Data

- Web of Documents

```
<h2>Berkeley Food and Housing Project awarded $1 million  
to fight veteran homelessness</h2><div>
```

```
<p>Local non-profit organization Berkeley Food and  
Housing Project (BFHP) announced on Friday that they  
have received about $1,000,000 from the U.S. Department  
of Veteran Affairs as part of a $300 million nationwide  
effort to eradicate veterans' homelessness.
```

```
<a href="http://...">Read More...</a></p>
```

```
</div>
```

From the Web of Documents to the Web of Data

- Web of Documents

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<h2>Berkeley Food and Housing Project awarded $1 million to fight veteran homelessness</h2>
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<p>Local non-profit organization Berkeley Food and Housing Project (BFHP) announced on Friday that they have received about $1,000,000 from the U.S. Department of Veteran Affairs as part of a $300 million nationwide effort to eradicate veterans' homelessness.
```

```
<a href="http://...">Read More...</a></p>
```

```
</div>
```

From the Web of Documents to the Web of Data

- Web of Documents

```
<h2>Berkeley Food and Housing Project awarded $1 million to fight veteran homelessness</h2>
```

```
<div>
```

```
<p>Local non-profit organization Berkeley Food and Housing Project (BFHP) announced on Friday that they have received about $1,000,000 from the U.S. Department of Veteran Affairs as part of a $300 million nationwide effort to eradicate veterans' homelessness.
```

```
<a href="http://...">Read More...</a></p>
```

```
</div>
```

From the Web of Documents to the Web of Data

- Web of Documents

`<h2>Berkeley Food and Housing Project awarded $1 million to fight veteran homelessness</h2>`

```
http://en.wikipedia.org/wiki/Berkeley,_New_South_Wales
http://en.wikipedia.org/wiki/Berkeley,_Ontario
http://en.wikipedia.org/wiki/Berkeley,_Gloucestershire
http://en.wikipedia.org/wiki/Berkeley,_California
http://en.wikipedia.org/wiki/Berkeley,_Denver
http://en.wikipedia.org/wiki/Berkeley,_Illinois
http://en.wikipedia.org/wiki/Berkeley,_Missouri
http://en.wikipedia.org/wiki/Berkeley,_Albemarle_County,_Virginia
http://en.wikipedia.org/wiki/Berkeley,_Charles_City_County,_Virginia
```

`Read More...</p>`

`</div>`

From the Web of Documents to the Web of Data

- Web of Documents

```
<h2>Berkeley Food  
to fight veteran h  
<div>
```

```
<p>Local non-pr
```

```
Housing Project (BFHP) announced on Friday that they  
have received about $1,000,000 from the U.S. Department  
of Veteran Affairs as part of a $300 million nationwide  
effort to eradicate veterans' homelessness.
```

```
<a href="http://...">Read More...</a></p>
```

```
</div>
```

```
http://en.wikipedia.org/wiki/East_Caribbean_dollar  
http://en.wikipedia.org/wiki/Australian_dollar  
http://en.wikipedia.org/wiki/Bermuda_dollar  
http://en.wikipedia.org/wiki/Canadian_dollar  
http://en.wikipedia.org/wiki/Cayman_Islands_dollar  
http://en.wikipedia.org/wiki/United_States_dollar  
http://en.wikipedia.org/wiki/Guyanese_dollar  
http://en.wikipedia.org/wiki/Hong_Kong_dollar  
http://en.wikipedia.org/wiki/Jamaican_dollar  
http://en.wikipedia.org/wiki/Kiribati_dollar  
http://en.wikipedia.org/wiki/New_Zealand_dollar  
...
```

From the Web of Documents to the Web of Data

- Web of Documents

```

    http://cityofberkeley.info
<h2>Berkeley Food and Housing Project awarded $1 million
to fight veteran homelessness</h2>
<div>
    http://bfhp.org/
    <p>Local non-profit organization Berkeley Food and
    Housing Project (BFHP) announced on Friday that they
    have received about $1,000,000 http://???.S. Department
    of Veteran Affairs as part of a $300 million nationwide
    effort to eradicate veterans' homelessness.
    <a href="http://...">Read More...</a></p>
</div>
```

From the Web of Documents to the Web of Data

- Web of Data

`<http://bfhp.org/>`

is a

organization .`<http://bfhp.org/>`

is located in

`<http://cityofberkeley.info>` .

the \$1,000,000

are a

funding .

the \$1,000,000

fund

`<http://bfhp.org/>` .

From the Web of Documents to the Web of Data

- Web of Data

```
<http://bfhp.org/>  
  <http://ex.org/ontology/isA>  
    <http://ex.org/ontology/Organization> .
```

```
<http://bfhp.org/>  
  <http://ex.org/ontology/isLocatedIn>  
    <http://cityofberkeley.info> .
```

```
<http://ex.org/funding2342>  
  <http://ex.org/ontology/isA>  
    <http://ex.org/ontology/Funding> .
```

```
<http://ex.org/funding2342>  
  <http://ex.org/ontology/funds> <http://  
bfhp.org/> .
```

From the Web of Documents to the Web of Data

- Web of Data

```
<http://bfhp.org/>  
  <http://ex.org/ontology/isA>  
    <http://ex.org/ontology/Organization> .
```

```
<http://bfhp.org/>  
  <http://ex.org/ontology/isLocatedIn>  
    <http://cityofberkeley.info> .
```

```
<http://ex.org/funding2342>  
  <http://ex.org/ontology/isA>  
    <http://ex.org/ontology/Funding> .
```

