



Bonolo*

A General Digital Library System for File-based Collections

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* Sotho word meaning easy.

<http://martinwest.uct.ac.za>



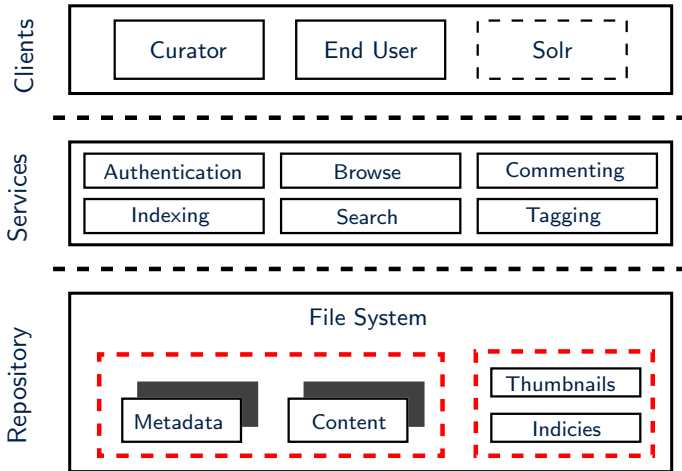
Motivation

- 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

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

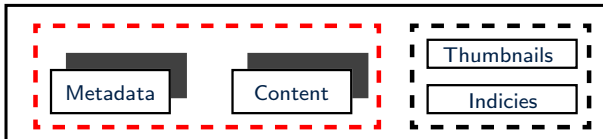
Prototype Implementation



Tools and Technologies

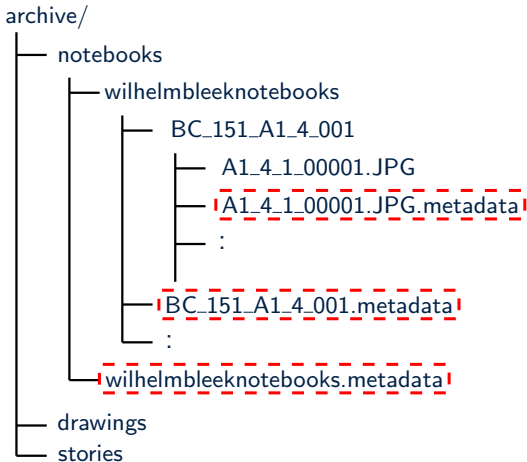
- Core technologies
 - Apache Tomcat
 - CSS
 - HTML
 - Java
 - JavaScript
 - XML
- Additional software components
 - Apache Solr
 - ImageMagick
 - SQLite

Repository Design



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

Repository Design (2)



End User Interface



- Authentication
- Browse
- Commenting
- Search
- Tagging

End User Interface (2)

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

Additional Story Information

Categories: Words and sentences

Description: Inaxa and Ikhannumup (at the South African Museum) give words and sentences in xam (on the recto pages) and in !Ora ("Hottentot") 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 (Inaxa and Ikhannumup)



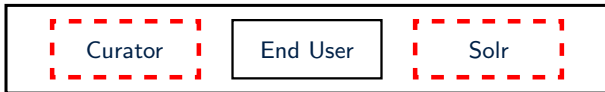
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0 Comments:

Curator Interface



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

Curator Interface (2)

CURATOR INTERFACE


lightnphiri Logout

bonolo

why complicate?

[home](#) [collections](#) [account](#) [recent activity](#) [about](#) [contact](#)

File: AG1_-_0001.jpg



Metadata:

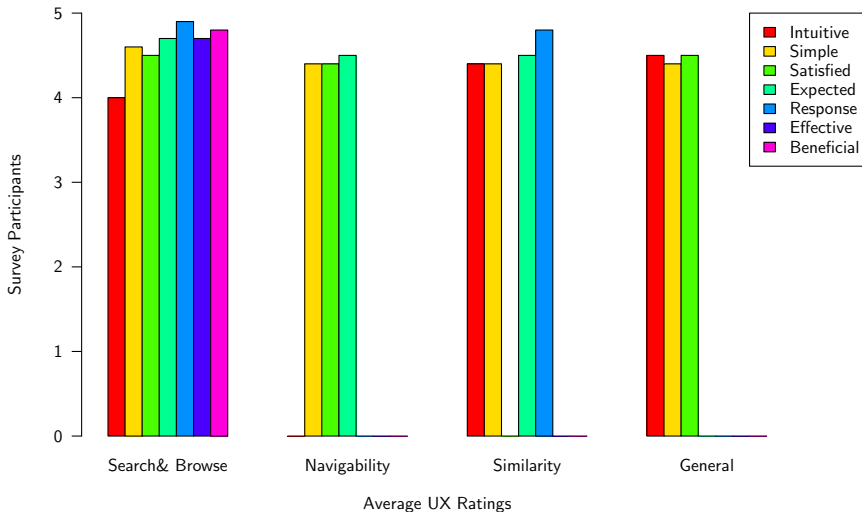
Options: [Edit the metadata file](#) [Download](#) [Upload](#)

