



Interoperability Options:

Lessons Learned from an IMLS National Leadership Grant

Danielle Cunniff Plumer

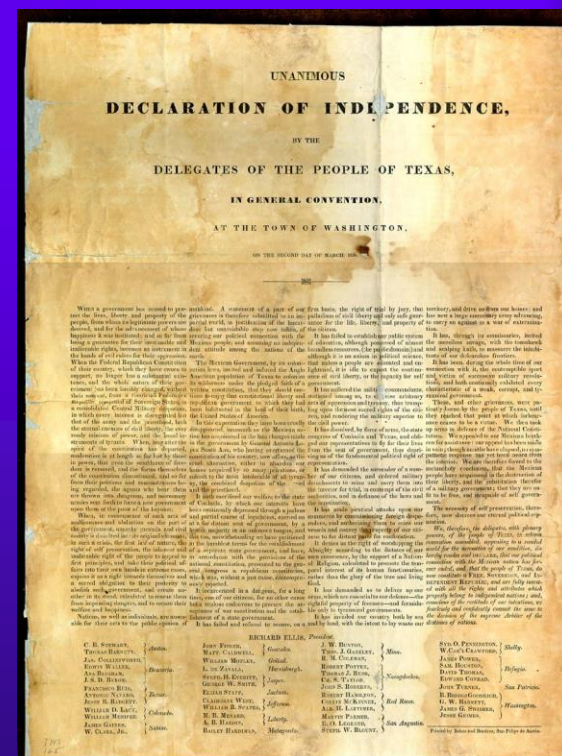
Texas State Library and Archives Commission

Texas Conference on Digital Libraries – May 30, 2007



Agenda

- ◆ Texas Heritage Digitization Initiative
- ◆ IMLS NLG, 2005-2007
 - Interoperability (OAI-PMH, Z39.50, SRU)
 - Texas Heritage Online
- ◆ Lessons Learned
 - Collection Granularity
 - Metadata Madness
 - Transformers
- ◆ Contacts & Credits





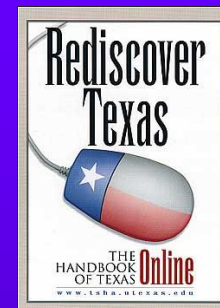
Digitization: Texas

◆ Existing Projects:

- Handbook of Texas Online
- Texas Archival Resources Online
- Portal to Texas History
- Texas Tides
- Texas Beyond History

◆ Funding Sources:

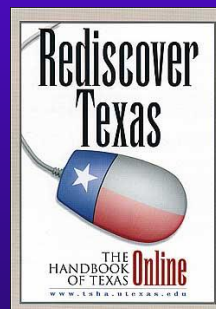
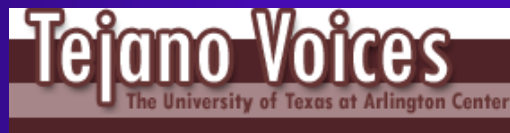
- State Grants
- Federal grants
- Foundations
- Institutions






THDI Vision

- ◆ *To offer unified online access to cultural heritage resources held by Texas institutions*





Collaboration: TARO



TARO

What is TARO?

Contact

Texas Archival Resources Online

Browse the finding aids by repository:

Select a repository

- Alexander Architectural Archive, University of Texas at Austin
- Austin History Center
- Benson Latin American Collection, University of Texas at Austin
- Center for American History, University of Texas at Austin
- Cushing Memorial Library, Texas A & M University
- Harry Ransom Humanities Research Center, University of Texas at Austin
- Houston Public Library, Houston Metropolitan Research Center
- Moody Medical Library, University of Texas Medical Branch
- Robert E. Nail, Jr. Historical Archives at Old Jail Art Center
- Southern Methodist University
- Southwest Collection/Special Collections Library, Texas Tech University
- Tarlton Law Library, University of Texas at Austin
- Texas State Library and Archives
- Texas Woman's University, the Woman's Collection
- University of Houston Libraries, Special Collections and Archives
- University of Texas at San Antonio
- University of Texas at Arlington Libraries, Special Collections
- Woodson Research Center, Rice University

[TARO Administrative Pages](#)

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- ◆ Texas Digital Library Alliance
- ◆ Funded by TIF 2000–2003
- ◆ Initially 5 ARL institutions plus state archives
 - 8 additional institutions
- ◆ Central repository for finding aids in EAD (XML)
- ◆ Hosted and maintained by UT Austin
- ◆ Lessons:
 - Sustainability
 - Growth



Sam Houston: Google

Sam Houston - Google Search - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.google.com/search?hl=en&q=sam+ Houston

Web Images Video News Maps Gmail more Sign in

Google sam Houston Search Advanced Search Preferences

Web Images Results 1 - 10 of about 5,180,000 for [sam Houston](#). (0.04 seconds)

[Sam Houston \(1793-1863\)](#)
One of the most colorful and controversial figures in Texas history, **Sam Houston** was born in Virginia on March 2, 1793. He spent much of his youth, however, ...
[www.lsjunction.com/people/houston.htm](#) - 5k - [Cached](#) - [Similar pages](#)

[Sam Houston - Wikipedia, the free encyclopedia](#)
Huntsville, Texas, is the home of the **Sam Houston Memorial Museum**, a 69 ft statue, **Sam Houston State University**, and **Houston's** gravesite. ...
[en.wikipedia.org/wiki/Sam_Houston](#) - 83k - May 17, 2007 - [Cached](#) - [Similar pages](#)