```
<http://ex.org/funding2342>  
  <http://ex.org/ontology/funds>  
    <http://bfhp.org/> .
```

From the Web of Documents to the Web of Data

- Web of Data

<http://bfhp.org/>

<http://www.w3.org/1999/02/22-rdf-syntax-ns#type>

<http://xmlns.com/foaf/0.1/Organization> .

<http://bfhp.org/>

<http://dbpedia.org/ontology/

locationCity>

<http://cityofberkeley.info> .

<http://ex.org/funding2342>

<http://www.w3.org/1999/02/22-

rdf-syntax-ns#type>

<http://vocab.ox.ac.uk/projectfunding#Funding> .

<http://ex.org/funding2342>

<http://vocab.ox.ac.uk/

projectfunding#funds>

<http://bfhp.org/> .

From the Web of Documents to the Web of Data

- Web of Data

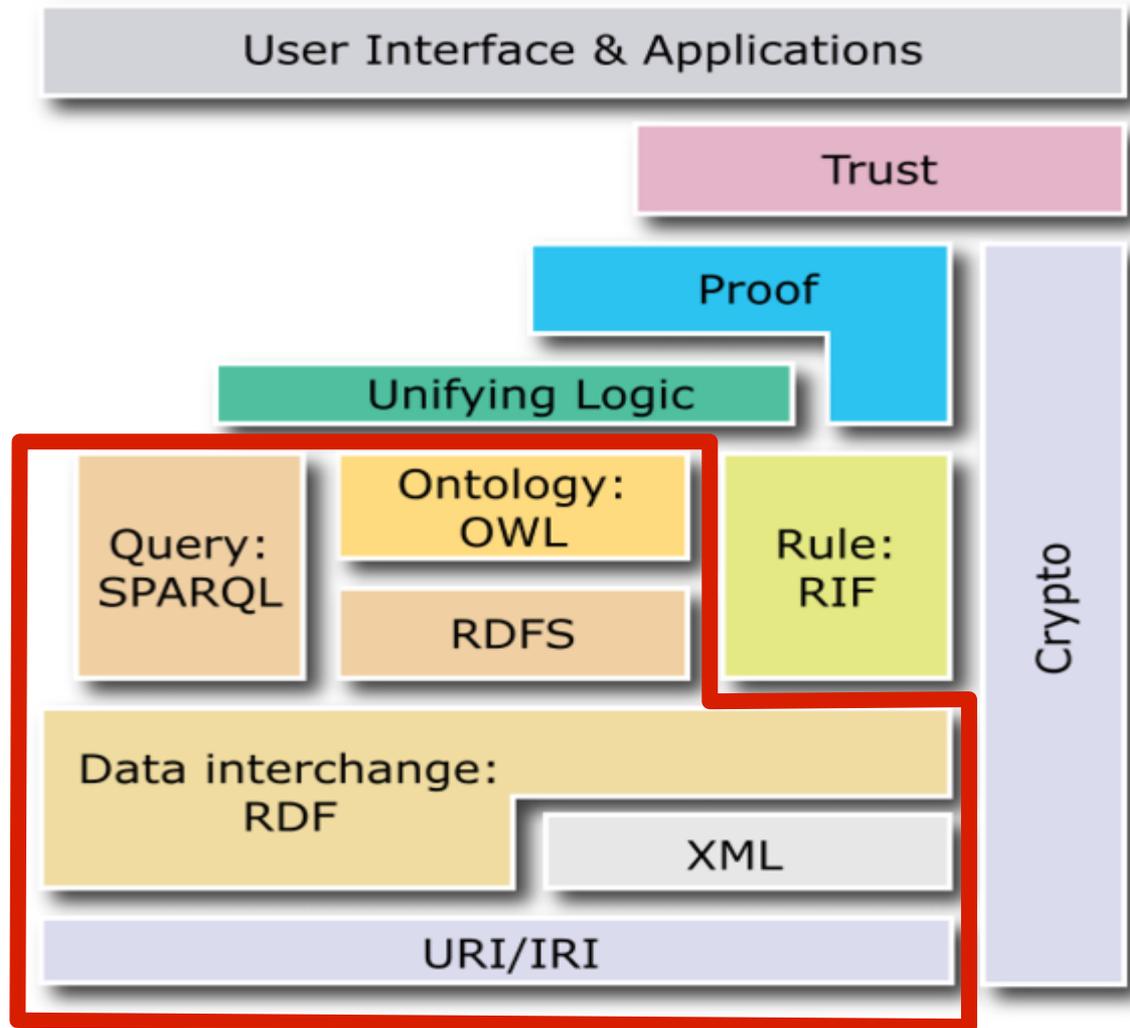
```
<http://bfhp.org/>  
  <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>  
    <http://xmlns.com/foaf/0.1/Organization> .
```

```
<http://bfhp.org/>  
  <http://dbpedia.org/ontology/locationCity>  
    <http://cityofberkeley.info> .
```

```
<http://ex.org/funding2342>  
  <http://www.w3.org/1999/02/22-rdf-syntax-ns#type>  
    <http://vocab.ox.ac.uk/projectfunding#Funding> .
```

```
<http://ex.org/funding2342>  
  <http://vocab.ox.ac.uk/projectfunding#funds>  
    <http://bfhp.org/> .
```

Semantic Web Technology Stack

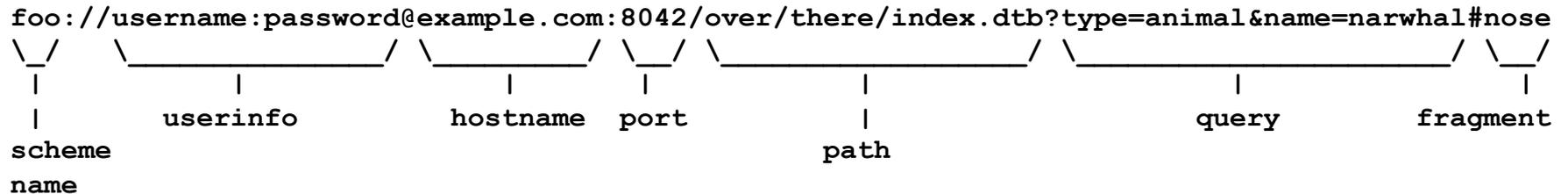


Semantic Web Technology Stack

URI/IRI

- Uniform Resource Identifier
 - `http://panlex.org`
 - `foo://example.com:8042/over/there?name=ferret#nose`
- Internationalized Resource Identifier
 - `http://ld.panlex.org/expression/कममजलदकर`

`foo://username:password@example.com:8042/over/there/index.dtb?type=animal&name=narwhal#nose`



The diagram shows the URI `foo://username:password@example.com:8042/over/there/index.dtb?type=animal&name=narwhal#nose` with brackets and vertical lines identifying its parts: `foo` is the scheme name; `username:password` is the userinfo; `example.com` is the hostname; `8042` is the port; `/over/there/index.dtb` is the path; `?type=animal&name=narwhal` is the query; and `#nose` is the fragment.

Semantic Web Technology Stack

RDF (*Resource Description Framework*)

- W3C specification
- "for conceptual description or modeling of information"

[http://en.wikipedia.org/wiki/Resource_Description_Framework]

- RDF documents (files)
 - graphs
 - triples
 - resources | blank nodes | literals



Semantic Web Technology Stack

RDF (*Resource Description Framework*)

- resources
 - sth. that has an identity
 - identified by IRI
 - often URLs used
 - "owned" by one person/organization → one authority
 - Web documents can be placed on the target location to provide further information about the resource
-

Semantic Web Technology Stack

RDF (*Resource Description Framework*)

- blank nodes (*anonymous resources*)
 - to be able to make statements about a resource with a certain identity without naming it

e.g. *"John has a friend born on 21st of April"*

[http://en.wikipedia.org/wiki/Blank_node]

- represented by
 - an underscore (with certain id) `"_:23"`
 - or `"[]"`
-

Semantic Web Technology Stack

RDF (*Resource Description Framework*)

- literals
 - can be without a type, but having a language tag (according to RFC 5646, BCP 47)
→ plain literal
e.g. `"apple"@en`, `"Apfel"@de`
 - can have a type: string, integer number, date, ...
→ typed literal
e.g. `"42"^^xsd:int`, `"2005-01-01"^^xsd:date`
-

Semantic Web Technology Stack

RDF (*Resource Description Framework*)

- triples

subject	predicate	object
resources/blank nodes	resources	resources/blank nodes/literals

- graphs

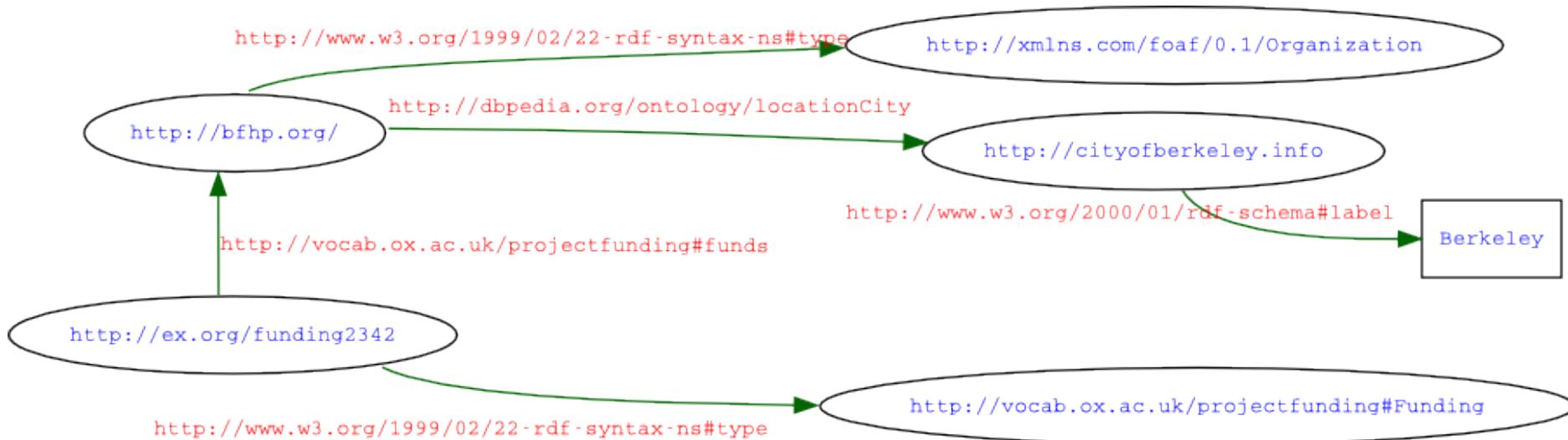
- each triple is associated with a certain graph (or a default graph)
- extension of triples to quads:

graph	subject	predicate	object
resource	resources/blank nodes	resources	resources/blank nodes/literals

Semantic Web Technology Stack

RDF (*Resource Description Framework*)

- example



Semantic Web Technology Stack

RDF (*Resource Description Framework*)

- abbreviations for URIs: prefixes

