Using Islandora for Open-Source Powered Digital Collections

Texas Conference on Digital Libraries 2015

Presented by Tommy Keswick / @TommyKeswick
Agenda

- What is Islandora?
- Why choose Islandora?
- Show and tell
About Me

- Drupal/Islandora developer at The Cherry Hill Company
- Librarian by training (UCLA MLIS 2008)
- Background in library consortia

@TommyKeswick
The Cherry Hill Company

We have been working with libraries since 1995.

We specialize in open-source tools to build, host, and support websites and repositories for libraries.

@thecherryhillco
http://chillco.com/
What is Islandora?
What is Islandora?

Fedora Repository

- Stores digital masters
- Stores metadata
- Manages collections
- Manages relationships between objects
What is Islandora?

Apache Solr

- Indexes all the object metadata
- Allows faceted search
- Highly configurable
What is Islandora?

Drupal

- Content management system
- Provides interfaces
- Website functionality
- Extensible framework
What is Islandora?

Islandora

- Set of Drupal modules
- Software libraries
- Solution Packs
Why Choose Islandora?

- Free & open-source software
- Digital library standards
- Easy import and export of data
- True repository features
- Extensive customizability
Show and Tell

- Object Viewers
- Content Models / Object Types
- Form Builder
- Customizations
Show and Tell

Object Viewers

- OpenSeadragon
- jQuery Zoom
- Internet Archive BookReader
- video.js
- pdf.js
OpenSeadragon

An open-source, web-based viewer for zoomable images, implemented in pure JavaScript, for desktop and mobile.

OpenSeadragon Viewer With Default Settings
jQuery Zoom

A plugin to enlarge images on touch, click, or mouseover.

Demo

[Image of a dog on the beach]

Github Repos

- Colorbox
- Autosize
- Zoom
- Wheel zoom

Blog Posts

- Rounding Decimals in JavaScript
- Cross-browser mouse positioning
- CSS Ribbon Menu
- jQuery Modal Tutorial
- A Better jQuery Accordion
- Fixing IE's Opacity Inheritance
- jQuery Tabs Tutorial
- HTML5 Placeholder Attribute
- NaturalWidth and NaturalHeight in IE
- Colorbox with Flickr Feed
- Tragedy Struck On Threadless
- Working with JavaScript click events
- Solving IE7 & IE8 PNG Opacity Problems
- JavaScript: Slice, Substring, or Substr?
LOONS. Family GAVIIDAE

Loons may be likened to gigantic Grebes from which they differ externally, chiefly in the full webbed foot instead of the individually webbed toes of the Grebe, and in the sharper, more pointed and spear-like bill. These birds are similar in their habits to the Grebes except that their homes are generally more substantially built and are placed upon a solid foundation, generally upon an island in some inland lake.

Both Loons and Grebes are literally “Water witches,” being practically, and in the case of Grebes, actually, born in the water and living in it ever afterwards. Loons are strong fliers, but like the Grebes, because of their small wings they must get their first impetus from the water in order to rise; in case there is any wind blowing they also make use of this by starting their flight against it. They are very peculiar birds and the expression “crazy as a loon” is not a fanciful one, being formed from their early morning and evening antics when two or more of them will race over the top of the water, up and down the lake, all the while uttering their demontical laughter. They vie with the Grebes in diving and disappear at the flash of a gun.
The open source HTML5 video player

Video clip from Disney Nature's Oceans
Trace-based Just-in-Time Type Specialization for Dynamic Languages

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Abstract

Dynamic languages such as JavaScript are more difficult to compile than statically typed ones. Since no concrete type information is available, traditional compilers need to emit generic code that can handle all possible type combinations at runtime. We present an alternative compilation technique for dynamically-typed languages that identifies frequently executed loop traces at runtime and then generates machine code on the fly that is specialized for the actual dynamic types occurring on each path through the loop. Our method provides cheap inter-procedural type specialization, and an elegant and efficient way of incrementally compiling lazily discovered alternative paths through nested loops. We have implemented a dynamic compiler for JavaScript based on our technique and we have measured speedups of 10x and more for certain benchmark programs.

Categories and Subject Descriptors D.3.4 [Programming Languages]: Processors — Incremental compilers, code generation.

and is used for the application logic of browser-based productivity applications such as Google Mail, Google Docs and Zimbra Collaboration Suite. In this domain, in order to provide a fluid user experience and enable a new generation of applications, virtual machines must provide a low startup time and high performance.

