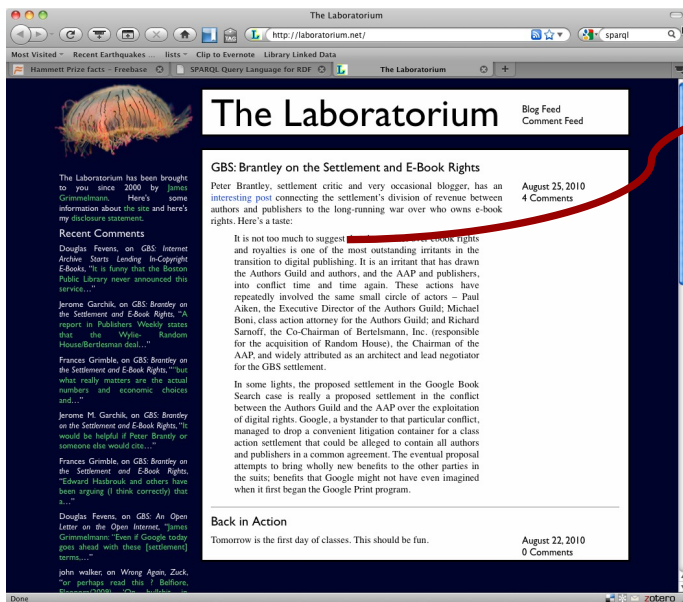




# Introduction to the semantic web

and linked data

# The “regular” Web is a web of documents



The Laboratorium

Blog Feed  
Comment Feed

## The Laboratorium

The Laboratorium has been brought to you since 2000 by James Grimmelmann. Here's some information about the site and here's my disclosure statement.

Recent Comments

Douglass Feenox, on [GBS: Brantley on the Settlement and E-Book Rights](#), "A report in Publishers Weekly raises that the Wylie-Random House/Bertelsmann deal..."

Jerome M. Garchik, on [GBS: Brantley on the Settlement and E-Book Rights](#), "It would be helpful if Peter Brantley or someone else would..."

Frances Gremble, on [GBS: Brantley on the Settlement and E-Book Rights](#), "Several Habrbrink and others have been arguing (I think correctly) that..."

Douglass Feenox, on [GBS: An Open Letter on the Open Internet](#), "James Grimmelmann: 'Even if Google today gets ahead with these [settlement] terms...'"

john walker, on [Wiang Again, Zuck](#), "or perhaps read this: 'Beliefs..."

### GBS: Brantley on the Settlement and E-Book Rights

Peter Brantley, settlement critic and very occasional blogger, has an interesting post connecting the settlement's division of revenue between authors and publishers to the long-running war over who owns e-book rights. Here's a taste:

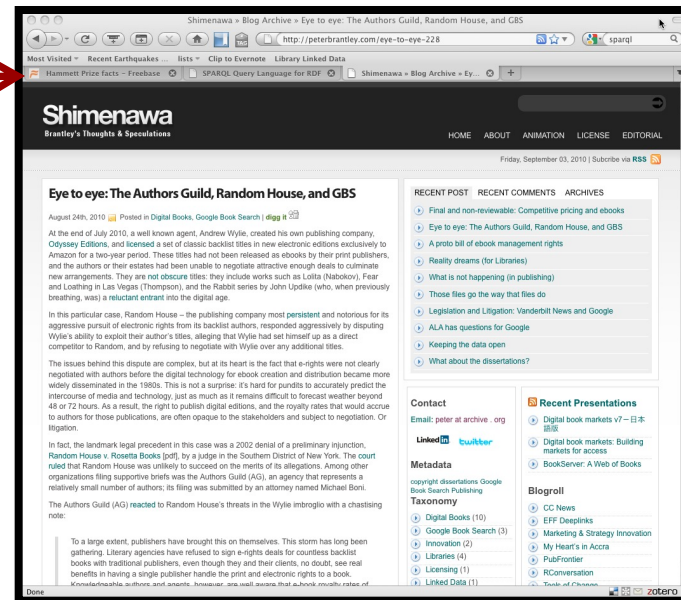
It is not too much to suggest that the e-book rights and royalties is one of the most outstanding irritants in the transition to digital publishing. It is an irritant that has drawn the Authors Guild and authors, and the AAP and publishers, into conflict time and time again. These actions have repeatedly involved the same small circle of actors – Paul Aiken, the Executive Director of the Authors Guild; Michael Boni, class action attorney for the Authors Guild; and Richard Saroff, the Co-Chairman of Bertelsmann, Inc. (responsible for the acquisition of Random House), the Chairman of the AAP, and widely attributed as an architect and lead negotiator for the GBS settlement.

In some lights, the proposed settlement in the Google Book Search case is really a proposed settlement in the conflict between the Authors Guild and the AAP over the exploitation of digital rights. Google, a bystander to that particular conflict, managed to drop a convenient litigation container for a class action settlement that could be alleged to contain all authors and publishers in a common agreement. The eventual proposal attempts to bring wholly new benefits to the other parties in the suits; benefits that Google might not have even imagined when it first began the Google Print program.

Back in Action

Tomorrow is the first day of classes. This should be fun.

August 22, 2010  
0 Comments



Shimenawa » Blog Archive » Eye to eye: The Authors Guild, Random House, and GBS

HOME ABOUT ANIMATION LICENSE EDITORIAL

Friday, September 03, 2010 | Subscribe via RSS

## Eye to eye: The Authors Guild, Random House, and GBS

August 24th, 2010 | Posted in [Digital Books](#), [Google Book Search](#) | [flag it](#)

At the end of July 2010, a well known agent, Andrew Wylie, created his own publishing company, Odyssey Editions, and licensed a set of classic backlist titles in new electronic editions exclusively to Amazon for a two-year period. These titles had not been released as ebooks by their print publishers, and the authors or their estates had been unable to negotiate attractive enough deals to cumulate new arrangements. They are not obscure titles: they include works such as *Lolita* (Nabokov), *Fear and Loathing in Las Vegas* (Thompson), and the *Rabbit* series by John Updike (who, when previously breathing, was a reluctant entrant into the digital age).

In this particular case, Random House – the publishing company most persistent and notorious for its aggressive pursuit of electronic rights from its backlist authors, responded aggressively by disputing Wylie's ability to exploit their author's titles, alleging that Wylie had set himself up as a direct competitor to Random, and by refusing to negotiate with Wylie over any additional titles.

The issues behind this dispute are complex, but at its heart is the fact that e-rights were not clearly negotiated with authors before the digital technology for ebook creation and distribution became more widely disseminated in the 1990s. This is not a surprise: it's hard for pundits to accurately predict the intercourse of media and technology, just as much as it remains difficult to forecast weather beyond 48 or 72 hours. As a result, the right to publish digital editions, and the royalty rates that would accrue to authors for those publications, are often opaque to the stakeholders and subject to negotiation. Or litigation.

In fact, the landmark legal precedent in this case was a 2002 denial of a preliminary injunction, *Random House v. Rosetta Books [pdf]*, by a judge in the Southern District of New York. The court ruled that Random House was unlikely to succeed on the merits of its allegations. Among other organizations filing supportive briefs was the Authors Guild (AG), an agency that represents a relatively small number of authors; its filing was submitted by an attorney named Michael Boni.

The Authors Guild (AG) reacted to Random House's threats in the Wylie imbroglio with a chastising note:

To a large extent, publishers have brought this on themselves. This storm has long been gathering. Literary agencies have refused to sign e-rights deals for countless backlist books with traditional publishers, even though they and their clients, no doubt, see real benefits in having a single publisher handle the print and electronic rights to a book. Knowledgeable authors and agents, however, are well aware that e-book royalty rates of

RECENT POST RECENT COMMENTS ARCHIVES

- Final and non-reviewable: Competitive pricing and ebooks
- Eye to eye: The Authors Guild, Random House, and GBS
- A proto bill of ebook management rights
- Reality dreams (for Libraries)
- What is not happening (in publishing)
- Those files go the way that files do
- Legislation and Litigation: VanderBilt News and Google
- ALA has questions for Google
- Keeping the data open
- What about the dissertations?

Contact

Email: [peter at archive .org](mailto:peter at archive .org)

Linked [in](#) [bookher](#)

Metadata

copyright dissertations Google Book Search Publishing

Taxonomy

- Digital Books (10)
- Google Book Search (3)
- Innovation (2)
- Libraries (4)
- Licensing (1)
- Linked Data (1)

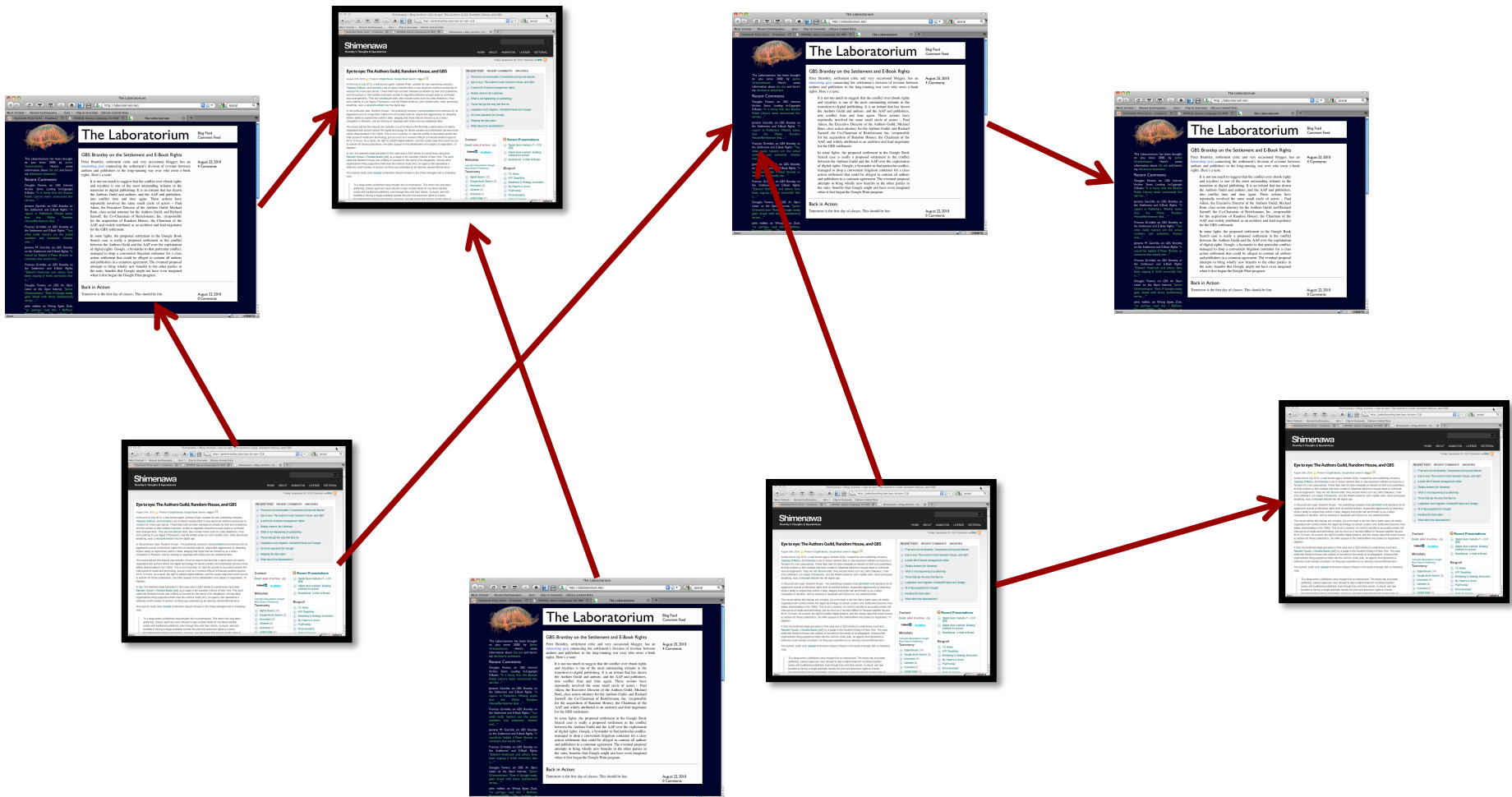
Recent Presentations

- Digital book markets v7 – [日本語]
- Digital book markets: Building markets for access
- BookServer: A Web of Books

Blogroll

- CC News
- EFF Deeplinks
- Marketing & Strategy Innovation
- My Heart's in Accra
- PubFrontier
- ReConversation
- Study of Change

# The “regular” Web is a web of documents



# The information “inside”

<p>Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut **Iceland** minim veniam, quis nostrud exercitation ullamco laboris **2014** aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur **volcano eruption** occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum</p>

# The “semantic web” is a web of data

Here’s a picture of my dog in Berkeley



# The “semantic web” is a web of data

Here's a picture of my dog in **Berkeley**



located in

California

longitude

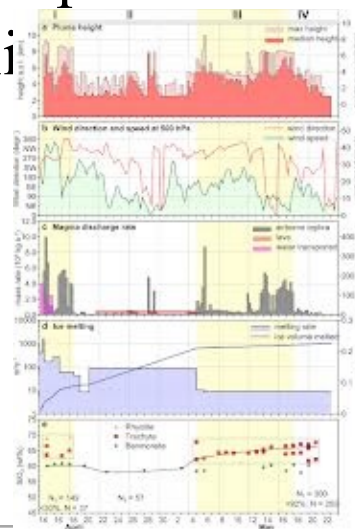
W 122° 16' 21"

