



# Normalization Rules

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# Session Topics

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- Primo, Source data and PNX
- Normalization Rules
- Normalization Mapping Tables
- Templates
- Q&A

# Normalization Rules

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- Normalization Rules – Rules to map the source record data into specific sections of a Primo record
- Only applies to local data sources. Does not work on remote data sources such as Primo Central, Metalib

# Primo

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#### Creator

United States. General Accounting  
Office (754)  
Minnesota. State Auditor. (334)  
Educational Resources Information  
Center (U.S.) (204)  
Minnesota. Dept. of Finance. (95)  
United States. Congress. Senate.

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#### ☆ Finance

Zvi Bodie ; Robert C Merton  
Upper Saddle River, NJ : Prentice Hall c2000.  
Available at North Campus Main Library General collection (HG173 .B58 2000 )

Like 0

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**Title:** Finance  
**Author:** Zvi Bodie  
Robert C Merton  
**Subjects:** Finance -- Handbooks, manuals, etc  
**Publisher:** Upper Saddle River, NJ : Prentice Hall  
**Creation Date:** c2000.  
**Format:** xxxi, 479 p. : ill. ; 26 cm. + 1 computer optical disc (4 3/4 in) + 1 calculator guide..  
**Language:** English  
**Identifier:** ISBN013310897X

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#### ☆ Essays in international finance.

Princeton University. International Finance Section  
Princeton, N.J. : International Finance Section, Dept. of Economics, Princeton University 1943-2000.  
Available at North Campus Main Library GEN

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#### ☆ Bulletin (New York University. Institute of Finance)

New York University. Institute of Finance  
New York : The University 1966-[1975  
Available at North Campus Main Library General collection (332.06 N42 )

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ExLibris

# Primo

The screenshot shows the OneSearch website for The Hong Kong Polytechnic University Pao Yue-kong Library. The top navigation bar includes 'Guest', 'e-Shelf', 'myRecord', and 'Login'. Below this is a search bar with tabs for 'Library Collections + e-Resources', 'Library Collections', 'e-Resources', and 'Extended Search'. A dropdown menu is open under 'Library Collections', listing various material types. The main content area contains several informational sections: 'What is OneSearch?', 'How-to Videos', 'Why Log in?', 'Need Research Assistance?', 'What are these?', 'Library Collection + e-Resources', 'Library Collections', 'e-Resources', and 'Extended Search'. Each section provides brief descriptions and links to further resources.

**OneSearch**  
The Hong Kong Polytechnic University Pao Yue-kong Library

Lib 香港圖書館  
The University Learning Hub

Guest ☆ e-Shelf myRecord Login

Materials Locations | Quick Tips | Help | Feedback

Library Collections + e-Resources | **Library Collections** | e-Resources | Extended Search

All Search Advanced Search Search HKALL

**What is OneSearch?**  
OneSearch provides a one-stop solution for the local and remote resources, such as books, journals, and objects.

**How-to Videos**  
View [How-to-Videos on OneSearch](#) to learn the basic search techniques.

**Why Log in?**  
Logging in with Library No. and PIN will enable you to:  
➢ Save your own e-shelf  
➢ Input tags or reviews  
➢ Search for those databases that require authentication

**Need Research Assistance?**  
You are welcome to contact our Research Help Desk (3/F) in person, by phone at 2766-6863 or via email at [libinf@polyu.edu.hk](mailto:libinf@polyu.edu.hk). You may also contact our Faculty Librarians by referring to [this page](#).

**What are these?**

**Library Collection + e-Resources**  
Allows you to search all types of items indicated below.

**Library Collections**  
For searching Library books, journals, AV materials, PolyU collections including PolyU IR and other in-house databases.

**e-Resources**  
For searching e-Books and e-journal articles.

**Extended Search**  
To search for Library journal articles with federate search mechanism. It helps to locate articles from databases that are not covered in the pre-index database available in e-Resources above.

