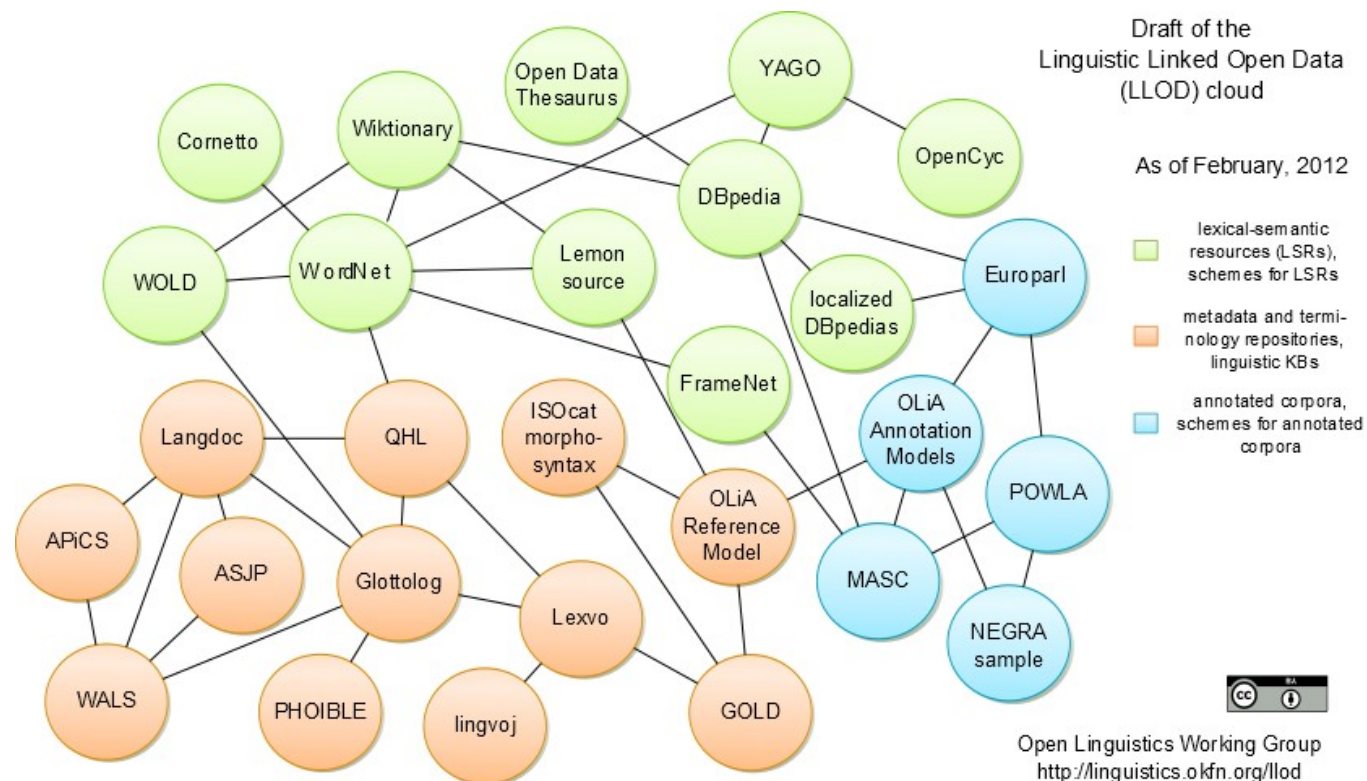


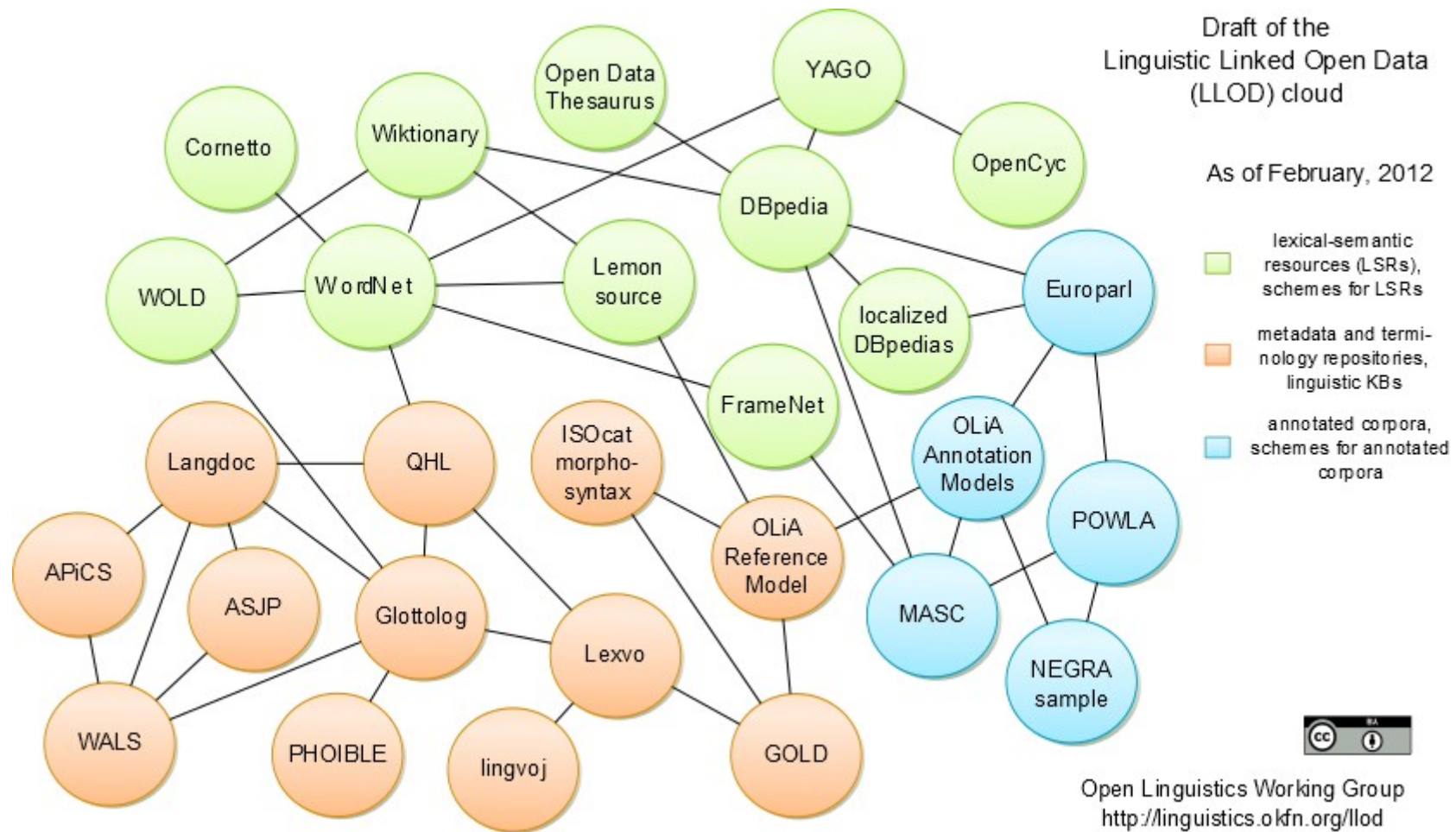
# Linguistic Linked Open Data Cloud (PanLex)

