Linked Data in Archives

Publish, Enrich, Refine, Reconcile, Relate









- TBL's original vision
 - □ "Weaving the Web" 1999
- Then: Focus on Machine Reasoning
 - Scientific American Article
- Now: Focus on things & links
 - Reasoning & Inferencing less central





Originally:

- Metadata standard built on XML
- Metadata about "Web" things (documents)
- Eventually:
 - Metadata about all sorts of things
 - And about relationships between things





- Use URIs as names for things
- Use HTTP URIs so that people can look up those names.
- When someone looks up a URI, provide useful information.
- Include links to other URIs. so that they can discover more things.

http://www.w3.org/DesignIssues/LinkedData.html



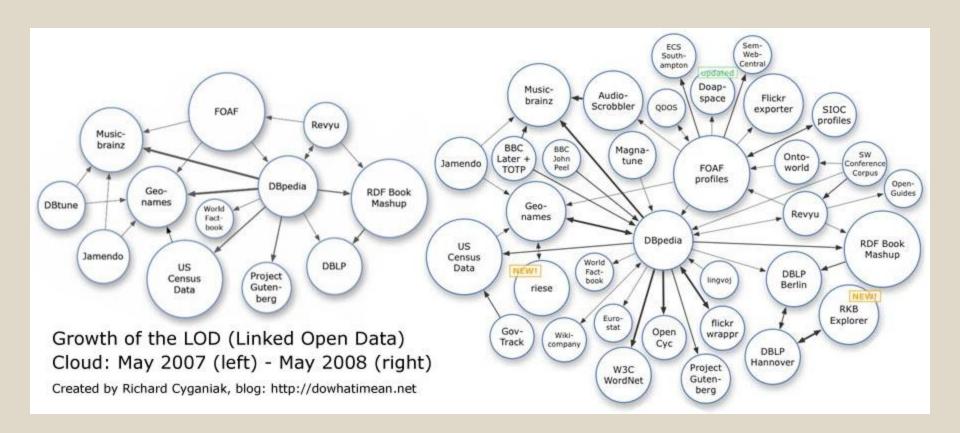


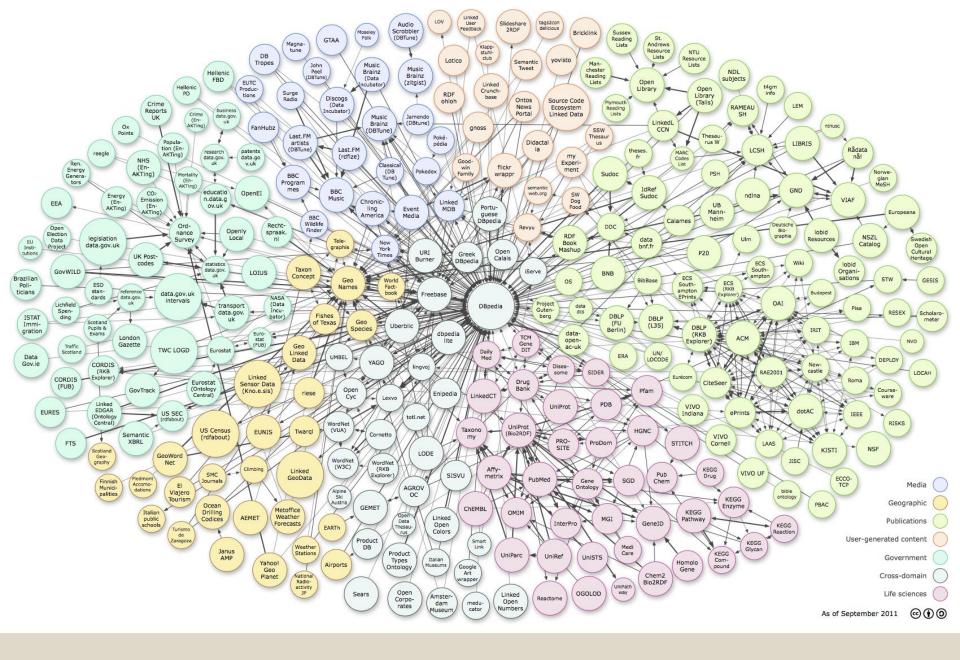
- Metadata as a Graph
- Typed "things", named by URIs
- The relationships between those things, also built on URIs
- Ease of integration *across* data sources – "merging graphs"



Growth of the Linked Data cloud









- Structured Wikipedia Data
- Genres, Influences, External Links
- Multi-lingual / Multi-script labels
- Rich Semantics
- Many linkages to other datasets



- Partial basis in data entry conventions
- InfoBoxes, and InfoBox Templates
- Metadata Entry Format
- Partial source of Ontology
 - Class Structure
 - Vocabulary Design



- 3.4 Million "things" described
- Ontology based on "infoboxes"
 - 1.5 million things classified
 - http://wiki.dbpedia.org/Ontology
- Approx. 50,000 "Properties"
 - Approx. 1,200 defined in ontology



