

Bonolo*

A General Digital Library System for File-based Collections

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November 13, 2012

* Sotho word meaning easy.

Digitization - martinwest.uct.ac.za



Holy United Methodist Church in SA (52). A young member.



Apostolic Full Gospel Mission of South Africa (2). Special Sunday service in Soweto - held in a marquee, to celebrate the 100th birthday of one of its members.

Digitization - lloydbleekcollection.cs.uct.ac.za



Motivation

- Preservation costs
 - Preservation lifecycle
 - Heritage funding model
- Technical skills and education
 - Content curators skillset
 - Steep learning curve for most solutions
- Internet bandwidth
 - Bandwidth intensive solutions
 - Cloud-centric solutions not feasible
- Existing solutions
 - Complexity

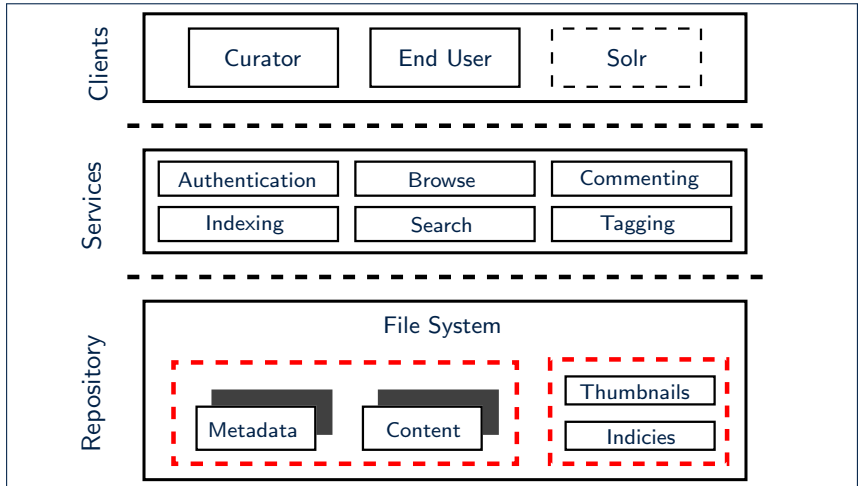
Previous Projects

- Largely driven by user requirements
- Computing resources
 - Minimal bandwidth use
 - Minimal use of computer resources
 - Distributable
- Minimalistic approach
- Lightweight tools and services
- Projects
 - Digital libraries without databases
 - In-browser digital library services
 - Hybrid online-offline collections

Design Principles

- Design for least possible resources
- Flexible design to facilitate extensibility
- Hardware and/or software platform independence
- Heterogeneous object, metadata and service integration
- Minimalist design approach
- Simplified preservation process
- Structured organisation of data
- Support for community and international standards

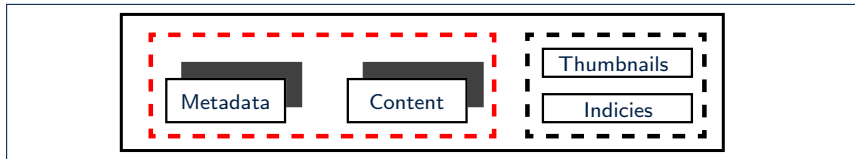
Prototype Implementation - Bonolo Architecture



Tools and Technologies

- Core technologies
 - Apache Tomcat
 - CSS
 - HTML
 - Java
 - JavaScript
 - XML
- Additional software components
 - Apache Solr
 - ImageMagick
 - SQLite

Repository Design



- Hierarchical structure
- Digital content and metadata stored on file system
- Objects stored with corresponding metadata record
- Metadata records encoded using XML

End User Interface - Functionality



- Authentication
- Browse
- Commenting
- Search
- Tagging

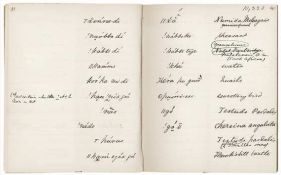
End User Interface - Item View

Navigation: [Home](#) » [Browse Stories](#) » [Previous Search](#) » Words and sentences: at the Museum, 24 September 1880 (Inauxa and Ikhanumup)

