SPARQLライブラリの紹介

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第3回Linked Open Data(LOD)活用ワークショップ

SPARQL結果をそのまま使用

- GET/POSTでクエリ投げるとXMLやJSON等返答
  - GET用URL生成してヘッダーで形式要求
  - SELECT + JSON: "Accept: application/sparql-results+json"
  - SELECT + XML: "Accept: application/sparql-results+xml"
  - CONSTRUCT + Turtle: "Accept: text/turtle"
  - CONSTRUCT + JSON-LD: "Accept: application/ld+json"
- 後は結果を処理すればOK

SPARQLクライントライブラリ

- クエリやクエリ結果を少し楽に扱いたい
- 大抵の言語にはライブラリあり
    - Ruby: sparql-client
    - Python: SPARQLWrapper
    - Java: ARQ (Jena)
    - PHP: RAP, EasyRDF
    - JS: sparql-client-2
- https://www.w3.org/wiki/SparqlImplementations

ARQ - A SPARQL Processor for Jena

ARQ is a query engine for Jena that supports the SPARQL RDF Query language. SPARQL is the query language developed by the W3C RDF Data Access Working Group.

ARQ Features

- Standard SPARQL
- Free text search via Lucene
- SPARQL/Update
- Access and extension of the SPARQL algebra
- Support for custom filter functions
- Property functions for custom processing of semantic relationships
- Aggregation, GROUP BY and assignment as SPARQL extensions
- Support for federated query
- Support for extension to other storage systems
- Client-support for remote access to any SPARQL endpoint

Introduction

- A Brief Tutorial on SPARQL
- Application API - covers the majority of application usages
- Frequently Asked Questions
- ARQ Support
- Application javadoc
- Command line utilities
- Querying remote SPARQL services
  - HTTP Authentication for ARQ
- Logging
- Explaining queries
- Tutorial: manipulating SPARQL using ARQ
- Basic federated query (`SERVICE`)

Advanced SPARQL use

Features of ARQ that are now legal SPARQL 1.1:

- Property paths
- GROUP BY and counting

https://jena.apache.org/documentation/query/

EASY RDF

A PHP library designed to make it easy to consume and produce RDF.

Designed for use in mixed teams of experienced and inexperienced RDF developers. Written in PSR-2 compliant PHP and tested extensively using PHPUnit.

Getting Started »

The latest stable version of EasyRdf is version 0.9.0.

Example

```
$foaf = new EasyRdf_Graph("http://njh.me/foaf.rdf");
$foaf->load();
$me = $foaf->primaryTopic();
echo "My name is: ".$me->get('foaf:name')."\n";
```

Requirements

- PHP 5.3 or newer
- The pcre extension (enabled by default)
- The mbstring extension (usually available)

Features

- Extensive unit tests written using PHPUnit
- Built-in parsers and serialisers: RDF/JSON, N-Triples, RDF/XML, Turtle
- Optional parsing support for: ARC2, Redland Bindings, rapper
- Optional support for Zend_Http_Client
- No required external dependancies upon other libraries (PEAR, Zend, etc...)
- Complies with the PSR-2 coding style
- Type mapper - resources of type foaf:Person can be mapped into PHP object of class Foaf_Person
- Support for visualisation of graphs using GraphViz
- Composer compatible
- Comes with a number of examples

http://www.easyrdf.org/

This repository Search Pull requests Issues Marketplace Gist

ruby-rdf / sparql-client

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SPARQL client for Ruby. http://rubygems.org/gems/sparql-client

361 commits 7 branches 31 releases 27 contributors Unlicense

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gkellogg committed on GitHub Merge pull request #81 from bryant1410/develop ... Latest commit 546482a on 17 Apr

etc	Fix doap file.	4 years ago
examples	Use Travis "trusty" build and wildcard Ruby versions.	4 months ago
lib/sparql	Update webmock to ~> 2.3.	7 months ago
spec	Add support for MINUS, pretty much equivalent to UNION support.	9 months ago
.gitignore	Add support for UNION, either with triple patterns, subquery, or bloc...	9 months ago
.travis.yml	Use Travis "trusty" build and wildcard Ruby versions.	4 months ago
.yardopts	Renamed the CONTRIBUTORS file to CREDITS.	7 years ago
AUTHORS	Corrected my email address in the AUTHORS file.	5 years ago
CONTRIBUTING.md	Fix CONTRIBUTING typos.	a year ago
CREDITS	disable webmock for rdf-spec repo tests and reenable repo tests	3 years ago
Gemfile	Remove wirble from Gemfile, as dependency-ci objects that it has no l...	a year ago
Gemfile-pure	Update minimum ruby version, and change sxp repo location in Gemfiles.	a year ago

https://github.com/ruby-rdf/sparql-client

Ruby

```
#!/usr/bin/env ruby
# -*- coding: utf-8 -*-

require 'sparql/client'
client = SPARQL::Client.new("http://ja.dbpedia.org/sparql")
query = "SELECT * WHERE { ?s ?p ? o . } LIMIT 10"
client.query(query).each do |solution|
  puts solution.inspect
end
```

演習用コードサンプル

- https://github.com/KnowledgeGraphJapan/sparql-library-examples
- お気に入りの言語で試す
- エンドポイントをWikidataに変えてみる
    - https://query.wikidata.org/sparql
- クエリを変えてみる
- プログラムで表示とか工夫してみる