nteraction	The following 57 pages are in this category	γ, out of 57 total. This list may not reflect recent ch	nanges (learn more).
About Wikipedia		•	
Community portal	Α	E cont.	М
Recent changes	Template:Infobox album	Template:Extra album cover/sandbox	Template:Infobox music festival
Contact Wikipedia	Template:Infobox anthem	Template:Extra chronology	User:Pretzels/Template:musicfesttest
Help	Template:Infobox anthem/sandbox	Template:Extra music sample	Template:Infobox music genre
Toolbox	Template:Audiosample	Template:Extra track listing	Template:Infobox music genre/sandbox
	_	Template:Extra track listing/sandbox	Template:Infobox musical
Print/export	В	 Template:Extra collapsed text 	 Template:Infobox musical artist
Languages	Template:Infobox Bruckner Symphony		Template:Infobox musical artist/sandbox
العربية	•	G	
Català	С	 Template:Infobox guitar model 	0
Dansk	Template:Infobox choir		Template:Infobox operas
Deutsch	 Template:Composer navbox 	Н	Б.
Español	Template:Composer navbox/sandbox	Template:Infobox high school marching band	P
فارسى	 Template:Infobox concert 	Template:Infobox hymn	 Template:Infobox pipe band
Gaelg	Б.		Б.
한국어	D	1	R
Hrvatski	Template:Infobox dancer	Template:Infobox Chord	Template:Infobox reality music competition
עברית יייייי	 Template:Infobox dancer/sandbox 	Template:Infobox music conference	 Template:Infobox record label
Magyar 팀회회회	 Template:Discography list 	Template:Infobox music of	6
Português	 Template:Discography list/sandbox 	 Template:Infobox music subgenre 	S
Română	Template:Infobox artist discography	Template:Infobox musical composition	Template:Infobox single
Русский	_	 Template:Infobox symphony 	Template:Singles
Simple English	E	Template:Infobox instrument	Template:Singles/sandbox
Slovenčina	Template:Infobox ESC entry	 User:TUF-KAT/Template sandbox1 	Template:Infobox song
Türken	Template:Infobox ESC entry/sandbox	Template:Infobox instrument/sandbox	Template:Infobox song/sandbox

Македонски

ВВВВВВВВ

Nederlands

Norsk (bokmål)

Polski

Português

Română

Pyccкий

Simple English

Slovenčina

Slovenščina

Svenska
Чив

Українська

Tiếng Việt

調馬

One of the following two alternatives (one for individuals, one for groups) should be placed in an article at the top of the page, before the introduction.

For articles about individuals

```
{{Infobox musical artist
| Name
 Imq
| Img alt
 Img capt
 Img size
 Landscape
                     = ** Mandatory ** Use one of solo singer, non vocal instrumentalist, non perfor
 Background
 Birth name
 Alias
                     = <!-- {{Birth date and age|YYYY|MM|DD}} -->
 Born
                     = <!-- {{Death date and age|YYYY|MM|DD|YYYY|MM|DD}} (death date then birth) +->
 Died
 Origin
 Instrument
 Genre
 Occupation
 Years active
                  = <!-- YYYY-YYYY -->
 Label
 Associated acts
                     = <!-- {{URL|example.com}} -->
 URL
| Notable instruments =
```

For articles about musical groups



On keyboards at the New Orleans Jazz and Heritage Festival, April 28, 2006

Background information

Robert Allen Zimmerman Birth name Also known Elston Gunnn, [1] Zimbo, [2] Zimmy, [3] Blind Boy Grunt, [4] Bobby the Hobo, [5] Bob Landy, [4] Robert Milkwood Thomas, [4] Lucky Wilbury/Boo Wilbury, Sergei Petrov, [6] Jack Frost [7] May 24, 1941 (age 69) Born

Duluth, Minnesota, U.S.

Rock, folk rock, folk, blues, Genres

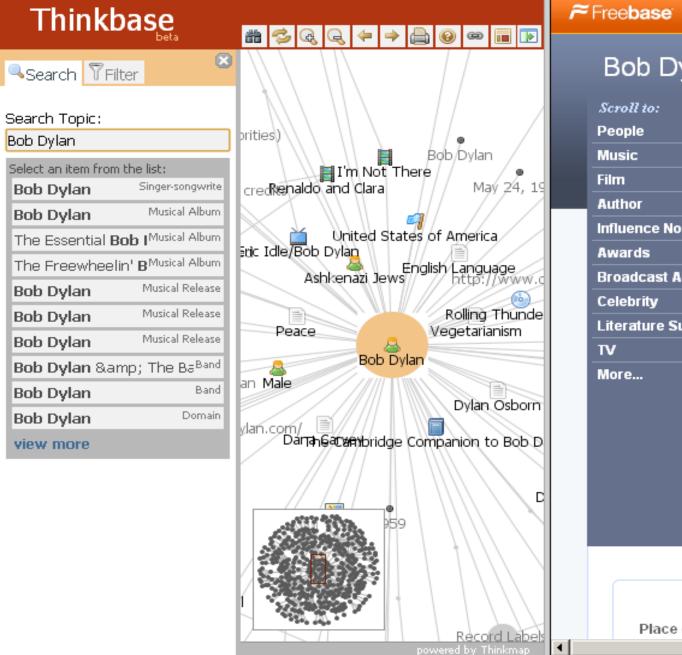
country, gospel

Occupations Singer-songwriter

Instruments Vocals, guitar, bass,

harmonica keuhoard niano

			I al Maries dan ien Mai con centani o
	dbpedia-owl:activeYearsStartYear	•	1961-01-01 00:00:00 (xsd:date)
	dbpedia-owl:alias	•	Elston Gunn, Tedham Porterhouse, Blind Boy Grunt, Milkwood Thomas
	dbpedia-owl:associatedBand	•	dbpedia:The_Band
	dbpedia-owl:associatedMusicalArtist	•	dbpedia:The_Band
	dbpedia-owl:background	•	solo_singer
	dbpedia-owl:birthDate	•	1941-05-24 (xsd:date)
	dbpedia-owl:birthPlace	•	dbpedia:Duluth,_Minnesota
	dbpedia-owl:genre	•	dbpedia:Rock_music
	dbpedia-owl:individualisedPnd	•	118528408
	dbpedia-owl:instrument	•	dbpedia:Singing
	dbpedia-owl:occupation	•	dbpedia:Singer-songwriter
	dbpedia-owl:recordLabel	•	dbpedia:Columbia_Records
	dbpedia-owl:thumbnail	•	http://upload.wikimedia.org/wikipedia/commons/thum
	dbpprop:birth	•	1941-05-24 (xsd:date)
	dbpprop:birthPlace	•	Duluth, Minnesota
	dbpprop:hasPhotoCollection	•	http://www4.wiwiss.fu-berlin.de/flickrwrappr/photos/Bi
	dbpprop:reference	:	http://www.lauriegiardino.com/Hibbing.htm http://www.bobdylan.com/ http://www.bjorner.com/still.htm http://www.boblinks.com/dates.html http://www.rocksourcearchive.com/dylan http://www.expectingrain.com/
	dbpprop:wordnet_type	•	http://www.w3.org/2006/03/wn/wn20/instances/synse
	dc:description	•	Rock and folk musician
•ſ	rdf.type	:	foaf:Person opencyc:Mx4rvVjaApwpEbGdrcN5Y29ycA yago:Person100007846 yago:AmericanPoets yago:NewYorkMusicians yago:AmericanMaleSingers
		-	