```
<http://bfhp.org/>  
    <http://www.w3.org/1999/02/22-rdf-syntax-  
ns#type>  
        <http://xmlns.com/foaf/0.1/  
Organization> .
```

```
@prefix rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>.  
@prefix foaf: <http://xmlns.com/foaf/0.1/>
```

```
<http://bfhp.org> rdf:type foaf:Organization.
```

Semantic Web Technology Stack

RDF (*Resource Description Framework*)

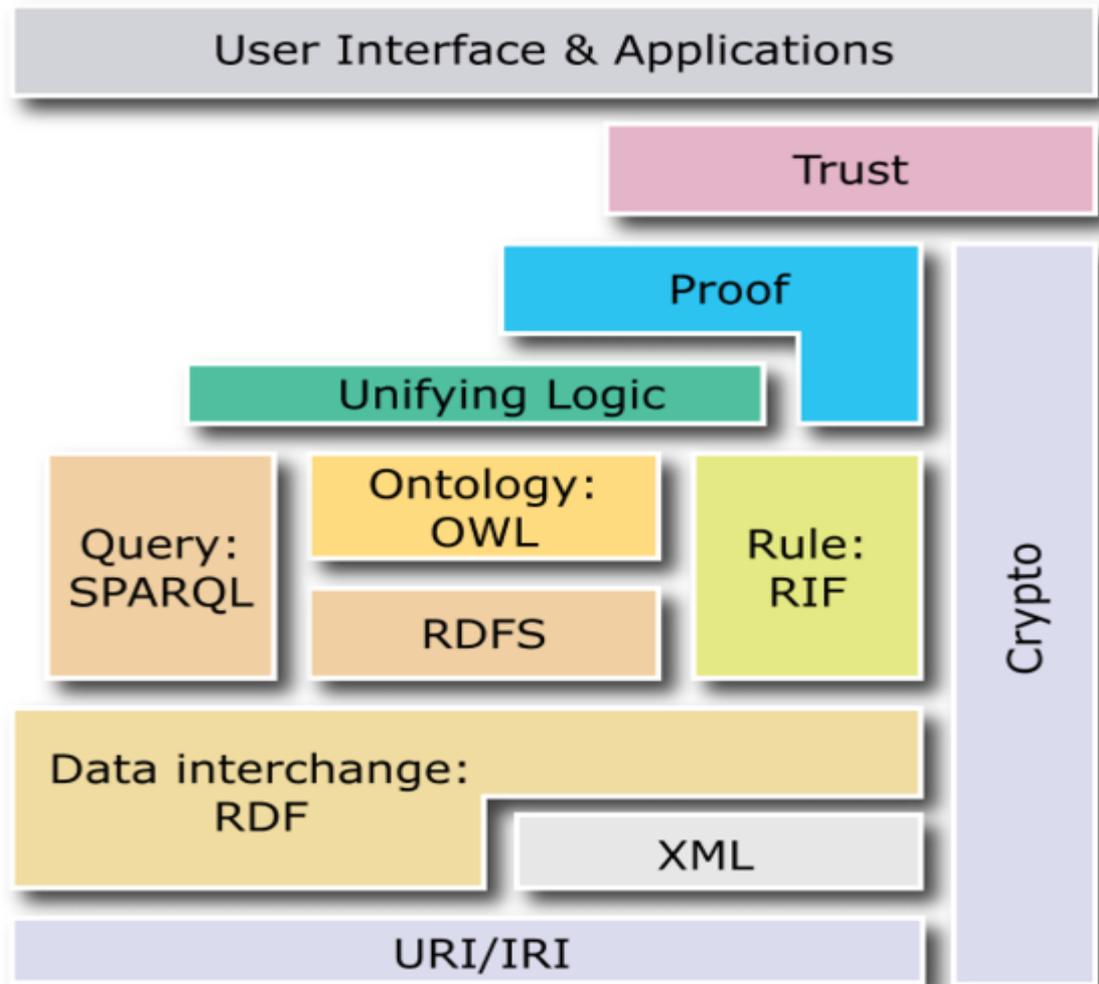
- abbreviations for URIs: prefixes

```
<http://bfhp.org/>  
    <http://www.w3.org/1999/02/22-rdf-syntax-  
ns#type>  
    <http://xmlns.com/foaf/0.1/  
Organization> .
```

```
@prefix rdf:<http://www.w3.org/1999/02/22-rdf-syntax-ns#>.  
@prefix foaf:<http://xmlns.com/foaf/0.1/>.
```