## Gliederung

- Aufgabenstellung
- PanLex
- Architektur
- Umsetzung



# Aufgabenstellung

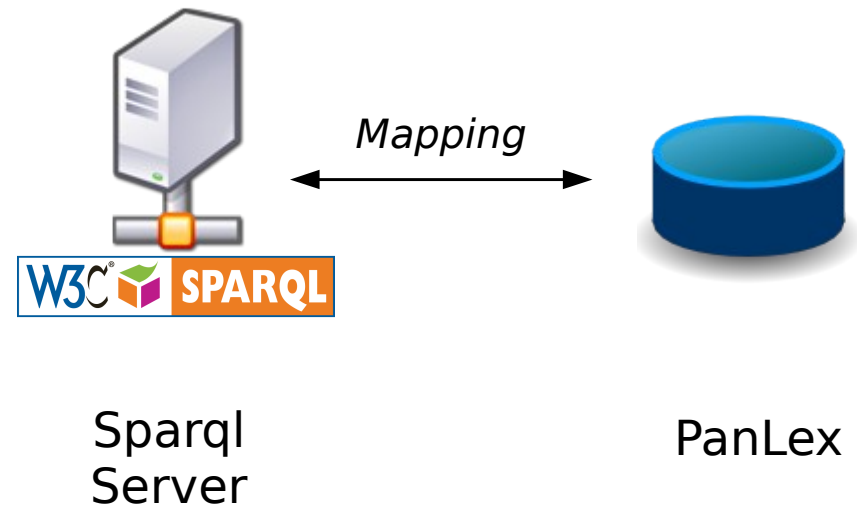


# PanLex

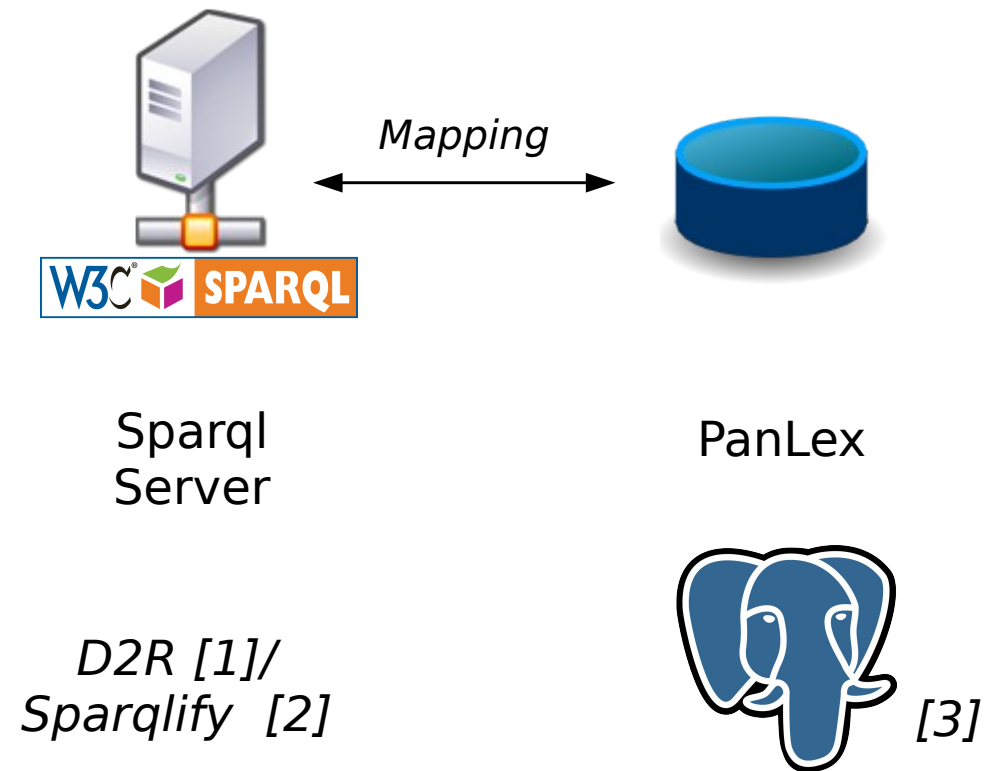
*„As a contribution to long-term linguistic diversity, the PanLex project works to enable the translation of any word from any language into any other language.“ [0]*