Date of birth: May 24, 1941 (age

Вο

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m

Place Musical Career Began: 0

Active as Musical Artist (start):

Musical Genres: Folk music, Ro music, Country rock, Alternative of

Also known as: Robert Allen Zir Frost, Bob Allen Zimmerman, Bo Dylan, Dylan, Bob

Place of birth: Duluth, Minnesota, United

Google Knowledge Graph



Web

Ads related to bob dylan

Why these ads?

Images

Bob Dylan Live 10/24 | ticketmaster.com

www.ticketmaster.com/

★★★★★ 19,268 reviews for ticketmaster.com Maps

At Valley View Center with guest Mark Knopfler Don't miss it!

Videos

News

Shopping

Bob Dylan San Diego - Valley View San Diego Sport Center.

www.bob-dylan.tickets-center.com/ Bob Dylan at Valley View Center.

Bob Dylan Tickets On Sale - Carrie Underwood Tickets On Sale

Blogs

More

Bob Dylan

www.bobdylan.com/

Official Bob Dylan website featuring Bob Dylan news, music, books, album info, tour dates and more.

San Diego, CA

Change location

Upcoming dates - Songs - Albums - News Martin Kalfatovic shared this on Blogger

Show search tools

Bob Dylan Songs | The Official Bob Dylan Site

www.bobdylan.com/songs

View a list of all of **Bob Dylan** songs at the official website. Listen to tracks, view song information, purchase tracks and more.

Bob Dylan Upcoming Events & Tickets | The Official Bob Dylan Site

www.bobdylan.com/upcoming-dates

View Bob Dylan's upcoming events schedule & tour dates. Buy Bob Dylan tickets at the official website.

Bob Dylan - Wikipedia, the free encyclopedia

en.wikipedia.org/wiki/Bob Dylan

Bob Dylan is an American singer-songwriter, musician, and artist. He has been an influential figure in popular music and culture for five decades. Much of his ...

Bob Dylan



Bob Dylan is an American singer-songwriter, musician, and artist. He has been an influential figure in popular music and culture for five decades.

Wikipedia

Born: May 24, 1941 (age 71), Duluth

Movies: Masked and Anonymous, No. Direction Home, Dont Look Back, More

Spouse: Carolyn Dennis (m. 1986-1992), Sara Dylan (m. 1965-1977)

Children: Jakob Dylan, Jesse Dylan, Sam-Dylan, Anna Dylan, Desiree Gabrielle

Dennis-Dylan, Maria Dylan

Song	Year
Like a Rolling Stone	1965
Knockin' on Heaven's Door	1978
The Times They Are A-C	1964
Hurricane	1976
Blowin' in the Wind	1963

