Semantic MARC.

or, How Charles Ammi Cutter was using RDF in 1867

Rob Styles & Nadeem Shabir
http://events.linkeddata.org/ldow2008/#program
http://www.youtube.com/watch?v=6eGcsGPGuTw
• Resources v Literals
• Synthetic or Natural Keys
• Dealing with Ambiguity
00673nam a2200217 a 45040010033000000030009000330 0500170004200800410005901500190010002000170011903 5001700136040003100153082001600184100001900200245 00620021926000330028130010020003146500060003346500 031003946550030004259cbbe7fc3a7346d99c281979d45b6 79cUK-BiTAL20050705133033.0990831s1999 eng  j 000 ||eng|d aGB99Y57412bnb a0747542155 : a()0747542155 aStDuBDScStDuBDSdUK-BiTAL04a823. 9142211 aRowling, J. K.00aHarry Potter and the Prisoner of Azkaban /cJ.K. Rowling. aLondon :bBloom sbury,c1999. a317p. ;c21 cm. 0aPotter, Harry (Fi ctitious character)vJuvenile fiction. 0aWizardsvJu venile fiction. 7aChildren's stories.2lcsh
Harry Potter and the Prisoner of Azkaban / J.K. Rowling.
317 p. ; 21 cm.
Potter, Harry (Fictitious character). Juvenile fiction.
Wizards. Juvenile fiction.
Children's stories.
Harry Potter and the Prisoner of Azkaban

Rowling, J. K.


317 p.; 21 cm.

Potter, Harry (Fictitious character)

Wizards

Children’s stories
Rowling, J. K.
Harry Potter and the Prisoner of Azkaban

Potter, Harry (Fictitious character)
Wizards
Juvenile fiction
Children's stories
Harry Potter and the Prisoner of Azkaban

Rowling, J. K.

0747542155

Wizards

Potter, Harry (Fictitious character)

Children's stories

Juvenile fiction

isbn

author

subject

genre

subject
Joanne K. Rowling
Charles Ammi Cutter (1837 – 1903)
something

the author known as J. K. Rowling

Rowling, J. K.

something else
/resource/Dog

/3020251/

/factbook/resource/China

/music/artist/60d41417-feda-4734-bbbf-7dcc30e08a83

/dblp/resource/record/journals/ac/DavisR61

/rdf/usgov/geo/us/or

/bookmashup/books/006251587X

/bookmashup/doc/persons/Iain+M+Banks
The record is nothing but the content of its fields, just as an RDF node is nothing but the connections: the property values. The mapping is very direct:
* a record is an RDF node;
* the field (column) name is RDF propertyType; and
* the record field (table cell) is a value.

Indeed, one of the main driving forces for the Semantic web, has always been the expression, on the Web, of the vast amount of relational database information in a way that can be processed by machines.

Relational Databases on the Semantic Web, Sir Tim Berners-Lee
http://www.w3.org/DesignIssues/RDB-RDF.html
URI ⊇ Primary/Foreign Keys
Using natural keys is the traditional approach, in line with Codd's original relational model. When you use them, you have only natural data that means something to users. This is good if users will ask ad hoc queries directly to the database in raw SQL. You can also often reduce the numbers of joins when using natural keys because you don't have to go to a lookup table to convert an ID to a description.

The Cost of GUIDs as Primary Keys Jimmy Nilsson
The fundamental issue is that keys are a significant source of coupling within a relational schema, and as a result they are difficult to change. The implication is that you generally want to avoid keys with business meaning because business meaning changes.

Choosing a Primary Key: Natural or Surrogate? Scott W Ambler
http://www.agiledata.org/essays/keys.html
0747542155
urn:isbn:0747542155

Rowling, J. K.
/people/36082b69-ba77-486b-b27d-bf3ac3f1bfe7

Harry Potter and the Prisoner of Azkaban
/titles/08944d4d-5b46-4bf5-9acf-3102b181de95

Potter, Harry (Fictitious character)
/character/e8b7ae0c-f465-4251-9bc9-bc4b6a61eb21

Wizards
/topics/08f0fa23-0cb8-4a66-a310-dfd8ed95e0ae

Juvenile fiction
/genres/ea65a567-bc36-4a23-a9de-bad053d18568

Children's stories
/genres/f96eda4a-42ab-4d57-8fc9-96e6f6f81e98
Conclusion...

Synthetic Keys are a Closed-World Mechanism.
Conclusion...

Natural Keys are Open, difficult and require some additional thinking.
Example...