**What can be entered in the Search Box?**  
You can search or perform combined search with any of the followings in the Search Box:  
➢ Keyword  
➢ Title word  
➢ Author name (in part or whole name)  
➢ Subject word  
➢ Call number  
➢ ISBN/ISSN

# Primo

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- How does Primo determine what information to display for each record?
- How does Primo determine which facets a record belongs to?
- How does Primo determine which group of records should be searched under a particular tab?

# Primo Normalized XML - PNX

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- Data from all sources is converted into a uniformed Primo format : PNX – Primo Normalized XML
- Every record is stored in Primo as individual PNX
- Primo Front End works with the PNX to retrieve and display/present the records when the user does a search

# Primo Normalized XML - PNX

- Control
- Display
- Links
- Search
- Facets
- Sort
- Dedup
- FRBR
- Delivery & Scoping
- Ranking
- Enrichment
- Additional Data
- Browse

```
<?xml version="1.0" encoding="UTF-8" ?>
<record>
<control>
<sourceid>primo_aleph</sourceid>
<recordid>primo_aleph004536586</recordid>
<sourcesystem>Aleph</sourcesystem>
</control>
<display>
<type>journal</type>
<title>Wall Street journal (Eastern ed. : Online)</title>
<edition>Eastern ed..</edition>
<publisher>New York, N.Y. : Dow Jones</publisher>
<creationdate>1959-</creationdate>
<identifier>$$CISSN$$V0099-9660</identifier>
<subject>New York (N.Y.) -- Newspapers; New York
County (N.Y.) -- Newspapers</subject>
<language>eng</language>
<source>primo_aleph</source>
</display>
<links>
<backlink>$$Taleph_backlink$$DThis item in the
Library Catalog</backlink>
<linktoholdings>$$Taleph_holdings</linktoholdings>
</links>
<search>
<title>The Wall Street journal [electronic
resource].</title>
<subject>New York (N.Y.) Newspapers.</subject>
<general>Dow Jones,</general>
<issn>0099-9660</issn>
<issn>0043-0080</issn>
```



# Source Data

## MARC Exchange

```
<record>LEADER 00693cam 2200205 45<U+fffd>0 001 ocm00337427 008 890421s1964 enka 00110aeng H 010 {{[a][64051742]}} 092 00{{[a][325.342B]}}>{{[b][C25]}} 100 10{{[a][Caradon, Hugh Foot,]}}>{{[c][Baron,]}}>{{[d][1907-]}} 245 12{{[a][A start in freedom /]}}>{{[c][by Hugh Foot.]} } 260 0 {{[a][London :]} }>{{[b][Hodder and Stoughton,]} }>{{[c][1964.]} } 300 {{[a][256 p. :]} }>{{[b][ill. ;]} }>{{[c][23 cm.]} } 600 10 {{[a][Caradon, Hugh Foot,]}}>{{[c][Baron,]}}>{{[d][1907-]}} 651 0{{[a][Great Britain]} }>{{[x][Colonies.]} } 907 {{[a][b10002066]}}>{{[b][110930]}}>{{[c][960326]}} 945 {{[a][.i10002558]}}>{{[b][1]}}>{{[c][0]}}>{{[d][0]}}>{{[e][1]}}>{{[f][maixm]}}>{{[g][-]}}>{{[h][M50689410]}}>{{[i][325.342B C25]}}>{{[k][0]}}>{{[l][0.00]}}>{{[m][0]}}>{{[n][0]}}>{{[o][0]}}>{{[p][0]}}>{{[q][0]}}>{{[r][-]}}>{{[s][0]}}>{{[t][0]}}>{{[u][0]}}>{{[v][0]}} 997 {{[b][oclc]}} 997 {{[b][acas]}} 998 {{[a][mai]}}>{{[b][960322]}}>{{[c][-]}}>{{[d][6]}}>{{[e][-]}}>{{[f][eng]}}>{{[g][enk]}}>{{[h][2]}}</record>
```