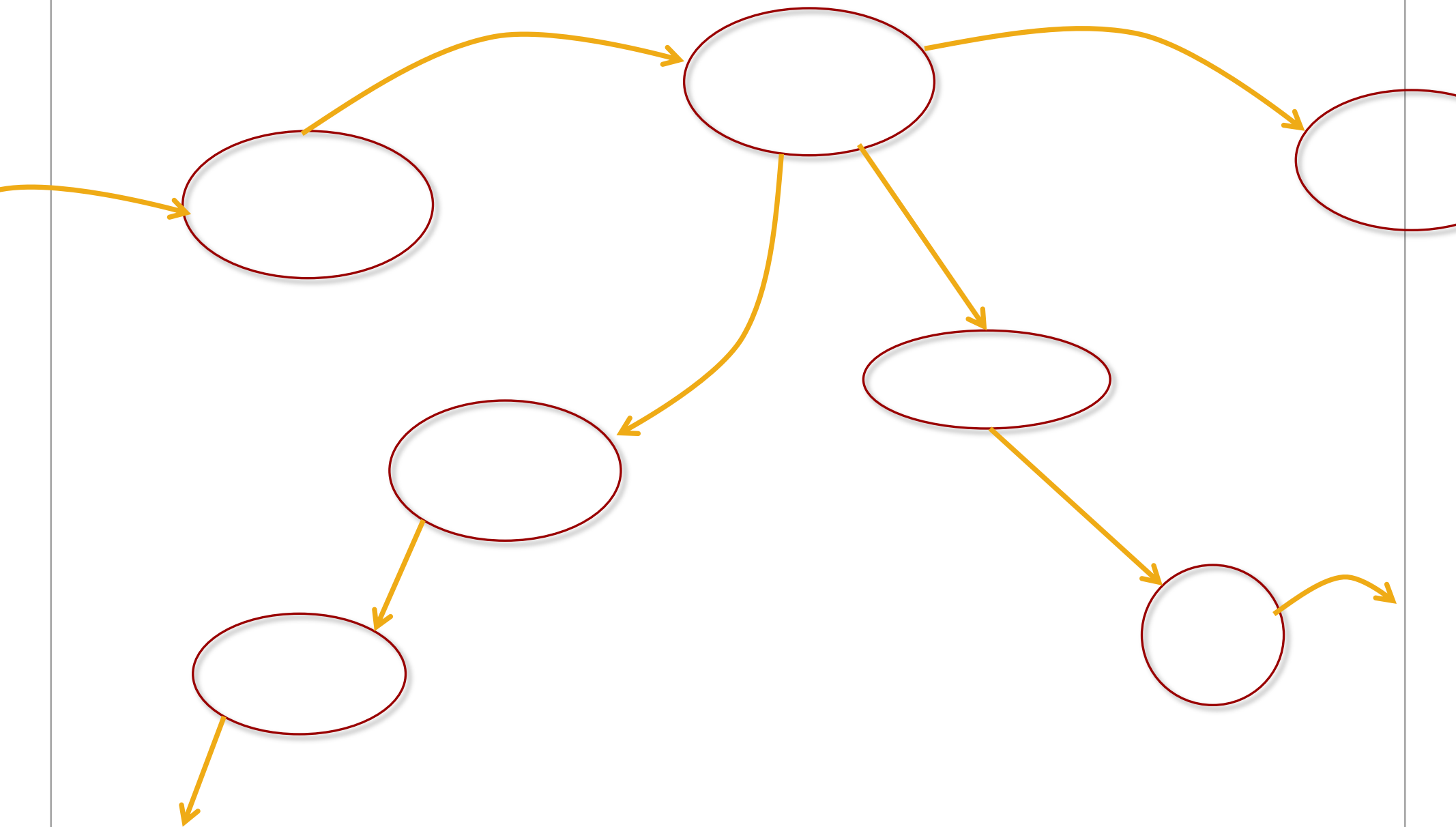
latitude

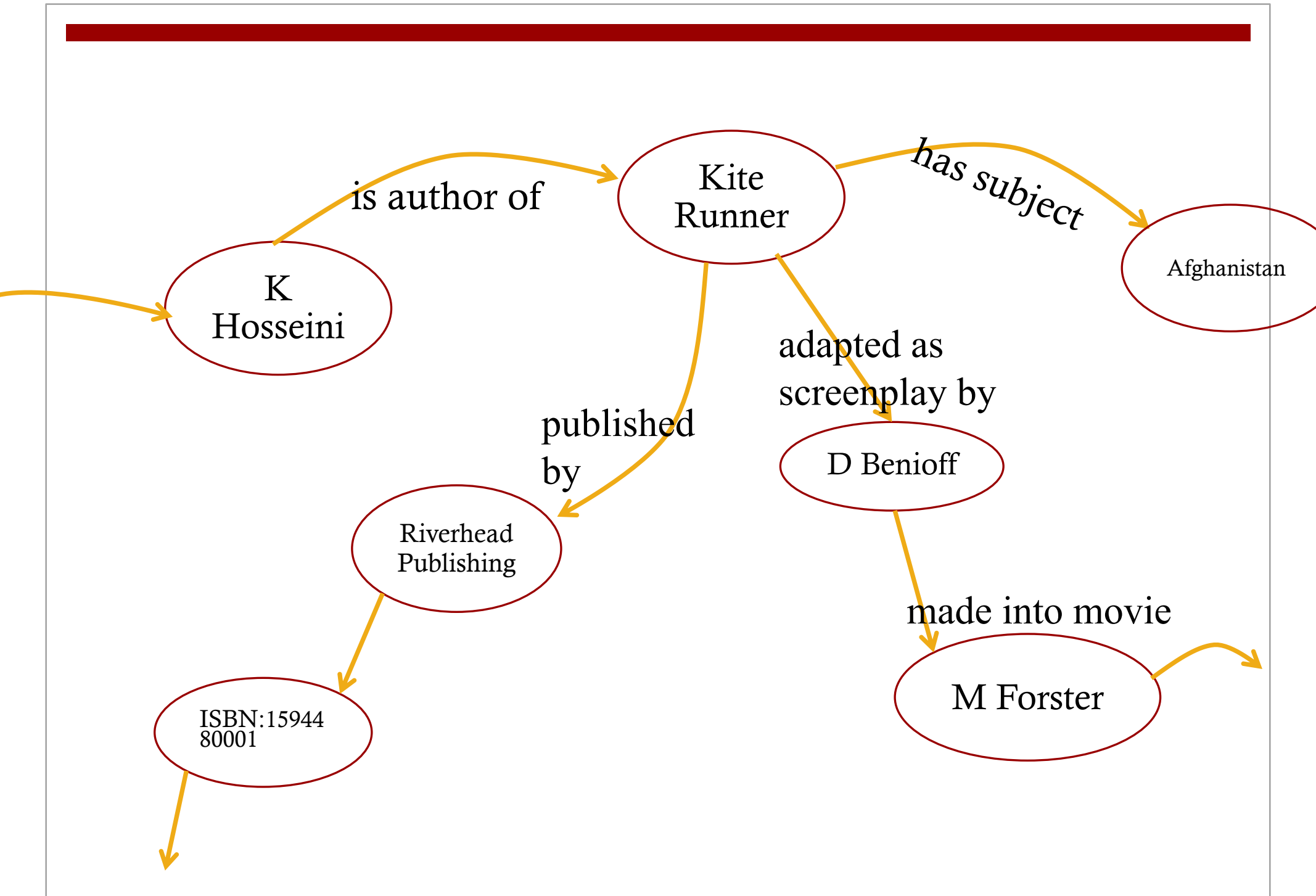
N 37° 52' 17"

# The information “inside”

<p>Lorem ipsum dolor sit amet, consectetur adipiscing  
sed do eiusmod tempor incididunt ut labore et dolore n  
aliqua. Ut **Iceland** minim veniam, quis nostrud  
exercitation ullamco laboris **2014** aliquip ex ea com  
consequat. Duis aute irure dolor in reprehenderit in vo  
velit esse cillum dolore eu fugiat nulla pariatur. Except  
**volcano eruption** occaecat cupidatat non proident  
in culpa qui officia deserunt mollit laborum</p>







## 2012 Ford Mustang Coupe



Model Shown V6, MSRP \$22,310

STARTING AT:  
**\$22,310**

City MPG:

**19**



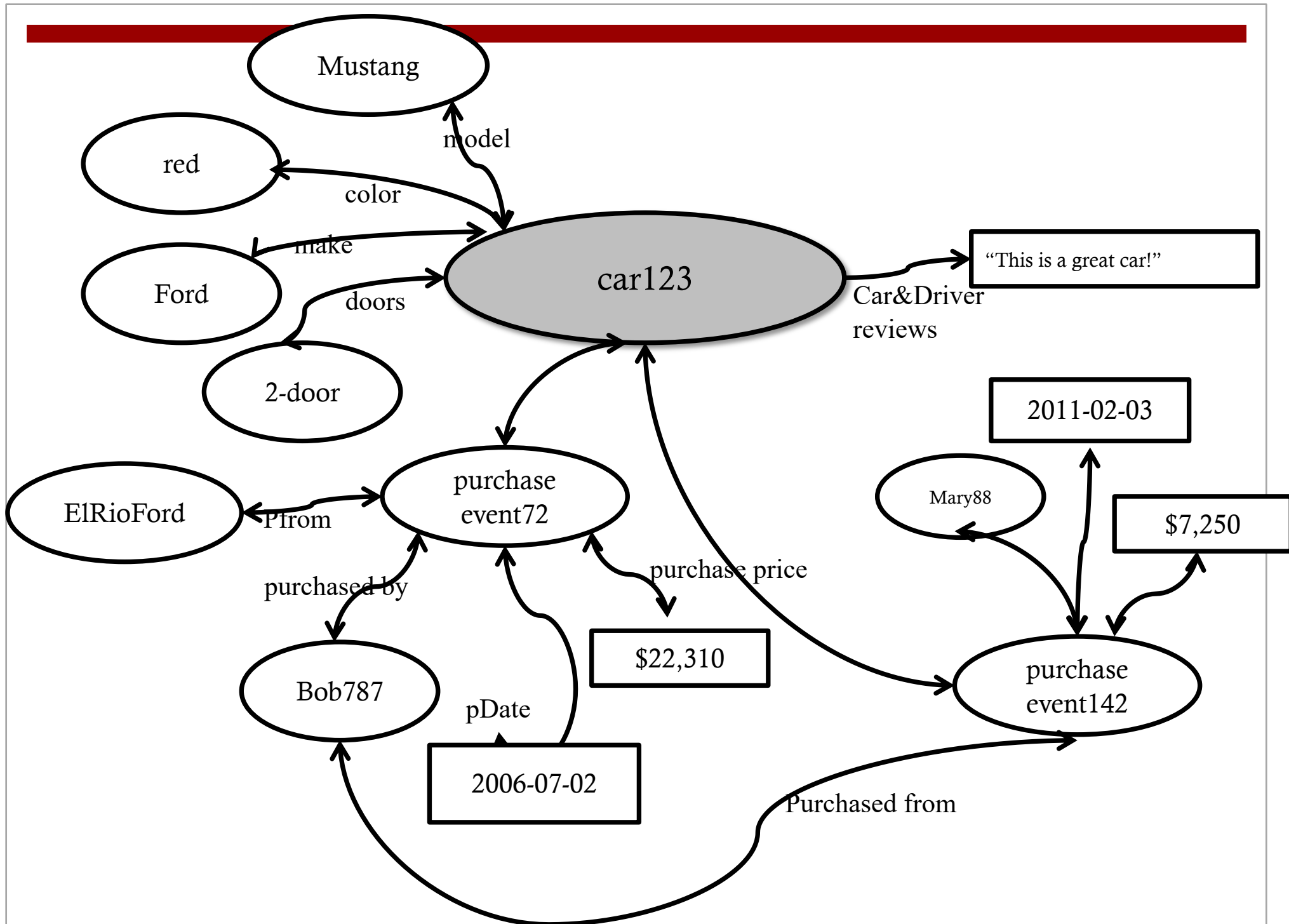
Hwy MPG:

**29**

Actual rating will vary with options,  
driving conditions, habits and vehicle  
condition.

**Color: Red Candy Metallic Tinted Clearcoat**







# Identifiers

# Language ambiguity

dog =



# Language ambiguity

dog =



**IDa87nn3**



**IDht4432**

# Internationalization (i18n)



dog (lang=en)

hund (lang=de)

perro (lang=sp)

chien (lang=fr)

**IDa87nn3**



# Rules for identifiers

## 1. Unique... within a domain

Karen has a web site with file `index.html`      `kcoyle.net/index.html`

Google has a web site with file `index.html`      `google.com/index.html`

# Rules for identifiers

## 2. Consistent.

Same identifier always identifies the same thing.

# Rules for identifiers

## 3. Persistent.

The identifier does not change.

Smith, John, 1946-2009

# Rules for identifiers

## 4. In a standard format

urn:ISBN:1-46492-149-0

<http://id.loc.gov/authorities/names/n89613425>

# Four rules of linked data

- 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, using the standards (RDF, SPARQL)
- Include links to other URIs. so that they can discover more things.

# Use http URIs

<http://id.loc.gov/authorities/names/n50074013>

<http://en.wikipedia.org/wiki/Singapore>

<http://www.geonames.org/1735634/>

# Identifiers should link to useful information

LC Control No.: 48008547

LCCN Permalink: <http://lccn.loc.gov/48008547>

Type of Material: Book (Print, Microform, Electronic, etc.)

Personal Name: [Polo, Marco, 1254-1323?](#)

Uniform Title: [English 1948 \[from old catalog\]](#)

Main Title: The adventures of Marco Polo,

Published/Created: New York, John Day Co., 1948.

Description: p. cm.

