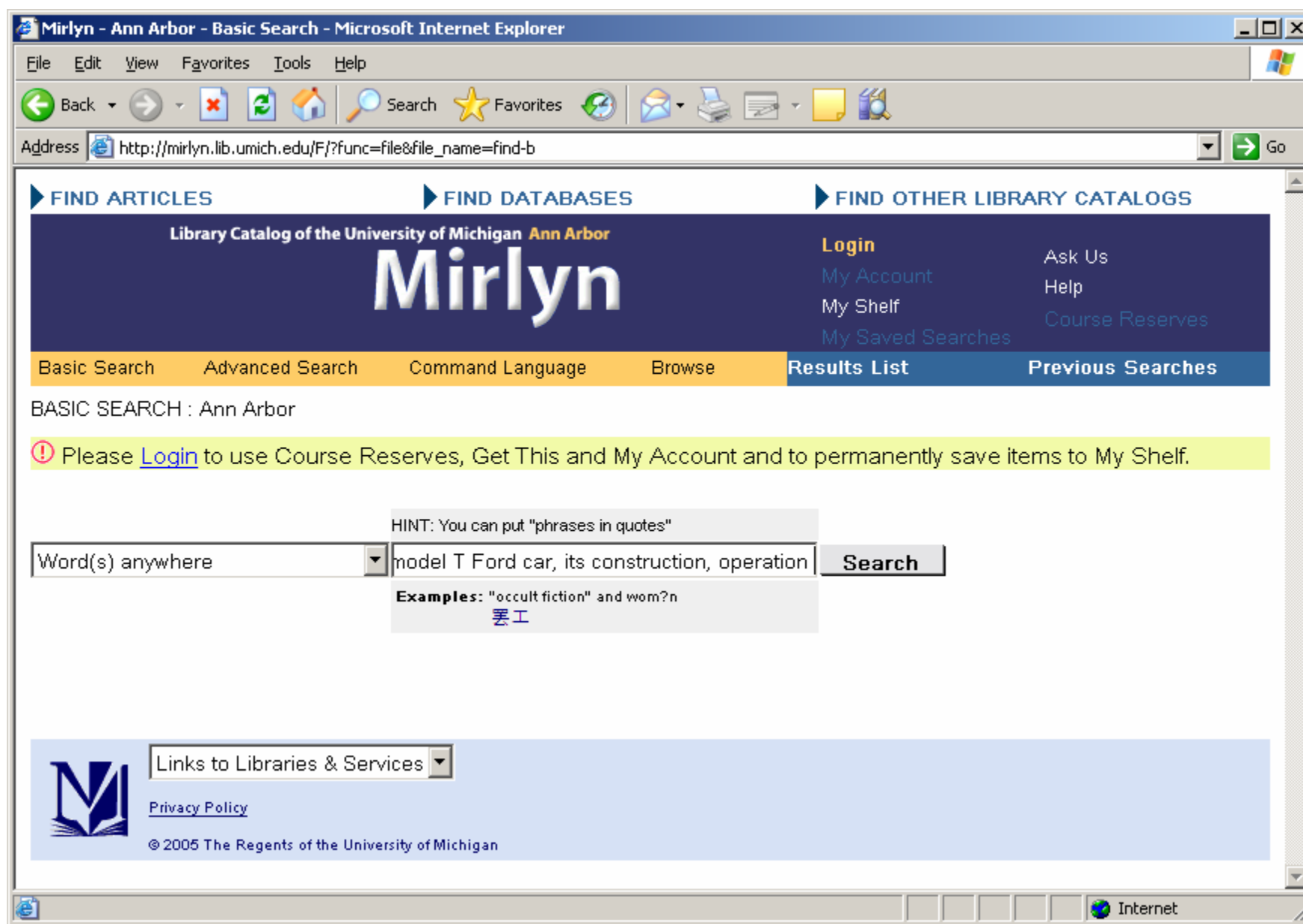




# **MBooks: Google Books Online at the University of Michigan Library**

Phil Farber, Chris Powell, Cory Snavelly

University of Michigan Library Information Technology



Mirlyn - Ann Arbor - Search Results - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Reload Print Mail New Tab