Additional Story Information

Categories: Words and sentences
Description: Inauxa and Ikhanumup (at the South African Museum) give words and sentences in Isan (on the recto pages) and in !Kra (Tlhotentot) on the opposite pages. These are largely the names of plants and animals and some descriptions of their habits or appearance.
Created: 24 September 1880
[Download This Story](#)

Story: Words and sentences: at the Museum, 24 September 1880 (Inauxa and Ikhanumup)

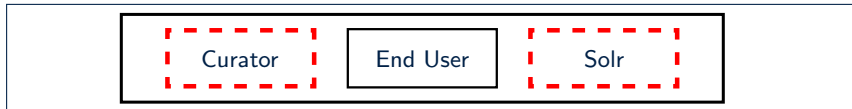


Page 10 / 14 (click the image to view full size)

[Please log in to comment.](#)

0 Comments:

Curator Interface - Functionality



- Authentication
- Batch import and export
- Browse
- Collection and Object management (add, edit, delete)
- Indexing
- Search

Curator Interface - Item View

CURATOR INTERFACE

bonolo

why complicate?

lightorp@irt

Logout

home

collections

account


recent activity

?

about

contact

File: AG1_-_0001.jpg



Metadata:

Options: [Edit Metadata](#) [Download](#) [Upload](#)

Options:

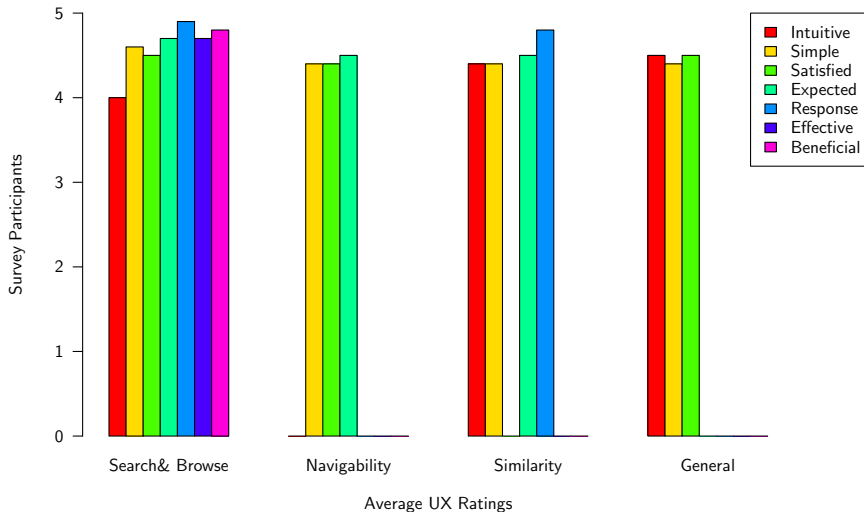
Edit the metadata file

identifier	AG1_-_0001.jpg
site_records_record_id	1
site_code	AG1
site_name	Andriessgrond 1
map_sheet	321888
creator	van Rijssen
date	00:00
description	indet fig paleindet animal3 smudges2 curved yellow lines bounding red line 20cmhorizontal indet fighuman crouching fig1 standing/walking/dancing figs, some with arms raiseddeland red and whitetdouble row of b dots2 yellow indet animal15 figs10x2cm object with 3 delicately painted hairpon headof small indet animal white1 indet animal very small1 human1 indet fig with spear1 rhabuck15 indet figs, 1,2,3 female, 9-male female, staetop. Others indet1 - has white paint around wrists2 - has club3 - has stick over shoulder4,7 - stick and club10 - stick3 smears3 faint human4 faint crudely drawn figs2 figs, 1 horizontal crude2 simple karosses
imagepath_imagepath	collections/Archaeology/Sites/321888_ClanWilliam/Andriessgrond/AG1/WIL_Archier____Nic_Wiltshire_Maich, _0001.jpg

End User Interface UX - Lab Experiment

- Objective
 - Feasibility of building user interface using file store
 - Assess impact of file store on user experience
- Target Group
 - Individuals with basic Web experience
 - 17 participants (80% students)
- Approach
 - Informed consent
 - Pre-experiment briefing
 - Typical DL end user tasks (search, browse)
 - Questionnaire