CALL NUMBER: [G370 .P72 1948a](#)

VIAF

Virtual International Authority File

## Search

Select Field:

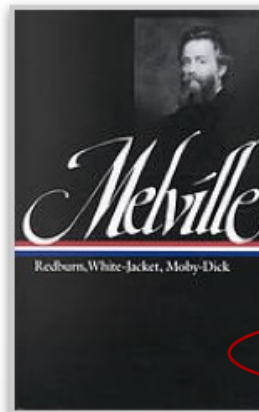
All Headings

Select Index:

All VIAF

Search

Herm



Melville, Herman, 1819-1891

Melville, Herman

1819-1891, מלویل, הרמן

Мелвил, Герман, 1819-1891

1891-1819, ملفل, هرمان

Melville, Herman (American author, 1819-1891)

VIAF ID: 27068555 (Personal)

Permalink: <http://viaf.org/viaf/27068555>

ISNI-test: [0000 0001 2125 135X](#)

# Identifiers should link to useful information

 Province of Florence ca. 484 m ✕

**A** **ADM2** second-order administrative division

**3176958**

Italy<sup>IT</sup> » Tuscany<sup>16</sup> » Florence<sup>FI</sup>

population : 973145

43.83333, 11.33333

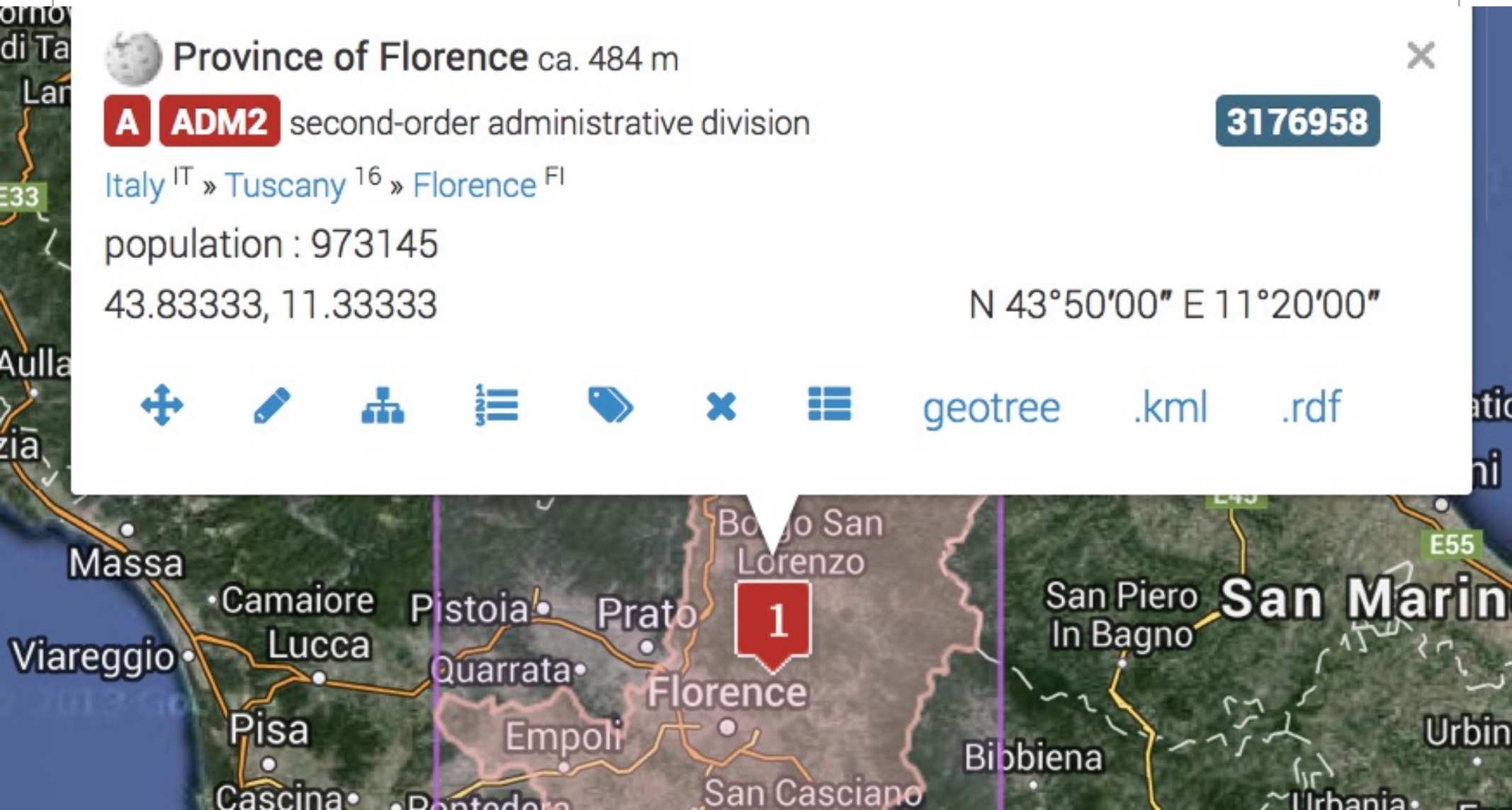
N 43°50'00" E 11°20'00"



geotree

.kml

.rdf

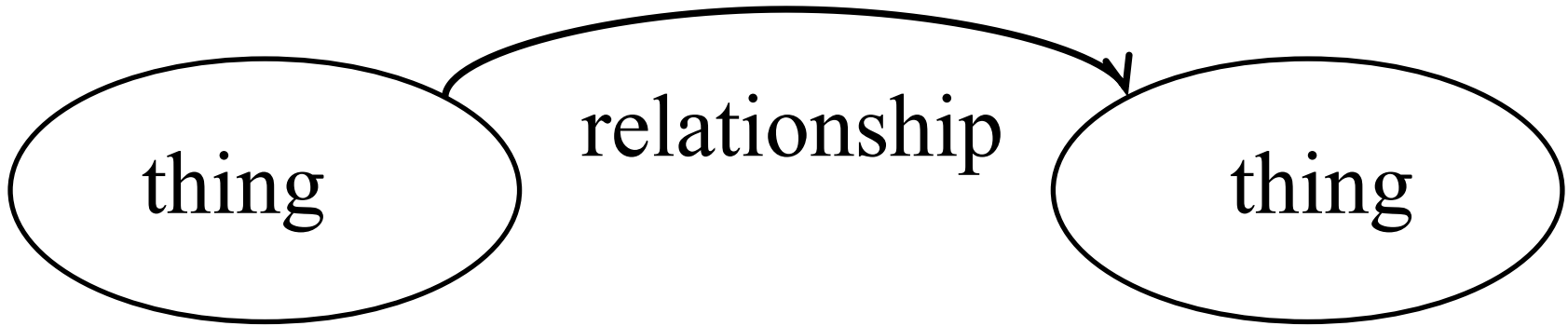




# Things and Strings

Semantic Web Basics





---

Moby  
Dick

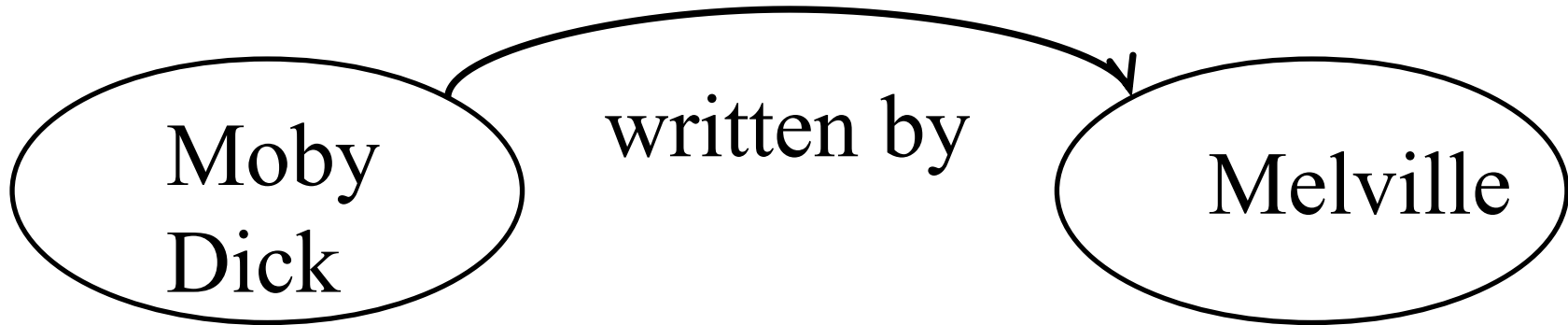
written by

Melville

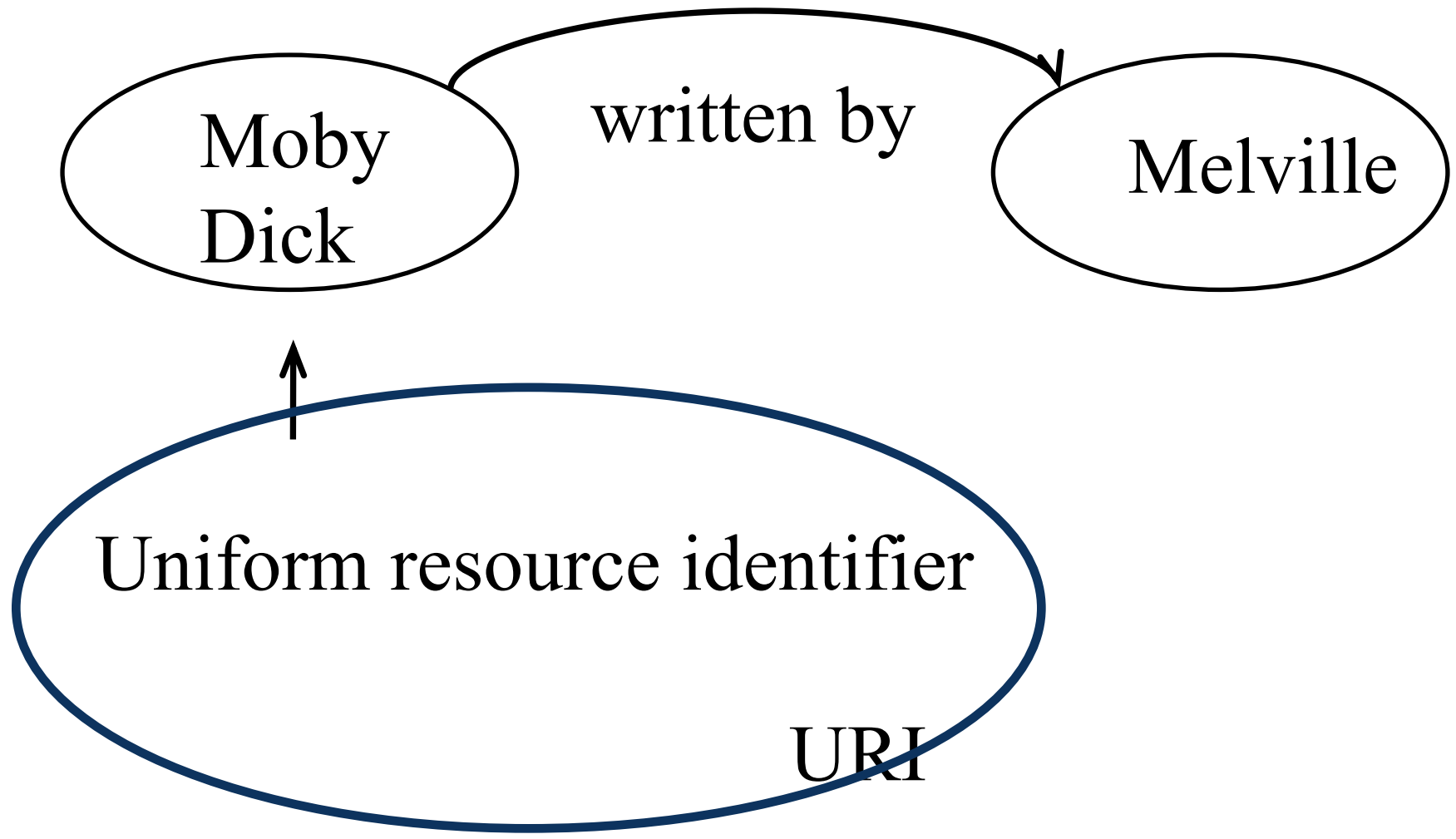
*subject*

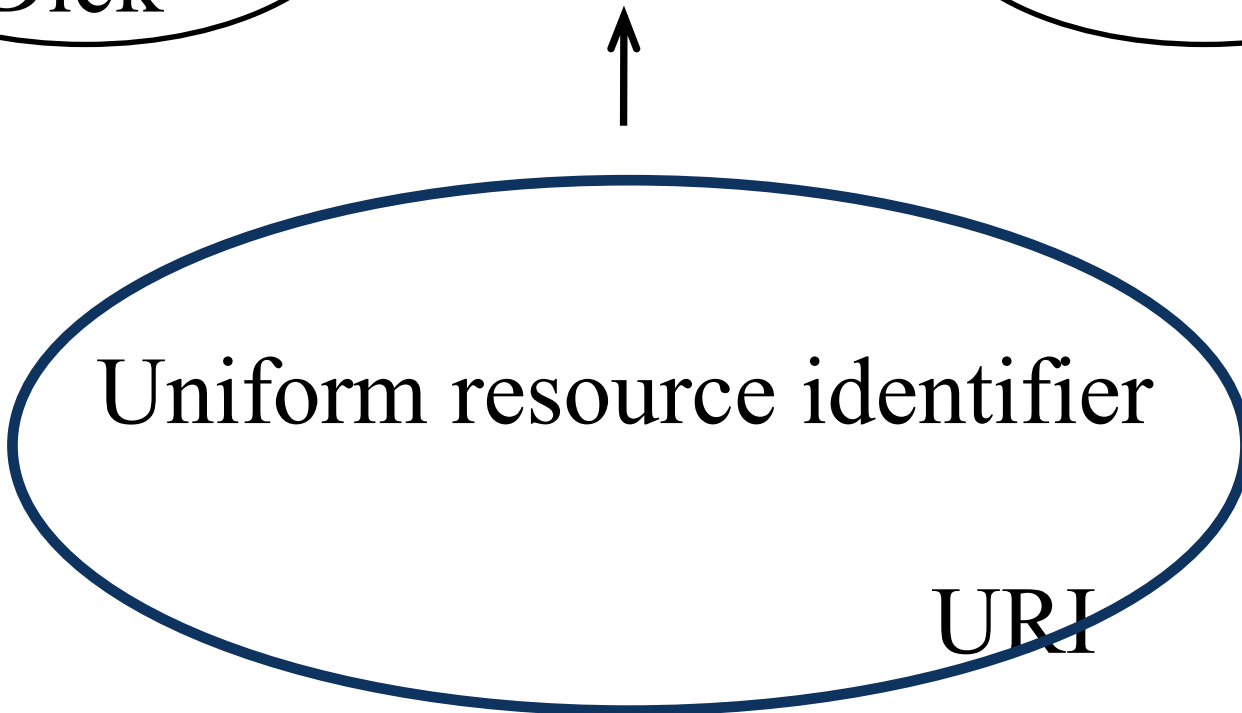
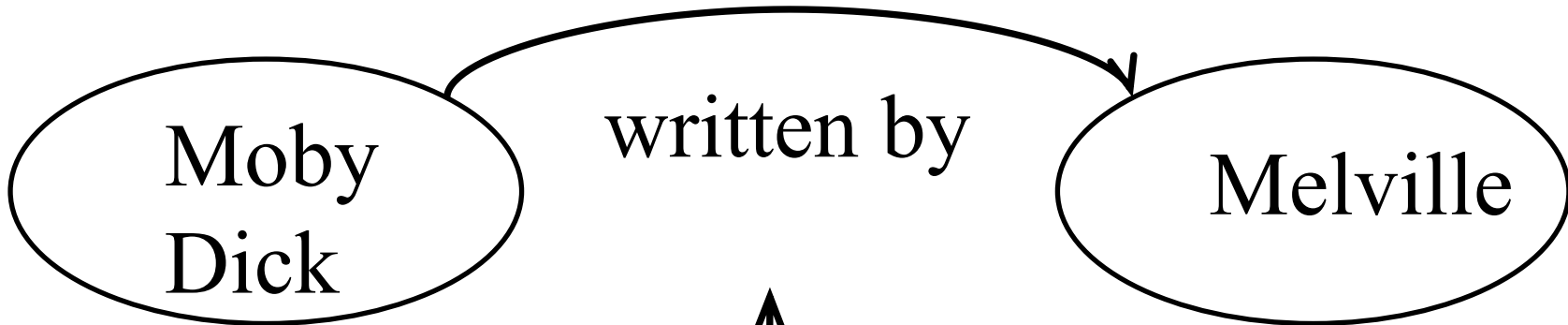
*predicate*