Albums

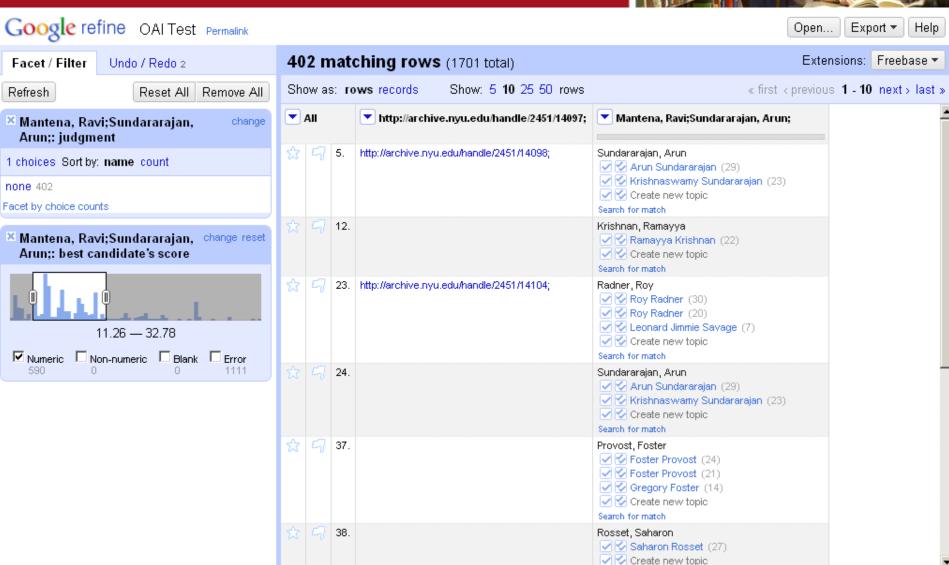






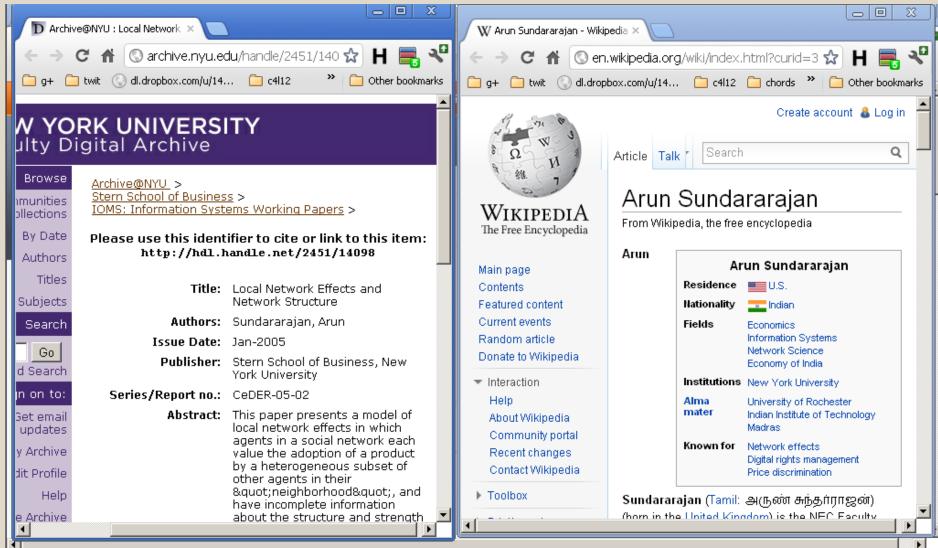
Google Refine





Automated Authorities?







Free Your Metadata

Polish and publish your metadata using Google Refine.







Before linking, metadata always need to be cleaned up. Take out those hands out of your pockets and discover how to handle those

freevourmetadata.org/about/

Reconcile

Match your metadata with controlled vocabularies connected to the Linked Data cloud and join the place which everyone knows hut has never seen

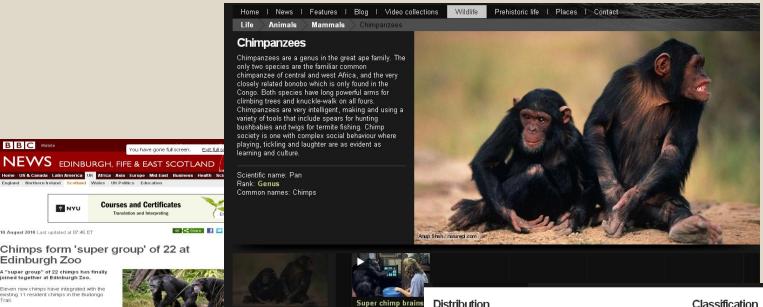


The Free Your Metadata team is coming to a city near you. Join and learn how to free your own metadata!



BBC Chimps





Chimps form 'super group' of 22 at Edinburgh Zoo

A "super group" of 22 chimps has finally joined together at Edinburgh Zoo.

10 August 2010 Last updated at 07:46 ET

₱ NYU

B B C Mobile

Eleven new chimps have integrated with the existing 11 resident chimps in the Budongo Trail.

enclosure, according to officials at Edinburgh

It has taken almost six months to complete the integration of the two groups as chimps live in complex communities.

Due to hierarchical groupings, keepers closely observed the status level of every chimp in the new group and correlated this to the nearest in status in the existing one.

Jo Richardson, head keeper at Budongo Trail, said: "It is important for the success of the integration to know individuals well as chimps have a lot of group politics and social dynamics, and are an extremely intelligent and

"This has been the biggest challenge and achievement for all the team at Budongo Trail so far, as this is the largest integration of chimps we have

Ms Richardson said the resident chimps have individual characteristics.

and when a new group is brought in it must be handled in the right way to ensure that no chimp's status is challenged initially as the two groups "So you start with those with the lowest status then gradually progress up

the status ladder until you get to the highest level and those being the alpha males,* she said. "This is done at the chimps' pace to ensure all group members have a chance to settle and integrate well with hopefully minimal aggression, as

chimps will sort out hierarchy and dynamics through both affiliative

Chimp hierarchies do not have a strict "pecking order", but are complex



Courses and Certificates

Translation and Interpreting

Related Storie

Chimps will sort out hierarchy and dynamics through both affiliative behaviour and sometimes fighting"

Head keeper, Budongo

Introduction

Features & Analysis

Most Popular

Distribution



The shading illustrates the diversity of this group - the darker the colour the greater the number of species. Data provided by WWF's Wildfinder.

Explore this group





Classification

Life Animals Vertebrates Mammals Primates Great apes Chimpanzees

Find wildlife

Search for your favourite wildlife

BBC News about Chimpanzees

Promiscuous apes make more sperm

Chimpanzees produce 200 times more sperm than the world's largest primates, scientists reveal.

- · Malaria 'caught from gorillas' · Safeguarding chimps from snares
- · Chimps form 'super group' of 22 at Edinburgh
- · Chimps 'feel death like humans'

Elsewhere on the BBC

- · Chimp recognises synthetic speech LEARNING ZONE BROADBAND
- LEARNING ZONE BROADBAND

Elsewhere on the web

NEW YORK UNIVERSITY LIBRARIES

Scientific tests can

show just how smart

chimpanzees really

virgin atlantic

he untold story of the UK special

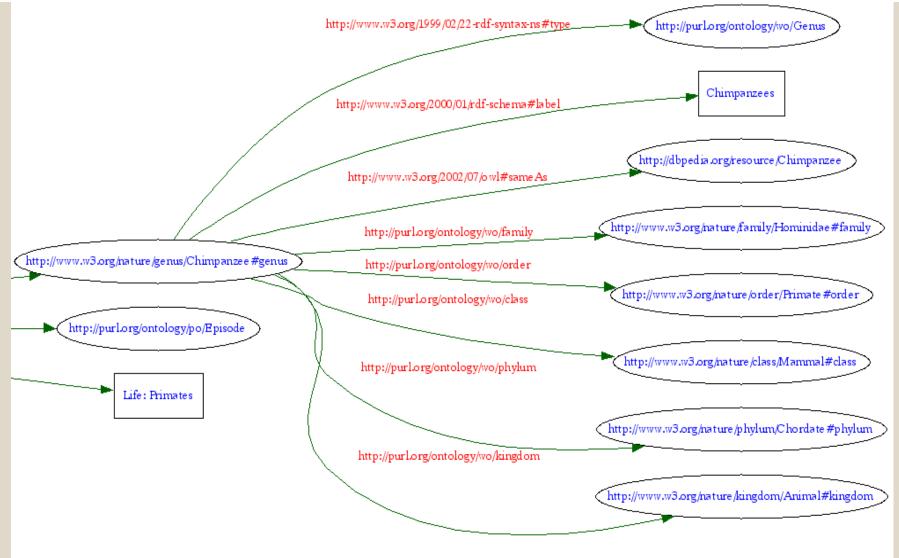
Are hockey enforcers the toughest guys in world sport?