Address [http://mirlyn.lib.umich.edu/F/JPLG2FFI4JM4M2EGA551LA27XDB2MXREY4Q6VD6RYYBQB53YHV-31284?func=find-b&find\\_code=WRD&request=The+m](http://mirlyn.lib.umich.edu/F/JPLG2FFI4JM4M2EGA551LA27XDB2MXREY4Q6VD6RYYBQB53YHV-31284?func=find-b&find_code=WRD&request=The+m) Go

Library Catalog of the University of Michigan Ann Arbor

# Mirlyn

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Basic Search Advanced Search Command Language Browse Results List Previous Searches

Ann Arbor : SEARCH RESULTS  
 RESULTS FOR Words= The model T Ford car its construction operation; Sorted by: Title, then Year(descending) Records 1 - 3 of 3

Selected records: [Select All](#) [Deselect All](#) [Create Subset](#) [Add to My Shelf](#) [Jump to Title](#)

Limit options: [Available Now](#) [Modify Search](#) [Jump to #](#)

Sort options: [Format](#) [Author](#) [Title](#) [Year\(a\)](#) [Year\(d\)](#)

#	Format	Author	Title	Year	Location
<a href="#">1</a>	<input type="checkbox"/>		Pagé, Victor Wilfred,	<a href="#">The model T Ford car: its construction, operation and repair; a complete practical treatise explaining the operating principles of all parts of the Ford automobile, with complete instructions for</a>	1916 • <a href="#">Bentley Historical FB 2 F699 P133</a>
<a href="#">2</a>	<input type="checkbox"/>		Pagé, Victor Wilfred,	<a href="#">The model T Ford car: its construction, operation and repair; a complete practical treatise explaining the operating principles of all parts of the Ford automobile, with complete instructions for</a>	1916 • <a href="#">Buhr Shelving Facility - Ask at any library   TL 215 .F7 P128 1916</a>

Internet

Mirlyn - Ann Arbor - Full Record - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Reload Mail Print Copy Paste Address http://mirlyn.lib.umich.edu/F/JPLG2FFI4JM4M2EGA551LA27XDB2MXREY4Q6VD6RYYBQB53YHV-33206?func=full-set-set&set\_number=026041&set\_er Go

my shelf Course Reserves  
My Saved Searches


Basic Search Advanced Search Command Language Browse Results List Previous Searches

Ann Arbor : FULL RECORD Record 2 of 3

This Record: Print/Export/Mail This Save to My Shelf

Format: Full Record Printer Friendly Named Tags MARC Tags Previous Record Next Record

[How to "Get This"](#)

Title	<b>The model T Ford car: its construction, operation</b> and repair; a complete practical treatise explaining <b>the</b> operating principles of all parts of <b>the Ford</b> automobile, with complete instructions for driving and maintenance. Includes <b>the</b> most thorough and easily understood illustrated instruction <b>Ford</b> repairing ever published ...
Electronic Location	<a href="#">Click here</a> U-M Online ; http://hdl.handle.net/2027/mdp.39015002064486  <a href="#">Full Text</a>
	<a href="#">Click here</a> Google Online ; http://books.google.com/books?vid=UOM39015002064486
Holdings	<a href="#">What Libraries Have</a>
Author	<a href="#">Pagé, Victor Wilfred, 1885-1947.</a>
Published	New York, N.W. Henley, 1916.
Format	Electronic Resource
	Book

Done Internet

University of Michigan Library – page images

http://suzchap.dev.umd.umich.edu/cgi/m/mdp/pt?seq=28&view=ir Google

**BOOKS** University of Michigan University Library

About MBooks Ask Us! Back to Mirllyn Catalog Feedback Options

Help make MBooks better - take our survey!

