Encoding Patron Information in RDF

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Library data in the Semantic Web

Patron information

Essential patron information

Summary

Sources

- Sorry, no final ontology yet, but work in progress.
- Feedback and contributions are very welcome!

Section 1

Library data in the Semantic Web

It's been around for some time...

- Stefan Gradman (2004): rdfs:frbr Towards an Implementation Model for Library Catalogs Using rdfs. Cataloging Classification Quarterly v39, n3/4, pp. 63-75 http://hdl.handle.net/10760/8021.
- Ian Davis, Richard Newman, Bruce D'Arcus (2005): Expression of Core FRBR Concepts in RDF http://vocab.org/frbr/.
- Talis!
- Library Linked Data Incubator Group Final Report http://www.w3.org/2005/Incubator/11d/XGR-11d/.
- LoC BIBFRAME (successor of MARC21) will be LOD: http://www.loc.gov/marc/transition/.

... data is being published.

- BNB (bibliography): http://bnb.data.bl.uk/
- LIBRIS (bibliography, authority): http://data.libris.kb.se/
- DNB (bibliography, authority):
- Nature (bibliography): http://data.nature.com/
- VIAF (authority): http://viaf.org/viaf/data/
- LoC (authorities): http://id.loc.gov/
- Lobid (organizations): http://lobid.org/
- Europeana (authorities): http://data.europeana.eu/
-your library next (?) http://datahub.io/group/lld

What kind of library data?

- bibliographic data (title, author, date...)
- authority data (thesauri, classification, subjects...)
- organizations (to a limited degree...)

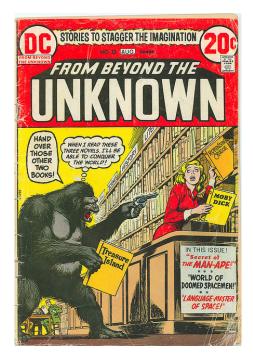
Is this really the core stuff that libraries deal with day by day?

Questions you should be nervous about

- How does LOD actually increase efficency (to safe money)?
- Does LOD model how data actually is (instead of how it should be)? In fact practical library data is quite dirty.
- What about the data that makes libraries unique:
 - Not bibliographic data
 - Data about holdings, access, buildings, opening hours...
- What about the patrons?

Section 2

Patron information



Library patron information

Eventually it is not that much

- user profiles
- loans and reservations

Why is patron information so neglected?

- Privacy: it is not Open Data
- Difficulties to get data out of legacy systems
- Lack of motivation (is it just boring?)

Motivation at GBV

- Access to library patron information for mobile apps and discovery interfaces
- Primarily required as API
- Alignment with RDF only as by-product to facilitate reuse and to enforce quality
- Same procedure as DAIA (API, data model & ontology)

Potential ontologies to build on

- BIBO, FRBR, RDA... (bibliographic data)
- FOAF (people)
- SIOC (online communities, access, services)
- DAIA (availability and library services)
- Organization ontology (organizations and places)
- OWL-S (discontinued Service Ontology)
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Section 3

Essential patron information

Data modeling rules of thumb

- RDFS and OWL are **not** conceptual modeling languages but schema languages, such as XSD, SQL Schema etc.
- Better don't begin with RDF at all.
- Begin with:
 - Requirements: what information do we need?
 - Possibilites: what information do we have?
- Strip down to the least common denominator

Which patron information do we care about most?

- 1. Personal data (name, email ...) : FOAF
- 2. Account data (state, type, expiration, fees...) : ?
- 3. Loans and reservations : ?

Instances of foaf:OnlineAccount or sioc:UserAccount with:

- date of expiration (no ontology found yet)
- fees (not ontology found yet)
- account states and types

Account states and types

The general state of a patron's account in a library.

- 0. active (may use most services)
- 1. inactive (may not use most services)
- 2. inactive because account expired
- 3. inactive because of outstanding fees
- n. inactive because of . . .

This does not involve types of accounts (e.g. student, professor, external user etc. each as sioc:Role) because it's difficult to find a consensus about account types among all libraries.

Account states in RDF

Many possible ontologies exist:

- a) One class for each account state
 - _:pa lib:hasPatronState [a lib:PatronState] .
- b) Open world assumption with inactive as default
 - lib:ActivePatron rdfs:subClassOf lib:Patron .

 - _:pa a lib:ActivePatron . # active for sure
- c) Open world assumption with active as default

_:pa lib:isInactiveBecause ?reason .

3. Loans and reservations: What information?

Each loan or reservation combines information about

- I) a library patron
- II) a document held by a library
- III) a current state of the loan or reservation
- IV) additional properties such as:
 - date issued
 - number or renewals
 - where to pick up the document
 - ▶ ...

II) A document held by a library

- Patron might be interested in a specific work or edition
- Most loans are about a specific copy

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- Patron might be interested in a specific work or edition
- Most loans are about a specific copy
- Problem already addressed in DAIA ontology
 - [a bibo:Document] daia:exemplar [a frbr:Item] .
- At least two URIs for each request:
 - URI of the patron originally requested
 - URI of the document the patron finally gets

III) Current document status for loan or reservation

Relation between a particular document and a particular patron:

- 0. no relation
- 1. reserved (the document is not accesible for the patron yet, but it will be)
- 2. ordered (the document is beeing made accesible for the patron)
- 3. held (the document is on loan by the patron)
- 4. provided (the document is ready to be used by the patron)
- 5. rejected (the document is not accesible at all)

Section 4

Summary

First result: we got an acronym!

Patron Account Information API (PAIA)



Figure: Paia, Hawaii

Second result: conceptual model with basic definitions

- ▶ Patron account states: active, inactive, inactive++
- At least two URIs for each document that is requested/loaned
- Document status:

none, reserved, ordered, held, provided, rejected

What's next

- Implement PAIA as API to get real world data instead of toy examples.
- Express this conceptual model in terms of RDF with existing ontologies and a new PAIA ontology, yet to be created.

Section 5

Sources

Current specification of Patron Account Information API: https://gbv.github.com/paia/

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Source code of this presentation (CC-BY-SA): https://github.com/jakobib/swib2012
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Images:

- Paia_beach_looking_east.jpg CC-BY-SA by Wikimedia Commons user Skier Dude.
- Nick Cardy: Secret of the man-ape. From Beyond The Unknown, Issue 23, 1973. CC-BY flickr user lincoln-log.