Unrestricted warfare'

olaroid punk

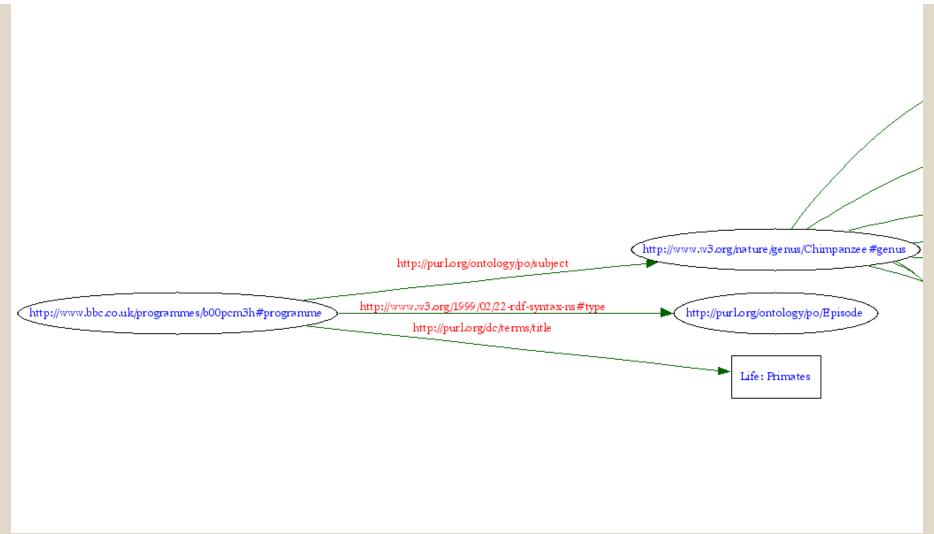
BBC Wildlife

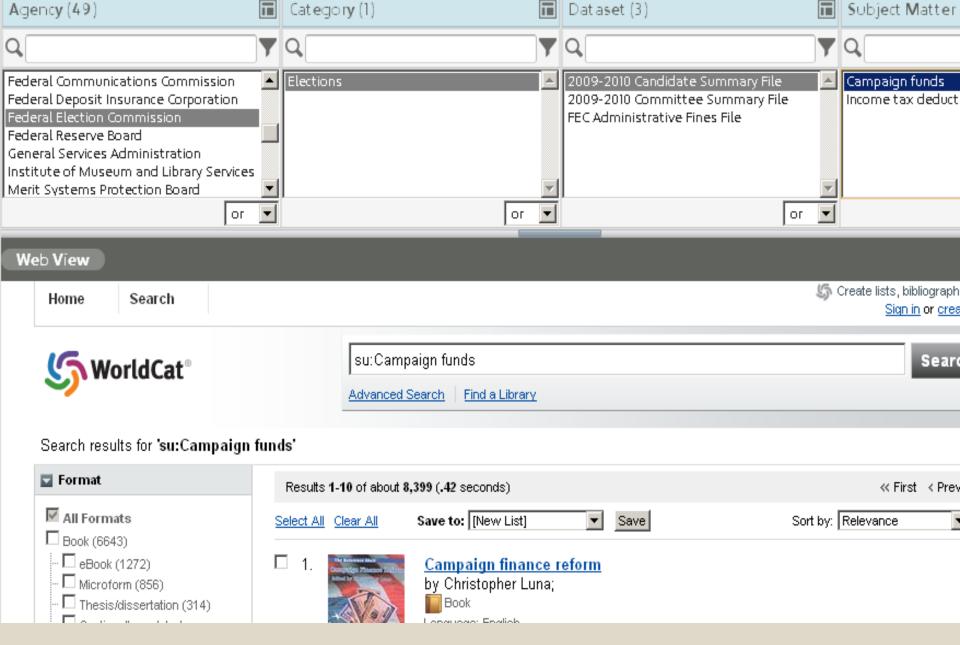




BBC Programmes





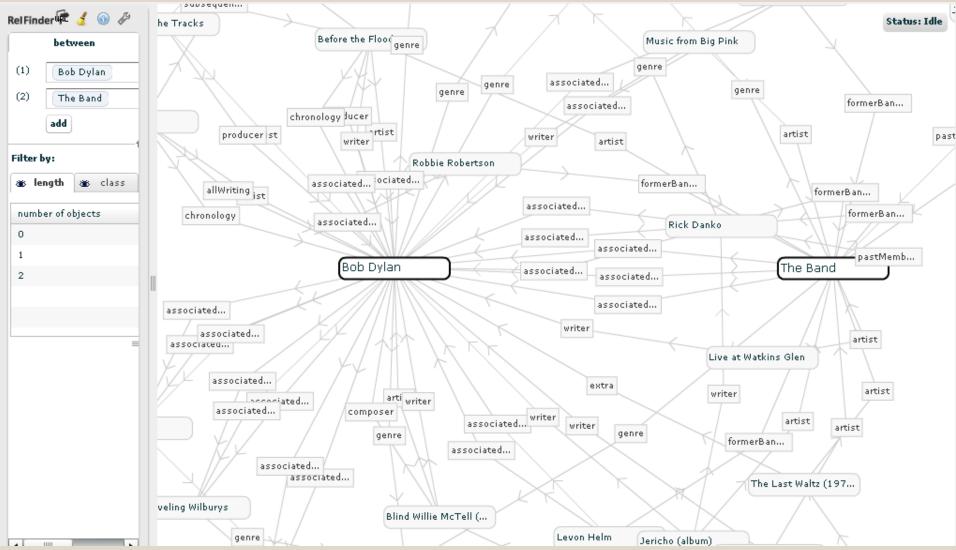


http://weblog.clarkparsia.com/2010/05/26/another-reason-semantic-web-kicks-ass/

http://datagov.clarkparsia.com/

RelFinder





LinkSailor: http://linksailor.com/nav



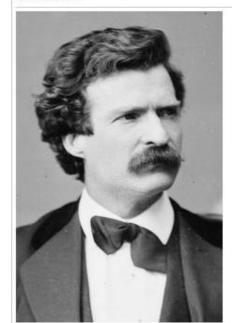
http://semanticlibrary.org/people/mark-twain



Curious about how Linksailor works? View a linksailor presentation or contact the developer

Mark Twain

OVERVIEW



PERSONAL INFORMATION

Samuel Langhorne Clemens (November 30, 1835 – April 21, 1910), well known by his pen name Mark Twain, was an American author and humorist. Twain is noted for his novels Adventures of Huckleberry Finn (1885), which has been called "the Great American Novel", and The Adventures of Tom Sawyer (1876). Twain was a friend to presidents, artists, industrialists, and European royalty. Twain was very popular, and his keen wit and incisive satire earned praise from critics and peers. Upon his death he was lauded as the "greatest American humorist of his age", and William Faulkner called Twain "the father of American literature".

CLASSIFICATIONS









- · Writers from Connecticut
- Literary collaborators
- American humorists
- 1910 deaths
- American travel writers
- American novelists
- Holy Land travellers
- American agnostics
- American satirists
- People of the Philippine— American War
- · American memoirists
- Writers from Missouri
- Critics of Christian Science
- · People from Elmira, New York
- Lecturers

MORE ON OTHER SITES





PERSONAL INFORMATION

Born: 30 November 1835 Birthplace: Florida, Missouri

Died: 21 April 1910

Place of death: Redding, Connecticut Married to: Olivia Langdon Clemens

Children: dbpedia:Susy_Clemens, dbpedia:Jean_Clemens and dbpedia:Clara_Clemens

CLASSIFICATION CONTEXT

A concept in the nyt:nytd_per scheme.

NOTABLE LOCATIONS



Lecturers

MORE ON OTHER SITES

More information can be found at:

- Wikipedia (2,3,4,5,6,7,8,9,10,11,12,13,14,15,16)