Title [more] The model T Ford car:its construction, operation and repair; a complete ... bookmark this page search this text "winter care" go

go to 28 of 294

size 75%

rotate

view page as

image

full-text

PDF

Fig. 3.—Side View of Stripped Ford Chassis Showing Valve Side of Motor. Digitized by Google

go to 28 of 294 size 75% rotate

Done

University of Michigan Library – search results

http://suzchap.dev.umd.umich.edu/cgi/m/mdp/ptsearch?id=390 Google

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The model T Ford car its construction, operation and repair; a complete ... bookmark this page search this text "winter care" go

Your search for "winter care" matched 4 pages in this item.

Viewing results for: 1 to 4 of 4 pages

[Return to the last page you viewed](#)

**Sequence #151 - 2 matching terms**  
...**Winter Care** of Automobiles 153 Filling and screwing down each cup three times, to insure ample su...  
...to discover loose parts while oiling and take immediate steps to remedy the defective condition. **Winter Care** of Automobiles. While  
motoring through out the entire year is not unusual, many owners o...

**Sequence #153 - 1 matching term**  
...**Winter Care** of Automobiles 155 using calcium chloride when compounding an anti-freezing solution ...

**Sequence #155 - 1 matching term**  
...**Winter Care** of Automobiles 157 The freezing temperatures of such solutions of varying proportio...

**Sequence #286 - 1 matching term**  
...ing U V W Why Clutch is Necessary . . Why Cooling Systems Are Necessary Why Oil is Used **Winter Care** of Automobiles .  
Wiring Diagrams for Dry Cells Wiring Diagram, Ignition . . Wiring Di...

Viewing results for: 1 to 4 of 4 pages

Done

University of Michigan Library – page images

http://suzchap.dev.umdl.umich.edu/cgi/m/mdp/pt?seq=153&view= Google

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Title [more] The model T Ford car:its construction, operation and repair; a complete ... bookmark this page search this text "winter care" go

go to 153 of 294

size 100%

rotate

view page as  
image  
full-text  
PDF PDF

### *Winter Care of Automobiles* 155

using calcium chloride when compounding an anti-freezing solution care must be taken that commercially pure salt is employed, as the cruder grades will liberate a larger percentage of free acid. The mistake should not be made of using chloride of lime, which has much the same appearance, but the corrosive action of which is very great.

It is well to test a solution of calcium chloride for acid before placing it in the radiator. A piece of blue litmus paper may be obtained at any drug store and immersed in the solution. If the paper turns red it is a sign that there is acid present. Acid may be neutralized by the addition of a small quantity of slacked lime.

The solutions may be made in these proportions:

Two pounds of salt to the gallon of water will freeze at eighteen degrees Fahrenheit.

Three pounds of salt to the gallon of water will freeze at one and five-tenths degrees Fahrenheit.

