OCLC Online Computer Library Center

Harvesting and Resolution Methods for Building OAI-based Services

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Introductions

- Name
- Affiliation
- Plans
- Needs
- Technical experience

Review OAI-PMH Protocol

- Identify
- ListSets
- ListMetadataFormats
- ListRecords
- ListIdentifiers
- GetRecord

Find Repositories to Harvest

- http://www.openarchives.org/Register/BrowseSites.pl
- http://oai.dlib.vt.edu/cgi-bin/Explorer/oai2.0/testoai
- http://oai.grainger.uiuc.edu/registry/
- Friends lists
- Communities (e.g. www.ndltd.org)

Exercise: Getting Started

- What are your data sources?
- How will you add value?
- Who will design the system?
- Who will create/operate the software?
- Who will create/maintain the data?
- Who will advocate for it politically?
- Who will benefit?
- Who will pay?

Metadata

- Metadata is data about data
- Metadata formats: two extremes
  - Dublin Core
  - MARC
- Metadata can be relative
  - Who created this document?
  - Who created the metadata about this document?
- Keep in mind, though, that OAI works just as well for sharing XML *content*

XML/DTD/XSD/XSL

- XML - eXtensible Markup Language
- DTD - Document Type Definition
- XSD - XML Schema Definition
- XSL - eXtensible Stylesheet Language

eXtensible Markup Language

- Meta-markup language
- HTML – Hypertext markup language
- XHTML – eXtensible hypertext markup language

XML Overview

- Well-formed XML
- XML Namespaces
- Valid XML
  - DTDs
  - XML Schemas
- OAI Items vs. Records
  - Item identifiers
  - Multiple metadata record representations

XML Namespaces

- Ambiguous XML Elements
  - <wind>NNE</wind>
  - <wind>Clockwise</wind>
- Prefixes help identify and differentiate elements
  - <weather:wind>SE</weather:wind>
  - <toy:wind>Widdershins</toy:wind>
- But, prefixes are arbitrary and potentially ambiguous, so what we really need is a URI (ie. prefixes are a local shorthand for the URI)
  - <weather:wind xmlns:weather="someURI">NW</weather:wind>

XML Schema Definition

- Defines what an XML document contains
  - XHTML
  - oai_dc
  - MARC21 XML

What is our "item"?

- Work – a distinct intellectual or artistic creation
  - J.S. Bach's *The art of the fugue*
- Expression – the intellectual or artistic realization of a work
  - The composer's score for organ
  - An arrangement for chamber orchestra by Anthony Lewis
- Manifestation – The physical embodiment of an expression of a work
  - CD, printed score, multimedia kit, etc.
- Item – A single exemplar of a manifestation

Exercise: Data Definition

- Design a metadata format for items in your project
  - List the elements you need
  - Consider the encoding rules
  - Consider using controlled vocabularies
- Assign an XML namespace
- Map a crosswalk to Dublin Core
- Create a sample item with both formats
  - Consider assigning OAI sets
- Report issues, problems, and concerns

Exercise: A Simple Harvester

- XOAIHarvester – a simple harvester written in XSLT
- http://errol.oclc.org/oai:xmlregistry.oclc.org:xoai/xoaiharvester.xsl
- The purpose of the Perl script is to manage incremental harvesting
- Caveat! OAI is merely the first step. Once data is harvested, OAI provides absolutely no guidance for doing something useful with it.

Concerns

- Data quality
- Duplicates
- Intellectual Property Rights (IPR)
- The appropriate copy problem
- Persistence

Repository Variables

- MetadataPrefix
  - oai_dc – the lowest common denominator
- Set
  - Hierarchical
  - Allows selective harvesting
  - Work best with community agreement
  - Client warrant

Exercise: Select/Create Tools

- http://www.oaforum.org/oaf_db/list_db/list_software.php
- http://www.openarchives.org/tools/tools.html
- http://www.cs.cornell.edu/people/simeon/software/utf8conditioner/
- http://harvest.physik.uni-oldenburg.de/dc/index.html

An Alternative Service Model

- ERRoLs are URLs to content and services related to repositories in the OAI Registry at UIUC
- http://errol.oclc.org/

Discussion

- Issues, Problems, Concerns?