- multilingual
- ca. 150.000.000 Einträge in 36 Tabellen
- eher wissenschaftliches Projekt
- seit 2006

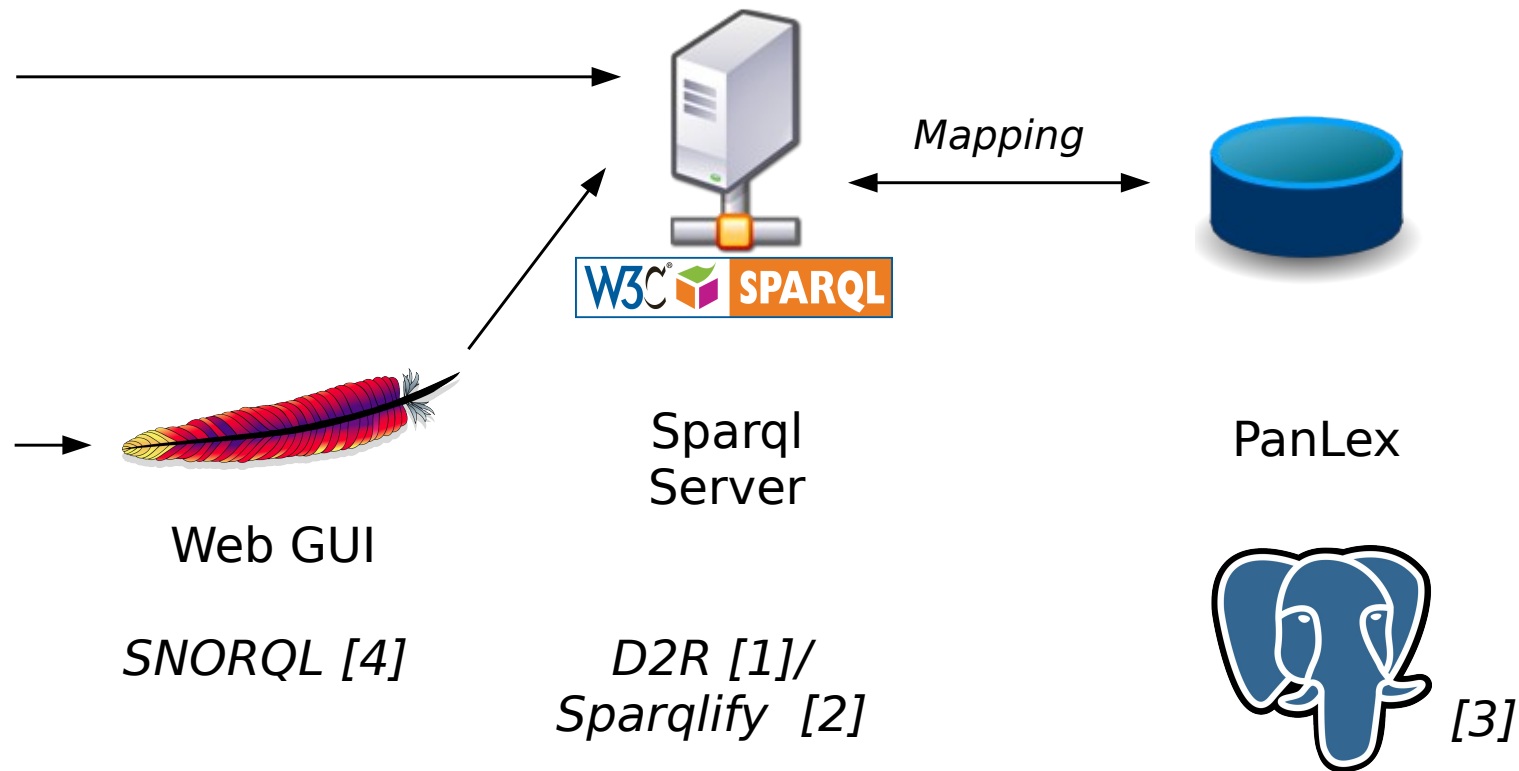
# Architektur



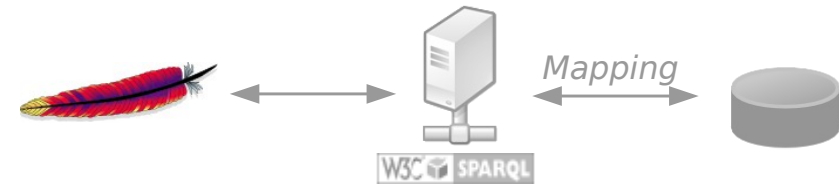
# Architektur



# Architektur



# Architektur



## SNORQL

- AJAX-Frontend zum Erkunden der Datenbasis eines Sparql Endpoints
- HTML- und JavaScript-Dateien

