

External Queries Extension

Querying external sources using inline queries

Basil Ell



Forschungszentrum Karlsruhe
in der Helmholtz-Gemeinschaft



Universität Karlsruhe (TH)
Forschungsuniversität • gegründet 1825



Overview

- Introduction
- Demarcation
- Example
- Main ideas
- Outlook



This work has been partially funded
by EU IST FP7 project ACTIVE
under grant 215040.



Yet another data integration extension?

■ There is

SPARQLExtension

External Data

Wibit/Exhibit

SPARQLing

SMW+ Data Import Extension, Wiki Web Services

RDFIO

LinkedWiki

...

What is the difference?

- All extensions require the user to learn a certain syntax
- My approach: using inline queries and translating them into the remote query language
 - No new syntax: querying external sources using ASK
 - No import, no replication
 - Unified view on disparate data sources
 - Mapping information is separated from queries. Therefore it becomes reusable. Few users contribute, the community benefits.
 - Display query results using usual result printers.

Simple Example

```
{{#ask: [[Category:Person]]  
| format=table  
}}
```

```
{{#ask: [[Category:Person]]  
| source=semanticweb.org  
| format=table  
}}
```

```
{{#ask: [[Category:Person]]  
| source=freebase  
| format=table  
}}
```

Complex Example

ASK

```
{#ask: [[Karlsruhe]] [[Category:City]] [[Located  
in::Germany]]  
| ?Population  
| source=freebase  
}}
```

MQL

```
{  
  "/location/statistical_region/population" : {  
    "number" : null  
  },  
  "/type/object/name" : "Karlsruhe",  
  "/type/object/name" : "/location/citytown",  
  "/location/location/containedby" : "Germany"  
}
```

Population → /location/statistical_region/population;number
Category:City → /location/citytown
Located in → /location/location/containedby

Page Property:Population

[[freebase pr mapping::/location/statistical_region/population;number]]



Page Category:City

[[freebase category mapping::/location/citytown]]

Page Property:Located in

[[freebase property mapping::/location/location/containedby]]

Configuring a new RemoteSMWStore

```
class SemanticWebOrgStore extends RemoteSMWStore {  
    public function __construct() {  
        $this->URLPart = "http://semanticweb.org/wiki/Special:Ask?title=Special%3AAsk";  
        $this->MP = new MappingProvider();  
        $this->MP->setGlobalProperties(  
            "semanticweb.org page mapping",  
            "semanticweb.org category mapping",  
            "semanticweb.org property mapping",  
            "semanticweb.org pr mapping",  
            "semanticweb.org property type"  
        );  
        $this->MP->setLocalProperties(  
            "Local semanticweb.org page mapping",  
            "Local semanticweb.org category mapping",  
            "Local semanticweb.org property mapping",  
            "Local semanticweb.org pr mapping",  
            "Local semanticweb.org property type"  
        );  
        $this->MP->setRemCategory("Category"); # Semanticweb.org uses an English SMW  
        $this->MP->setLocCategory("Kategorie"); # Local SMW is a German SMW  
    }  
}
```

Conclusions

- **Using external data as if it was internal data: querying, displaying using various result printers**
- **Import not necessary (but possible)**
- **Provenance of external data remains known, separation between external and internal not blurred**
- **No replication**
- **External data may also be imported/replicated -> stored in properties**
- ***Live view* on external data**
- **Reuse of mappings: some users add mappings, all users benefit**
- **Locality of each mapping property is well-defined**

Outlook

- **SPARQL Mediator?**
- **Performing aggregation on the results of mediators**
- **Global view on disparate data sources**
- **SMW knows where to retrieve which information**
- **Web of wikis: querying each other, sharing data, sharing mappings**
- **Integration with in-place editing?**

Status

- Soon to be released
- Extension still buggy
- Demo wiki available:

www.basil-ell.de/mediawiki/ExternalQueries

Questions?