[Sam Houston State University | See How Success Unfolds](#)
Sam Houston State University, founded in 1879, is one of the oldest universities in the state of Texas. **Sam Houston** State University currently offers 86 ...
[www.shsu.edu/](#) - May 17, 2007 - [Similar pages](#)

[Sam Houston Memorial Museum](#)
Calendar of events, virtual tour, hours of operation, membership information, and chronology. Located in Huntsville.
[www.shsu.edu/~simm_www/](#) - 5k - [Cached](#) - [Similar pages](#)
[[More results from www.shsu.edu](#)]

[Sam Houston Race Park](#)
Quarter Horse and Thoroughbred racing at **Houston**, TX.
Ⓜ [Map of 7575 N Sam Houston Pkwy W, Houston, TX 77064](#)
[www.shrp.com/](#) - 28k - May 16, 2007 - [Cached](#) - [Similar pages](#)

[Sam Houston a Texas Hero](#)
Sam Houston was born in Virginia on March 2 1793


Done zotero

Sam Houston - Google Search - Mozilla Firefox

File Edit View History Bookmarks Tools Help

http://www.google.com/search?hl=en&q=sam+ Houston




News results for **sam Houston**

 **Army approves expansion of Fort Sam Houston under BRAC** - 23 hours ago
SAN ANTONIO — The Department of Defense officially approved plans Thursday to renovate and expand facilities at Fort **Sam Houston** and Camp Bullis to ...
[Houston Chronicle](#) - [12 related articles »](#)
[San Antonio Express](#)

Searches related to: **sam Houston**

fort sam Houston	sam Houston pictures	sam Houston high school	alamo
stephen f austin	santa anna	davy crockett	james k. polk

Image results for **sam Houston**



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sam Houston Search

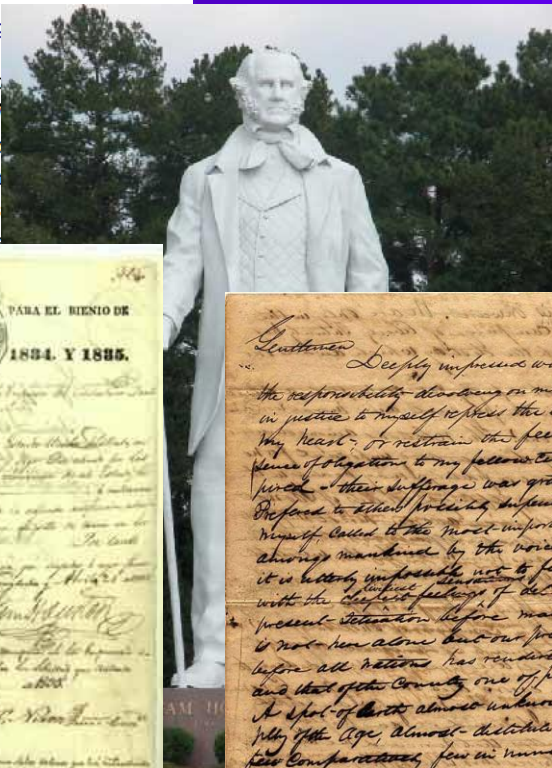
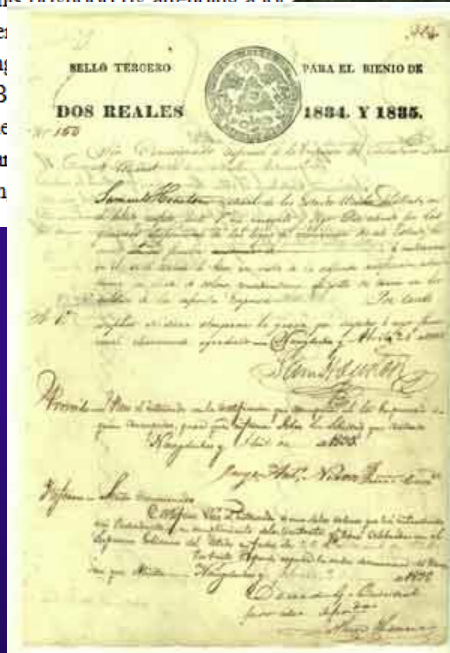
Done zotero

Sam Houston: Sources

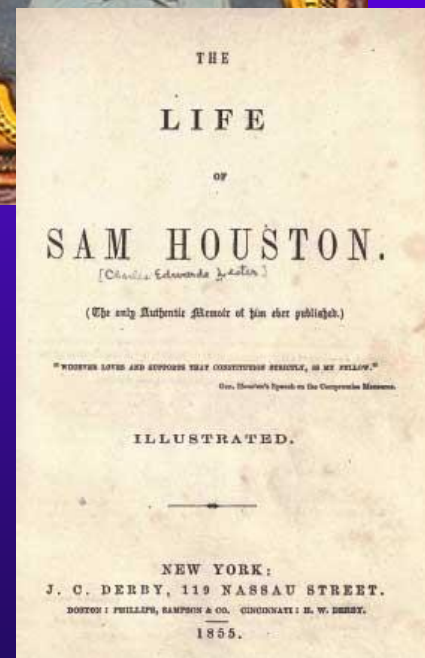
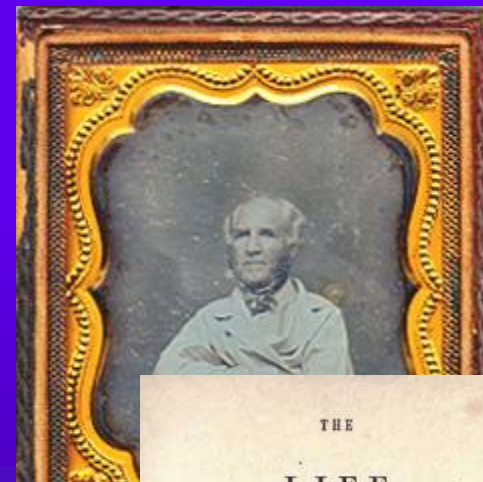
THE HANDBOOK OF TEXAS Online