139.18.2.158/snorql/

Snorql: Exploring http://139.18.2.158/sparklify

**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#>

SELECT DISTINCT * WHERE {
  ?s ?p ?o
}
LIMIT 10
```

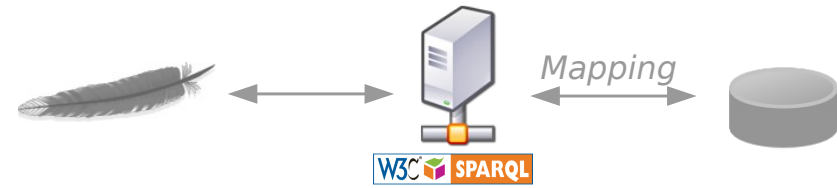
Results: Browse Go! Reset

**Browse:**

- [Classes](#)
- [Properties](#)

Powered by [Sparklify](#)

# Architektur

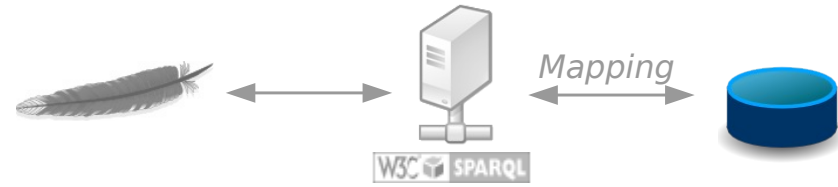


## Sparqlify

- Java
- in der AKSW-Gruppe von Claus Stadler entwickelt
- seit März 2012
- eigene Mapping-Sprache

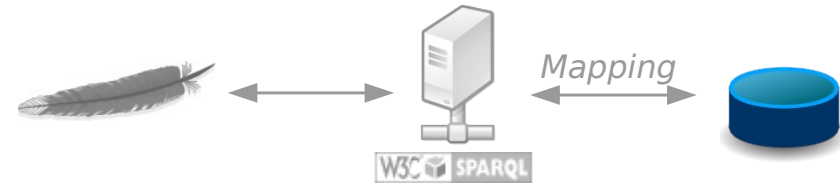


# Architektur



PostgreSQL 9.0.2  
- nur lokaler Zugriff

# Umsetzung

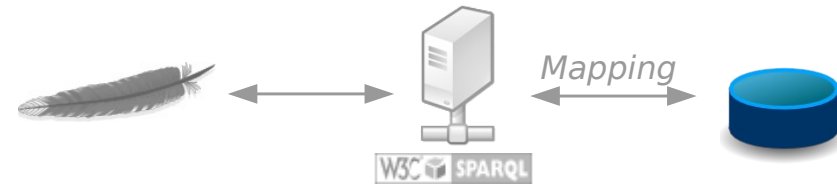