## Dublin Core

```
<oai_dc:dc xsi:schemaLocation="http://www.openarchives.org/OAI/2.0/oai_dc/ http://www.openarchives.org/OAI/2.0/oai_dc.xsd" xmlns:dc="http://purl.org/dc/elements/1.1/" xmlns:oai_dc="http://www.openarchives.org/OAI/2.0/oai_dc/" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">  
<dc:title>South Australian School of Mines and Industries : handbook</dc:title>  
<dc:creator>South Australian School of Mines and Industries.</dc:creator>  
<dc:subject>South Australian School of Mines and Industries</dc:subject>  
<dc:publisher>K. Stevenson, Government Printer</dc:publisher>  
<dc:identifier>1959.8/92840</dc:identifier>  
<dc:type>calendar</dc:type>  
<dc:fulltext>Fulltext</dc:fulltext>  
<dc:identifier>http://ura.unisa.edu.au:80/R/?func=dbin-jump-full&object_id=33257</dc:identifier>  
</oai_dc:dc>
```

# Source Data > PNX > Front End

lonely planet Search Advanced Search Browse Search Library News feeds

rss  
☆ Add page to e-Shelf

**Expand My Results**  
 Expand beyond library collections

**Refine My Results**

**Availability**  
Available in the Library (6)  
Full Text Online (21,610)  
Peer Reviewed (2,988)  
More options ▾

**Resource Type**  
Articles (8,781)  
Newspaper Articles (7,276)  
Books (3,868)  
Reviews (1,041)  
Reference Entries (331)  
More options ▾

**Topic**  
Publishing Industry (1,406)  
Lonely Planet Publications (1,109)  
Book Publishing (413)  
Travel Industry (354)  
Tourism (351)  
More options ▾

**Creator**  
Rushton, Katherine (34)

**Show Hot Articles ▾**

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☆ **Lonely planet**  
Williams, S  
Nursing standard (Royal College of Nursing (Great Britain) : 1987), 1998, Vol.12(52), pp.34  
[Peer Reviewed Journal]  
**Full text available** Like 0

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☆ **Turkey : a Lonely Planet travel atlas**  
Lonely Planet Publications (Firm) ; Steinhart Katzir Publishers.  
Hawthorn, Vic. ; Oakland, CA : Lonely Planet Publications c1997.  
**Available at** North Campus Main Library Borchert Map (Thematic Maps) (G2210 .L66x 1997 ) Like 0