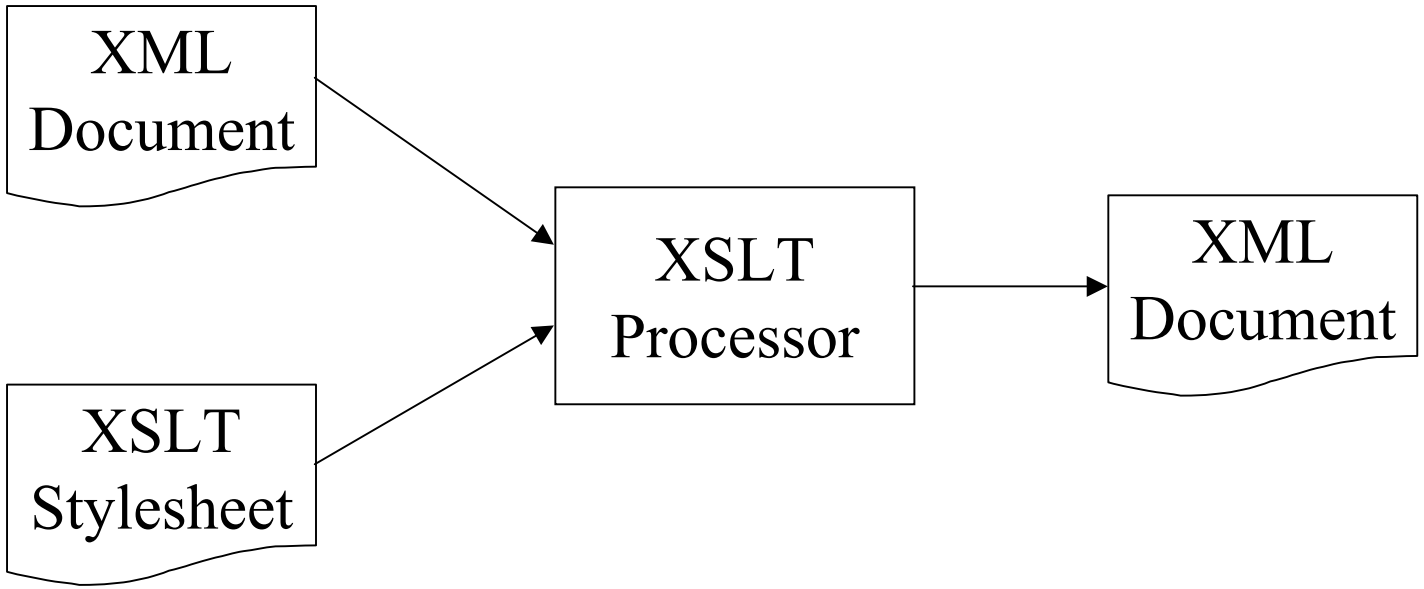
Music Services

- Organizational issues
- Cultural issues
- Collection policies
- Best practices
- Consensus-building
- Controlled vocabularies
  - http://alcme.oclc.org/gsafd/
- Do items represent digital and/or physical entities?
- Authority control

Repository Descriptors

- Repository-level "description" elements
  - oai-identifier description – identifier layout
  - eprints description – content & policies
  - friends description – discover repositories
  - branding description – branding information
  - olac-archive description – archive info
- Record-level "about" elements
  - Rights statements
  - Provenance statements

XSLT Overview



Validate Repositories

- http://www.openarchives.org/data/registerasprovider.html
- http://oai.dlib.vt.edu/cgi-bin/Explorer/oai2.0/testoai
- http://www.w3.org/2001/03/webdata/xsv

Example Service Providers

- ARC - A Cross Archive Search Service (experimental research service) http://arc.cs.odu.edu/
- Dokumenten- und Publikationsserver der Humboldt-Universität zu Berlin (search service, German language user interface) http://edoc.hu-berlin.de/oaisearch/
- iCite (citation index) http://icite.sissa.it/
- NCSTRL—Networked Computer Science Technical Reference Library (search engine) http://www.ncstrl.org/
- my.OAI (value-added search interface to a selected list of metadata databases)

Resources

- http://www.openarchives.org/
- http://www.oaforum.org/

Everything you need to know

- http://www.oaforum.org/otherfiles/oaf_d23_technical2.pdf