plx=> \dt

Liste der Relationen

Schema	Name	Typ	Eigentümer
public	af	Tabelle	apache
public	ap	Tabelle	apache
public	aped	Tabelle	apache
public	apf	Tabelle	apache
public	apli	Tabelle	apache
public	au	Tabelle	apache
public	av	Tabelle	apache
public	cp	Tabelle	apache
public	cu	Tabelle	apache
public	df	Tabelle	apache
public	dfid	Tabelle	apache
public	dfp	Tabelle	apache
public	dm	Tabelle	apache
public	dmid	Tabelle	apache
public	dn	Tabelle	apache
public	dnid	Tabelle	apache
public	ex	Tabelle	apache
public	exap	Tabelle	apache
public	exid	Tabelle	apache
public	exq	Tabelle	apache
[...]			

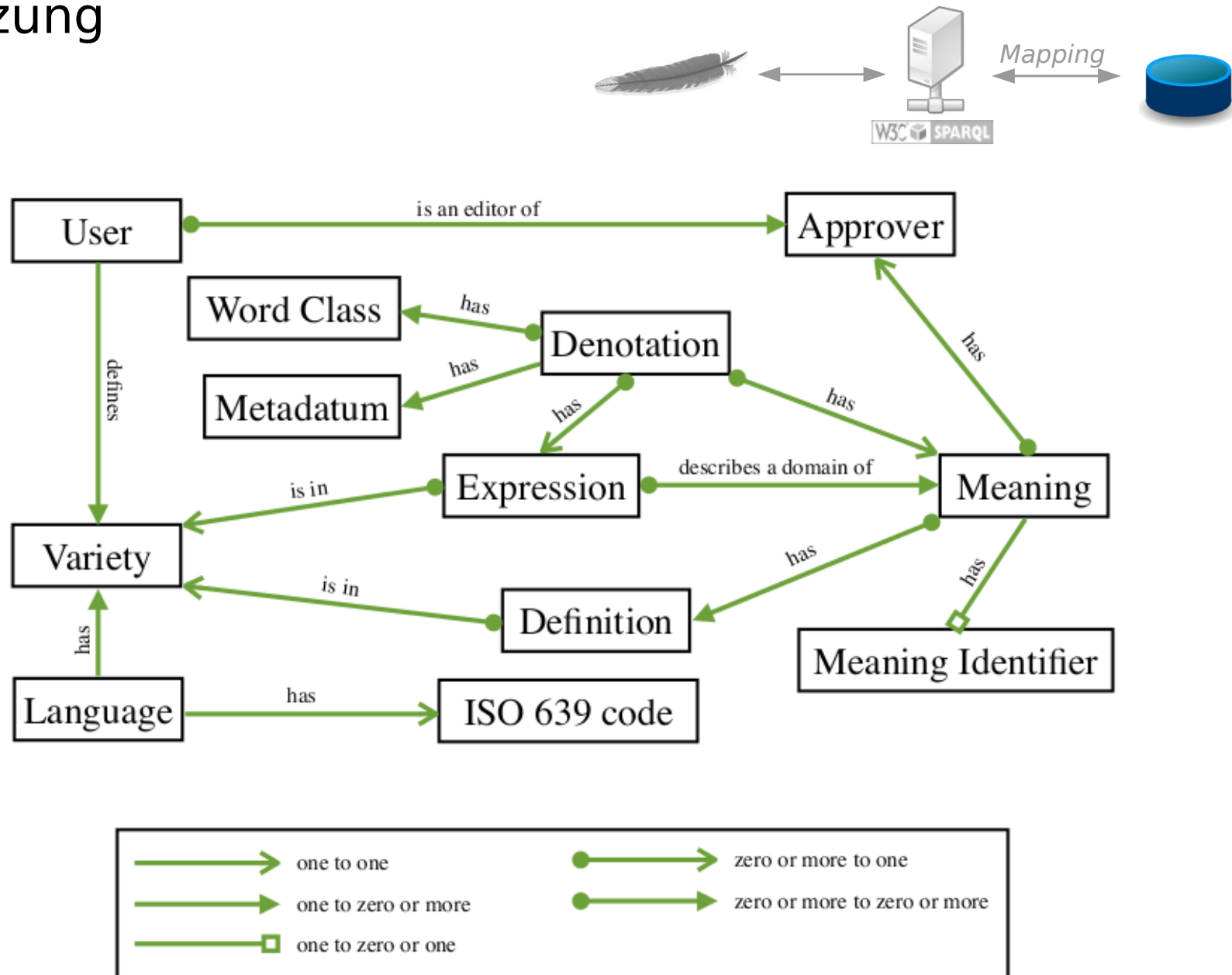
