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Blacklight

- Background

- What is Blacklight and what can it do?
  - Functionality
  - Technology

- Blacklight and catalogues

- Blacklight and repositories

- Community

Background

- The NINES digital humanities publishing initiative at University of Virginia (UVa)
  - Collex project within this aimed to provide a user interface to a collection of 19th century documents
- UVa wanted to create a better interface for their library catalogue

- The Collex interface was developed to create Blacklight
  - a more general discovery solution
- Blacklight was made open source in 2008
  - UVa stimulated a community to support this

Blacklight today

- Blacklight is now used as a library catalogue interface at a number of Universities
  - UVa, Stanford, Johns Hopkins, (Hull)…
- Blacklight is an active community helping to develop the software further

- Others are using Blacklight for different purposes
  - Rock'n'Roll Hall of Fame, Northwestern Digital Archive…
  - Hydra project (repositories)
  - WGBH television channel

What is Blacklight?

- Blacklight is a 'next generation' discovery interface
  - It continues to be improved
- It is free and open source

- It is an interface built on Apache Solr
  - And offers all the functionality that this offers
- It is designed for use with single or mixed collections (e.g., library, archives, images, videos, etc.)
  - It is designed to be customised to meet your local requirements
- It is a Ruby on Rails application

Blacklight?

Solr + UVa = Blacklight

Blacklight is being actively improved

- Since being made available in 2008 it has developed steadily
  - Version 2.0 – March 2009
  - Version 2.5 – May 2010
  - Version 3.0 – July 2011
  - Version 3.2 (current) – December 2011

- Over 20 developers from across different Universities are contributing to the creation and improvement of Blacklight
  - Top 10% of active open source projects
  - www.ohloh.net/p/blacklight

Blacklight is free

- Blacklight is licensed under the Apache 2.0 Software License
  - Anyone can make use of Blacklight
  - Anyone can adapt Blacklight to meet their needs
  - Anyone can share their version of Blacklight
    - So long as they also use the Apache 2.0 license
    - So long as they make it clear what changes they have made

- This ensures that the flexibility within the system can be put into practice without any concern

Blacklight is built on Apache Solr

- Solr offers
  - Faceted browsing
  - Plugin architecture
    - This allows local changes
  - Relevance based searching
    - The algorithm can be adjusted locally
  - Advanced full text search
  - Geospatial search
  - Multiple search indexes
- Extending the capability of Lucene

What else can Blacklight do?

- Static URLs for all search and record pages
  - Allows bookmarking and tagging
- Personal search history
- RSS and Atom version of any search
- Results sorting
- Export to RefWorks/EndNote
- Export as a citation
- Support Unicode and non-Roman scripts
- COinS are embedded in each item
- Embedded Google APIs (e.g., Book Preview)

Blacklight is designed for use with single or mixed collections

- Blacklight was initially designed to work with MARC records
    - solrMarc is a related project that indexes MARC records into Solr
        - Default solution out of the box
- Blacklight can also be used for other types of record

- For example,
    - EAD archive records
    - MODS metadata records
    - Video files
    - Music
    - …or a mixture of these

Four key capabilities

- Support for any type of record or metadata

- Object-specific behaviours
    - Books, images, videos, music, manuscripts, etc.
- Specific views for domain or discipline-specific materials

- Easy to add different views, and override the core system with local modifications

Blacklight is a Ruby on Rails application

Blacklight

Local Code

Blacklight Plug In

Catalogue Records (MARC) → **Solr index** ← **Repository Records (MODS)**
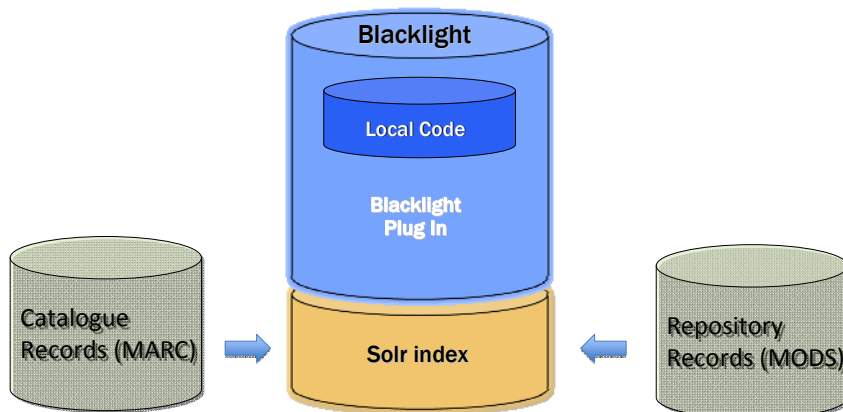
A note on Ruby