- openlibrary.org (2, 3, 4, 5)
- New York Times

LINKED DATA

This page is also available as Linked Data.

Linked Data URI:

http://semanticlibrary.org/people/marktwain

More data:

- dbpedia.org (2,3,4,5,6,7,8,9,10,11,12,13,14,15)
- data.nytimes.com (2)
- rdf.freebase.com (2)
- sw.opencyc.org (2)
- www4.wiwiss.fu-berlin.de
- www.bbc.co.uk

C: Florida, Missouri



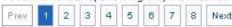
Missouri St. Louis Virginia Comerie District of Kentucky Virginia Columbilian data @2012 Google A: Connecticut

B: Redding, Connecticut

C: Florida, Missouri

CREATIVE WORK

1962 works found, showing only the first 120



- · Adventures of Huckleberry Finn
- The Adventures of Tom Sawyer
- . Mark Twain on simplified spelling; a speech at the annual dinner of the Associated Press, held in New York, September 19, 1906 : revised expressly for the Simplified Spelling Board
- The wisdom of Mark Twain
- Plymouth Rock and the Pilgrims and other salutary platform opinions
- Queen Victoria's jubilee; the great procession of June 22, 1897, in the Queen's honor, reported both in the light of history, and as a spectacle
- · Anturiaethau Tom Sawyer; (The adventures of Tom Sawyer)
- Masa' ta'anugot le-Erets ha-kodesh
- . Mark Twain's (i.e. S. L. Clemens') Date, 1601; conversation as it was by the social fireside in the time of the Tudors
- Zhanna d'Ark
- · Prince & the Pauper (Classic Library)
- · Tom Sawyer
- The Washoe giant in San Francisco
- · Roughing it in California
- · Mark Twain, wit and wisecracks

This service is provided by lan Davis.



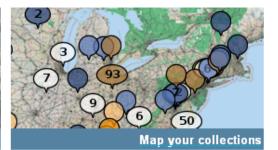


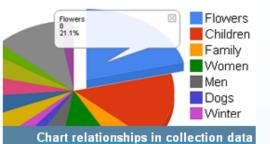
Login or Sign up



Present Visual Collections

ginia, Richmond Division, Civil Action Case #2819- Lorna AFSC Work in the Prince Edward County Virginia Sch ernor J. Lindsay Almond at a press conference declaring the Browse collection timelines





Viewshare is a free platform for generating and customizing views (interactive maps, timelines, facets, tag clouds) that allow users to experience your digital collections.