```
<http://bfhp.org> rdf:type foaf:Organization.
```

Semantic Web Technology Stack



Semantic Web Technology Stack

RDFS (RDF Schema)

- additional features for
 - classifications:
 - classes
 - resources
 - properties
 - literals
 - domain and range restrictions
 - definitions of sub-classes and sub-properties
 - comments and labels of resources
 - links to other resources providing additional informations
-

Semantic Web Technology Stack

OWL (Web Ontology Language)

- ontology modeling language with further features, e.g. for the statement that
 - a resource represents a concept ("*class*") or an instance ("*entity*", "*individual*")
 - two resource identifiers represent (not) the same entity
 - two classes of entities are disjoint (e.g. the class **car** and the class **person**)
 - two classes are the same
 - a certain property ("*predicate*") has cardinality constraints
 - one property is the inverse of another property

Semantic Web Technology Stack

SPARQL (*SPARQL Protocol and RDF Query Language*)

- language to query RDF documents or databases
- based on pattern matching and graph traversal concepts
- current versions: 1.0 and 1.1
- main template:

SELECT

<variables that should appear in result>

WHERE {

<query patterns>

FILTER (*<additional constraints>*) }

Semantic Web Technology Stack

SPARQL

- variable definition via leading '?', e.g. "?someVar"
- query pattern definition via triple pattern:
<subject> <predicate> <object> .
→ every position can contain a certain resource (or literal in case of the object position) or a variable
- example: get all resources of type Organisation

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
```

```
SELECT ?org
```

```
WHERE {
```

```
  ?org rdf:type <http://xmlns.com/foaf/><http://bfhp.org/> .
```

```
}
```

Semantic Web Technology Stack

SPARQL

- example: get all resources of type `Organisation` from Berkeley

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
```

```
PREFIX dbo: <http://dbpedia.org/ontology/>
```

```
SELECT ?org
```

```
WHERE {
```

```
    ?org rdf:type <http://xmlns.com/foaf/0.1/Organization> .
```

```
    ?org dbo:locationCity <http://cityofberkeley.info> .
```

```
}
```

```
<http://bfhp.org/>
```

Semantic Web Technology Stack

SPARQL

- example: get all resources of type `City` having a label starting with "Berk"

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
```

```
SELECT ?city
WHERE {
    ?city rdf:type dbo:City .
    ?city rdfs:label ?label.
    FILTER(regex(?label, "^Berk"))
}
```

```
<http://cityofberkeley.info>
```

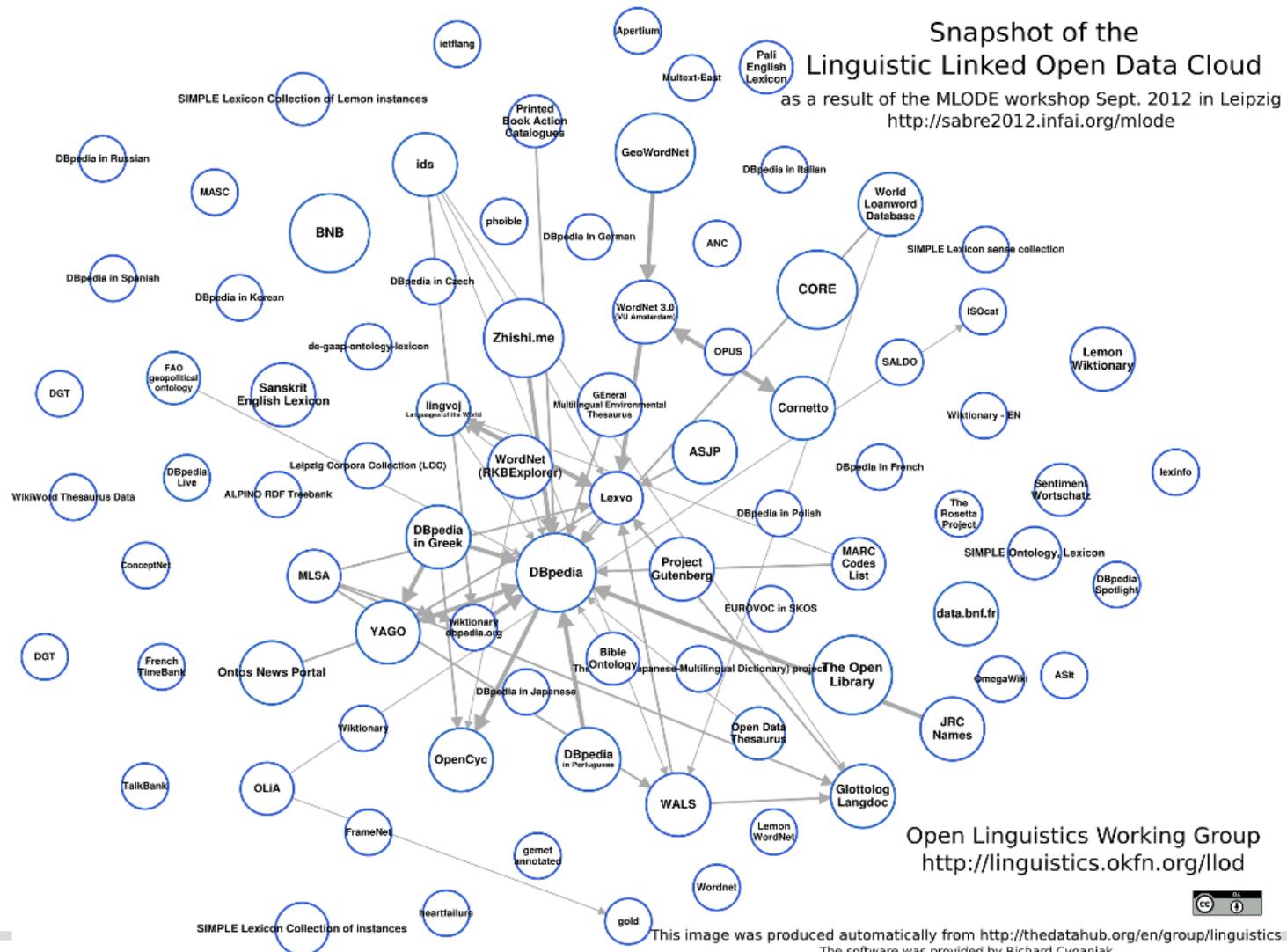
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Linguistic Linked Open Data

- Working Group on Open Data in Linguistics (OKFN)
 - bring the idea of "openness" defined on <http://opendefinition.org/> to the linguistic world
 - one project: ***Linguistic Linked Open Data cloud***
[<http://linguistics.okfn.org/resources/llod/>]
 - workshop 2012 in Leipzig: ***Multilingual Linked Open Data for Enterprises*** (MLODE)
[<http://sabre2012.infai.org/mlode>]
 - main focus: enhance the LLOD cloud
-

Linguistic Linked Open Data



Standards using Semantic Web Technologies

NIF (NLP Interchange Format)

[<http://nlp2rdf.org/nif-1-0>]

- makes certain parts of a text available via URIs
- *"Welcome to Dublin in Ireland!"*

```
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .  
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .  
@prefix nifstr: <http://nlp2rdf.lod2.eu/schema/string/> .  
@prefix doc: <http://example.com/exampledoc.html#> .
```

```
doc:offset_11_17_Dublin rdf:type nifstr:OffsetBasedString .
```