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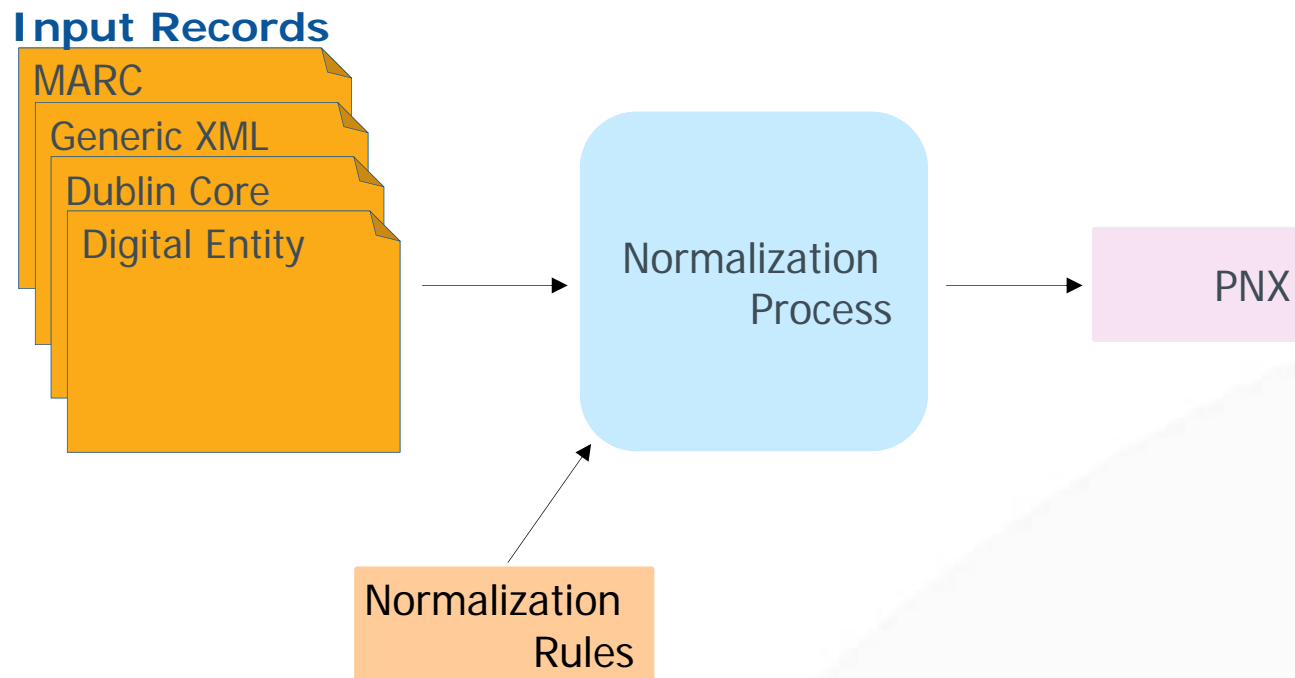
**Title:** Turkey : a Lonely Planet travel atlas  
**Author:** Lonely Planet Publications (Firm)  
Steinhart Katzir Publishers.  
**Subjects:** Roads -- Turkey -- Maps ; Turkey -- Maps  
**Related Titles:** Series: Lonely Planet travel atlas  
**Publisher:** Hawthorn, Vic. ; Oakland, CA : Lonely Planet Publications  
**Creation Date:** c1997.  
**Format:** 1 atlas (119 p.) : col. ill., maps ; 23 cm..  
**Language:** English ; French ; German ; Japanese ; Spanish