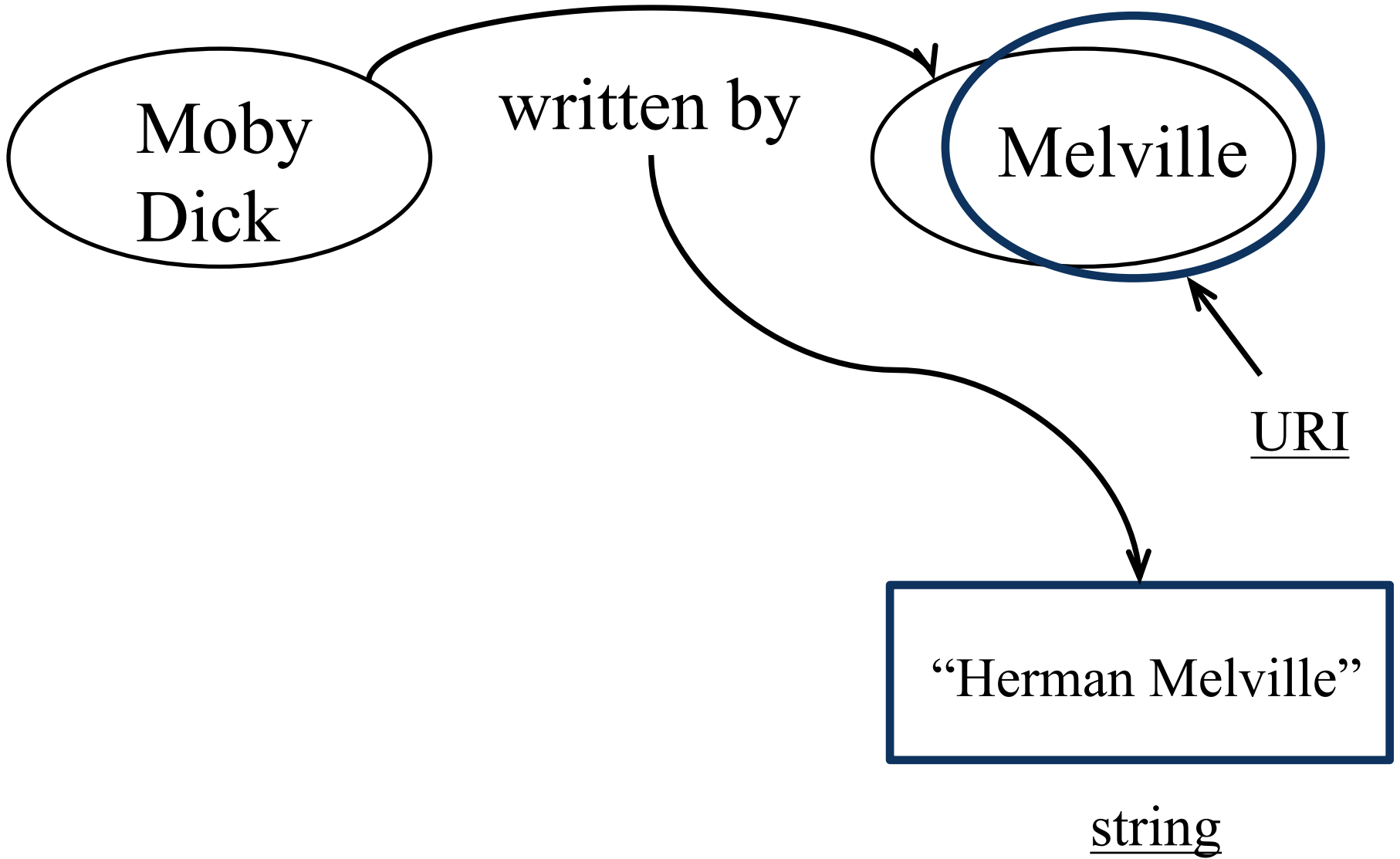
*object*



↑  
identifier







---

<http://www.worldcat.org/oclc/474017053>

<http://viaf.org/viaf/27068555>

<http://purl.org/dc/terms/creator>

WorldCat URI for book “Moby Dick”

---

<http://www.worldcat.org/oclc/474017053>

<http://viaf.org/viaf/27068555>

<http://purl.org/dc/terms/creator>

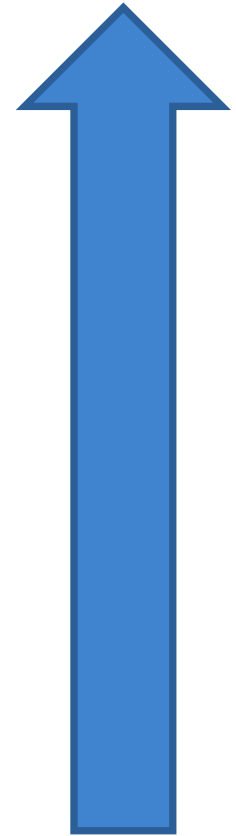
Dublin Core URI for element “creator”

---

<http://www.worldcat.org/oclc/474017053>

<http://viaf.org/viaf/27068555>

<http://purl.org/dc/terms/creator>



VIAF URI for person “Herman Melville”

---

<http://www.worldcat.org/oclc/474017053>

<http://viaf.org/viaf/27068555>

<http://purl.org/dc/terms/creator>

---

<http://www.worldcat.org/oclc/474017053>

<http://purl.org/dc/terms/creator>

---

<http://www.worldcat.org/oclc/474017053>

<http://viaf.org/viaf/27068555>

<http://purl.org/dc/terms/creator>

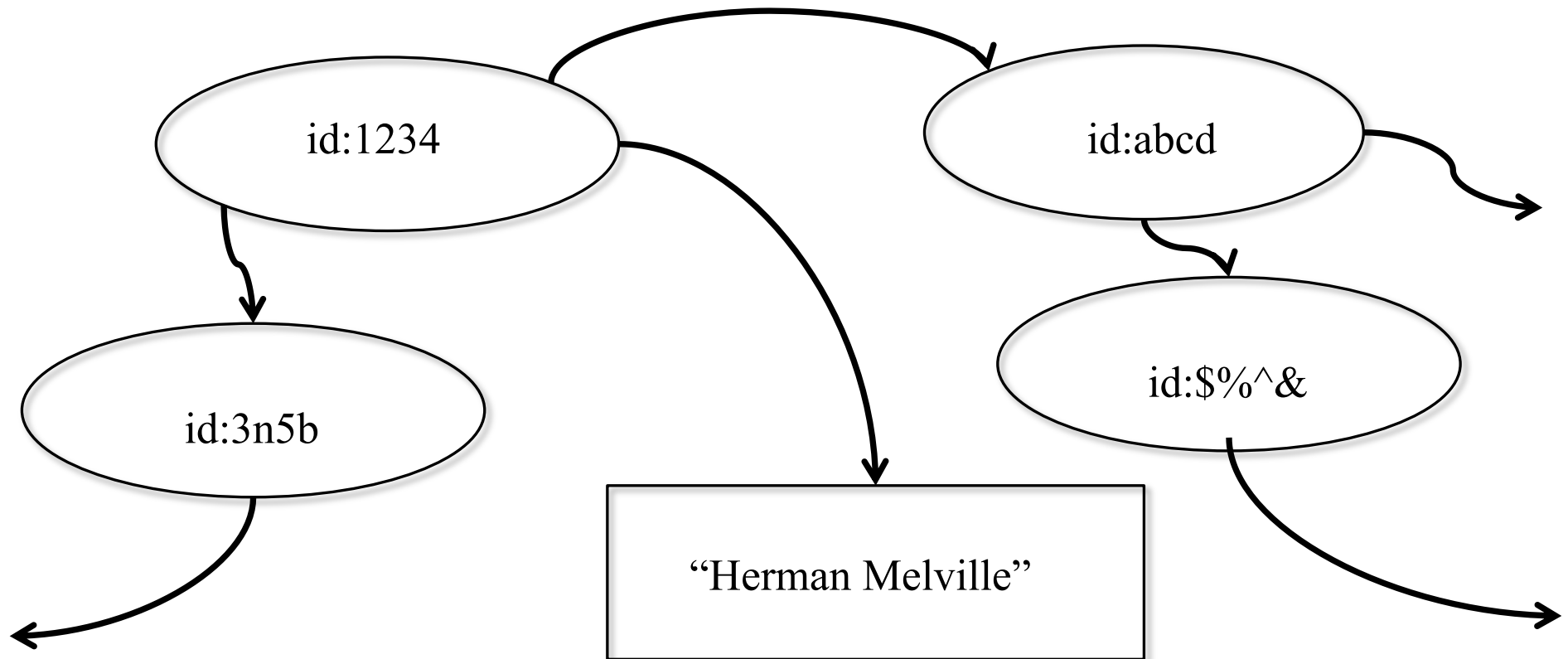
---

<http://www.worldcat.org/oclc/474017053>

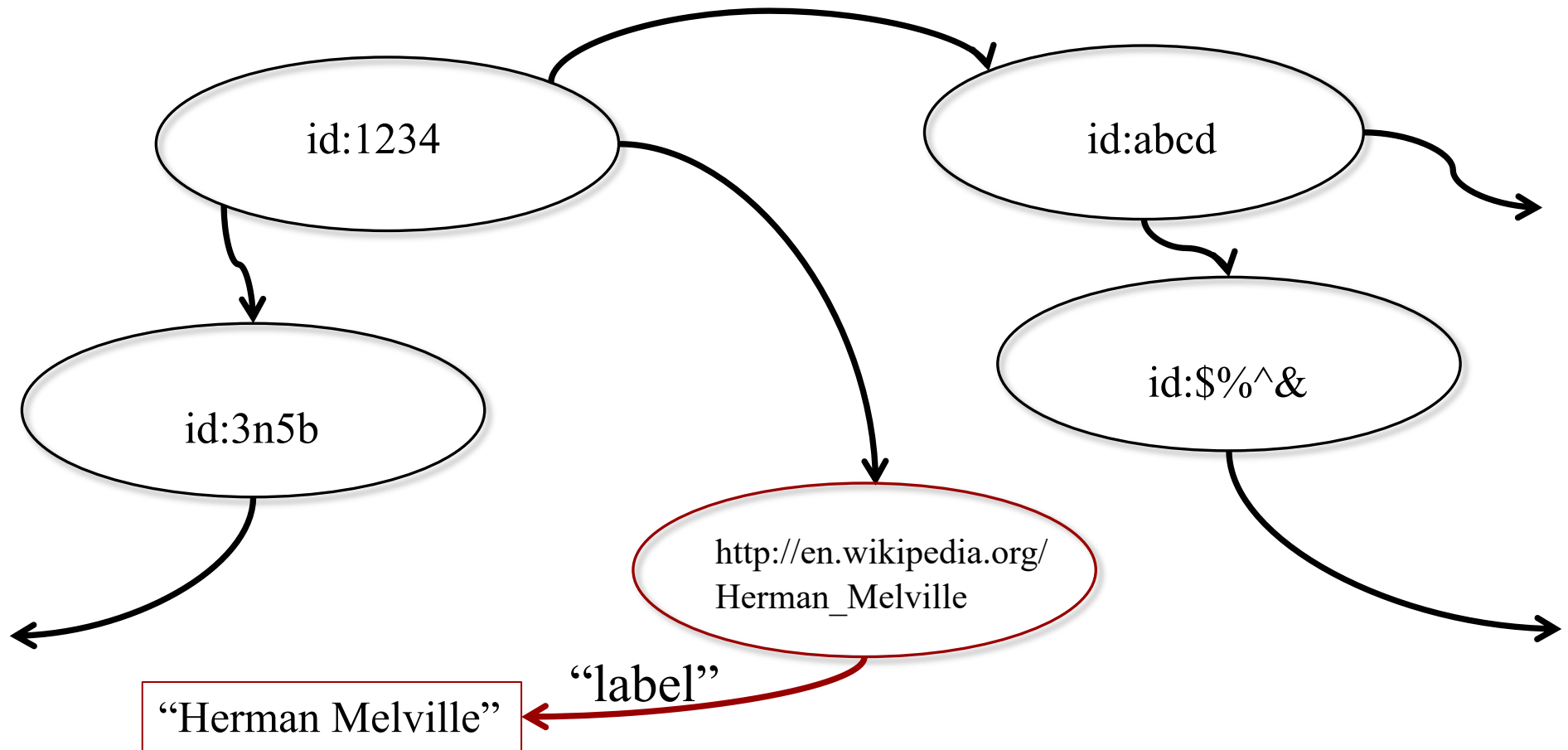
“Herman Melville”