Four pounds of salt to the gallon will freeze at seven-

Done

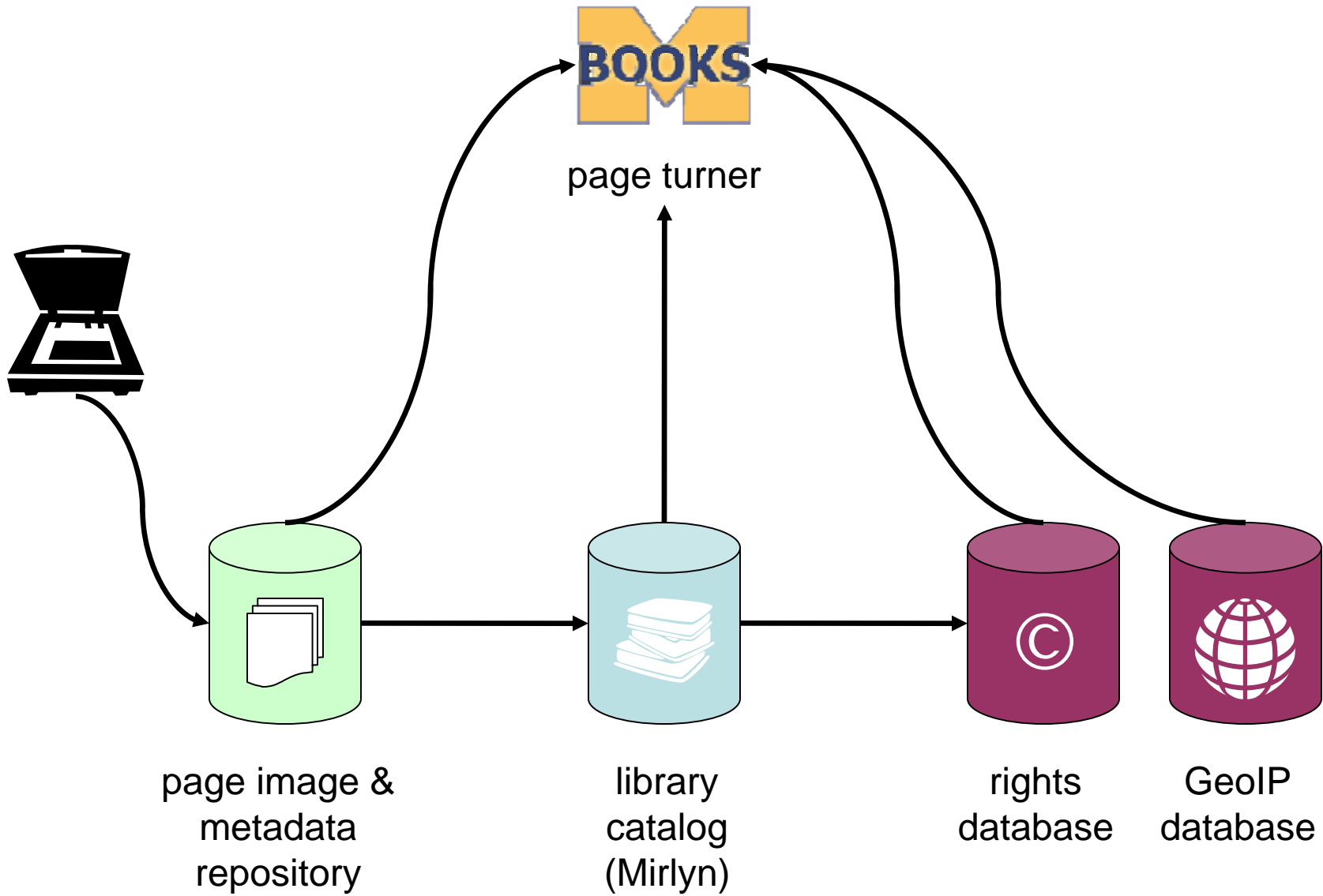


# Architecture overview

**Four basic pieces:**

- **Mirlyn, the library catalog**
- **Page image and metadata repository**
- **Rights and GeolP databases**
- **Pageturner**







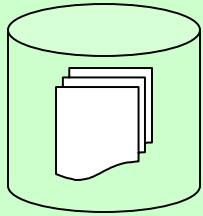
## **Library catalog — Mirlyn**

- **During scanning, tracking information is stored in Mirlyn:**
  - ***Manual scanning of barcode or batch process for a call number range***
  - ***Triggers unavailability message online***
  - ***Metadata extracted and made available***
  - ***Daily list of barcodes for returned items used to remove unavailable status***



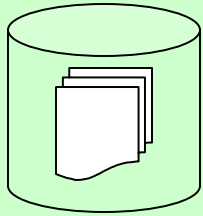
## Library catalog — Mirlyn

- **When images are added to repository:**
  - *Barcodes used to add to the item record call-number-2 field*
  - *Supplies info to rights database*
  - *Record updated in 006, 007, and 533 fields*
  - *Virtual 856 fields or link to detailed holdings are generated in the display*
  - *Supplies metadata to the pageturner*



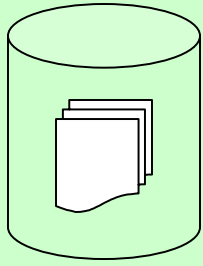
# METS Object

- **Why METS?**
  - *Can serve as an Archival Information Package and a Dissemination Information Package*
  - *Designed to record the relationship between pieces of complex digital objects*
  - *Can be created automatically as texts are loaded or reloaded*