Rowling, J. K.
Example...

/people/rowling, j. k.
Example...

Harry Potter and The Prisoner of Azkaban

Prisoner of Azkaban, Harry Potter and The
Example...

harry potter and the prisoner of azkaban

prisoner of azkaban harry potter and the
Example...

and azkaban harry of potter prisoner the

and azkaban harry of potter prisoner the
Example...

Harry Potter and The Prisoner of Azkaban

Prisoner of Azkaban, Harry Potter and The
Example...

/titles/
andazkabanharryofpotterprisonerthe
http://purl.org/vocab/frbr/core#
Introduction

In 2001, the Network Development and MARC Standards Office released the publication, "Display for Multiple Versions from MARC 21 and FRBR," which outlined the FRBR (Functional Requirements for Bibliographic Records) model. This model allows for the sharing of bibliographic records regardless of source, which can be used to share records among libraries. The FRBR model is used to create MARC records that can be shared among libraries.

The FRBR Display Tool, based on the above analysis, is an XSLT program that transforms the bibliographic data found in MARC record arrival files into meaningful displays by processing the bibliographic data into the "Work," "Expression," and "Manifestation" FRBR concepts. The matching and sorting specifications for the tool are outlined below.

The FRBR Display Tool sorts and arranges bibliographic record sets using the FRBR model. It then generates useful hierarchical displays of these record sets containing works that consist of multiple expressions and manifestations.

The tool is very flexible. Because the tool is written in XSLT, it is easy to augment based on an institution's individual needs. Likewise, the output may be augmented by simply changing the XSL stylesheet that controls display. No changes to the XSLT program itself are required.

The tool does not create bibliographic databases to create the record set on which it operates. A retrieved file, e.g., an OPAC search result of MARC 21 records must be created before using the tool.

In its current version, the FRBR Display Tool works best with record sets resulting from searches of name and title fields. Broader searches (e.g., example that include data searched in the X vest fields) produce less useful display results because the FRBR Display Tool does not display the field that caused the removal of a record unless that field was one already in the display elements.

Suggested Usage

The following list indicates a few possible uses of the FRBR Display Tool. Please contact the Network Development and MARC Standards Office (marc@loc.gov) if you have used it for other purposes and would like to contribute to this list.

1. Test FRBR concepts through experimentation with calling and sorting files by segmenting MARC 21 records into the FRBR "Works," "Expressions," and "Manifestations" concepts.
2. Use the tool to display the evolution (or history) of a title.
3. Experiment with an alternative front end display for library catalogs, based on FRBR concepts as a test option.

Matching, Sorting and Display Specifications

The current version of the FRBR Display Tool is version 2.0.

The following display table outlines the matching, sorting and displaying processes used in generating the resulting FRBR display. They are given to assist analysis of results when using the tool and to help users determine where they may want to adjust the tool for their individual needs.

See the display example for further guidance on the display specifications used with the FRBR Display Tool.

Work Level
Define work level under: author and title

Author:

- **Match**: The following fields in this order: 100$a$b$c$d (or) 110$a$b$c$d (or) 111$a$c$d$s$q
  - **Ignore**: Extra white space, case, nonfiling characters, brackets, parentheses and all punctuation
  - **Sort**: Alphabetically by first sorting character in string
  - **Display**: The following fields in this order: **100$a$b$c$d$s$q (or) 110$a$b$c$d (or) 111$a$c$d$s$q**
    - Maintain all punctuation
    - **Display label**: Author:

and Title:

- **Match**: The following fields in this order: 240$a$d$k$s$m$n$p$s$r (or) 243$a$d$k$s$m$n$p$s$r (or) 245$a$g$k$s$m$p
  - **Delete**: Data contained in brackets, along with the brackets
  - **Ignore**: Extra white space, case, nonfiling characters, brackets, parentheses and all punctuation
  - **Sort**: Alphabetically by first sorting character in string (beneath the content of the 1XX field)
  - **Display**: The following fields in this order: **240$a$d$k$s$m$n$p$s$r (or) 243$a$d$k$s$m$n$p$s$r (or) 245$a$g$k$s$m$p**
    - Maintain all punctuation
    - **Display label**: Work:
/works/rowlingjkandazkabanharryofpotterprisonerethe

MD5

/works/4e2fc306b548098b8277c07719176998
What's in a name?

...merges just like that.

Subject and object node using same URIs
Conclusions
http://events.linkeddata.org/ldow2008/#program
http://blogs.talis.com/nodalities
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