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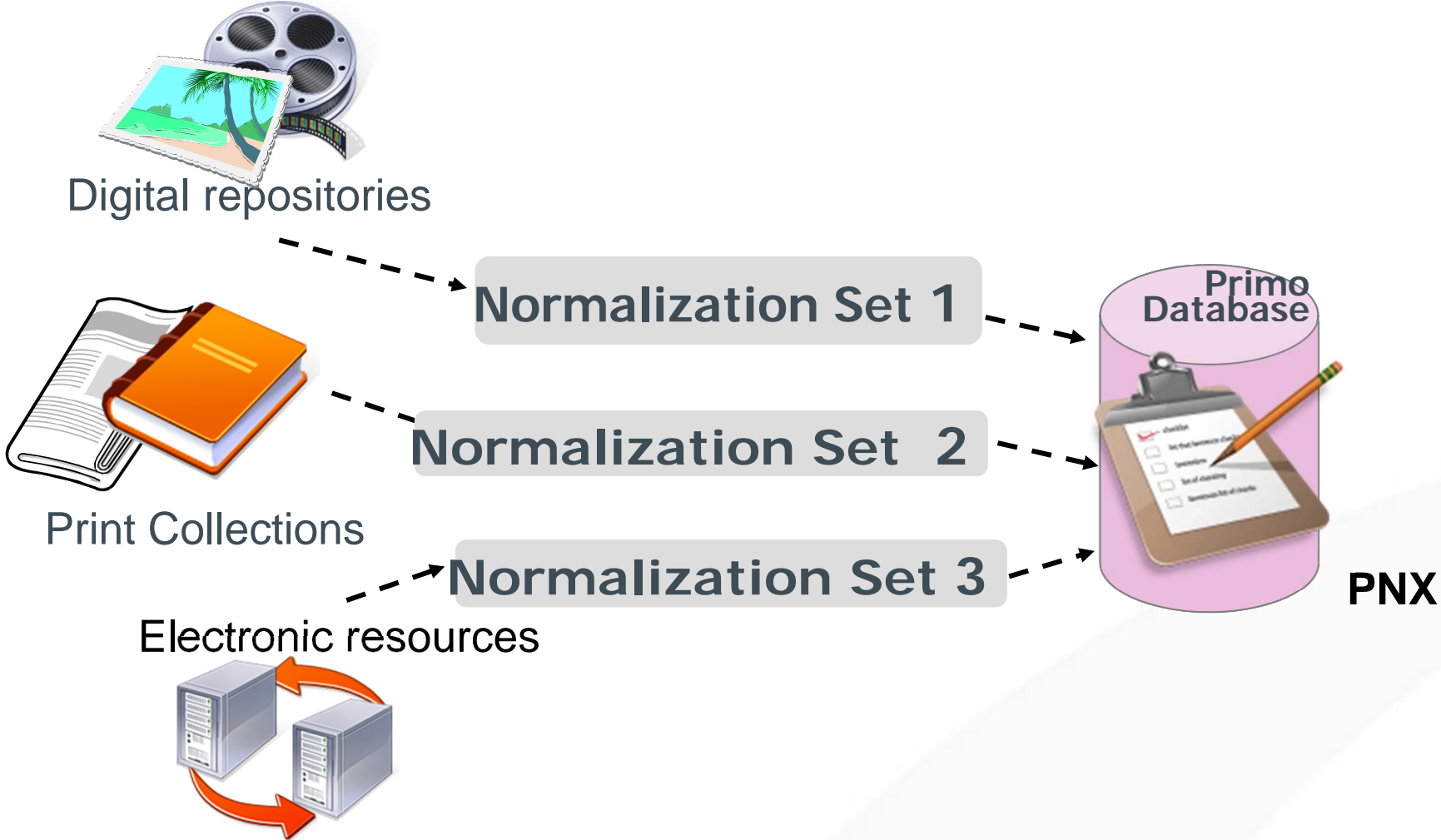
☆ **Lonely planet**  
Down To Earth, Dec 15, 2012  
India, Dec. 15 -- Astronomers have found a lonely planet drifting through space that does not orbit a star. It is not the first time that such a planet...  
**Full text available** Like 0

# Normalization Rules

The Normalization Rules convert the data from the various information sources into the unified structure of PNX, enabling a quick and efficient search.



# Normalization Sets



# Normalization Rules— Converting to Single Format

## XML from Voyager

```
<datafield tag="245" ind1="1" ind2="0">  
<subfield code="a">City limits : emerging constraints on urban growth;</subfield>  
<subfield code="c">Kathleen Newland.</subfield>  
</datafield>
```

PNX

```
<display>  
<title> City limits : emerging constraints on urban growth </title>
```

## XML from Dspace

```
<control>  
<dc:title>Library of Congress (John Adams Building). Drawing of Adams Building,  
Library of Congress annex I</dc:title>
```

PNX

```
<display>  
<title>Library of Congress (John Adams Building). Drawing of Adams Building,  
Library of Congress annex I</title>
```