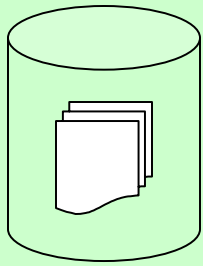
# METS Object

- **What's there?**
  - ***metshdr with an ID and CREATEDATE***
  - ***dmdSec with a URL***
  - ***Two techMD referencing notes files***
  - ***Two fileGrps (images and OCR)***
  - ***Physical structMap tying together the files with any metadata (page numbers or features)***



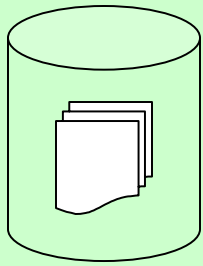
# Page image and metadata repository

- **Objectives:**
  - *A guiding principle: store archival images, create deliverables on demand*
  - *Incorporate TDR-like practices*
- **Simple filesystem layout adapted from DLXS**
  - *One directory per volume, all files inside*
  - *Example: /l1/obj/bc/39015/1/2/3/39015123456789/*
  - *Use of a namespace allows for conflicting identifiers*
  - *Currently, one namespace: UM barcode ('bc') at scan time*



## Page image and metadata repository

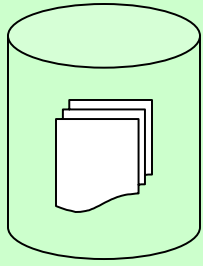
- **Download and ingest**
  - ***Google Return Interface (GRIN) at Google provides volumes over HTTPS***
    - *TIFF, JPG, UTF-8 OCR, metadata in a package*
  - ***Google Return (Object Oriented) Validation Environment (GROOVE) at UM***
    - *manages all download and validation*
    - *Written in Perl; MySQL backend for state tracking*
    - *available to Google Partners via CVS (see me!)*



## **Page image and metadata repository**

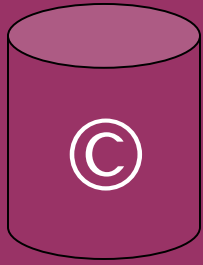
- **Automatic validation in GROOVE**
  - *Check barcode check digit using Luhn algorithm*
  - *Fixity check on JPG, TIFF, UTF8 using MD5*
  - *Well-formedness and embedded metadata check on JPG, TIFF, UTF8 using JHove*
  - *Various completeness cross-checks*
  - *Failures retried, will eventually refer to Google*
- **Periodic fixity checks using MD5**





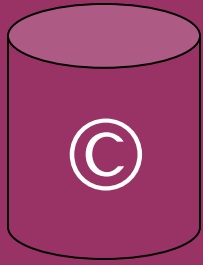
# Page image and metadata repository

- **Qualitative validation (manual)**
  - *20-page samples to QA staff (primarily students)*
  - *ACDSee used to examine visual characteristics and severity (readable/not readable); recorded in database*
  - *Trends identified and reported to Google*
- **METS file created (functions as a manifest)**
- **Persistent identifier (Handle) created**
- **Feed of identifiers sent to/from Mirlyn via ssh**



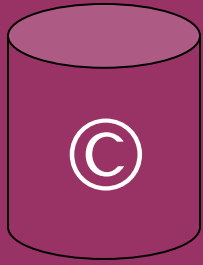
# Rights database

- **What information to store?**
  - *Considered complexity and maintenance*
  - *Considered using MARC directly*
  - *Needed to accommodate both bib record-derived rights and manual overrides*
- **Approach: examine bib record, determine authoritative copyright status, store rights attribute, source, reason, and timestamp**
- **Stored in MySQL**



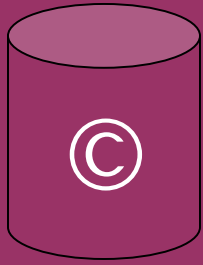
## Rights database

- **Rights attributes currently in use**
  - **pd: *public domain***
  - **pdus: *public domain for US viewers\****
  - **inc: *in copyright***
  - **und: *undetermined (a body of work for cataloging!)***
  - **nobody (override): *no access***