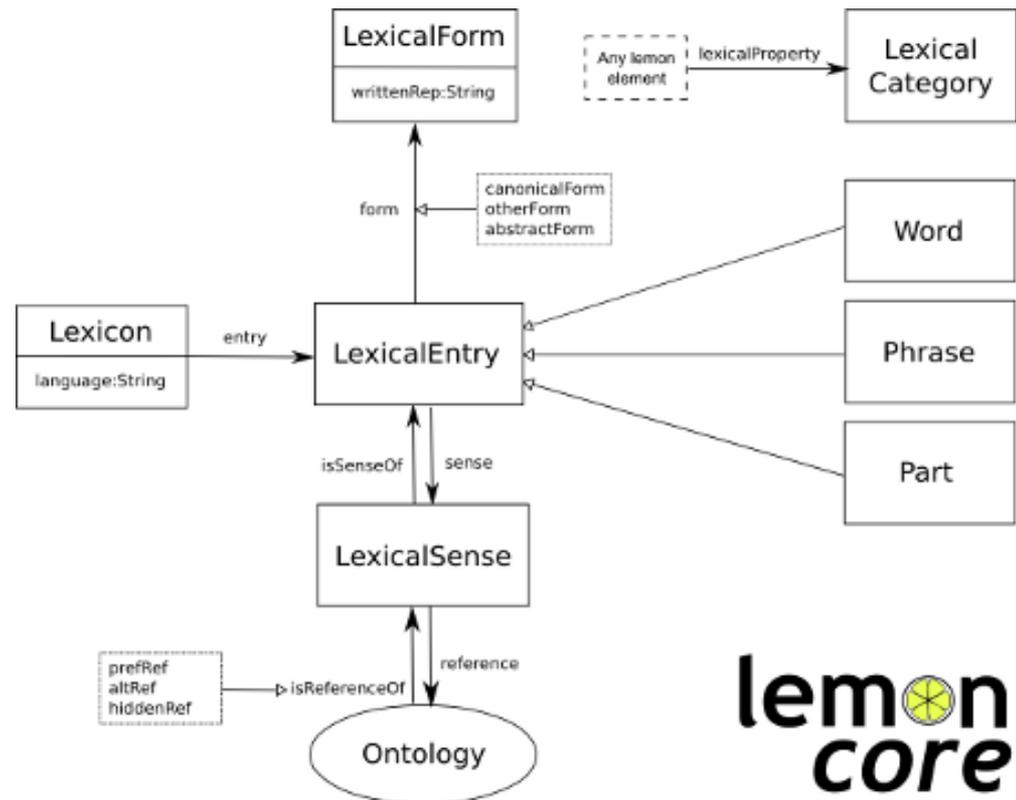
```
doc:offset_11_17_Dublin rdfs:seeAlso <http://dbpedia.org/resource/Dublin> .
```

Standards using Semantic Web Technologies

lemon (*Lexicon Model for Ontologies*)

[<http://lemon-model.net/>]

- modeling lexicons and machine-readable dictionaries and link them to the Semantic Web and the Linked Data cloud

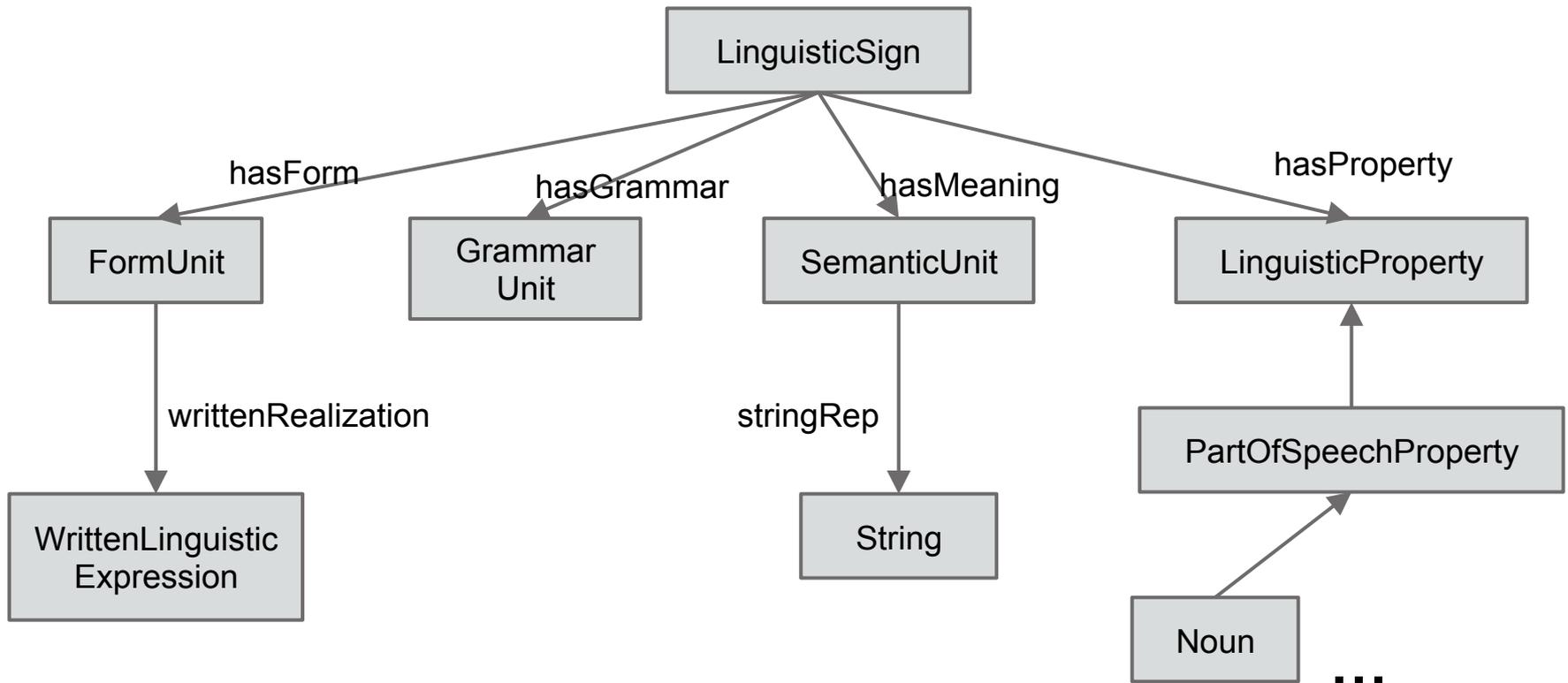


Standards using Semantic Web Technologies

GOLD (General Ontology for Linguistic Description)

[<http://linguistics-ontology.org/>]