<http://purl.org/dc/terms/creator>

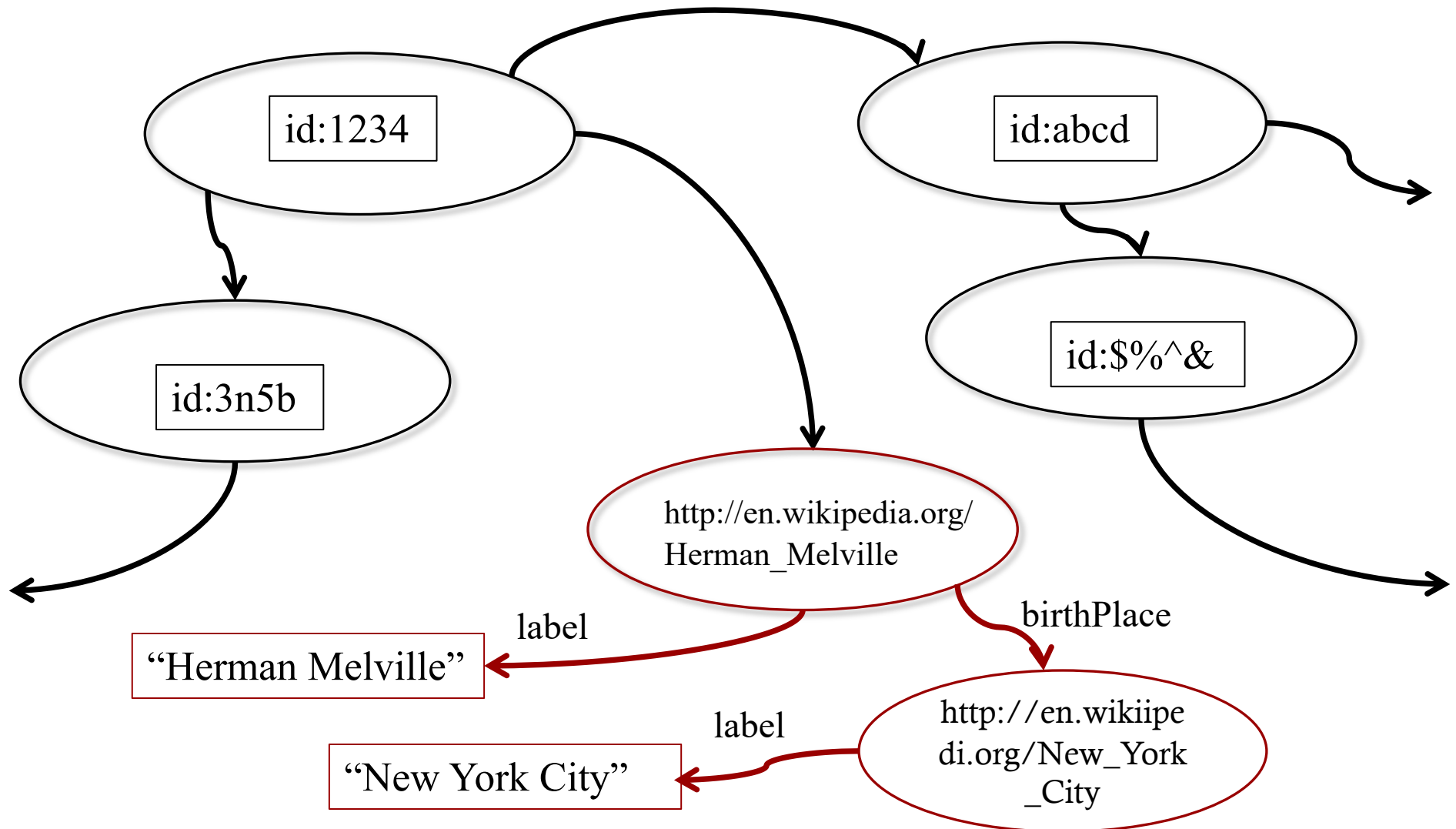
# “things and strings”

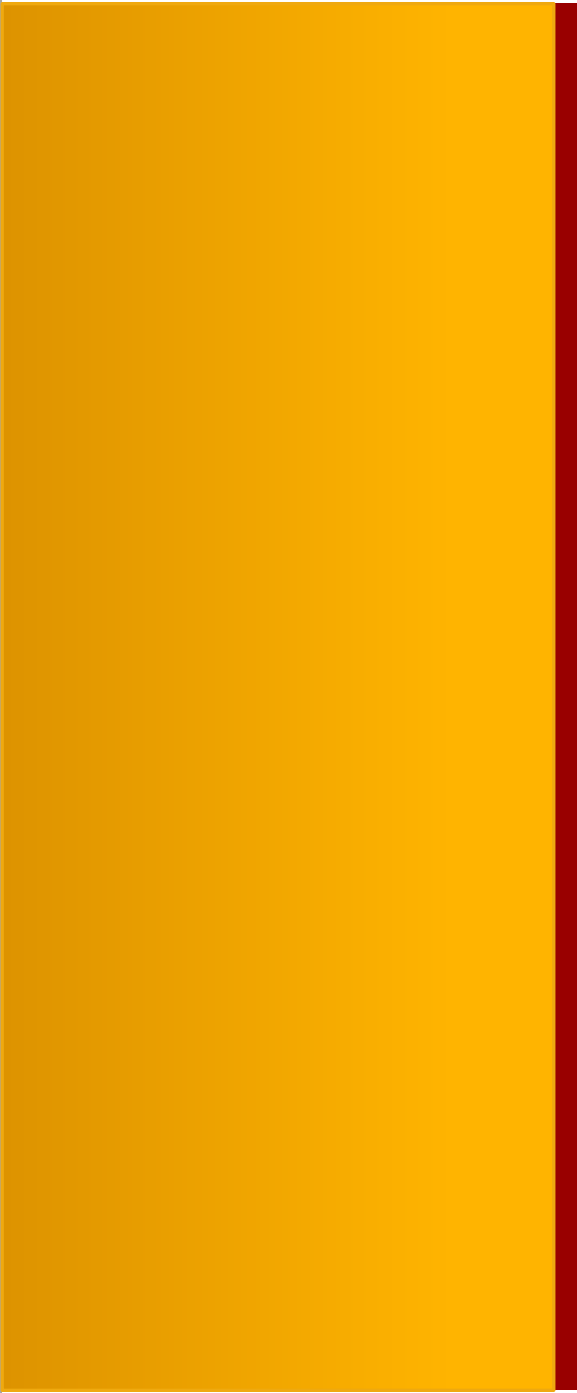


# “things and strings”



# “things and strings”





The “things” in  
library/archive data

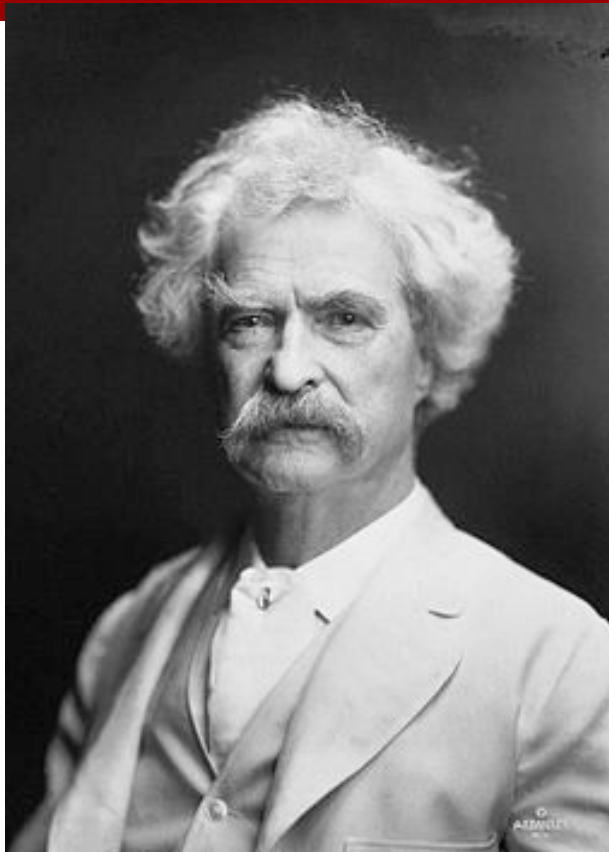
# What are the things in our metadata?

- people, corporate bodies, families
- places (as subjects, as locations, and other)
- events (conferences, legislative actions)
- topics (classification, subject headings)
- resources (books, sound recordings; works, expressions)
- physical formats, extents
- ...

How many are unique to  
library data?

~0

# People are things



[http://en.wikipedia.org/wiki/Mark\\_Twain](http://en.wikipedia.org/wiki/Mark_Twain)

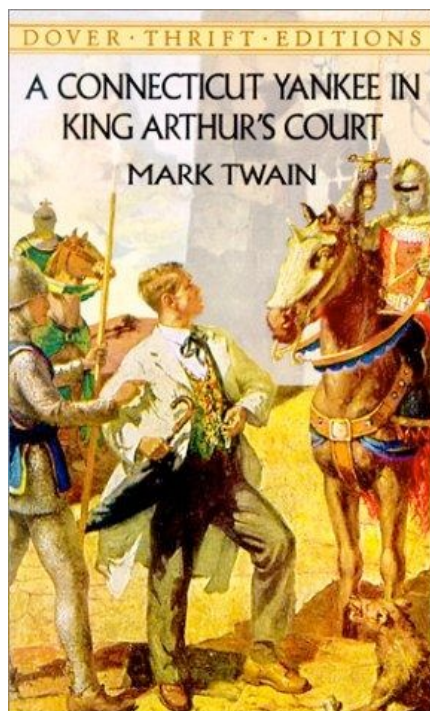


[http://openlibrary.org/authors/OL18319A/Mark\\_Twain](http://openlibrary.org/authors/OL18319A/Mark_Twain)



<http://www.amazon.com/Mark-Twain/e/B000APWHJ2/>

# Books are things

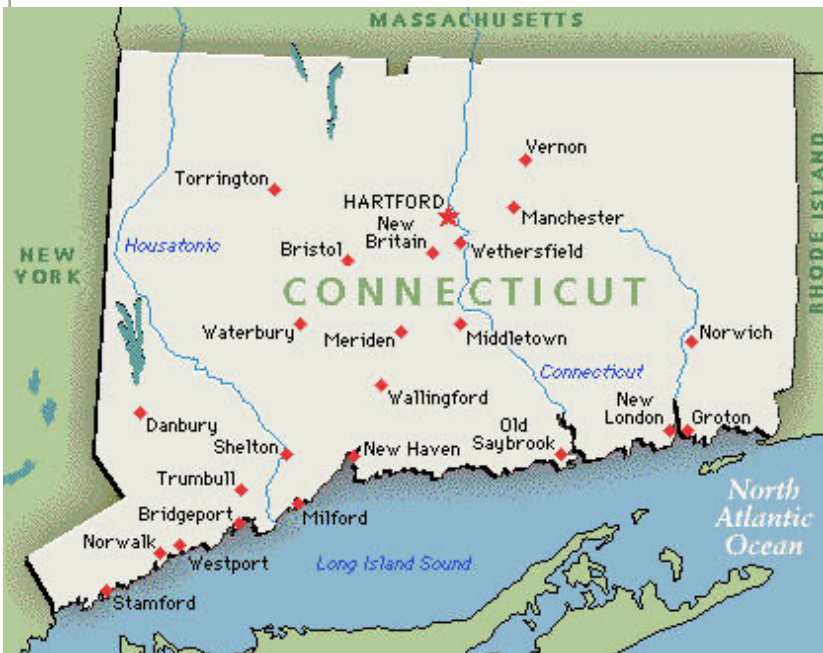


<http://openlibrary.org/works/OL54106W/>

<http://lccn.loc.gov/91132212>

<http://d-nb.info/993737730>

# Places are things



[http://www.geonames.org/maps/google\\_41.667\\_-72.666.html](http://www.geonames.org/maps/google_41.667_-72.666.html)

<http://id.loc.gov/vocabulary/countries/ctu>

<http://en.wikipedia.org/wiki/Connecticut>

# Data elements are things

## Dublin Core

<http://purl.org/dc/elements/1.1/title> (title)

## Friend of a Friend (FOAF)

[http://xmlns.com/foaf/spec/#term\\_Person](http://xmlns.com/foaf/spec/#term_Person) (Person)

[http://xmlns.com/foaf/spec/#term\\_title](http://xmlns.com/foaf/spec/#term_title) (title)

## DBpedia

<http://dbpedia.org/ontology/Place> (Place)





# Names

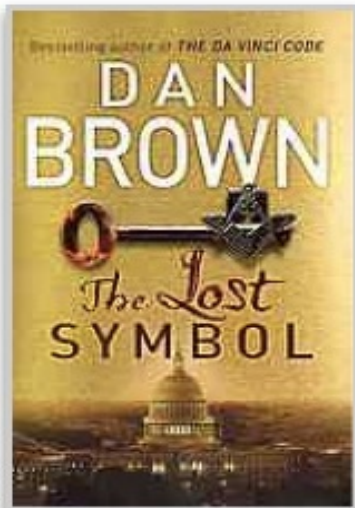
Authority control

# Names



Virtual International Authority Control (VIAF)

# Identifiers



Brown, Dan, 1964-....