- *Rapid* application development for web applications
  - 10x productivity
- Supportable
  - MVC (Model-View-Controller) structure separates data from logic from presentation
- Testable
  - Rspec/Cucumber are powerful, automatable test coverage tools
- Learnable
  - 1 week learning curve to basic proficiency

Testing

- Blacklight community principles
  - https://github.com/projectblacklight/blacklight/wiki/Community-principles
- All contributed code must have full test coverage before it is committed.
- Tests must be committed at the same time code is.
- All bugs and development tasks will be tracked in JIRA.
- All code must be documented before it's committed

Open technology development

- JIRA used for tracking issues
  - http://jira.projectblacklight.org/
- Hudson used for continuous integration and testing of code
  - http://hudson.projectblacklight.org/
- Open code repository at github
  - https://github.com/projectblacklight/
- Wiki providing documentation for use
  - https://github.com/projectblacklight/blacklight/wiki
- Google Group
  - blacklight-development@groups.google.com
- Website
  - http://projectblacklight.org

JIRA

Hudson

Github

Wiki

Google group

Website

Open source development

- Open Source Software is no panacea

- You need to know what you're getting into

- Philosophies are difficult to implement wholesale

- Implementations must serve the greater goals of the library

- The process of testing, implementing, and testing again, and working with a community to achieve goals, takes time
  - **but is worth the effort for stability and scalability.**

Blacklight and catalogues

- Basic Blacklight

- Basic Blacklight at Hull

- Searchworks at Stanford

- Catalyst at Johns Hopkins

- Virgo at UVa

- WGBH Open Vault

- Rock'n'Roll Hall of Fame

Basic Blacklight

University of Hull

Searchworks

Catalyst

OpenVault

Basic Blacklight results

Hull results

Searchworks results

Catalyst results

OpenVault results

Basic Blacklight single result

Hull single result

Searchworks single result

Catalyst single result

OpenVault single result

Rock'n'Roll Hall of Fame

Virgo

Virgo results

Virgo book/article results

Virgo single result

Blacklight and repositories

- Remember - Blacklight can be used as an interface to any type of record
  - This can include records held within digital repositories
- Blacklight is used as the default interface for the Hydra project
  - A flexible, multi-purpose repository solution
    - based on Fedora
  - Hydra – one body of content, many views (heads) to this
- Blacklight offers a way of exposing rich repository functionality

Hydra

- A collaborative project between:
  - University of Hull
  - University of Virginia
  - Stanford University
  - Fedora Commons/DuraSpace
  - MediaShelf LLC
- Unfunded (in itself)
  - Activity based on a common need
- We aim to work towards a reusable framework to permit repositories to support the management of many different types of content for many purposes
- Original timeframe - 2008-11 (but now extended indefinitely)

Fundamental Assumptions

No single institution can resource the development of a full range of digital content management solutions on its own,

...yet each needs the flexibility to tailor solutions to local demands and workflows.

No single system can provide the full range of repository-based solutions for a given institution's needs,

...yet sustainable solutions require a common repository infrastructure.

"If you want to go fast, go alone. If you want to go far, go together"
(African proverb)

Adding partners

- More Universities and organisations are now using Hydra
  - Northwestern University, Chicago
  - Notre Dame University
  - London School of Economics
  - Rock'n'Roll Hall of Fame
- Hydra is a community, but not just a community
  - It is a way of modelling content
  - It has a technical implementation

Technologies?

- Fedora
  - All Hydra partners are Fedora users
- Solr
  - Very powerful indexing tool, as used by…
- Blacklight

  - Ruby gems (MediaShelf contributions)

  - ActiveFedora, Opinionated Metadata
    - For creating and managing the repository contents
  - Solrizer
    - For indexing repository content

The technical bit…
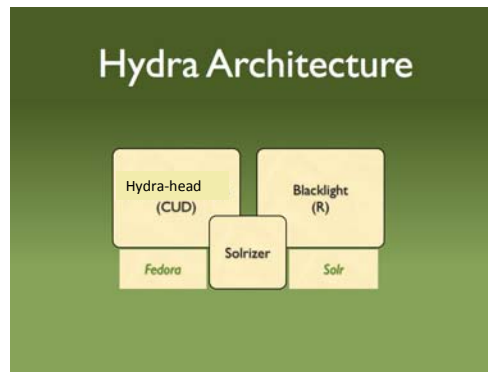
CRUD approach
•Blacklight provides 'Read' as part of the overall system
•Hydra-head (the Ruby Gems and more) provides 'Create',
    'Update' and 'Delete'