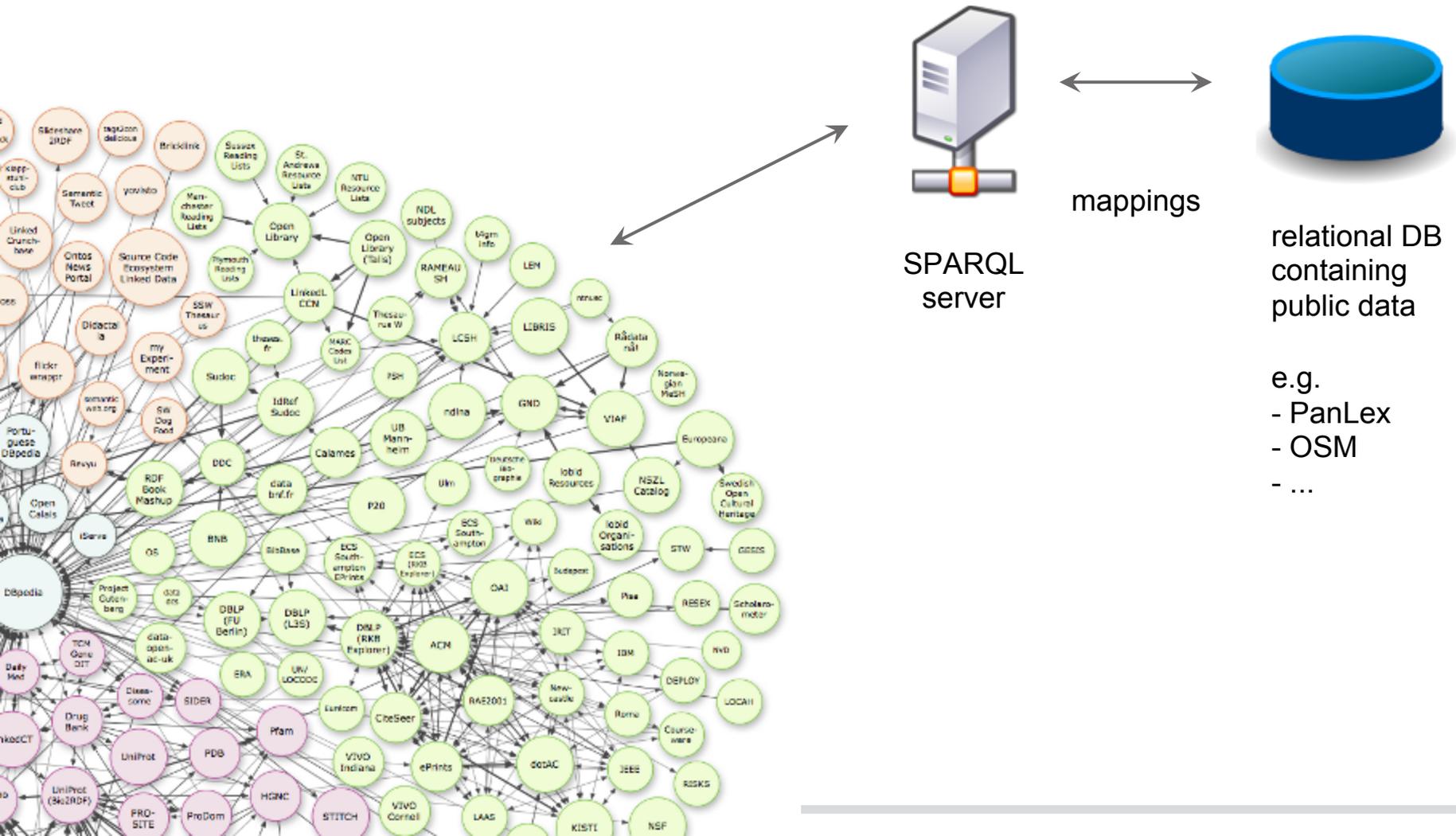
- ontology for descriptive linguistics



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-

RDB2RDF



RDB2RDF Mapping Tools

Sparqlify

SPARQL -> SQL
Rewriter

ontop

D2RQ

Accessing Relational Databases
as Virtual RDF Graphs



Ultrawrap

Sparqlify

- project of the AKSW group (University of Leipzig)
- <http://sparqlify.org>
- source code: <https://github.com/AKSW/Sparqlify>
- datasets run by Sparqlify
 - PanLex (<http://ld.panlex.org>)
 - LinkedGeoData (<http://linkedgeodata.org>)
 - Deutscher Wortschatz (offline due to maintenance)

 - LODStats (<http://stats.lod2.eu>)
 - Converted CSV files

Sparqlify
SPARQL -> SQL
Rewriter

Sparqlification Mapping Language (SML)

- SML is independent effort for an RDB2RDF mapping language
 - Combines syntactic elements from SQL and SPARQL
 - Aimed at being as human readable as possible
 - "Core" Expressivity equivalent to RDB to RDF Mapping Language (R2RML)
 - <http://www.w3.org/TR/r2rml/>
 - Some differences in "advanced" features exist:
 - R2RML supports inverse expressions
 - SML supports constraints
 - However, future adoptions of additional features possible in both languages.
-

SML Structure

<Prefixes>

Create View <ViewName> As

Construct

<Quads>

With

<VariableDefinitions>

From

<LogicalTable>

SML Structure

<Prefixes>

Create View <ViewName> As

Construct

<Quads> // The quads to create

With

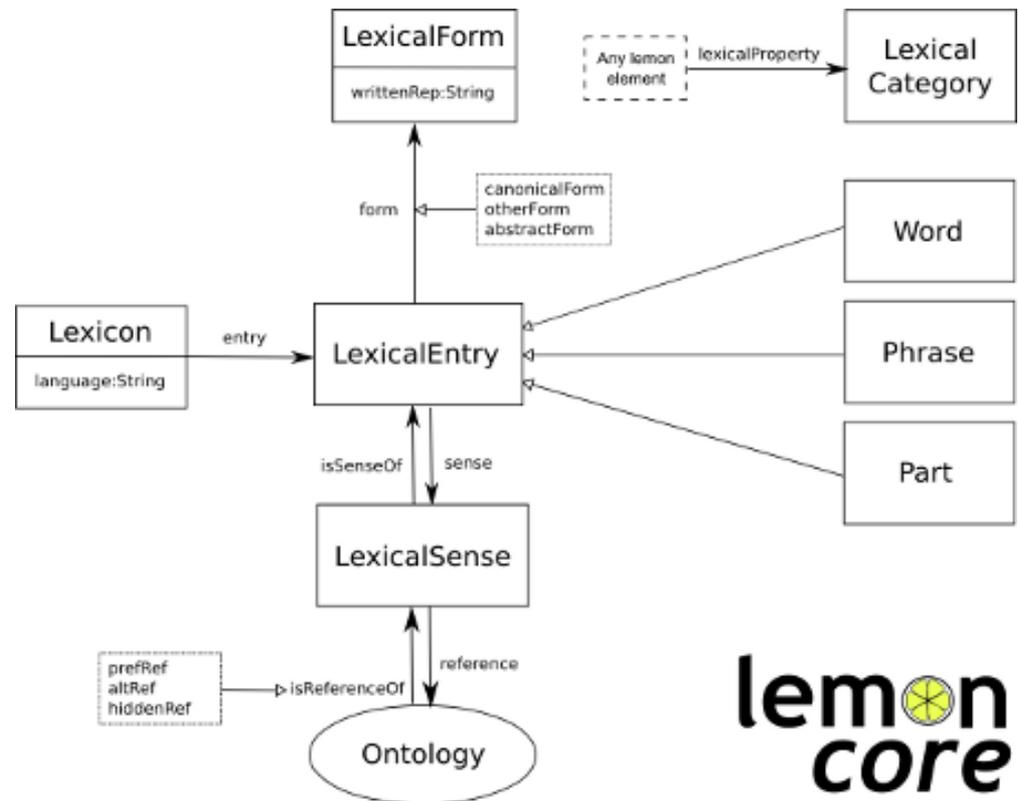
<VariableDefinitions> // What RDF terms to create