# Umsetzung



plx=> \dS ap

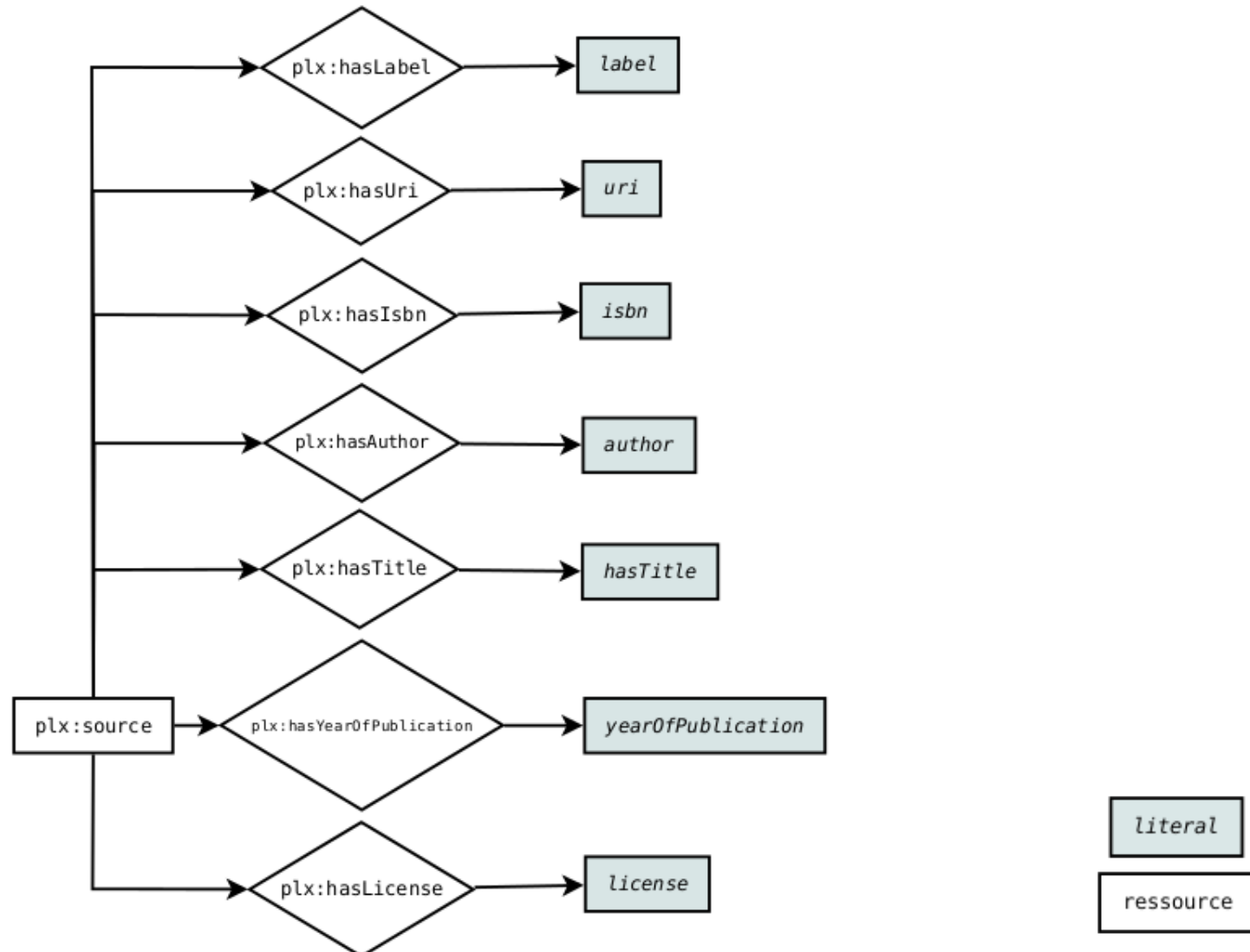
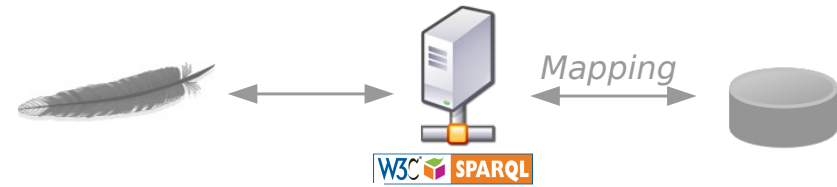
Tabelle »public.ap«		
Spalte	Typ	Attribute
ap	integer	not null
dt	date	not null Vorgabewert ('now'::text)::date
tt	text	not null
ur	text	
bn	text	
au	text	
ti	text	
pb	text	
yr	smallint	
uq	smallint	not null
ui	smallint	
ul	text	
li	character(2)	
ip	text	
co	text	
ad	text	

# Umsetzung

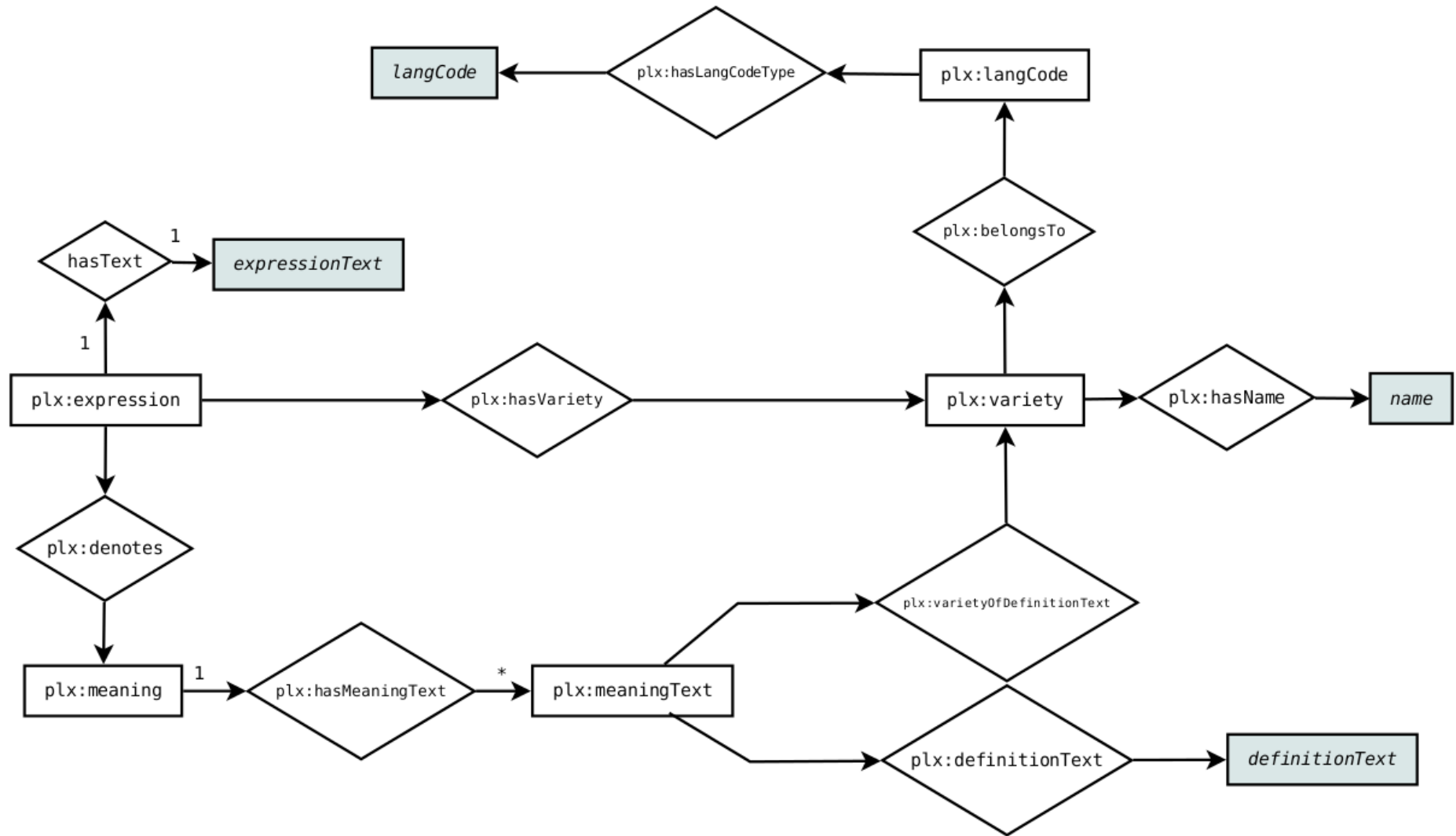
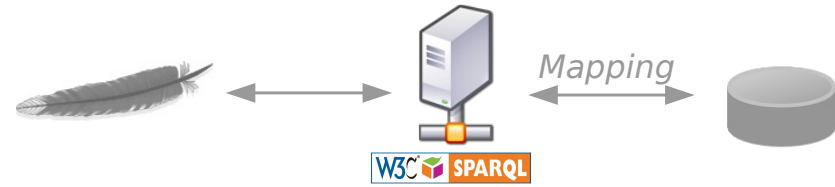


[<http://panlex.org/tech/doc/panlex-db-design.pdf>]

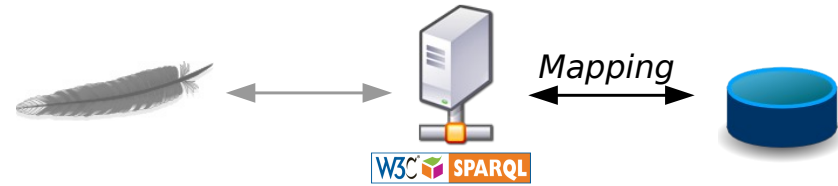
# Umsetzung



# Umsetzung

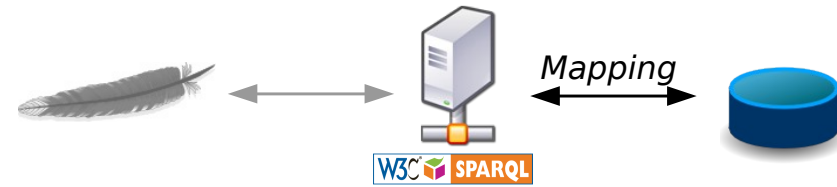


# Umsetzung