Compilers for statically typed languages rely on type information to generate efficient machine code. In a dynamically typed programming language such as JavaScript, the types of expressions may vary at runtime. This means that the compiler cannot easily transform operations into machine instructions that operate on one specific type. Without exact type information, the compiler must emit slower generalized machine code that can deal with all potential type combinations. While compile-time static type inference might be able to gather type information to generate optimized machine code, traditional static analysis is very expensive and hence not well suited for the highly interactive environment of a web browser.

We present a trace-based compilation technique for dynamic languages that reconciles speed of compilation with excellent per-
Show and Tell

Content Models / Object Types

- Images
- Books
- Audio
- Video
- Citations / scholarly papers
- Newspapers
ONE OF PRINCE EDWARD ISLAND'S HISTORIC SPOTS

Seldom do history and romance meet so beautifully as they seem to when one steps inside the moated walls of Fort La Joie on a midsummer moonlit night. The cellars of the French houses within the Fort are still there and the huge trees which witnessed many joys and sorrows, tragedies and comedies of the old French occupation, cast their shadows over the interior of the Fort and breathe all sorts of romance and legends to the modern temperament who will lend himself to the spirit of by-gone days.

The spot is most ideally situated at the mouth of Charlottetown Harbor in the midst of one of P. E. Island's most fertile farms and, although the surrounding land is being carefully cultivated, the Fort itself has been left intact, with its deep moat all round, which, in warlike days, was kept full of water, with a drawbridge at the southwest end.

Should the Dominion Government acquire this Fort for a National Park it would take very little work to restore it as it was in the olden days.

Even the old French road is traceable leading from the place of debarkation. Also the evidences
01 - A Case of Trespass

Description
Librivox recording of a public-domain text

In collections
- Audio Collection

Details
Test Cat

In collections
- Video Collection

<table>
<thead>
<tr>
<th>Title</th>
<th>Test Cat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creator</td>
<td></td>
</tr>
<tr>
<td>Subject</td>
<td></td>
</tr>
</tbody>
</table>
The life cycle of Argia vivida Hagen: developmental types, growth ratios and instar identification (Zygoptera: Coenagrionidae)


<table>
<thead>
<tr>
<th>Title</th>
<th>The life cycle of Argia vivida Hagen: developmental types, growth ratios and instar identification (Zygoptera: Coenagrionidae)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authors</td>
<td>M. Leggott, G. Pritchard</td>
</tr>
<tr>
<td>Abstract</td>
<td>Eggs were hatched in the laboratory and larvae reared to the final instar. Three developmental types were recognized (12, 13 and 14 instars) and there was a positive correlation between growth rate, final size, number of instars and temperature between 15 and 25 degree. C. These factors, plus intra-instar variation, allow only the 1st, 2nd, 3rd, and final instars to be identified with certainty. The number of antennomeres, metathoracic wing pad length, and head width were useful in assigning larvae to instar. Head width growth ratios decreased as larvae grew; the average growth ratio was 1.24.</td>
</tr>
<tr>
<td>Journal</td>
<td>Odonatologica</td>
</tr>
<tr>
<td>Date</td>
<td>1985</td>
</tr>
<tr>
<td>Volume</td>
<td>14</td>
</tr>
<tr>
<td>Issue</td>
<td>3</td>
</tr>
<tr>
<td>Start page</td>
<td>201</td>
</tr>
<tr>
<td>End</td>
<td>210</td>
</tr>
</tbody>
</table>
Cadre

View MARXML

Expand all months Collapse all months

1969

January

January 21, 1969
Show and Tell

Form Builder

- Create XML forms
- MODS for detail
- DC transformations
- Custom schemas
Preview Form

Title *

Sub Title

Name

Type
personal

Name

Role

Select a role from this vocabulary - http://id.loc.gov/vocabulary/relators.html - e.g. Artist, Creator, Designer, Engraver, Illustrator, Photographer, Printmaker, etc.

Add
Create - Value

If the type is either Element or Attribute, the name of the element or attribute is expected. If the type is XML, an XML snippet is expected. The value of the form field will be inserted wherever the string %value% is used in the XML snippet.
**CURRENT ASSOCIATIONS**

<table>
<thead>
<tr>
<th>CONTENT MODEL</th>
<th>TYPE</th>
<th>DATASET ID</th>
<th>LABEL FIELD</th>
<th>TRANSFORM</th>
<th>SELF TRANSFORM</th>
<th>HAS TEMPLATE</th>
<th>OPERATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>islandora:sp_basic_image</td>
<td>Built-in</td>
<td>MODS</td>
<td>{'titleInfo'}</td>
<td>mods_to_dc.xsl</td>
<td>No Self Transform</td>
<td>No</td>
<td>Enable</td>
</tr>
</tbody>
</table>

**ADD ASSOCIATION**

**Content Model**: The content model to associate with a form. If the content model has no descendents it will not show up in autocomplete.