[return to](#)

HOUSTON, SAMUEL (1793-1863). Sam Houston, one of the illustrious political figures of Texas, was born on March 2, 1793, in Wadley, Georgia. He was the son of Daniel and Elizabeth (Paxton) Houston. He attended the Ridge Church, Rockbridge County, Virginia, and was reared Presbyterian. He began his boyhood by attending a local school.



Guidance Deeply impressed with a sense of the responsibility resting on me, I cannot in justice to myself repress the emotions of my heart. To restrain the feelings which my sense of obligation to my fellow citizens has inspired, their suffering was gratefully borne. I have been called to the most important situation among mankind by the voice of the people. It is utterly impossible not to feel impressed with the deepest feelings of duty in my present situation before mankind. It is not men alone but our present attitude before all nations has rendered my position one of great responsibility. A spot of earth almost unknown to the people of this age, almost destitute of resources, few comparisons, few in number, we shall be remembered against oppression, and when invaded by a numerous host, we dare to proclaim our independence and to strike for freedom on the heads of our oppressors. May yet



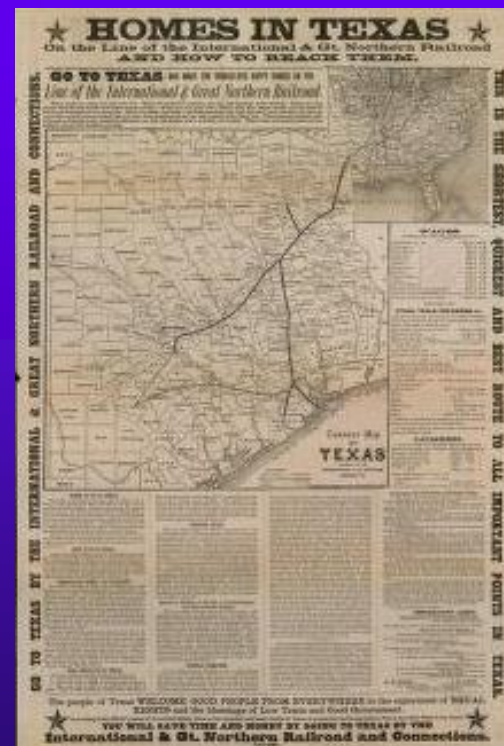


THDI IMLS Grant

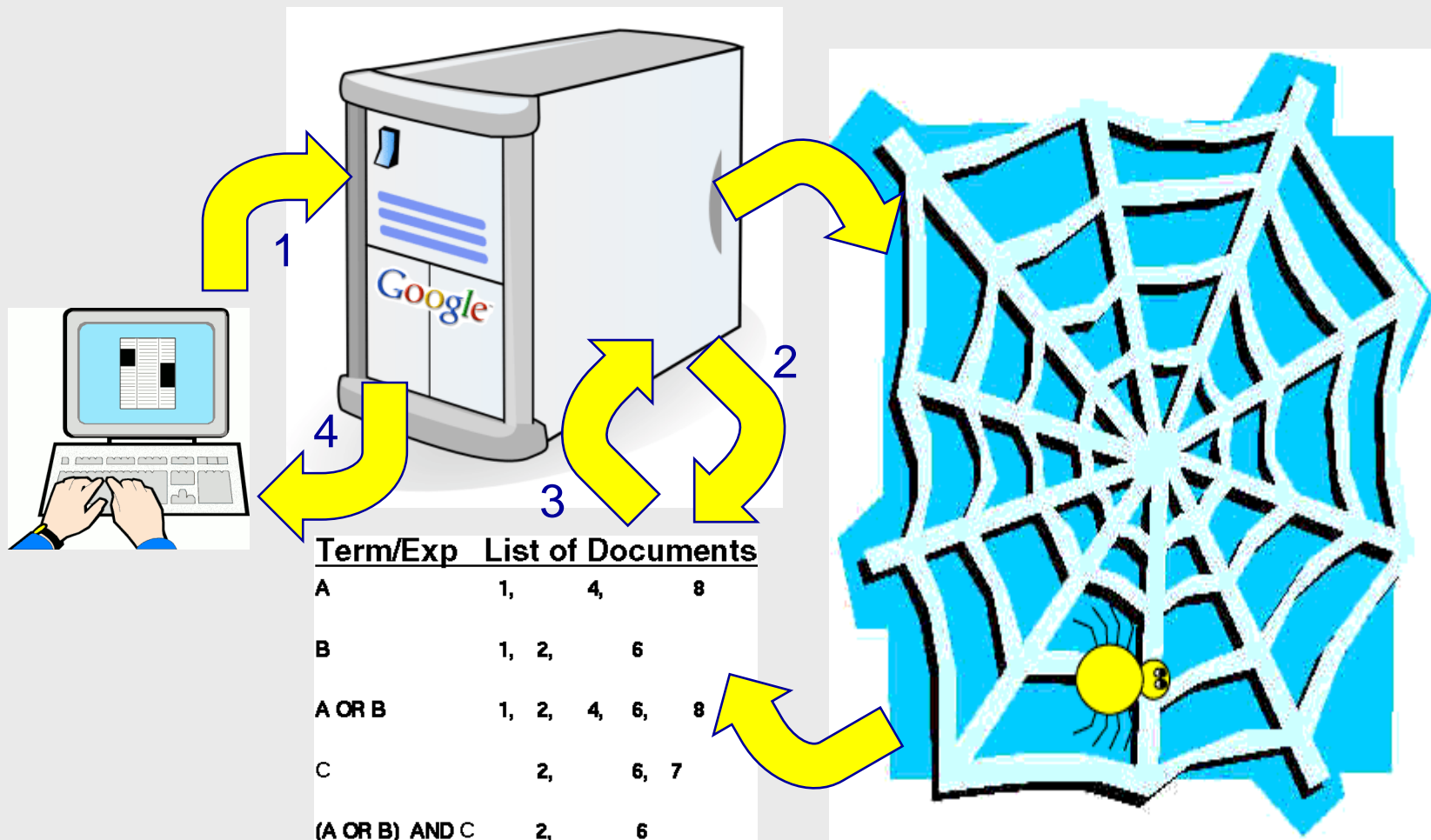


◆ Purposes:

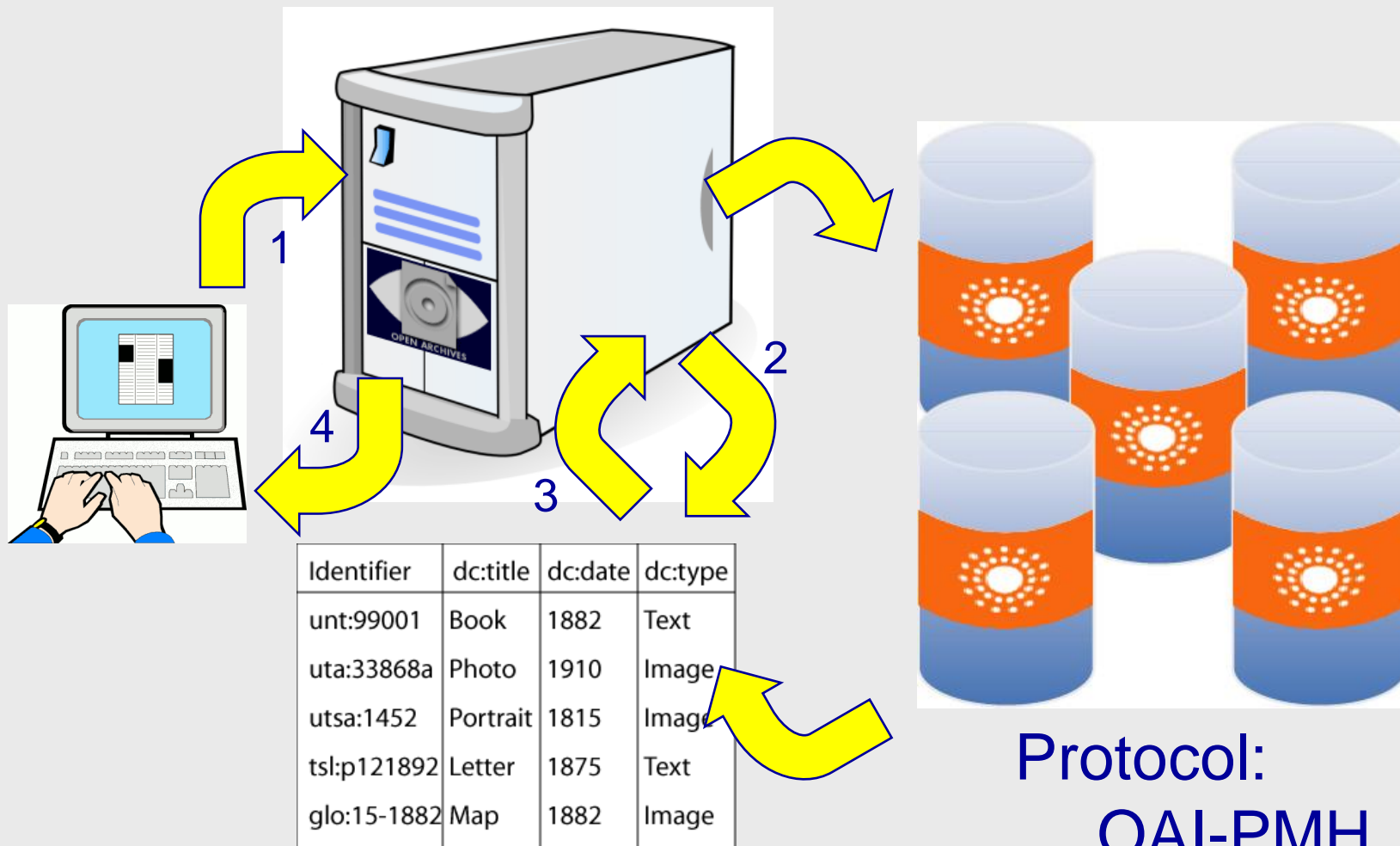
- ⌘ enhance interoperability among disparate collections of digital assets
- ⌘ provide seamless access to digital assets through a federated search engine
- ⌘ demonstrate the feasibility of using open source software in support of international standards



