Mapping Relational Data to RDF

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Introduction

- RDB2RDF WG started October 2009
  - Home: http://www.w3.org/2001/sw/rdb2rdf/
  - Charter http://www.w3.org/2009/08/rdb2rdf-charter
  - 24 participants from 12 organizations; 5 invited experts

Goal is to standardize mapping Relational data to RDF

Data may be materialized as RDF or queried in place

Query using SPARQL
Why Map Relational Data to RDF?

- Relational databases underpin most business, government and scientific enterprises
- Data and transactions double every two years
- 15 Billion dollar business
- So, there is a lot of Relational data out there and it is not integrated with the Web
- We need to fix this
Why Map Relational Data to RDF?

- Integrate disparate Relational databases
  - RDBs are often insular, limited
  - Integration is an important requirement
- Add semantics
  - Map to OWL ontologies
  - Add rules
- Combine with data from other sources
- Publish Relational data on the Web
  - Allow integration with other Web resources
History

- Workshop on RDF Access to Relational Databases
  - Oct 2007
  - Report: http://www.w3.org/2007/03/RdfRDB/report

- RDB2RDF XG Started Feb 2009
  - Report: http://www.w3.org//2005/Incubator/rdb2rdf/XGR-rdb2rdf
  - Home: http://www.w3.org/2005/Incubator/rdb2rdf/

- RDB2RDF WG Started October 2009
Work in Progress

- Working drafts
  - Requirements and Usecases
    - http://www.w3.org/TR/rdb2rdf-ucr/
    - 8 June 2010
  - Custom mapping
    - http://www.w3.org/TR/r2rml/
    - 28 October 2010
  - Default mapping
  - Formal semantics?
Custom Mapping Details

- Expressed in RDF “Turtle” syntax

- RDFS class Table2TriplesMap maps the rows in a logical table, represented by a SQL query into RDF triples.

- RDF class RDFTermMap class represents the mapping to any RDF term: IRIs, blank nodes, or literals.
  - Has subclasses RDFSubjectTermMap, IRIMap, bNodeMap, LiteralMap

- RDF class ForeignKey specifies a foreign key relationship
Problems

- How to create URI identifiers for Relational data?
- What version of SQL do we support?
- What to do about vendor extensions?