Brown, Dan

1964, براون, دان,

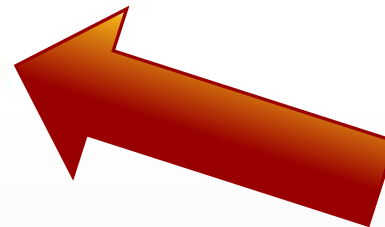
براون, دان

1964, בראון, דן,

VIAF ID: [102403515](http://viaf.org/viaf/102403515) (Personal)

Permalink: <http://viaf.org/viaf/102403515>

ISNI-test: [0000 0001 0929 7080](http://www.isni.org/0000-0001-0929-7080)



# Identifiers

## Search

Select Field:

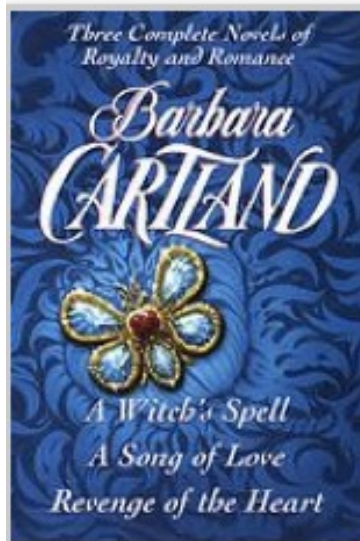
All Headings

Select Index:

All VIAF

Search Terms:

barbara cartland



Cartland, Barbara, 1902-2000



Cartland, Barbara, 1901-2000



Cartland, Barbara



Cartland, Barbara, 1902-



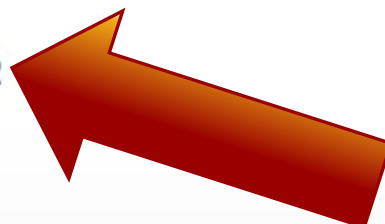
Cartland, Barbara, 1904-2000



VIAF ID: 64003092 (Personal)

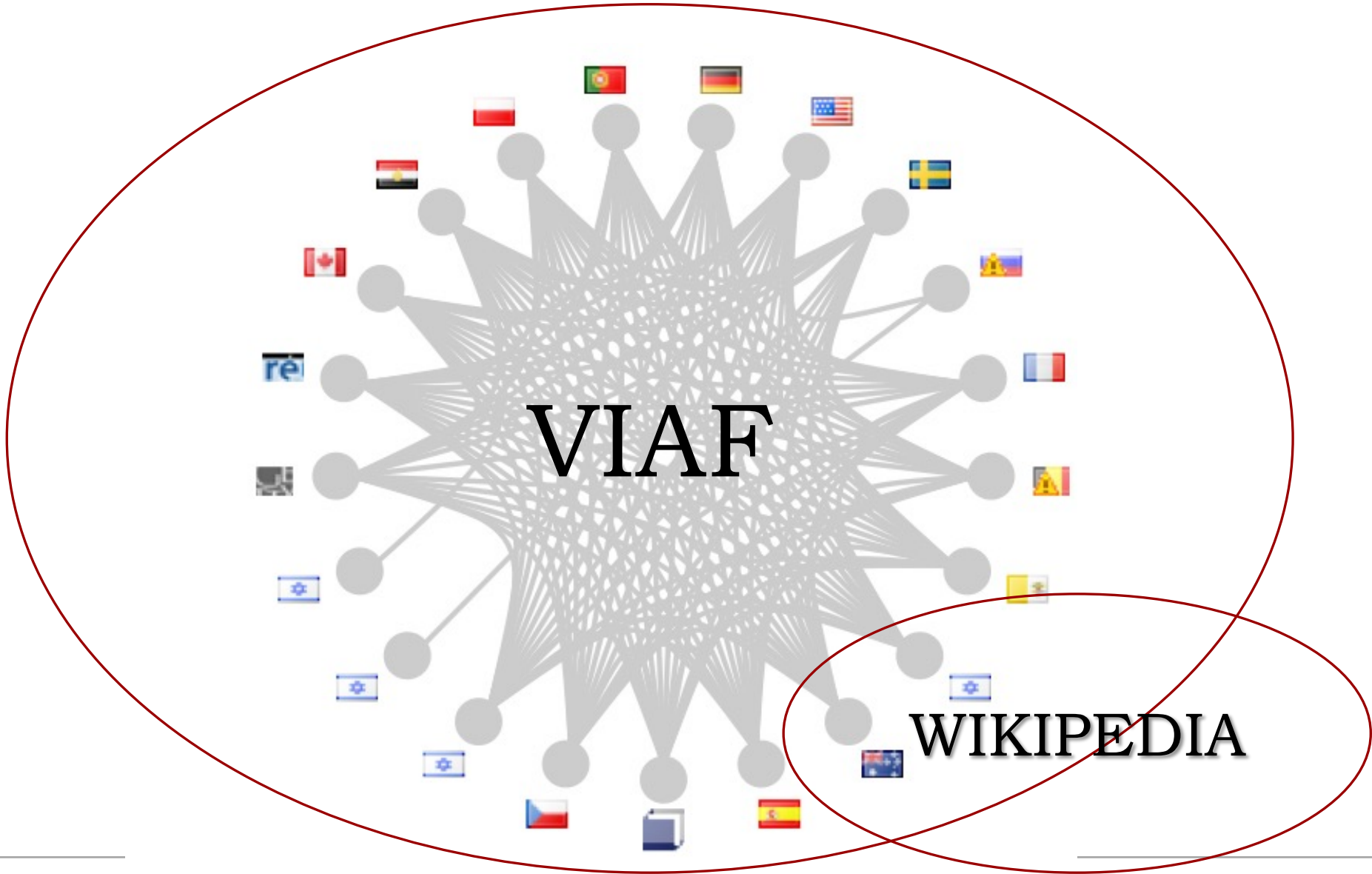
Permalink: <http://viaf.org/viaf/64003092>

ISNI-test: [0000 0001 2027 2212](https://orcid.org/0000-0001-2027-2212)



VIAF

WIKIPEDIA



SUBJECTS

AUTHORS

ADD A BOOK

LISTS

RECENTLY

ABOUT US

  
LIBRARY

A page on the web for every book.

Search

 Only show eBooks[More search option](#)

# Barbara Cartland

9 July 1901 - 21 May 2000

Dame Mary Barbara Hamilton Cartland was an English author, known for her numerous romance novels. She also became one of the United Kingdom's most popular media personalities, appearing often at public events and on television, dressed in her trademark pink and discoursing on love, health and social issues. Other than her fictional romance books, she also wrote health and cookery books, and stage plays and recorded an album of love songs. She was often billed as the Queen of Romance. ([Source](#).)

Last edited by [George](#)  
January 13, 2010 | [History](#)

Edit

[Manage Author Photos](#)

## Books by this Author

 376 books [Add another?](#)☰ Sorting by: **Most Editions** | [First Published](#) | [Most Recent](#) | [Title](#)

### [Love leaves at midnight](#)

8 editions – first published in 1978



### [Love in the Moon](#)

7 editions – first published in 1980



### [The magic of love](#)

7 editions – first published in 1977

## Related...

### SUBJECTS

[Fiction in English](#), [Large type books](#), [History](#), [Biography](#), [Love stories](#), [English](#), [Historical fiction](#), [English](#), [Love](#), [Nobility](#), [Administration of estates](#), [Authorship](#), [Courts and courtiers](#), [Inheritance and succession](#), [Love stories](#), [Man–woman relationships](#), [Napoleonic Wars](#), [1800–1815](#), [Novelists](#), [English](#), [Orphans](#), [Veterans](#), [Women](#), [Actresses](#), [Aged](#), [Blind](#), [British](#), [Care and hygiene](#), [Child labor](#)

### PLACES

[England](#), [Great Britain](#), [London \(England\)](#), [Highlands \(Scotland\)](#), [Paris \(France\)](#), [Russia](#), [Scotland](#), [Austria](#), [Bali Island \(Indonesia\)](#)

# Barbara Cartland

Scroll to:

TV Actor

Politician

Author

People



Dame Mary Barbara Hamilton Cartland, DBE, CStJ, (9 July 1901 – 21 May 2000) was an English author and London society figure, known for her numerous romance novels. She also became one of the United Kingdom's most popular media personalities, appearing often at public events and on television, dressed in her trademark pink and discoursing on love, health and social issues. Other than her fictional romance books, she also wrote health and cookery b... [More](#)

[W Read article at Wikipedia](#)

Embed this Topic



**Date of birth:** Jul 9, 1901

**Date of death:** May 21, 2000 (age 98 years)

**Place of birth:** [Edgbaston, United Kingdom](#)

**Also known as:** Mary Barbara Hamilton Cartland

These people



Edit this

Last edited M

Related



TV Actor

# Other name identifiers

- ORCID identifiers (academic)
- ISNI (publishers)
- Thomson-Reuters (publisher)
- etc.



# Lists!

and even lists of lists

# Lists, lists, lists

## RDA in RDF

- Applied Material
- Aspect Ratio
- Base Material
- Base Material for Microfilm, Microfiche, Photographic Negatives, and Motion Picture Film
- Book Format
- Broadcast Standard
- Carrier Type
- Choruses
- colour
- Colour of Moving Images
- Colour of Still Image
- Colour of Three-Dimensional Form
- Configuration of Playback Channels
- Content Type
- Conventional Collective Titles
- Digital Representation of Cartographic Content
- Emulsion on Microfilm and Microfiche
- Encoding Format
- Extent of Cartographic Resource

## MARC at LoC.gov

- Genre/form
- Relators
- Countries
- Geographic Areas
- Languages
- PREMIS
- Preservation events
- Preservation roles



Subjects

# Linking subject lists

RAMEAU

LCSH

DNB

国立国会図書館

Biblioteca Nazionale Centrale Firenze

## Nuovo soggettario

**LoC**

**AGROVOC**

**NS**

**BNF**

**[it.wikipedia.org](http://it.wikipedia.org)**

# End of the world as we know it?

(answer: not quite)

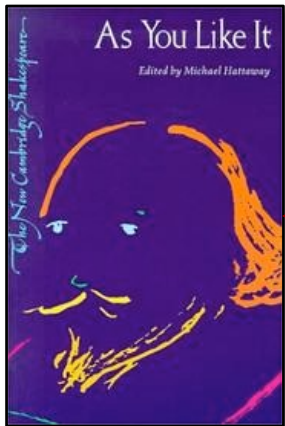




# Statements

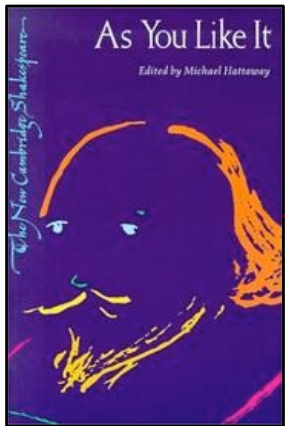
“not records”

# A record



- 001 |a 822.3/3 |2 22
- 001 |a Shakespeare, William, |d 1564-1616.
- 24510 |a As you like it / |c edited by Michael Hattaway.
- 250 |a Updated ed.
- 260 |a Cambridge, UK ; |a New York : |b Cambridge University Press, |c 2009.
- 300 |a xv, 240 p. : |b ill. ; |c 24 cm.
- 4901 |a New Cambridge Shakespeare
- 504 |a Includes bibliographical references (p. 240).
- 5050 |a Introduction. Journeys ; Plays within the play ; Theatrical genres ; Pastoral ; Counter-pastoral ; The condition of the country ; Politics ; 'Between you and the women the play must please' ; Gender ; Nuptials ; Sources ; Date and occasion ; Stage history ; Recent critical and stage interpretations -- Note on the text -- List of characters -- The play -- Textual analysis -- Appendixes : 1. An early court performance? ; 2. Extracts from Shakespeare's principal source, Lodge's *Rosalind* ; 3. The songs.
- 650 0 |a Fathers and daughters |v Drama.
- 650 0 |a Exiles |v Drama.
- 60010 |a Shakespeare, William, |d 1564-1616. |t As you like it.
- 57 |a Pastoral drama. |2 gsafr

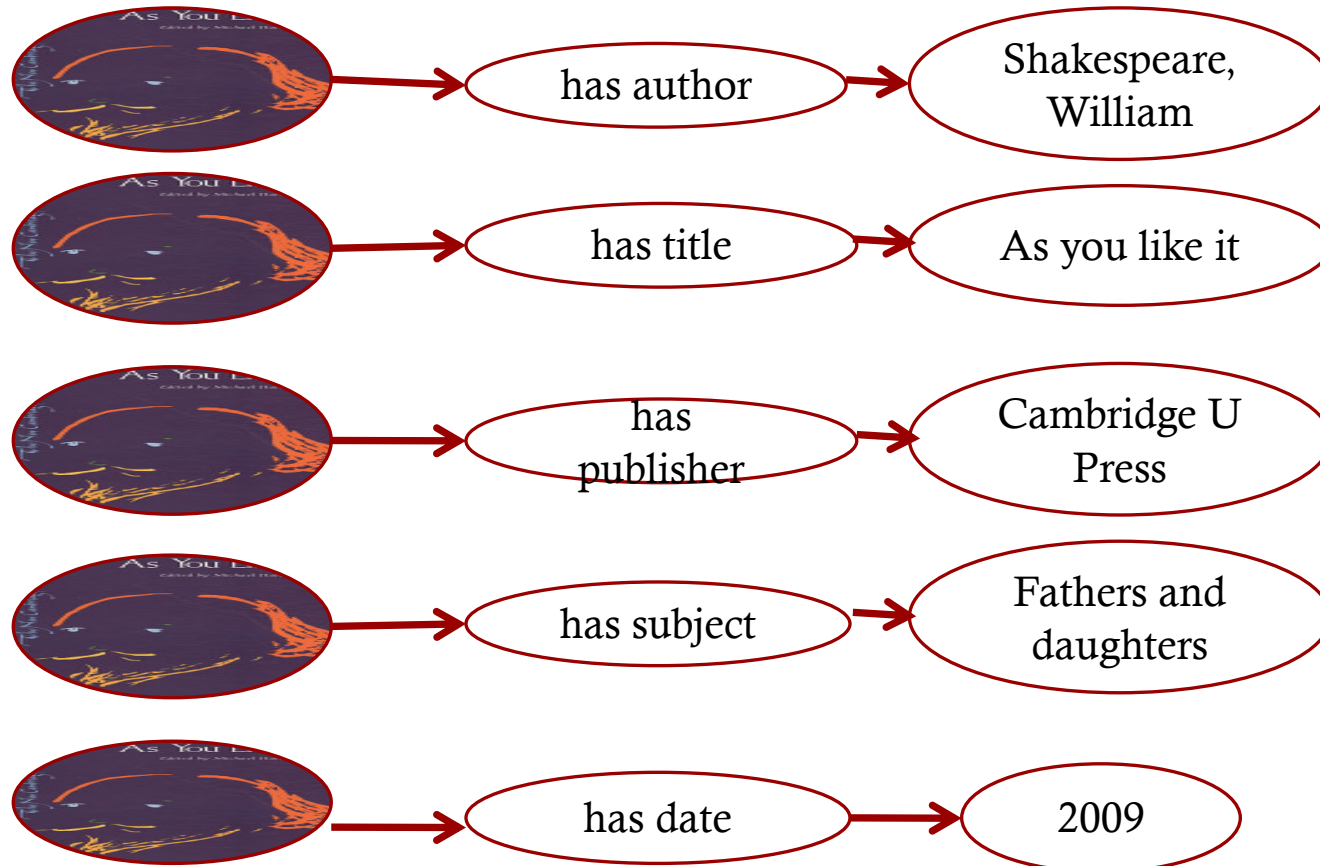
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- 57 |a Pastoral drama. |2 gsafrd