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Get Started

Import Collections	Generate Views	Embed and Share	
g/views/trow/the-phay-collection/	Generate distinct interactive visual interfaces to your digital collections	Just copy-paste to embed your interface in any webnade. Provide your users with	



viewshare.org



ttp://opencontext.org/





- Linked Ancient World Metadata Institute
 - Archeologists, Numismatists, Classists
 - Quasi- Digital Humanities
- Doing their own Linked Data
- Excited about Libraries helping
 - UIAF, id.loc, FAST, OCLC #'s etc...
- Actively modeling ancient place names

W3C Linked Library Data Incubator



- Collected, Curated and Clustered over 50 Use Cases
- Mined use cases for functional requirements and design patterns
- Recommendations to W3C
- http://www.w3.org/2005/Incubator/Ild/

Use Case Categories



- Bibliographic Data
- Authority Data
- Archives & Heterogeneous Metadata
- Citations
- Digital Objects
- Collections
- Social & New Uses

So What Can You Do?



- Iterative changes to metadata
- Adding identifiers where you can
 - Unit Titles, Component Levels
- Access points at series, subseries, folder
- Relationships rather than (or in addition to) prose
- RDFa embedded in HTML Finding Aids
- Start playing with tools and techniques

Daily Worker



See all finding aids in this repository

Table of Contents

Descriptive Summary
Historical/Biographical Note
Scope and Content Note and Arrangement
Access Points
Administrative Information

Series I: Biographical Files Series II: Subject Files

Container List

Series III: Oversize Material

Print / View Finding Aid as Single Page



Guide to the Daily Worker and Daily World Photographs Collection PHOTOS.223

Elmer Holmes Bobst Library 70 Washington Square South New York, NY, 10012 (212) 998-2630 tamiment.wagner@nyu.edu

Tamiment Library / Wagner Archives Collection processed by Hillel Arnold. Finding aid by Hillel Arnold, Erika Gottfried and Michael Nash. This finding aid was produced using the Archivists' Toolkit July 16, 2012 English Describing Archives: A Content Standard

Access Points

Subject Names

- Abernathy, Ralph, 1926-1990 -- |v Pictorial works
- Abzug, Bella S., 1920-1998. -- |v Pictorial works
- Ali, Muhammad, 1942- -- |v Pictorial works
- Allende Gossens, Salvador, 1908-1973 -- |v Pictorial works
- Amter, I. (Israel), b. 1881 -- |v Pictorial works
- · Arafat, Yasir, 1929-2004 -- |v Pictorial works
- Bloor, Ella Reeve, 1862-1951 -- |v Pictorial works
- Brezhnev, Leonid Il'ich, 1906-1982 -- |v Pictorial works
- Browder, Earl, 1891-1973. -- |v Pictorial works
- Bussi de Allende, Hortensia -- |v Pictorial works

- Cartor Timmu 1004 Lu Diatorial works



Container List

Series I: Biographical Files

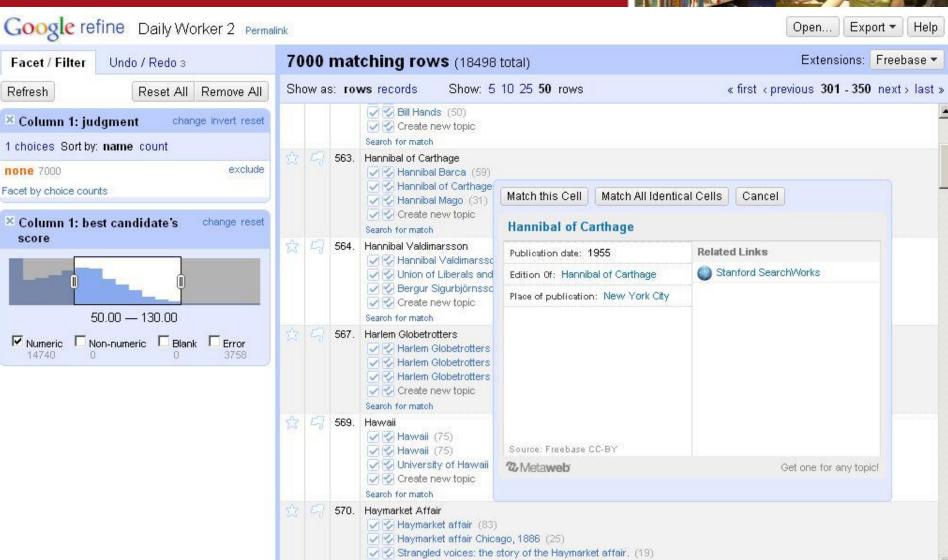
Scope and Content Note

Contains images of individuals, alone or in groups. Of particular significance are rare photographs of Communist Party of the United States of America (CPUSA) leaders including Elizabeth Gurley Flynn, Gus Hall, Ella Reeve "Mother" Bloor and Henry Winston, as well as important figures in radical politics including Lucy Parsons, Paul Robeson, Thomas Mooney and many others. This series also contains photographs of athletes, musicians, actors, politicians, clergy, and individuals not linked to the CPUSA or the American Left.

	Box	Folder	Title	Date
	Вох: 1	Folder: 1 (Photographs)	Aaron, Hank - Graphics See also: <u>Doby, Larry</u> , <u>Robinson, Frank</u>	1974
	Box: 1	Folder: 2 (Photographs)	Aaron, Hank – Pre-Press Prints	1973- 1984
	Box: 1	Folder: 3 (Photographs)	Aaron, Hank - Thermal Prints	1982- 1995
	Box: 1	Folder: 4 (Photographs)	Aaron, Hank - Prints	1973- 1979
	Box: 1	Folder: 5 (Photographs)	Abascal, Salvador	undated
	Box: 1	Folder: 6 (Photographs)	Abate, Catherine	1998
	Box: 1	Folder: 7 (Photographs)	Abbado, Claudio	1979

