Marriage of Figaro - Opera: Linked Open Data

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ABSTRACT

With the rapid change in technology and connectivity, it has become necessary for libraries to have a revamp. A library is no longer just a catalogue of books, newspapers and other reading or viewing material. We wish to create a connected website for a library that leverages the technology available today, a linked open data online library.

Keywords

BIBFRAME 2.0; FUSEKI; SPARQL; RDF; LINKED OPEN DATA; JAVASCRIPT; BOOTSTRAP.js; HTML; HTTP ENDPOINTS;

1. INTRODUCTION

The Library linked data promises to meet libraries' need for agility in content delivery and user engagement. This project demonstrates the initial modeling of BIBFRAME 2.0 work, instance, item, agent, topic, etc. from local data examples in Opera Land, a collection of opera books, videos, sound recordings, streaming media, etc. interwoven into user's online experience using Alma, LC MARC to BIBFRAME Transformation Service, RDF Translator, RDF Validator, RDFa Validator, Apache Jena Fuseki Server, etc.

2. RELATED WORK

3. ARCHITECTURE
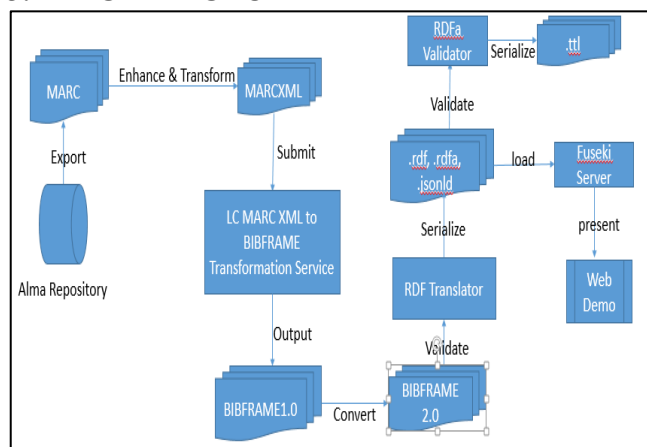
The architecture comprised of three main layers, the initial model for the data, the tools to extract rules and meaningful relationships from the data and the endpoint, to display the extracted content. For modeling our data, we used Alma Repository and exported it to MARC. The results from MARC tool were enhanced and transformed to MARCXML format. They were then submitted to LC MARQXML To BIBFRAME Transformation service layer. The output in BIBFRAME 1.0 had to undergo revisions to be updated to BIBFRAME 2.0 Model. It was then pushed through a validator to get formats like RDF, RDFa, Turtle and JSON-LD. The data in the RDF format was then stored on FUSEKI server running on localhost. SPARQL queries were used to extract rules and display data on the browser.

4. IMPLEMENTATION

The heading of a section should be in Times New Roman 12-point bold in all-capitals flush left with an additional 6-points of white space above the section head. Sections and subsequent subsections should be numbered and flush left. For a section head and a subsection head together (such as Section 3 and subsection 3.1), use no additional space above the subsection head.

4.1 BIBFRAME

BIBFRAME 2.0 organizes the information that provides the description of a resource into three core levels of abstraction: Work, Instance, and Item.

4.1.1 WORK

It is the highest level of abstraction. It reflects the conceptual essence of the cataloged resource: authors, languages, and what it is about (subjects).

4.1.2 INSTANCE

It is the resource reflecting an individual, material embodiment of a Work. It carries the info such as publisher, place and date of publication, and format.

4.1.3 ITEM

It is an actual copy (physical or electronic) of an instance. It bears the information such as location (physical or virtual), shelf mark, and barcode.
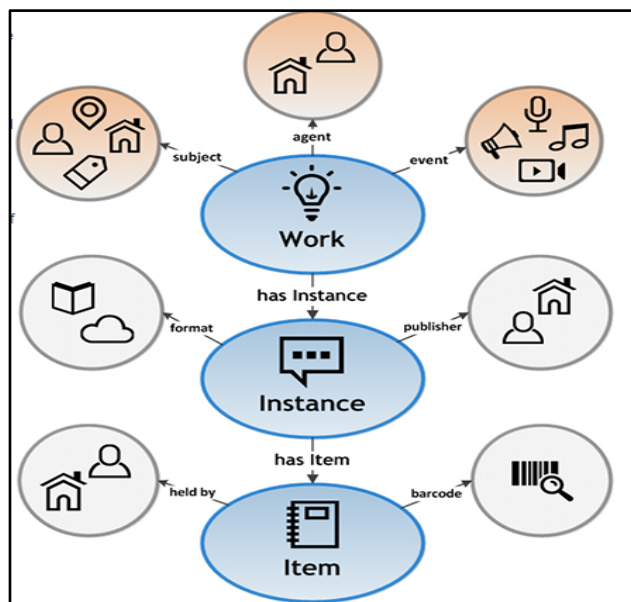
4.1.4 Additional concepts related to BIBFRAME 2.0 core classes:

4.1.4.1 Agents: persons, families, organizations, jurisdictions, meetings, etc. associated with a Work or Instance through roles such as author, editor, composer, etc.

4.1.4.2 Subjects: A Work might convey one or more concepts that represent the "about" of the Work. Such a concept is referred as "subject" of the Work. Concepts may be subjects include topics, places, temporal expressions, events, works, instances, items and agents, etc.

4.1.4.3 Events: Details of what happens at a given place and time

4.2 FUSEKI

The heading of subsections should be in Times New Roman 12-point bold with only the initial letters capitalized. (Note: For subsections and subsubsections, a word like *the* or *a* is not capitalized unless it is the first word of the header.)

4.2.1 INSTALLATION

The heading for subsubsections should be in Times New Roman 11-point italic with initial letters capitalized and 6-points of white space above the subsubsection head.

4.2.2 SPARQL

The heading for subsubsections should be in Times New Roman 11-point italic with initial letters capitalized.

4.2.3 HTTP ENDPOINT

The heading for subsubsections should be in Times New Roman 11-point italic with initial letters capitalized.

4.2.4 HTML-JAVASCRIPT

The heading for sub subsections should be in Times New Roman 11-point italic with initial letters capitalized and 6-points of white space above the sub subsection head.

4.3 WEBPAGE

The heading of subsections should be in Times New Roman 12-point bold with only the initial letters capitalized. (Note: For subsections and sub subsections, a word like *the* or *a* is not capitalized unless it is the first word of the header.)

4.3.1 BOOTSTRAP

5. EVALUATION

6. CONCLUSIONS

7. FUTURE WORK

8. ACKNOWLEDGMENTS

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