## Rights database

- **Rights attributes not yet in use:**
  - *orph: orphaned work*
  - *umall (override): open access for authenticated UM affiliates*
  - *world (override): open access to world*
- **Source can currently be ‘google’ or ‘lit-dlps-dc’ (local digitization)**



# Rights database

- Each rights attribute must have a reason.
- Reasons in use:
  - *bib: bibliographically-derived*
  - *man: manual access control override*
- Reasons not yet in use:
  - *con: contractual agreement on file*
  - *ddd: due diligence documented*



# GeolP database

- Right attribute 'pdus' requires country of origin.
- Several options; all use DNS registry information with tweaks for additional accuracy.
- We chose MaxMind GeolP database:
  - *99% accurate*
  - *Update utility and several query APIs included*
  - *\$12/month*



# Pageturner middleware

- **Ties all the rest together**
  - *User interface*
  - *Access rights determination*
  - *OCR, page image access*
  - *Item search*
- **Gives users the opportunity to provide feedback**



# Pageturner: *feedback form*

University of Michigan Library - page images - Firefox

File Edit View Go Bookmarks Tools Help

http://suzchap.dev.umd.umich.edu/cgi/m/mdp/pt?id=39015002064486;q1=%22transmission%20case%22%20flywheel;start=1; Go

go to 33 of 294

## Feedback Options

- ▶ [Help make MBooks better - take our survey](#)
- ▶ [Do you have a comment about this page? Please tell us.](#)

### Page Feedback

**Overall page readability and quality**

- ☐ Few problems, entire page is readable
- ☐ Some problems, but still readable
- ☐ Significant problems, difficult or impossible to read

**Specific page image problems?**

- ☐ Missing parts of the page
- ☐ Blurry text
- ☐ Curved or distorted text
- ☐ Other problem

**Problem with access rights?**

- ☐ This item is in the public domain, but I don't have access to it.
- ☐ I have access to this item, but should not.

*To request a reply on this rights-related issue, enter your email address below. (We will make every effort to address copyright issues by the next business day after notification.)*