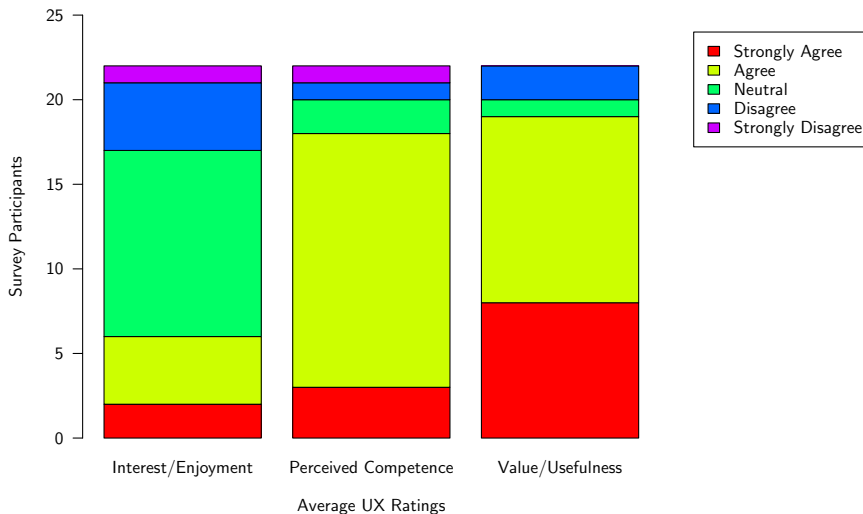
End User Interface UX - Experiment Results



Curator Interface UX - Online Experiment

- Objective
 - Assess user experience when performing curation tasks
- Target Group
 - Individuals with no experience working with DL tools
 - Social networking site recruitment
 - 23 participants
- Approach
 - Intrinsic Motivation Inventory
 - Five (5) minute 'HOWTO' screencast
 - Curation tasks with two datasets
 - Online questionnaire

Curator Interface UX - Experiment Results



Curator Interface UX - Experiment Results

■ Participants general comments

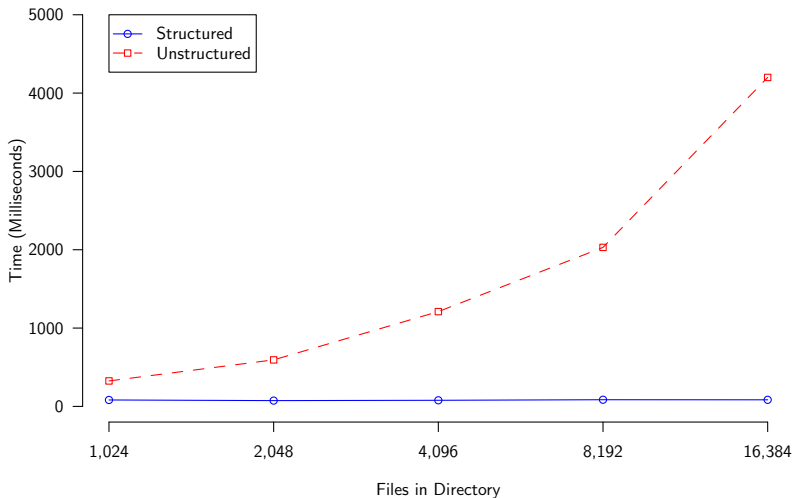
"... Also, I fail to see how Bonolo differentiates itself from something like Dropbox. I can create a folder structure on my PC and upload it to Dropbox very easily. I can then browse my files and folders in Dropbox's web interface..."

"... I have to say though that I managed to complete the tasks without watching the video (which is a great sign I think). I'm impatient with manuals but even worse with instructional videos..."

Repository Performance - Lab Experiment

- Objective
 - Impact of file store structure on performance
 - Performance metrics: response time
- Test Environment
 - Intel Core 2 Duo CPU E7400@ 2.80GHz
 - 2 GB RAM
 - 32-bit Windows 7 Ultimate edition
- Approach
 - Structured and unstructured collections
 - Exponential increase of files in collections
 - Load time and corresponding data transfer during navigation

Repository Performance - Experiment Results



Conclusion

- Experimental results look promising
 - Effectiveness
 - Usability
 - Medium-sized collections
- Work in progress
 - Evaluation
 - Flexibility
 - Scalability
- Future work
 - Reference implementation
 - Design principles
 - Extensibility

Thank You

Questions?

Additional Information

<http://dl.cs.uct.ac.za>