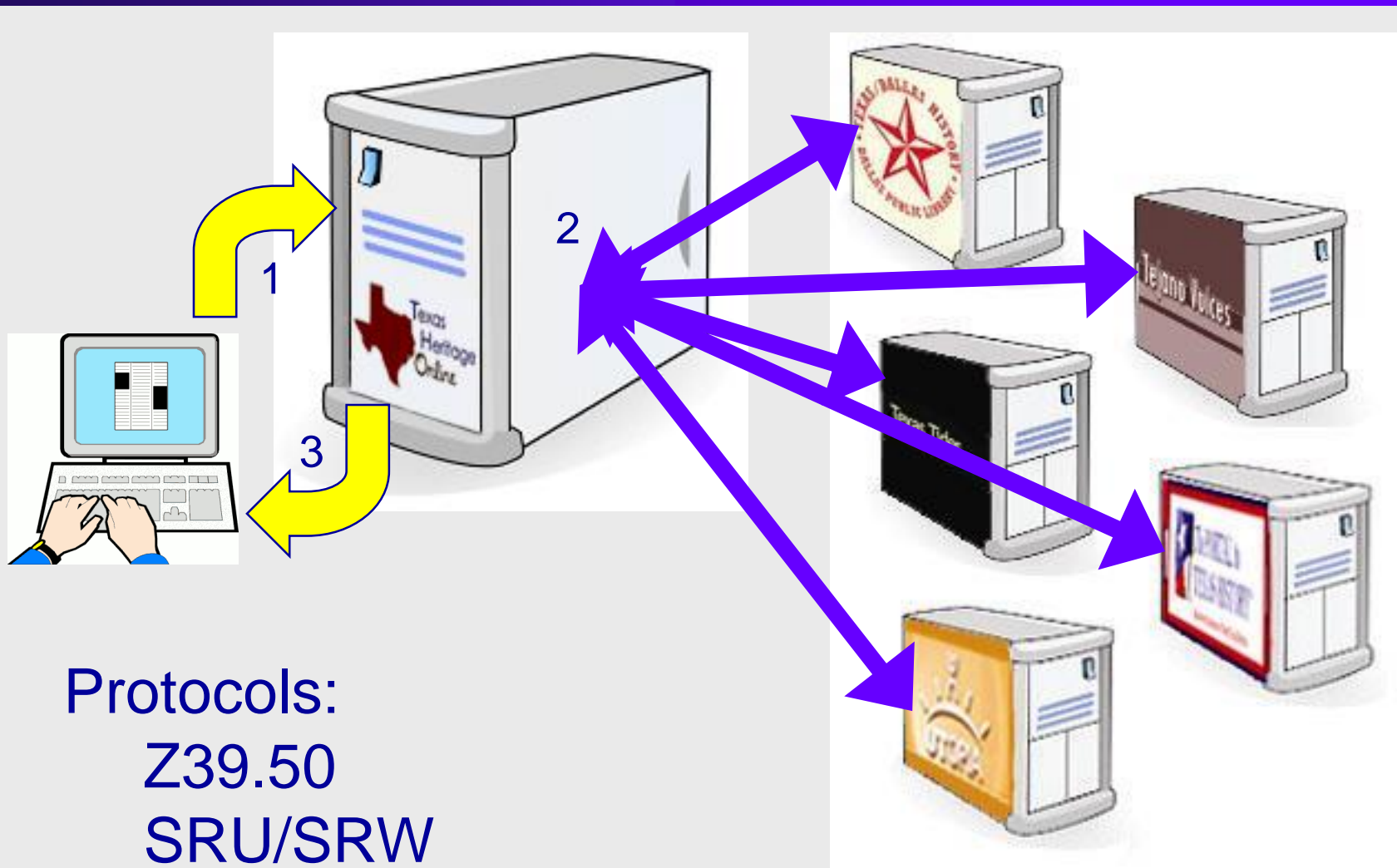
Web Search



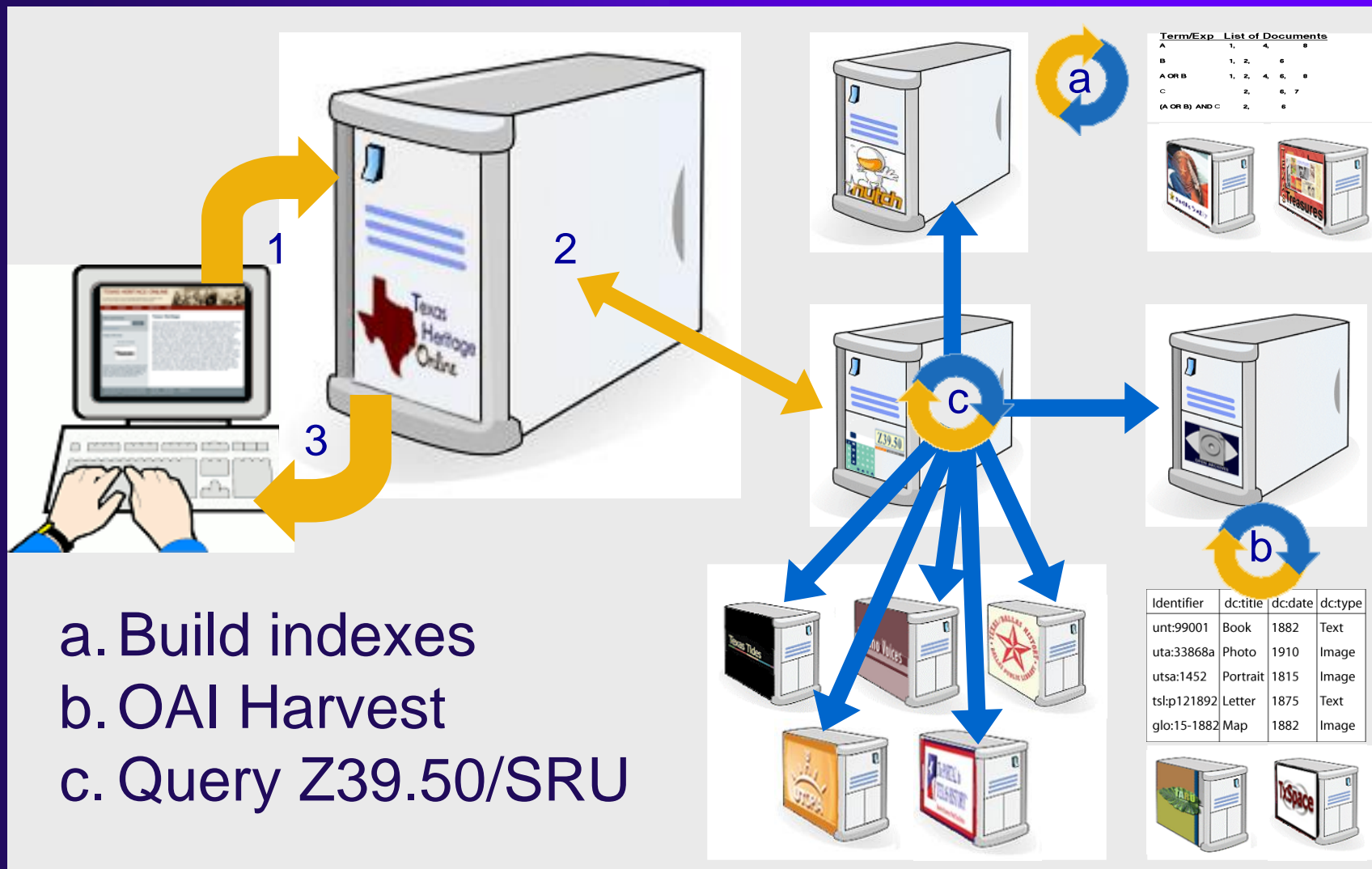
Metadata Harvesting



Federated Search



THDI Architecture

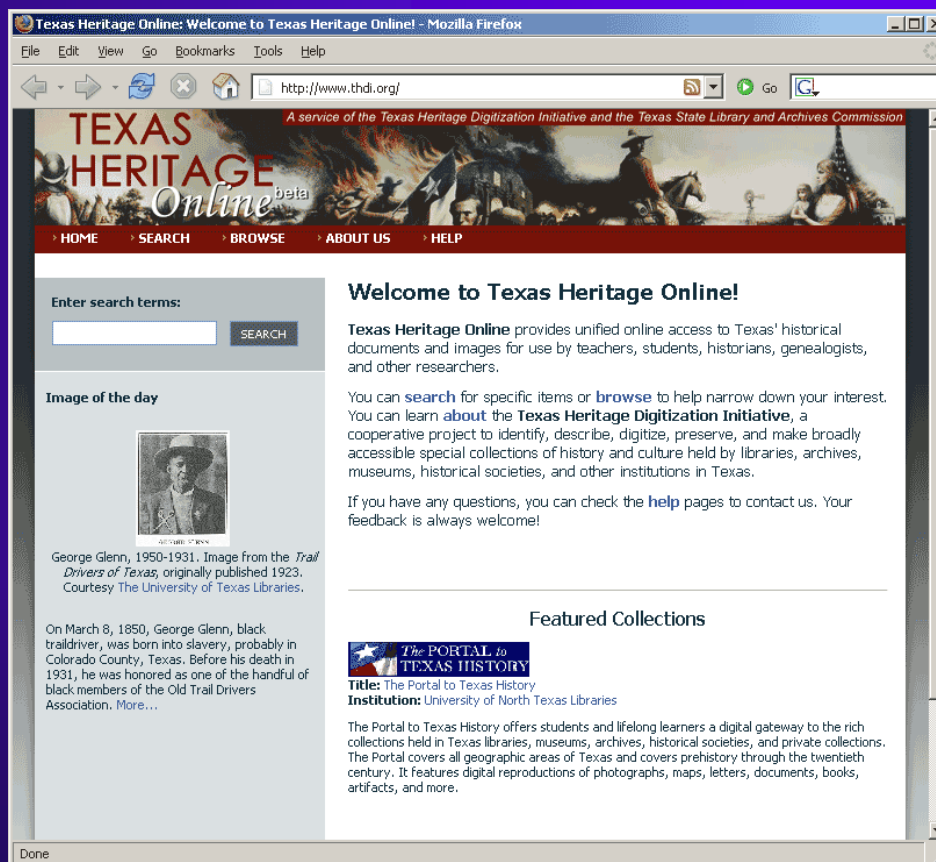


- a. Build indexes
- b. OAI Harvest
- c. Query Z39.50/SRU



Texas Heritage Online

◆ <http://www.texasheritageonline.org>





Technical Specifications

- ◆ Full support for Z39.50
 - SRW/U “bonus”
- ◆ Metadata normalization
 - Dublin Core
 - MARC
- ◆ Support for thumbnail images
- ◆ Open Source
- ◆ Standards-Compliant
 - Including Accessibility





Product Details

- ◆ Vendor: Index Data
- ◆ Product: Keystone DLS (TKL)
 - Also used in
 - Library of Texas
 - Portal to Texas History
- ◆ Features:
 - XML-based CMS
 - CSS-driven interface
 - YAZ toolkit
 - Zebra indexing engine



Enter search terms:

SEARCH

Image of the day



George Glenn, 1950-1931. Image from the *Trail Drivers of Texas*, originally published 1923. Courtesy The University of Texas Libraries.