**Other problems or comments?**

W3C XHTML 1.0 W3C CSS

Done Now: Overcast, 36° F Thu: 40° F Fri: 41° F Sat: 46° F Sun: 46° F

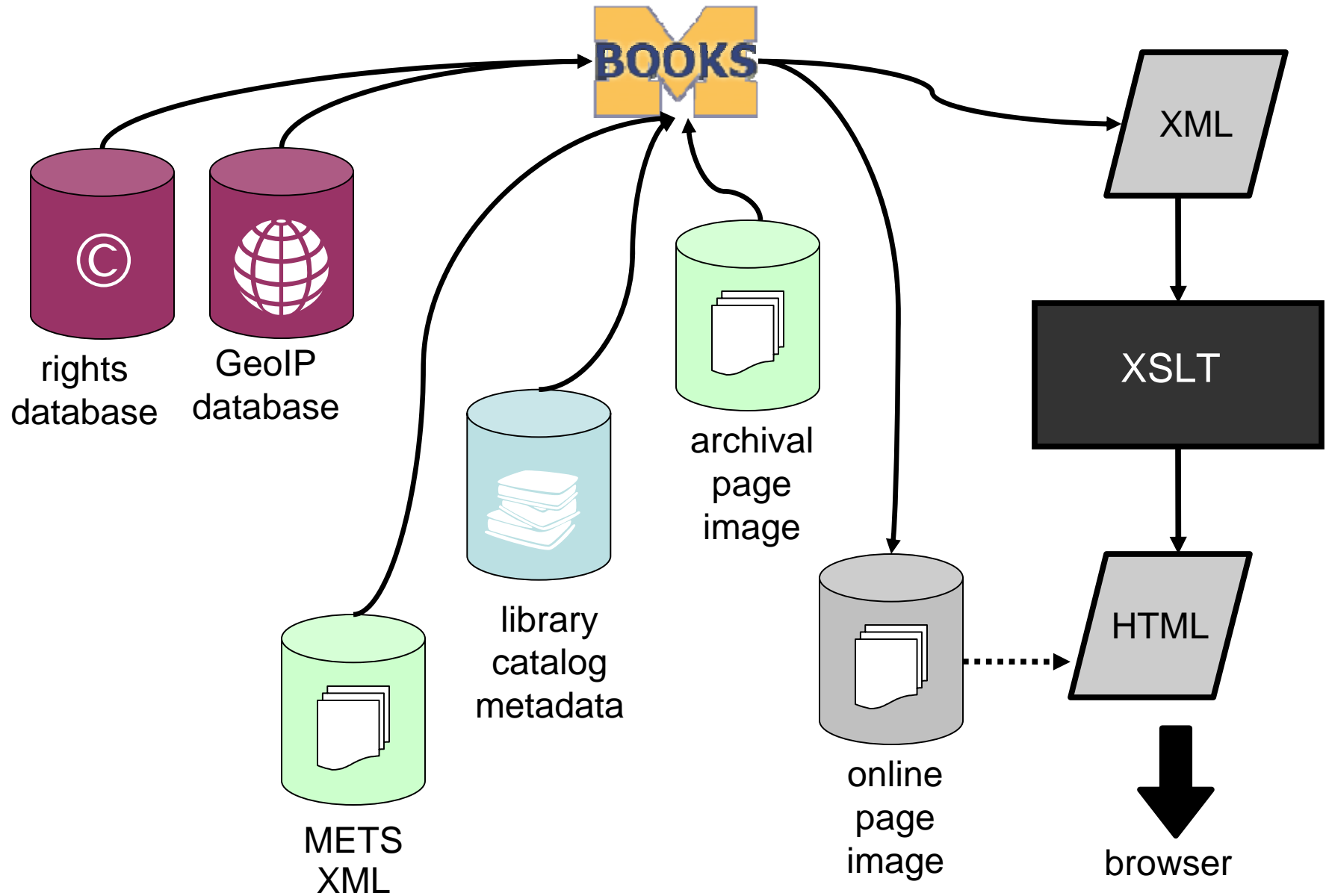




## **Pageturner: *image retrieval***

- ***Access GeolP and Rights dB***
- ***Access repository for METS object and archival image***
- ***Access Mirlyn library catalog for item metadata***
- ***Transform images and cache them***
- ***Wrap in XML, apply XSL to create HTML***

# Pageturner: *page image retrieval*





## **Pageturner: *Item searching***

- ***Wrap, concatenate and cache OCR files***
- ***Create and cache indexes***
- ***Perform search***
- ***Display results***



# Payetturner: *Item searching*

- ***Wrap, concatenate and cache OCR files***

```
<doc>
  <page SEQ="1"></page>
  <page SEQ="2">THE MODEL T FORD CAR ITS
CONSTRUCTION, OPERATION AND REPAIR
A COMPLETE PRACTICAL TREATISE [...]
  </page>
  [...]
  <page SEQ="292"></page>
  <page SEQ="293"></page>
</doc>
```



## **Pageturner: *Item searching***

- ***Create and cache indexes***
  - **XPAT full text index**
  - **XML page region index**
  - **Processed in real-time**
  - **Cache indexes**



## **Pageturner: *Item searching***

- ***Perform search***
  - Individual words and/or phrases co-occurring within a page
  - Right stemming with “\*”, e.g., “fond\*” gives “fond,” “fondest,” “fondly,” etc.



## **Pageturner: *Item searching***

- ***Display results***
  - Hit counts and KWICs, per page
  - No KWICs if access restricted
  - OCR Word/Phrase highlighting



# Pageturner: *Item searching*

University of Michigan Library – search results

http://suzchap.dev.umd.umich.edu/cgi/m/mdp/ptsearch?id=3! Google

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Title [more] The model T Ford car: its construction, operation and repair; a complete ... bookmark this page search this text: "transmission case" flywheel go

Your search for "transmission case" flywheel matched 4 pages in this item.