```
// (df)
// mappings concerning meaning definitions
Create View df As
  Construct {
    ?mn a plx:meaning.
    ?mt a plx:meaningText.
    ?mn plx:hasMeaningText ?mt.
    ?mt plx:varietyOfMeaningText ?lv.
    ?mt plx:definitionText ?tt.
  }
  With
    ?mn = uri(concat(plx:meaning, '/', ?mn))
    ?mt = uri(concat(plx:meaningText, '/', ?df))
    ?lv = uri(concat(plx:variety, '/', ?lv))
    ?tt = typedLiteral(?tt, xsd:string)
  From
    df
```

# Umsetzung

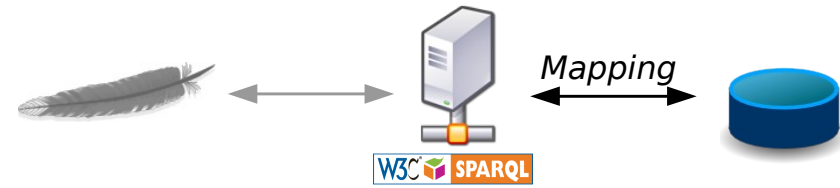


```
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:plx="http://panlex.org/plx/#" >
  <rdf:Description rdf:about="http://panlex.org/plx/#meaningText/1145938">
    <plx:definitionText rdf:datatype="http://www.w3.org/2001/XMLSchema#string">
      ஓர் இரும்பாயுதம்
    </plx:definitionText>
  </rdf:Description>
  <rdf:Description rdf:about="http://panlex.org/plx/#meaningText/1145939">
    <plx:definitionText rdf:datatype="http://www.w3.org/2001/XMLSchema#string">
      Iron rod used in making books out of palmyra leaves, two such being passed through and
      fastened with a screw
    </plx:definitionText>
  </rdf:Description>
  [...]
```

```
Create View df As
Construct {
  ?mt a plx:meaningText.
  [...]
  ?mt plx:definitionText ?tt.
}
With
  [...]
  ?mt = uri(concat(plx:meaningText, '/', ?df))
  ?tt = typedLiteral(?tt, xsd:string)
From
  df
```

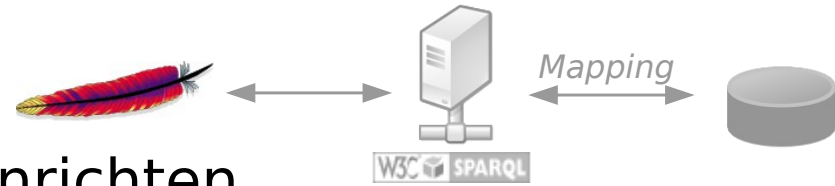


# Umsetzung



- zur Erinnerung: ca. 150.000.000 Einträge in 36 Tabellen
  - Load-Probleme auf Server
  - DOS-anfällig
- 
- Timeouts
  - maximale Anzahl von Ergebnissen (server-seitig)

# Umsetzung

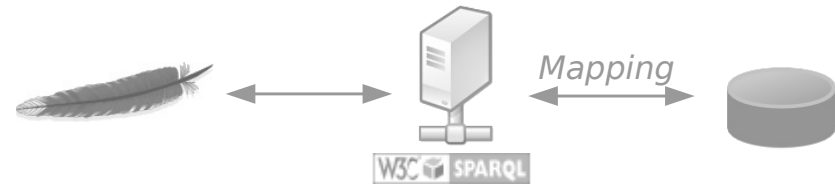


- apache httpd installieren und einrichten

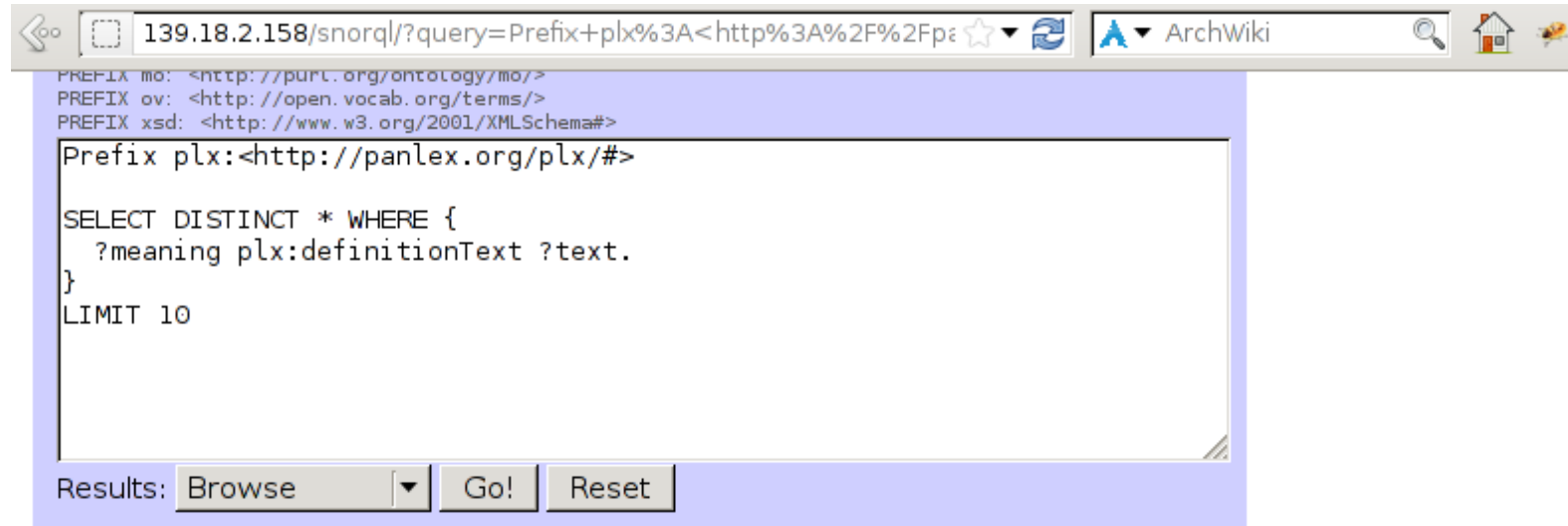
```
Alias /snorql "/home/patrick/snorql/SNORQL/snorql"
<Directory /home/patrick/snorql/SNORQL/snorql>
    Options Indexes FollowSymLinks MultiViews
    AllowOverride None
    Order allow,deny
    allow from all
</Directory>
ProxyPass /sparklify http://139.18.2.158:7531/sparql
```

- SNORQL-JavaScript anpassen