On March 8, 1850, George Glenn, black traildriver, was born into slavery, probably in Colorado County, Texas. Before his death in 1931, he was honored as one of the handful of black members of the Old Trail Drivers Association. [More...](#)

Welcome to Texas Heritage Online!

Texas Heritage Online provides unified online access to Texas' historical documents and images for use by teachers, students, historians, genealogists, and other researchers.

You can [search](#) for specific items or [browse](#) to help narrow down your interest. You can learn [about](#) the **Texas Heritage Digitization Initiative**, a cooperative project to identify, describe, digitize, preserve, and make broadly accessible special collections of history and culture held by libraries, archives, museums, historical societies, and other institutions in Texas.

If you have any questions, you can check the [help](#) pages to contact us. Your feedback is always welcome!

Featured Collections



Title: The Portal to Texas History

Institution: University of North Texas Libraries

The Portal to Texas History offers students and lifelong learners a digital gateway to the rich collections held in Texas libraries, museums, archives, historical societies, and private collections. The Portal covers all geographic areas of Texas and covers prehistory through the twentieth century. It features digital reproductions of photographs, maps, letters, documents, books, artifacts, and more.

Enter search terms:

sam houston

SEARCH

Search results

✓ = Search complete

Collection	Items
✓ Cartographic Connections	0
✗ Library of Congress Digitized Historical Collections	-
✓ NET Images	1
✓ Portal to Texas History	12
✓ Tejano Voices	0

Portal to Texas History

[Info / Link](#)

Showing record 1 to 10

Results per page 10

[Previous](#)

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[Letter from unknown person to Mexia, May 27, 1836]

Letter from unknown person to Mexia: Arriving to Galveston and hearing the news of the retreat of the enemy. Describes conditions of the prisoners in Galveston and mentions speaking to some of the imprisoned officers. Galveston, May 27, 1836.



de Zavala Jr., Lorenzo: [Letter from Lorenzo de Zavala Jr. to unknown person, enclosed with letter to W.E. Hutchison, July 1, 1879]

Letter from Lorenzo de Zavala Jr. to unknown person enclosed with with an additional letter to W.E. Hutchison. The letter addressed to Hutchison describes the mis-handling of the affairs over the estate and property of the deceased Lorenzo de Zavala Sr. The additional letter to unknown person describes his own eye-witness account of the events of the Battle of San Jacinto and his personal endeavors afterwards. Merida, Yucatan, July 1, 1879.



Houston, Sam: Letter to James H. Raymond

Request for payment of \$240 to the Executive Contingent Fund.



Bruce, Henry: Life of General Houston, 1793-1863

Biography of Sam Houston.



The PORTAL to
TEXAS HISTORY™

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Life of General Houston, 1793-1863

Creator (Author): Bruce, Henry

Publisher Name: Dodd, Mead and Compnay

Place of Publication: New York

Original Creation Date: 1891

Coverage: From 1793 To 1863

Description: Biography of Sam Houston.

Language: English

Subject(s): (LCSH) Houston, Sam, 1793-1863
(UNTL-BS) People - Individuals - Sam Houston

Series Title: Makers of America

Institution: University of North Texas Libraries |

Collection: Texas History Collection

Identifier: Accession or Local Control No : pt-txhp-1114046
OCLC : 1114046 |

Digital Creation Date: 2005

Resource Type: Text-Book

Format: Text

Permalink: Please use this URL for external references:
<http://texashistory.unt.edu/permalink/meta-pt-2408>



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Bruce, Henry: Life of General Houston, 1793-1863

Biography of Sam Houston.



Collection Technologies

◆ Library Catalogs

- Dallas Public Library
- North Richland Hills Public Library
- UT Arlington

◆ Repositories & DAMS

- Stephen F. Austin
- Texas A&M
- Univ. of North Texas

◆ Online Databases

- General Land Office
- Historical Commission
- Texas State Library
- UT Austin

◆ Web-Based Exhibits

- Texas State Library
- Austin History Center
- Dallas Public Library
- UT Arlington



Interoperability Options

◆ Library Catalogs

Z39.50 → Dallas Public Library

Z39.50 → North Richland Hills
Public Library

Z39.50 → UT Arlington

◆ Repositories & DAMS

OAI → Stephen F. Austin

OAI → Texas A&M

SRU → Univ. of North Texas

◆ Online Databases

???? → General Land Office

???? → Historical Commission

OAI → Texas State Library

Z39.50 → UT Austin

◆ Web-Based Exhibits

Z39.50 → Texas State Library

Z39.50 → Austin History Center

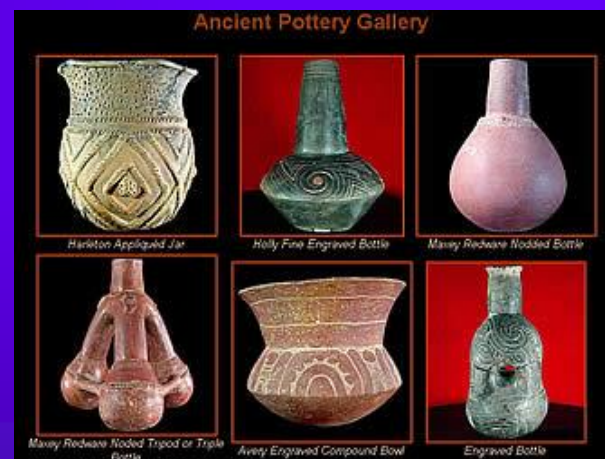
Z39.50 → Dallas Public Library

Z39.50 → UT Arlington



Next Steps & Wish List

- ◆ Usability testing
- ◆ Mapping “mashups”
- ◆ Person search
 - Genealogy
- ◆ OpenSearch and/or Yahoo! API
- ◆ Merge/rank across targets
- ◆ Faceted search results