650 0 |a Fathers and daughters

# Statements



“Triples”

# Triples

<http://lcn.loc.gov/2009025024>

(the book)

<http://RDVocab.info/roles/authorWork>

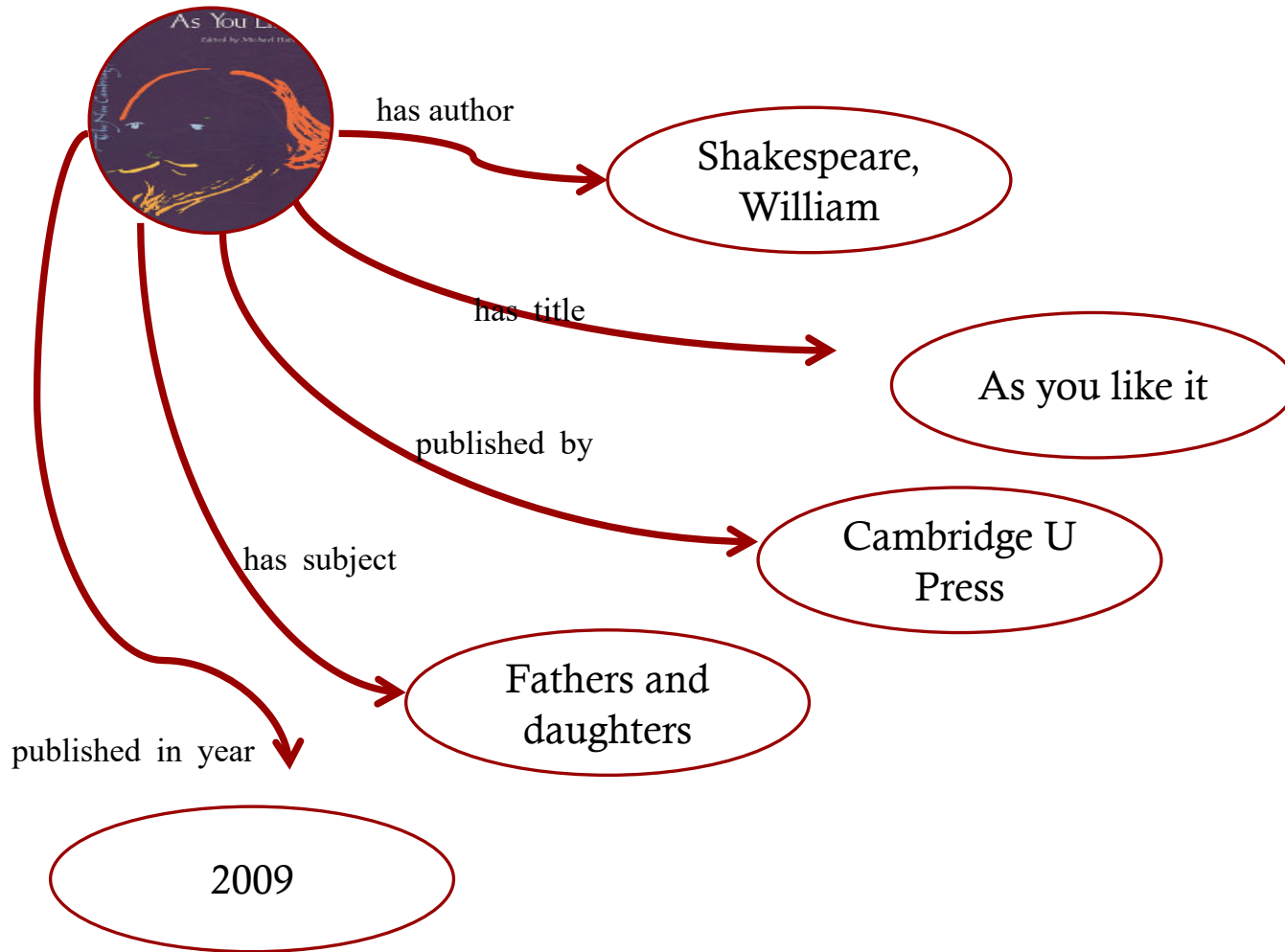
(has author)

[http://lcna.loc.gov/n\\_78095332](http://lcna.loc.gov/n_78095332)

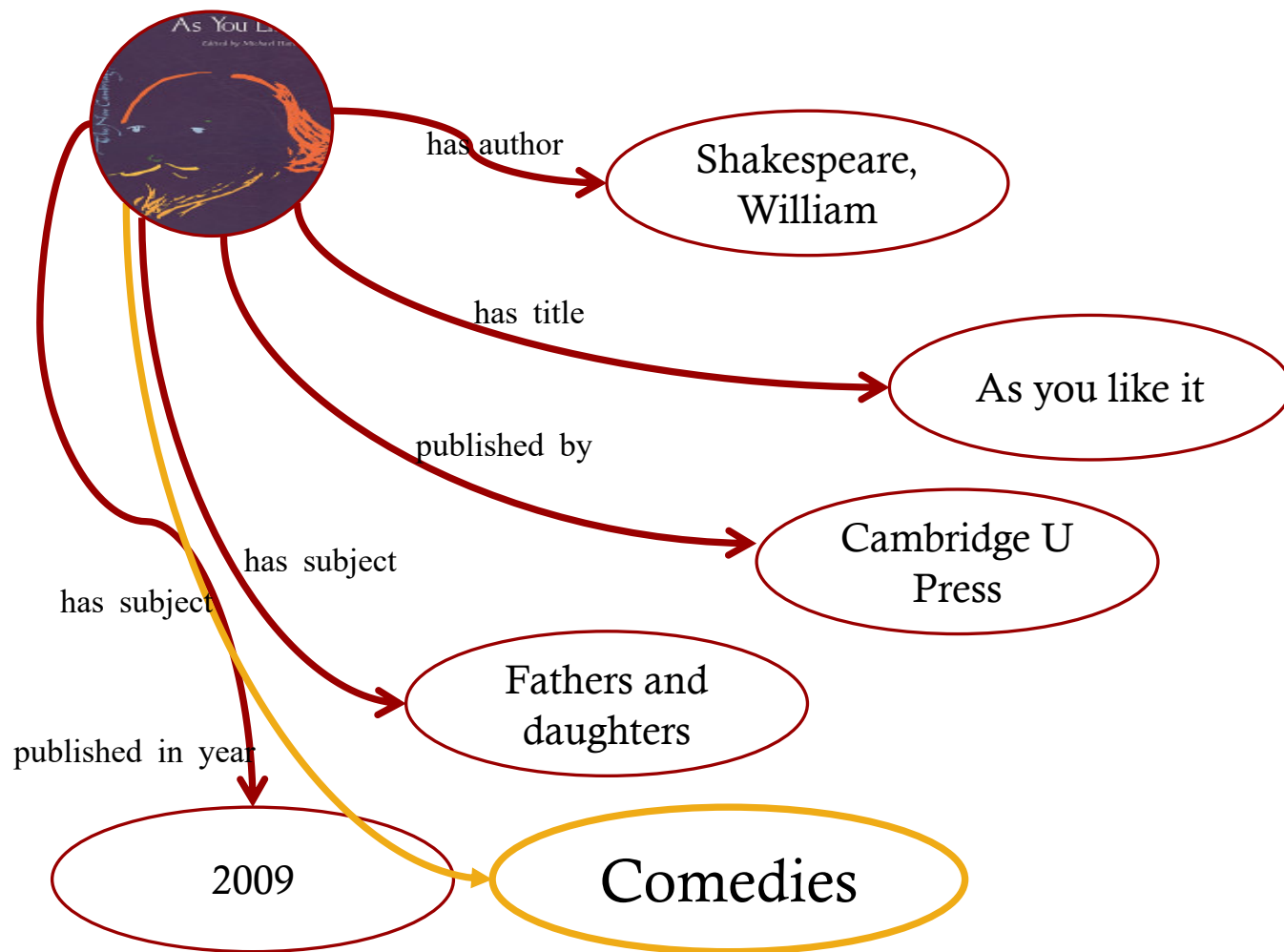
(the author)

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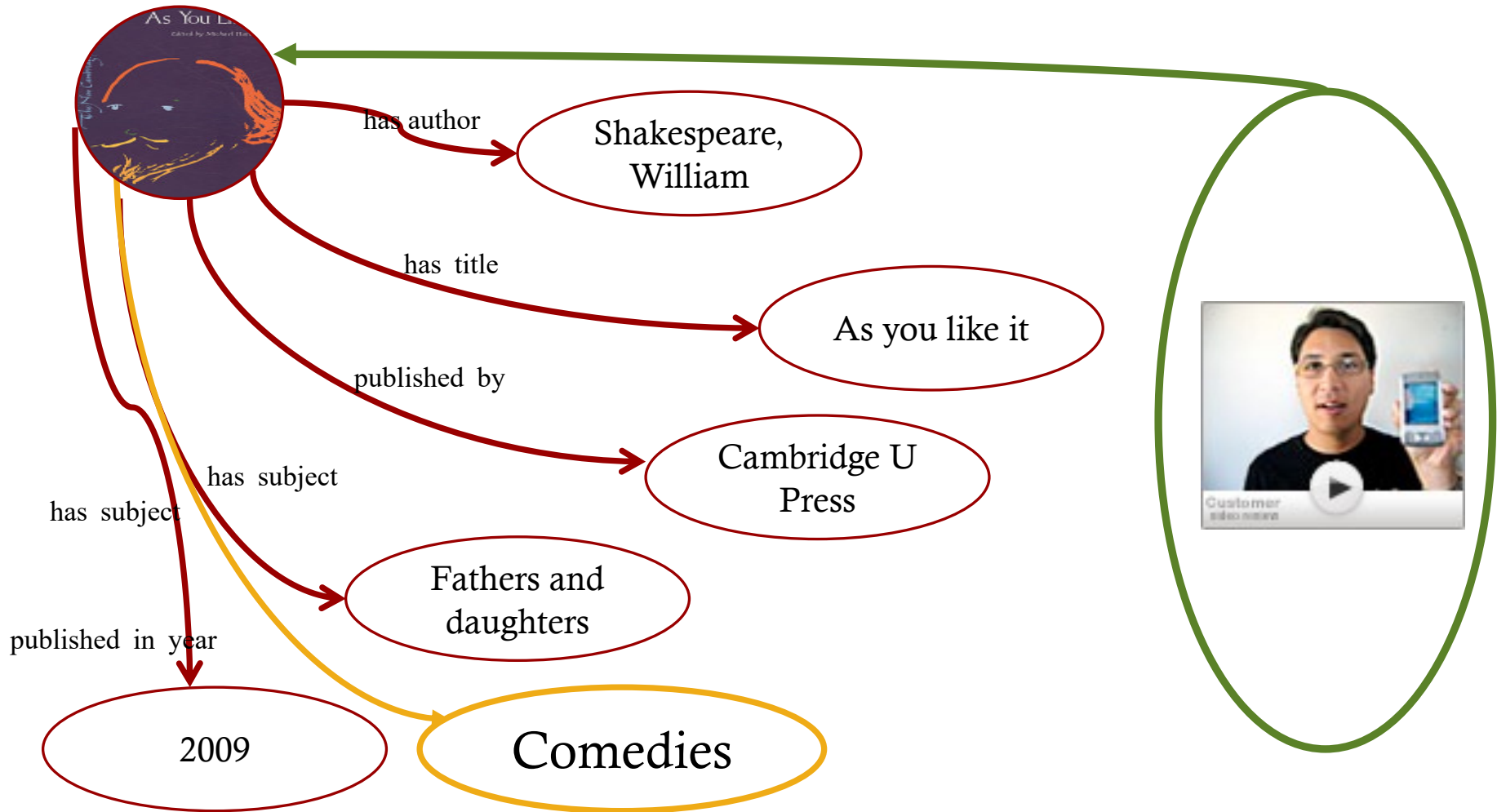
# Graphs