Hydra at Hull

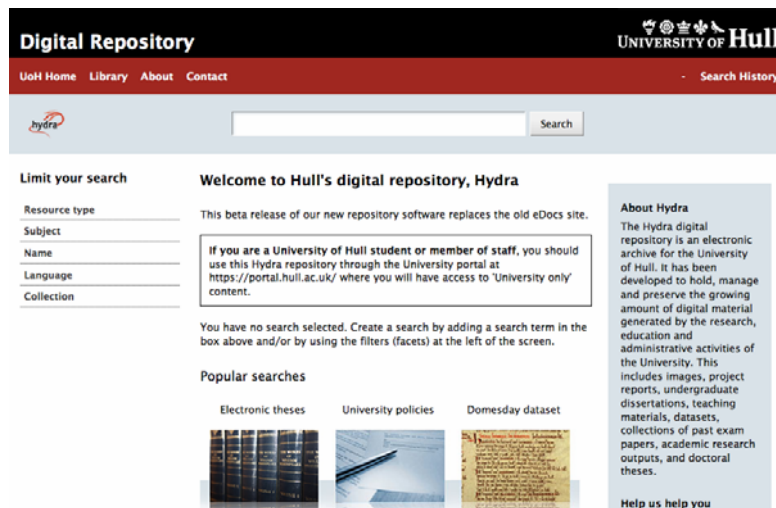# Hydra in Hull results

Hydra in Hull single result

Academic Commons at Columbia

Academic Commons results

Academic Commons single result
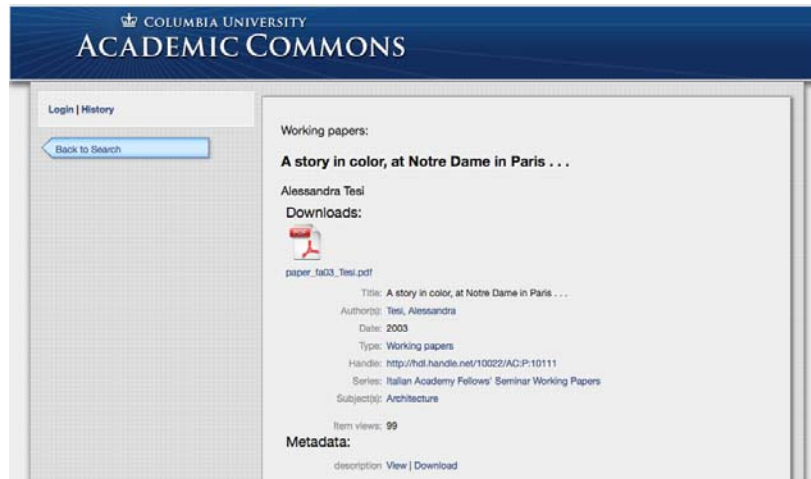
Blacklight and community

- Without its community, Blacklight would have been another nice idea
  - The community has made it better
- It is valuable to have people to discuss ideas with at other institutions
  - Different views allow better solutions for everyone
- Two communities
  - Developer
  - Managers
- They need each other for success

BlSAG

- The **Blacklight Strategic Advisory Group** offers interested and committed institutions the opportunity to coordinate, advise and support the open source Blacklight project's development and maintenance from a strategic and management level.

- Membership in this group is open to any institution that:
  - has committed to using Blacklight in its environment
  - is committed to the success and sustainability of the Blacklight project beyond its own institutional walls
  - will commit to furthering the open source solution through any of a variety of means

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Blacklight developers

- Regular, weekly, calls to discuss developments

- Use an IRC channel for day-to-day communication
  - Node - #blacklight channel on chat.freenode.net
  - Archive logs available at http://irclogs.projectblacklight.org/

- Use the community principles to guide input and ensure quality

- Occasional Blacklight face-to-face meetings
  - e.g., Johns Hopkins University in November 2011

Summary

blacklight

- Blacklight started as a solution to a need
  - It has become a solution for many needs
- It has developed using an open source model
  - Slow growth, but very solid development
- It offers great flexibility in what it can be used for
  - Discovery of many different types of content
  - Provide the functionality and design you need
- It can be used for repositories as well as catalogues
  - Or both

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Thank you

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