From

<LogicalTable> // Query, Table or View

Example: Creating an SML View

- example:
lemon



Example: Creating an SML View 1/5

Prefix plx: <http://panlex.org>

Prefix lemon: <http://www.lemon-model.net/lemon#>

mn (meaning)
mn
1
2
3

Example: Creating an SML View 2/5

Prefix plx: <http://panlex.org>

Prefix lemon: <http://www.lemon-model.net/lemon#>

Create View Lemon_LexicalSense As

mn (meaning)
mn
1
2
3

Example: Creating an SML View 3/5

Prefix plx: <http://panlex.org>

Prefix lemon: <http://www.lemon-model.net/lemon#>

Create View Lemon_LexicalSense As

Construct {

?lexSense a lemon:LexicalSense.

}

mn (meaning)
mn
1
2
3

Example: Creating an SML View 4/5

Prefix plx: <http://panlex.org>

Prefix lemon: <http://www.lemon-model.net/lemon#>

Create View Lemon_LexicalSense As

Construct {

?lexSense a lemon:LexicalSense.

}

With

?lexSense = uri(plx:meaning, '/', ?mn)

mn (meaning)
mn
1
2
3

Example: Creating an SML View 5/5

Prefix plx: <http://panlex.org>

Prefix lemon: <http://www.lemon-model.net/lemon#>

Create View Lemon_LexicalSense As

Construct {

?lexSense a lemon:LexicalSense.

}

With

?lexSense = uri(plx:meaning, '/', ?mn)

From

mn

mn (meaning)
mn
1
2
3

Mapping to different RDF Terms

?s = uri(<http://ex.org/>, ?id)

?la = plainLiteral(?name)

?lb = plainLiteral(?name, 'en')

?d = typedLiteral(?age, xsd:int)

?f = bNode(?id)

PanLex2RDF

- modelled the PanLex structures
- created PanLex vocabulary
- re-used established vocabularies
- data accessible under <http://ld.panlex.org/rdf.htm>
- web viewer: <http://ld.panlex.org/vsnorql/>
- deployment notes: http://sparqlify.org/wiki/Deployment_PanLex

SPARQL:

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX dc: <http://purl.org/dc/elements/1.1/>
PREFIX dcterms: <http://purl.org/dc/terms/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
PREFIX sim: <http://purl.org/ontology/similarity/>
PREFIX mo: <http://purl.org/ontology/mo/>
PREFIX ov: <http://open.vocab.org/terms/>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
```

```
Prefix plx: <http://ld.panlex.org/plx/>
SELECT ?ta ?m ?tb ?lvl ?l {
  ?ea rdfs:label ?ta .

  ?da plx:denotationExpression ?ea .
  ?da plx:denotationMeaning ?m .
  ?db plx:denotationMeaning ?m .
  ?db plx:denotationExpression ?eb .