identifier	AG1_-_0001.jpg
site_records_record_id	1
site_code	AG1
site_name	Andriesgrond 1
map_sheet	321888
creator	van Rijssen
date	00:00
description	indet fig paleindet animal3 smudges2 curved yellow lines bounding red line 20cmhorizontal indet figurem crouching figs6 standing/walking/dancing figs, some with arms raisedeland red and whitedouble row of b dots2 yellow indet animals15 lps10x3cm object with 3 delicately painted harpoon heads4 small indet anlm white1 indet animal very small human1 indet fig with spear1 rhebuck15 indet figs, 1,2,3 female, 9-male female, steatop. Others indet1 - has white paint around wrists2 - has club3 - has stick over shoulder4,7 - stick and club10 - stick3 smears3 faint humans4 faint crudely drawn figs2 figs, 1 horizontal crude2 simple karosses
imagepath_imagepath	collections/Archaeology/Sites/321888_Clamwillam/Andriesgrond/AG1/Wil_Archer___Nic_Wiltshire_March _0001.jpg

End User Interface UX 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)
 - Post-experiment questionnaire

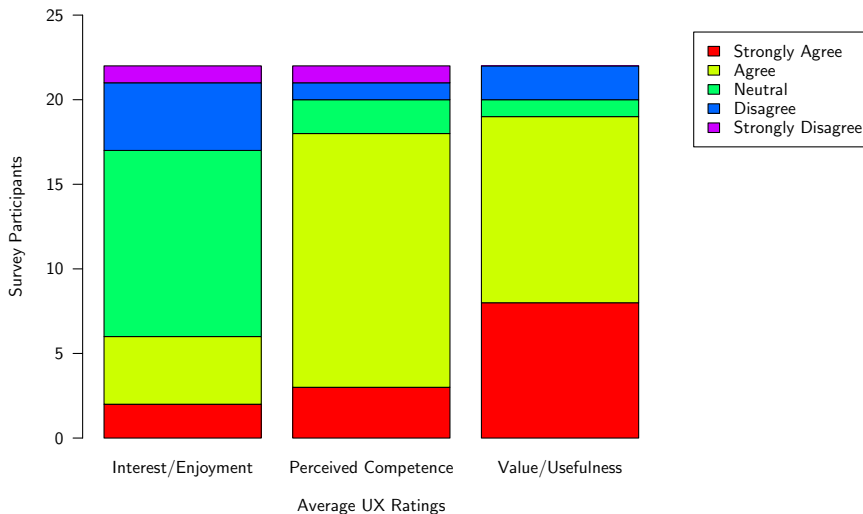
End User Interface UX Experiment (2)



Curator Interface UX 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 (2)



Curator Interface UX Experiment (3)

- Participants general comments

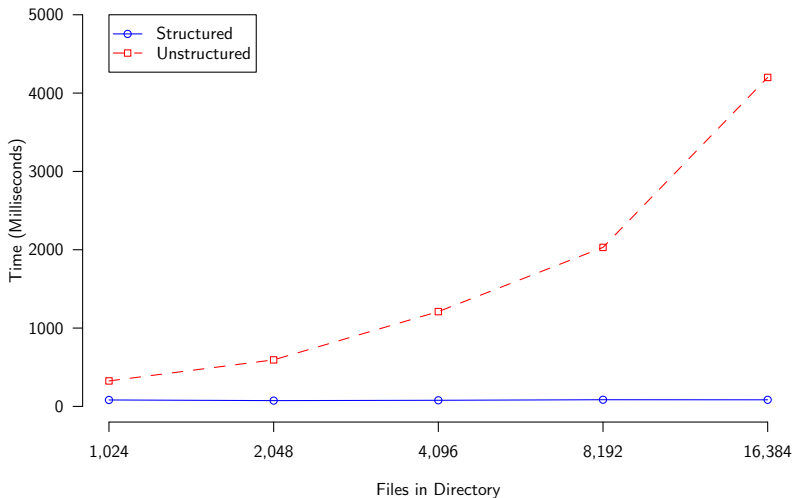
“... Also, I fail to see how Bonolo differentiates itself from something like Dropbox. I can create a folder structure on my PC and upload it to Dropbox very easily. I can then browse my files and folders in Dropbox’s web interface...”

“... 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 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 (2)



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`