Lessons Learned

- ◆ Collection granularity
 - What is a “collection”?
 - Common
 - Provenance
 - Topic
 - Metadata assigned at *collection* or *item* level
- ◆ Granularity Issues
 - Relevance ranking
 - Federated search display

Search results

✓ = Search complete

Collection	Items
✓ Cartographic Connections	0
✓ Cross Timbers	0
✓ Deaf Smith County Library	49
✓ LC WPA Posters - Aquifer	44
✓ Library of Congress	4293
✓ NET Images	0
✓ OAIster	880
✓ Open Content Alliance	21
✓ Portal to Texas History	329
✓ Tejano Voices	0
✓ TSLAC Exhibits	0
✓ UNT Libraries OAI Harvest	329



Lessons Learned

◆ Metadata madness:

- Dublin Core
 - Simple (OAI)
 - Qualified
- MARC21
- MODS
- “Custom”
- None

◆ Standards?





Standards: Levels

- ◆ Minimal
 - Lowest level of common practice
 - Weak interoperability
- ◆ Basic
 - Appropriate for most institutions
 - Vendor-supplied interoperability
- ◆ Enhanced
 - Experimental
 - Newer standards are unsupported





THDI Standards

- ◆ Digitization
- ◆ Metadata
- ◆ Controlled vocabulary
- ◆ Interoperability
- ◆ Preservation



Lessons Learned

◆ Transformers

- Move burden of normalization from collection to aggregator
- Protocol syntax requirements

◆ XSLT

- Dublin Core as lowest common denominator
- Custom normalization filters determined by target analysis





Conclusion

- ◆ Evolution of Federated Search:
 1. Metadata-centric
 2. Resource-centric
 3. Collection-centric
 4. **User-centric**





Contacts

- ◆ **Texas Heritage Online**
<http://www.texasheritageonline.org>
- ◆ **Danielle Cunniff Plumer**
THDI Coordinator
Texas State Library and Archives
dplumer@tsl.state.tx.us
- ◆ **Ann Hodges**
THDI Steering Committee
Univ. of Texas at Arlington Library
ann.hodges@uta.edu





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2. Sam Houston Collage
 - *Handbook of Texas Online*, s.v. “Houston, Samuel.”
<http://www.tsha.utexas.edu/handbook/online/articles/HH/fho73.html> (accessed November 4, 2006).
 - Sam Houston statue, Huntsville. Photo by Dreanna Belden of the statue by Adickes, David. Available from the Portal to Texas History, University of North Texas.
 - Daguerrotype of Sam Houston in white duster coat, c. 1859. Prints and Photographs Collection, Texas State Library and Archives Commission.
 - Lester, C. Edwards. *The life of Sam Houston (The only authentic memoir of him ever published)*. New-York, J. C. Derby, 1855. Available from the Open Content Alliance / Internet Archive.
 - Sam Houston’s title to land in Nacodoches County, 05 May 1835. Texas General Land Office patent no. 315, vol. 18.
 - Sam Houston’s jaguar-skin vest. Sam Houston Memorial Museum Collection, Texas Tides, Stephen F. Austin State University.
 - Sam Houston Inaugural Address, 1836 (first page). From the Earl Vandale Collection, The Center for American History, The University of Texas at Austin.
3. Correct Map of Texas. St. Louis: Woodward, Tiernan & Hale, 1878. Courtesy of Special Collections, University of Texas at Arlington.
4. “Mrs. Angelina Eberly firing off a cannon,” Prints and Photographs Collection, Texas State Library and Archives Commission.



Image Credits

5. Caddo Pottery, Courtesy Texas Beyond History, The University of Texas at Austin. Available at <http://www.texasbeyondhistory.net/tejas/clay/galleries/index.html>
6. Launch of the USS *Houston* (CA-30), Newport News, Virginia, September 7, 1929. Cruiser Houston Collection. Courtesy of Special Collections, University of Houston Libraries.
7. Oil near Ranger going over the top, circa 1917. W.D. Hornaday Collection, Prints and Photographs Collection, Texas State Library and Archives Commission.
8. Texas Rangers; taken at Railroad Station in Ft. Worth, Texas during a railroad strike in April, 1886. ETRC Photograph Collection. Texas Tides, Stephen F. Austin State University.
9. Needle point picture of a map of Austin's Old 300 Colony. From the collections of the Fort Bend County Museum, Richmond, Texas. Available on the Portal to Texas History, University of North Texas
10. Toy John Deere wagon. From the collections of the George Ranch Historical Park, Richmond, Texas. Available on the Portal to Texas History, University of North Texas
11. Boy in a charro costume, Casasola Studio Photographs, PH041-01-00007, Special Collections Department, University of Texas at El Paso Library.