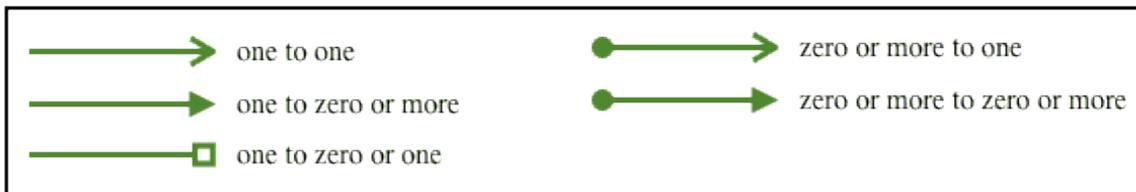
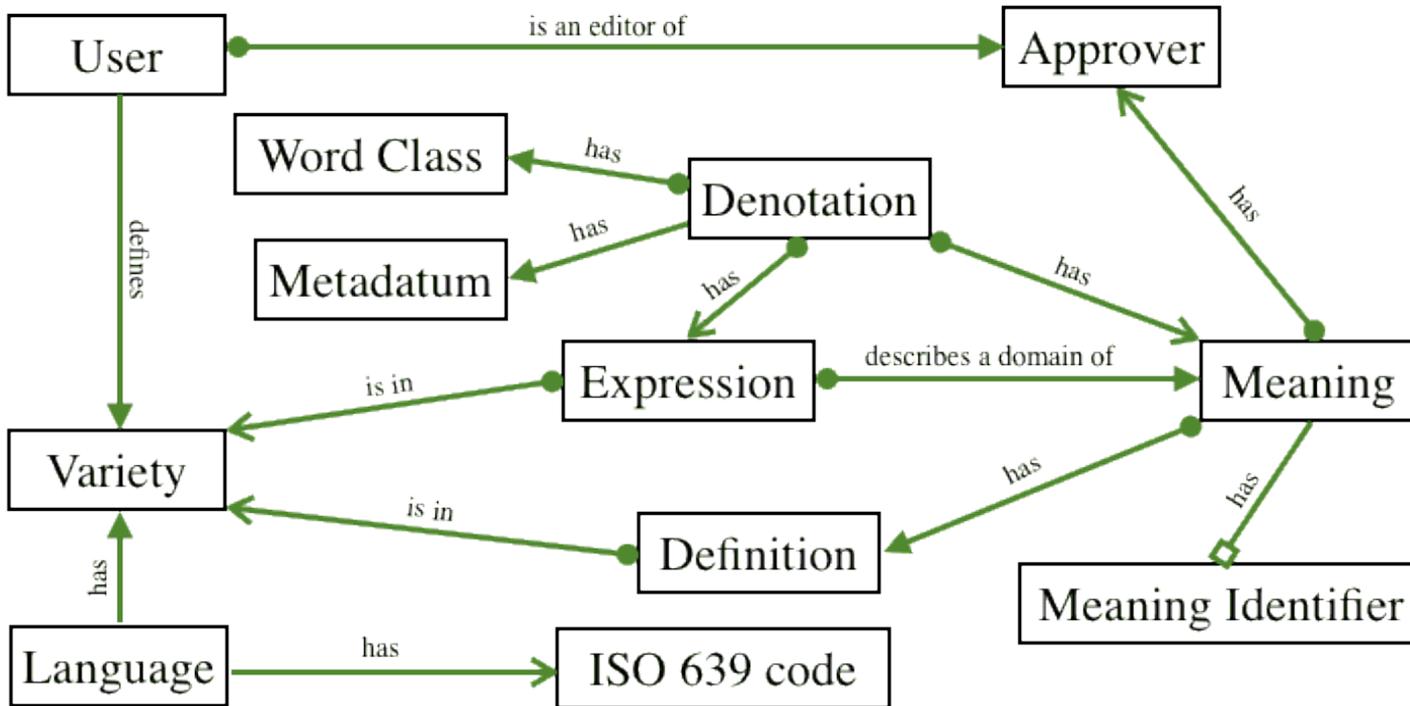
  ?eb rdfs:label ?tb .
```

Results:

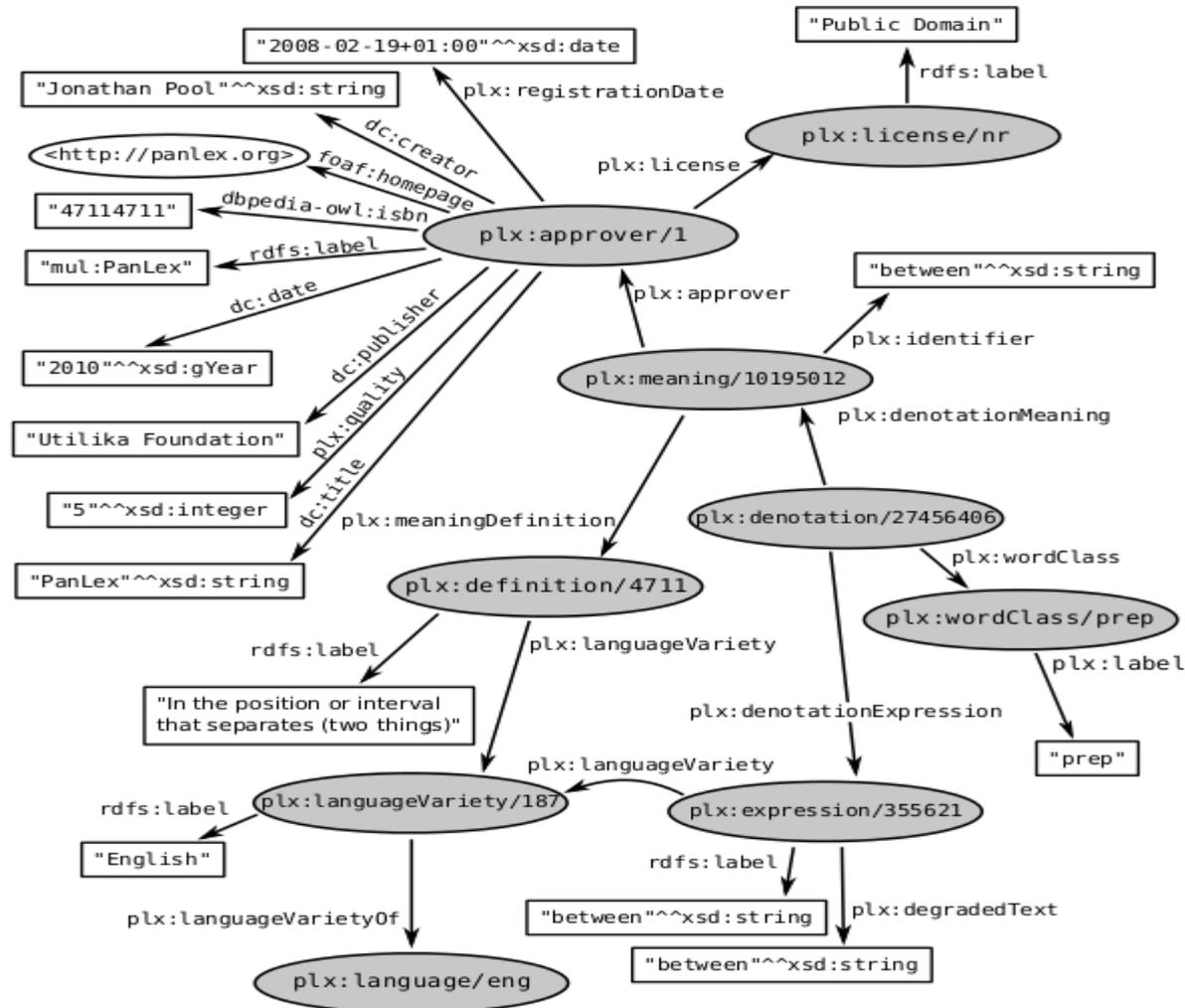
SPARQL results:

ta	m	tb
"translation"^^xsd:string	< http://ld.panlex.org/plx/meaning/10014922 >	"translation"^^xsd:string
"translation"^^xsd:string	< http://ld.panlex.org/plx/meaning/10014922 >	"işogbufö"^^xsd:string
"translation"^^xsd:string	< http://ld.panlex.org/plx/meaning/10014922 >	"işögbifö"^^xsd:string
"translation"^^xsd:string	< http://ld.panlex.org/plx/meaning/10014922 >	"ögbufö-şîşe"^^xsd:string
"translation"^^xsd:string	< http://ld.panlex.org/plx/meaning/10016878 >	"translation"^^xsd:string

PanLex2RDF



PanLex2RDF



PanLex2RDF

- integration of
 - the lemon model
 - the linguistic sign model (from GOLD)

→ make PanLex data available in other model structures
→ better interoperability

Demo

...

Thanks!

- <https://github.com/AKSW/PanLex-2-RDF>
 - <http://www.semantic-web-journal.net/content/countering-language-attribution-panlex-and-web-data-1>
 - <http://aksw.org>
 - cstadler@informatik.uni-leipzig.de
 - pwestphal@informatik.uni-leipzig.de
-

Advantages

Try to search for these things on the current Web:

- Apartments near German-French bilingual childcare in Leipzig.
- ERP service providers with offices in Vienna and Berlin.
- Researchers working on DB related topics in south-east Asia.

Information to answer such search queries is available on the Web, but opaque to current Web search.

(Semantic) Data Web allows to complement text on Web pages with structured data and to intelligently combine and integrate such structured information from different sources

Outline

- Semantic Web [30min]
 - Vision
 - From the Web of Documents to the Web Of Data
 - Technology stack
 - RDF Datenmodell
 - SPARQL
 - Ontology Languages (RDF / RDFs / OWL2)
 - Promote Web Data Lectures in SlideWiki!
 - Advantages
 - Faceted Search (DBpedia Faceted Browser)
 - Paradigm: "Think about the things you want to model, rather than how to physically store the data)
 - Interlinkability
 - Demo von Queries @ev Facete
 - Linguistic Resources in the Semantic Web [10min]
 - Patrick's Folien
 - MLODE
 - RDB2RDF [@35, 15MIN]
 - Concepts (How does it work, ???)
 - Sparqlify (SML)
 - Architektur Mapping Language
 - Mapping of PanLex (Best practices)
 - Related Work (Mapping Languages, Other Tools)
 - Integration von Lemon (GOLD falls nicht zu kompliziert)
 - Erstellung der DBpedia Links
 - Demo
 - Discussion [@55]
-