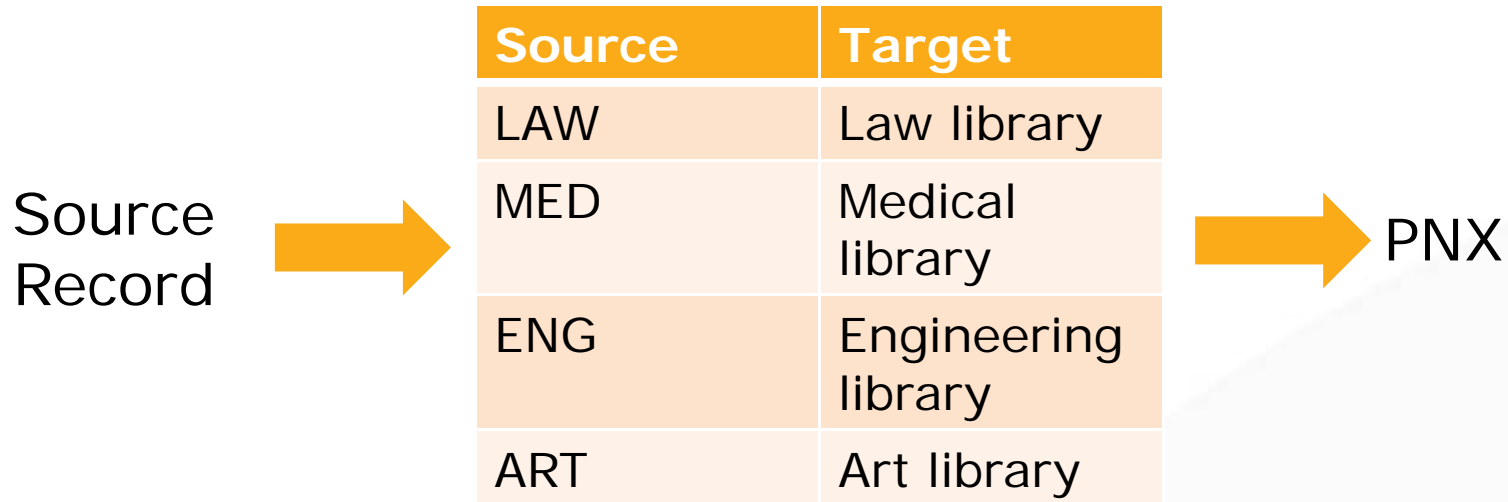
# Normalization Rule - Elements

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- Normalization rules have four main parts:
  - **PNX field** (or “target”) – *where to create*  
this is the section/field in the PNX record that will be created by the rule. A single PNX field can be created from one or more rules
  - **Source** – *what to create it from*  
this is the source data that is being normalized in the rule. In most cases it will be field from the source record but not necessarily.
  - **Conditions** – *when to create it*
  - **Conversion** – *how to create it*  
this is what needs to be done to the source data so it is converted to the target PNX field. The conversion can have several components including conditions and transformation routines.

# Normalisation Mapping tables

- Normalization **Mapping tables** can be used by specific rules to convert source data codes from the source to PNX data – instead of typing in the options manually



# Templates Mapping table

- Templates are used to build calculated link per record
- As opposed to a specific static link such as a URL from 856.
- In the PNX you will see these as a \$\$T

```
- <links>
  <openurl>$$Topenurl_journal</openurl>
  <backlink>$$Tvoyager_backlink$$Ebacklink</backlink>
  <thumbnail>$$Tsyndetics_thumb</thumbnail>
  <thumbnail>$$Tgoogle_thumb</thumbnail>
  <thumbnail>$$Tamazon_thumb</thumbnail>
  <linktotoc>$$Tamazon_toc$$Elinktotoc</linktotoc>
  <openurlfulltext>$$Topenurlfull_journal</openurlfulltext>
  <linktoholdings>$$Tvoyager_holdings</linktoholdings>
  <linktoexcerpt>$$Tsyndetics_excerpt$$Elinktoexcerpt</linktoexcerpt>
  <linktouc>$$Tamazon_uc$$Eamazon</linktouc>
  <ln01>$$Tgoogle_books_isbn$$DThis Item in Google books</ln01>
</links>
```



# Templates Mapping table

Two types of link:

- Calculated
  - Uses mapping tables

`$$Tgoogle_books_isbn`



Links

- > This item in Amazon.com
- > This item in Google books

`$$Uhttp://purl.access.gpo.gov/GPO/LPS48960$$DLink to Resource`



Links

- > This item in the Library Catalog
- > Link to Resource
- > Review
- > This item in WorldCat®

- Static
  - A standard URL, perhaps from an "856" Marc field

# Conclusion

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- The mechanism of converting the source records into PNX through the normalization rules enables Primo to be highly configurable.
- Front end display, facets, record details, scopes and links can all be setup accordingly to the library's requirements

# Normalization Rules

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**Q&A**

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# Thank You!

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