Viewing results for: 1 to 4 of 4 pages

[Return to the last page you viewed](#)

**Note:** detailed search results are not shown for restricted items.

Sequence #33 - **3 matching terms**

Sequence #108 - **2 matching terms**

Sequence #255 - **4 matching terms**

Sequence #257 - **4 matching terms**

Viewing results for: 1 to 4 of 4 pages

Done





# Pageturner: *Item searching*

University of Michigan Library - search results

http://suzchap.dev.umd.umich.edu/cgi/m/mdp/psearch?id=3! Google

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Title [more] The model T Ford car: its construction, operation and repair: a complete ... bookmark this page search this text "transmission case" flywheel go

Your search for "transmission case" flywheel matched 4 pages in this item.

Viewing results for: 1 to 4 of 4 pages

[Return to the last page you viewed](#)

**Sequence #33 - 3 matching terms**

... is driven in that direction. The ball rests in a socket member attached to the lower part of the flywheel casing of the engine as clearly shown at Fig. 3. . It will be apparent that this method of...

...ing plates while the third point of support is at a ball joint member attached to the rear of the transmission case. This ball joint serves to enclose the universal joint and performs the same fur...

...erforms the same function for the rear end of the car that the ball joint on the front end of the flywheel case performs for the front end of the car. The rear radius rod system is also triangular...

**Sequence #108 - 2 matching terms**

...nk shaft, no gears are turning idly and- the weight of the gearing serves merely as an additional flywheel member. With light cars like the Ford practically all roads may be negotiated on the dir...

...the top, this fitting in a suitable carrying member or ball seat, machined in the back end of the transmission case. The front end of the propeller shaft revolves in a plain bearing, while the re...

**Sequence #255 - 4 matching terms**

...carried by the stationary plate by no more than 1/2nd of an inch. To take the old magnets from the flywheel simply remove the cap screw and bronze screw which holds each in place. The magneto is of...

...rent collecting contact plunger which is held in place by the binding post carrier on top of the transmission case cover. Remove the three screws which serve to retain this collecting terminal in ...

...t taking the power plant out of the car. After the crank case and transmission covers are off, the flywheel may be taken off of the flange on the end of the crank shaft by removing four cap screws ...

...be taken off of the flange on the end of the crank shaft by removing four cap screws that hold the flywheel to that member. Whenever repairs are necessary to the magneto such as replacing magnets o...

**Sequence #257 - 4 matching terms**

...he inlet manifold, while the small packing at F is used at the lower portion of the crank case or flywheel compartment as a seating for the oil drain plug. The felt packings are clearly shown at F...

... crank case member and the cylinder block. The piece marked M, is employed between the top of the transmission case and the pressed steel lower portion. The large packing, C, is placed between the...

... of the crank case and the pressed steel lower crank case member. Packing P is utilized under the transmission case cover plate on late model Ford cars, while that shown at E is used on some of th...

...red are used to complete the packing between the timing gear case portions and between the upper transmission case and round portion ...

Done



# PageTurner: *Item searching*

A screenshot of a web browser displaying the University of Michigan Library MBOOKS interface. The browser window title is "University of Michigan Library - page images". The address bar shows the URL "http://suzchap.dev.umd.umich.edu/cgi/m/mdp/pt?id=390150". The page header includes the "BOOKS" logo, the "University of Michigan University Library" name, and navigation links: "About MBooks", "Ask Us!", "Back to Mirlyn Catalog", and "Feedback Options". A red banner below the header says "Help make MBooks better - take our survey!". The main content area displays a document titled "The model T Ford car's construction, operation and repair, a complete ...". The document text is titled "Ford Radius Rod Construction" and describes the mechanical components of a Ford Model T, including the front spring supporting members, the axle, the transmission case, and the rear axle assembly. The text is highlighted in yellow. On the left side of the document, there are navigation controls: "go to 33 of 294", "view page as" (with options for "image", "full-text", and "PDF"), and a "bookmark this page" button. At the bottom of the browser window, there is a "Done" button.



# What's Next?

- *Display additional structural metadata*
- *Building collections*
- *Scalability of repository storage*