**Metadata Dataset ID**: The dataset ID where the object's metadata is stored.

**Label Field**: The form field for the object's label.

**XSL Transform**: An XSL transform for setting the Fedora object's Dublin Core metadata dataset.
Show and Tell

Customizations

- Detroit Public Library Digital Collections
- Cherry Hill LibraryDAMS
<table>
<thead>
<tr>
<th>PID</th>
<th>LABEL</th>
<th>STATUS</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>islandora:root</td>
<td>Top-level Collection</td>
<td>A</td>
<td>islandora:collectionCMModel</td>
</tr>
<tr>
<td>islandora:collectionCMModel</td>
<td>Islandora Collection Content Model</td>
<td>A</td>
<td>fedora-system:ContentModel-3.0</td>
</tr>
<tr>
<td>islandora:136579</td>
<td>Children standing in front of building</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
<tr>
<td>islandora:136580</td>
<td>Hotel Pontchartrain and Woodward Avenue</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
<tr>
<td>islandora:136581</td>
<td>Cadillac Square, looking west from county building</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
<tr>
<td>islandora:136582</td>
<td>Standish Backus residence</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
<tr>
<td>islandora:136583</td>
<td>Workers on Livingstone cut</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
<tr>
<td>islandora:136584</td>
<td>Old Mission Church on Mackinac Island</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
<tr>
<td>islandora:136585</td>
<td>Electric engine and power house of Detroit River tunnel</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
<tr>
<td>islandora:136586</td>
<td>Detroit City Hall</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
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<tr>
<td>islandora:136587</td>
<td>Euclid Linwood apartment building</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
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<tr>
<td>islandora:136588</td>
<td>Campus Martius</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
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<tr>
<td>islandora:136589</td>
<td>Harkness Church</td>
<td>A</td>
<td>islandora:chillco_jsp_large_image_cmodel</td>
</tr>
</tbody>
</table>
Welcome to the Cherry Hill Islandora Demo

LibraryDAMS™ from Cherry Hill is a Digital Asset Management System for libraries.

Flowers & Plants

CAMELLIA
Single red flower with yellow center

California Poppy
<table>
<thead>
<tr>
<th>Details</th>
<th>MODS</th>
<th>DC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Names:</strong></td>
<td>Rain Breaw Michaels, Photographer</td>
<td></td>
</tr>
<tr>
<td><strong>Type of Resource:</strong></td>
<td>still image</td>
<td></td>
</tr>
<tr>
<td><strong>Genre:</strong></td>
<td>Flower</td>
<td></td>
</tr>
<tr>
<td><strong>Date Created:</strong></td>
<td>2013-05-12</td>
<td></td>
</tr>
<tr>
<td><strong>Format:</strong></td>
<td>1 digital image</td>
<td></td>
</tr>
<tr>
<td><strong>Abstract:</strong></td>
<td>Single red flower with yellow center</td>
<td></td>
</tr>
<tr>
<td><strong>Subject:</strong></td>
<td>Bush Flower</td>
<td></td>
</tr>
</tbody>
</table>

```xml
<?xml version="1.0"?>
<mods xmlns="http://www.loc.gov/mods/v3"
xmlns:mods="http://www.loc.gov/mods/v3"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xlink="http://www.w3.org/1999/xlink">
  <titleInfo>
    <title>Camellia</title>
  </titleInfo>
  <name>
    <namePart>Rain Breaw Michaels</namePart>
    <role>
      <roleTerm authority="marcrelator" type="text">Photographer</roleTerm>
    </role>
  </name>
  <typeOfResource>still image</typeOfResource>
  <genre authority="lctgm">Flower</genre>
  <originInfo>
    <dateCreated>2013-05-12</dateCreated>
  </originInfo>
  <language>
    <languageTerm authority="iso639-2b" type="code"/>
  </language>
</mods>
```
California Blue Eyes
Thank You

Please don’t hesitate to ask any questions!

Tommy Keswick

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tkeswick@chillco.com
@TommyKeswick
@thecherryhillco