Refine

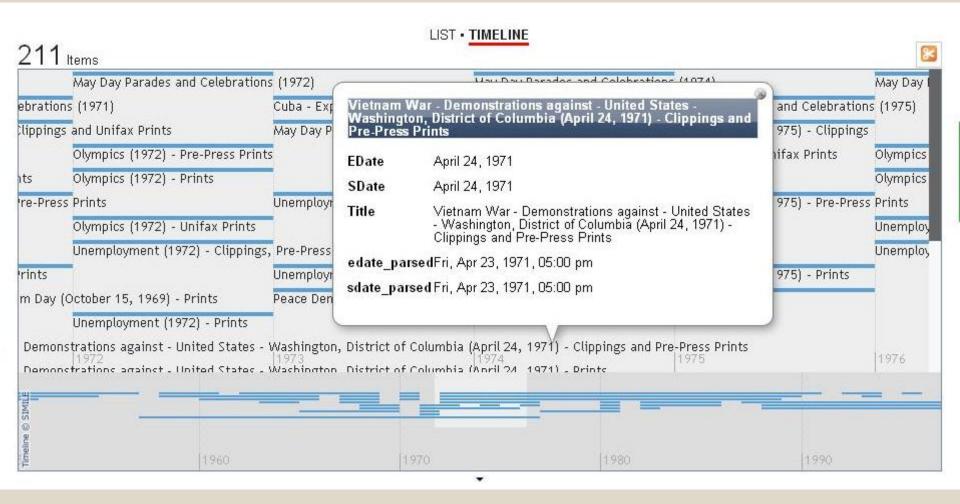




Create new topic

ViewShare

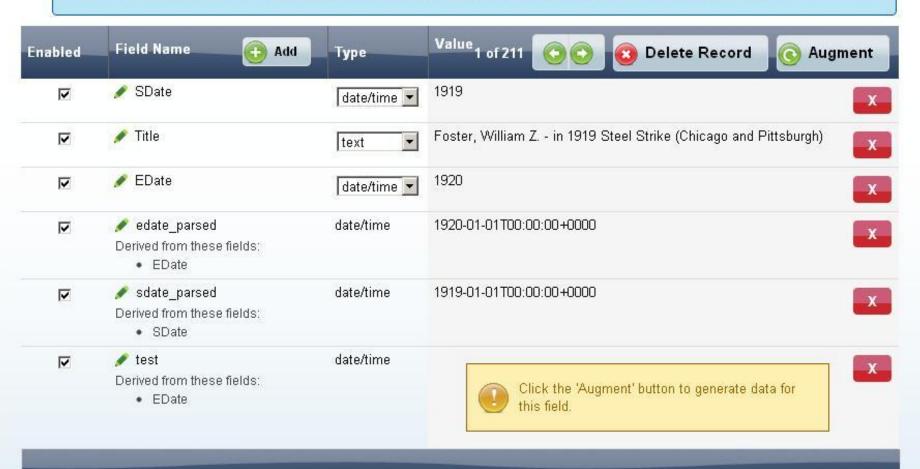








Tip: If you want to view your data on a Map you need latitude, longitude information. If your data includes lat/long information modify the type for this field to "location". If you do not have lat/long data, you can augment your data by specifying which fields (e.g. city, state, zip) to generate such information (click "Add+" button next to the Field Name in the top banner).



LC Bibliographic Framework Transition





Akara is a platform for developing data services available on the Web, using REST architecture. Akara is open source software written in Python and C.

ABOUT

DOWNLOAD

DISCUSS



Akara provides the data pipeline for Zepheira's Freemix and for The Library of Congress's Recollection project. The Reference Extract project, a collaboration of The MacArthur Foundation, OCLC, and Zepheira, uses Akara to process information about topics and related Web pages to provide measures of page credibility. Cleveland Clinic used Akara as a platform for processing patient data records. Akara provided pluggable content service modules for the Knowledge Discovery System at Elsevier. Sun

© 2010 Zepheira LLC



CC BY-SA 3.0



Contact

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- Distributed information ecosystem
 - Linking Data
 - Focus on identification over description
- Create navigable, browsable information landscapes
- Relationships between resources weave context & enrich user experiences

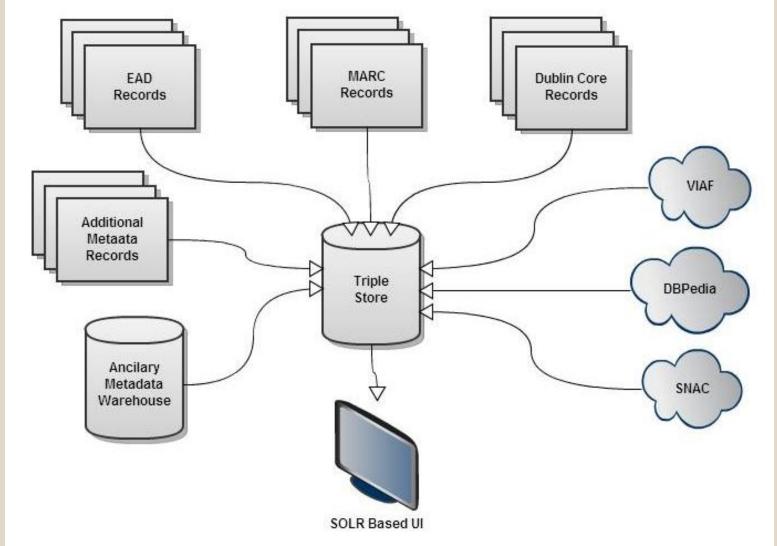
Next Steps & Works in Progress



- Provenance
- Licensing
- Best Practices, Modeling & Infrastructure
- DCMI & W3C Work! (Add links on new slide)
 - DC Abstract Model / Application Profiles / Description Sets
 - Vocabulary Management
 - Schema.org mappings
 - Provenance Ontology
- Interface Design

New Interfaces







- Providing models & resources for scholars and researchers
- Digital Humanities (LAWDI)
- Adding authoritative, stable URIs to the grid that others can link to
- Pouring our history of info mgt into tools like Freebase



corey.harper@nyu.edu 212.998.2479 @chrpr