```
this._endpoint = 'http://139.18.2.158/sparklify';
this._poweredByLink = 'http://aksw.org/projects/Sparqlify';
this._poweredByLabel = 'Sparqlify';
```



Vielen Dank  
für die  
Aufmerk-  
samkeit!



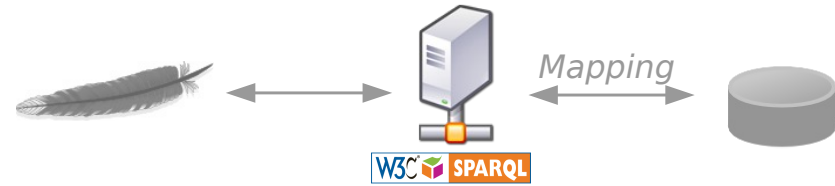
### SPARQL results:

meaning	text
<http://panlex.org/plx/#meaningText/1>	"of a fresh fish, to gut, scale and prepare for cooking"^^xsd:string
<http://panlex.org/plx/#meaningText/2>	"Form of aller"^^xsd:string
<http://panlex.org/plx/#meaningText/3>	"a canine character in Creole folktales, typically the dimwitted victim of Lapin's trickery."^^xsd:string
<http://panlex.org/plx/#meaningText/4>	"a type of soup made of organ meats"^^xsd:string
<http://panlex.org/plx/#meaningText/5>	"small ball of a substance, typically rolled by hand"^^xsd:string
<http://panlex.org/plx/#meaningText/6>	"past participle of boire"^^xsd:string
<http://panlex.org/plx/#meaningText/7>	"a mendical condition"^^xsd:string

# Quellen

- [0] <http://panlex.org>
- [1] <http://d2rq.org/d2r-server>
- [2] <http://aksw.org/projects/Sparqlify>
- [3] <http://www.postgresql.org/>
- [4] <https://github.com/kurtjx/SNORQL/>
- [5] <http://panlex.org/tech/doc/panlex-db-design.pdf>
- [6] <http://www.opensecurityarchitecture.org/cms/library/icon-library>
- [7] <http://www.icon-king.com/projects/nuvola/>

# Umsetzung



```
<rdf:RDF
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:owl="http://www.w3.org/2002/07/owl#" >
  <rdf:Description rdf:about="http://panlex.org/plx/#iso639-3/tuk">
    <owl:sameAs rdf:resource="http://lexvo.org/id/iso639-3/tuk"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://panlex.org/plx/#iso639-1/bg">
    <owl:sameAs rdf:resource="http://lexvo.org/id/iso639-1/bg"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://panlex.org/plx/#iso639-3/nau">
    <owl:sameAs rdf:resource="http://lexvo.org/id/iso639-3/nau"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://panlex.org/plx/#iso639-3/ile">
    <owl:sameAs rdf:resource="http://lexvo.org/id/iso639-3/ile"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://panlex.org/plx/#iso639-3/sna">
    <owl:sameAs rdf:resource="http://lexvo.org/id/iso639-3/sna"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://panlex.org/plx/#iso639-1/nb">
    <owl:sameAs rdf:resource="http://lexvo.org/id/iso639-1/nb"/>
  </rdf:Description>
  <rdf:Description rdf:about="http://panlex.org/plx/#iso639-1/cv">
    <owl:sameAs rdf:resource="http://lexvo.org/id/iso639-1/cv"/>
  </rdf:Description>
  [...]
```