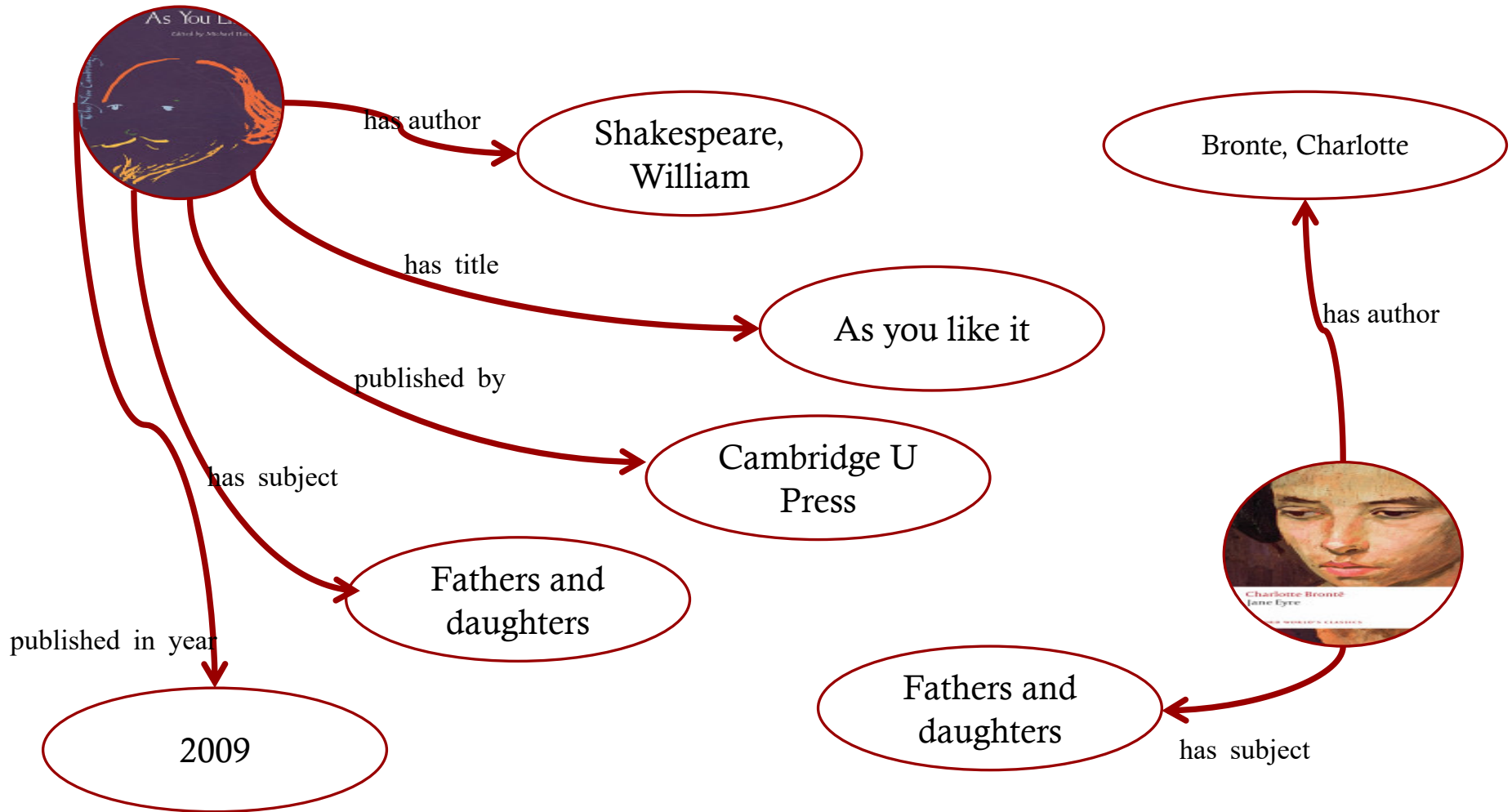
# Flexible



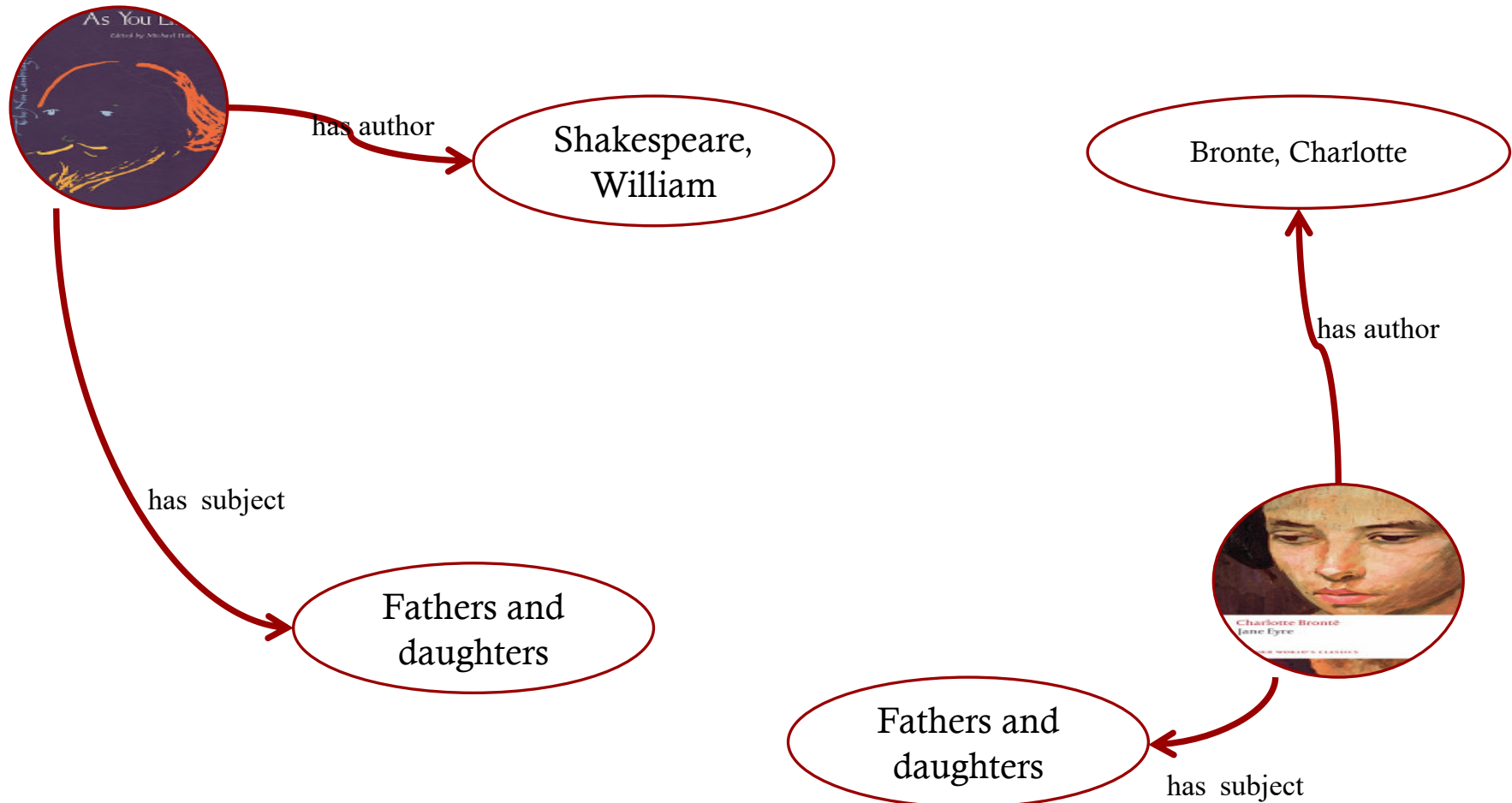
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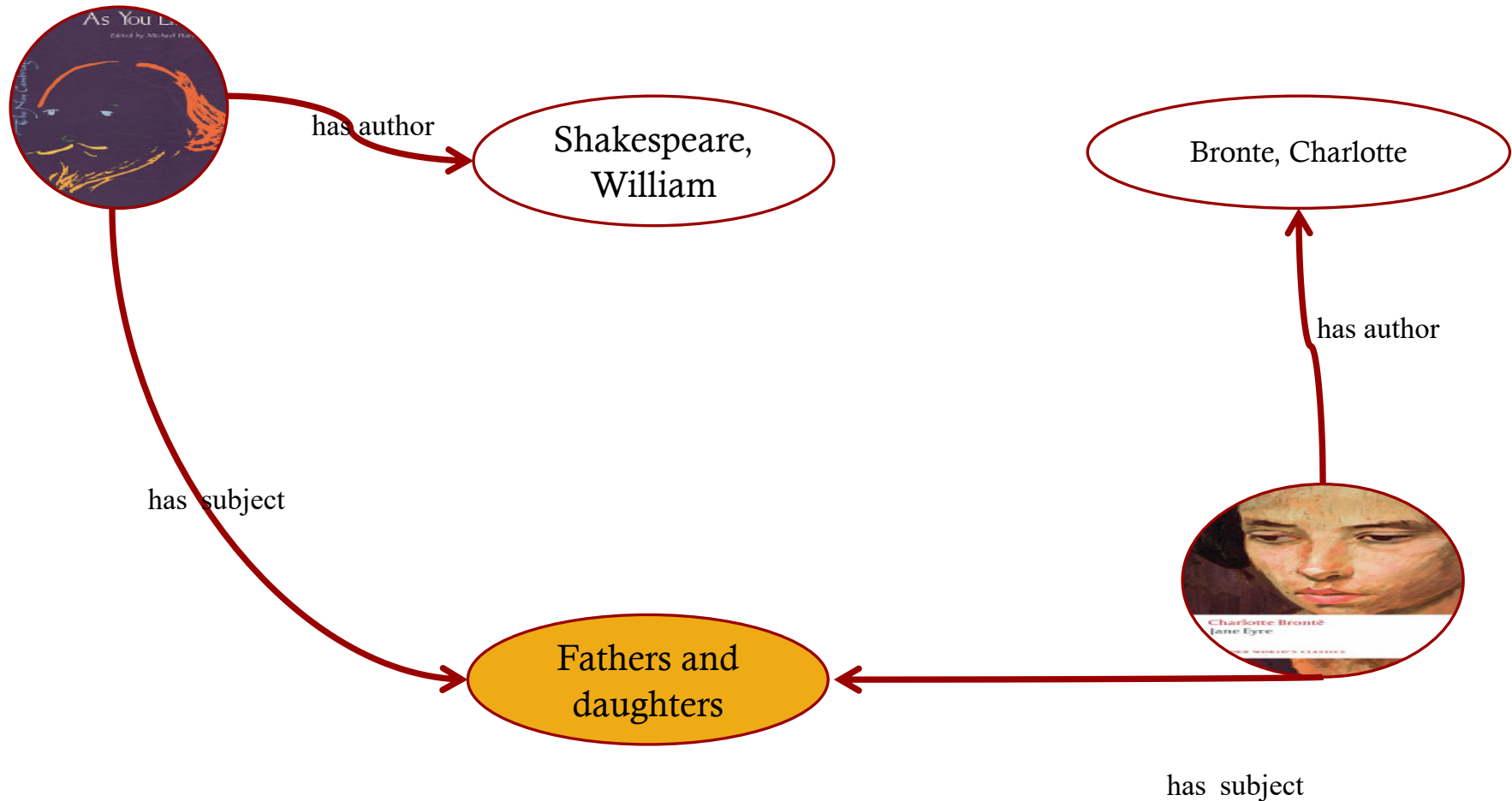
# Recombinant metadata



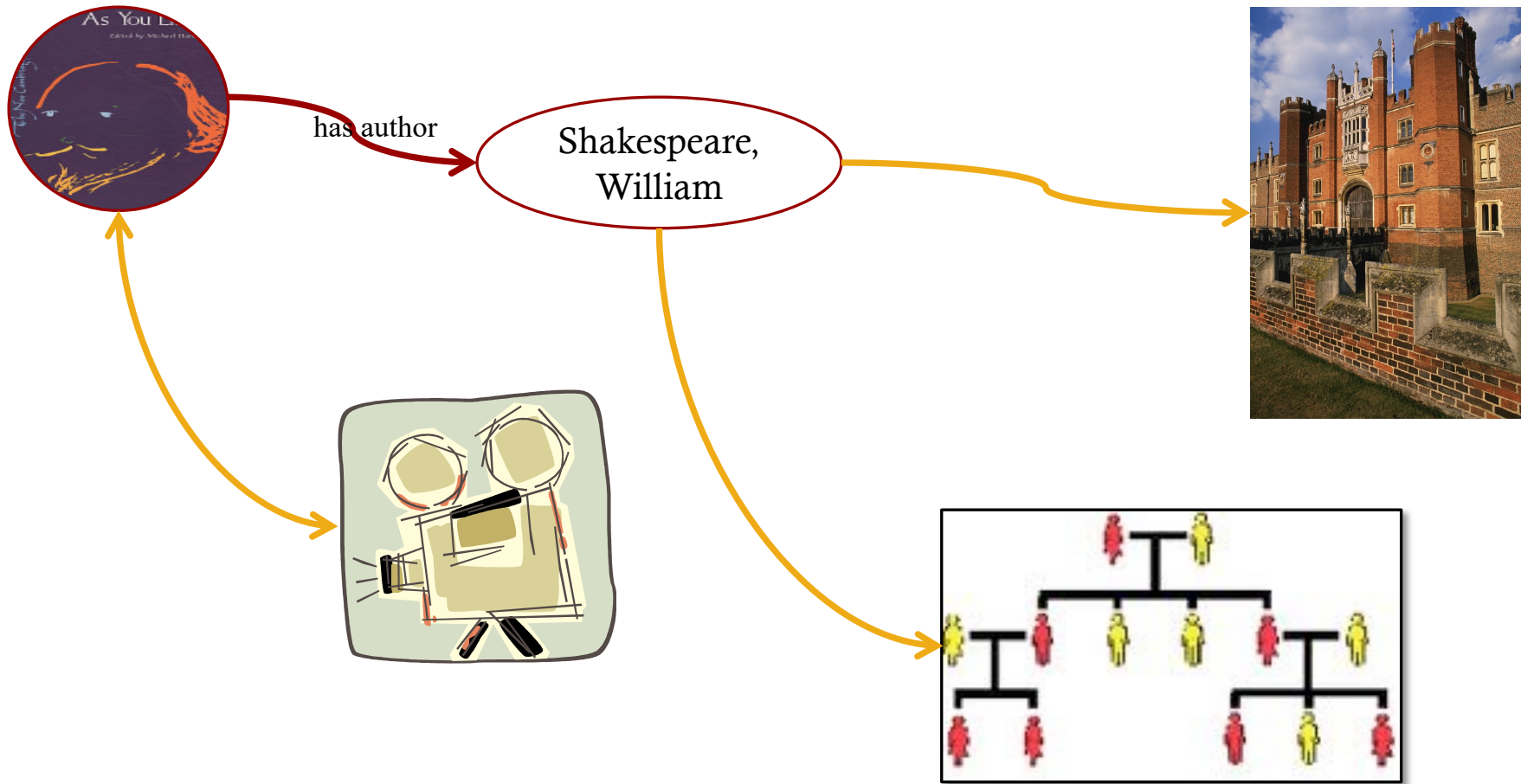
# Recombinant metadata



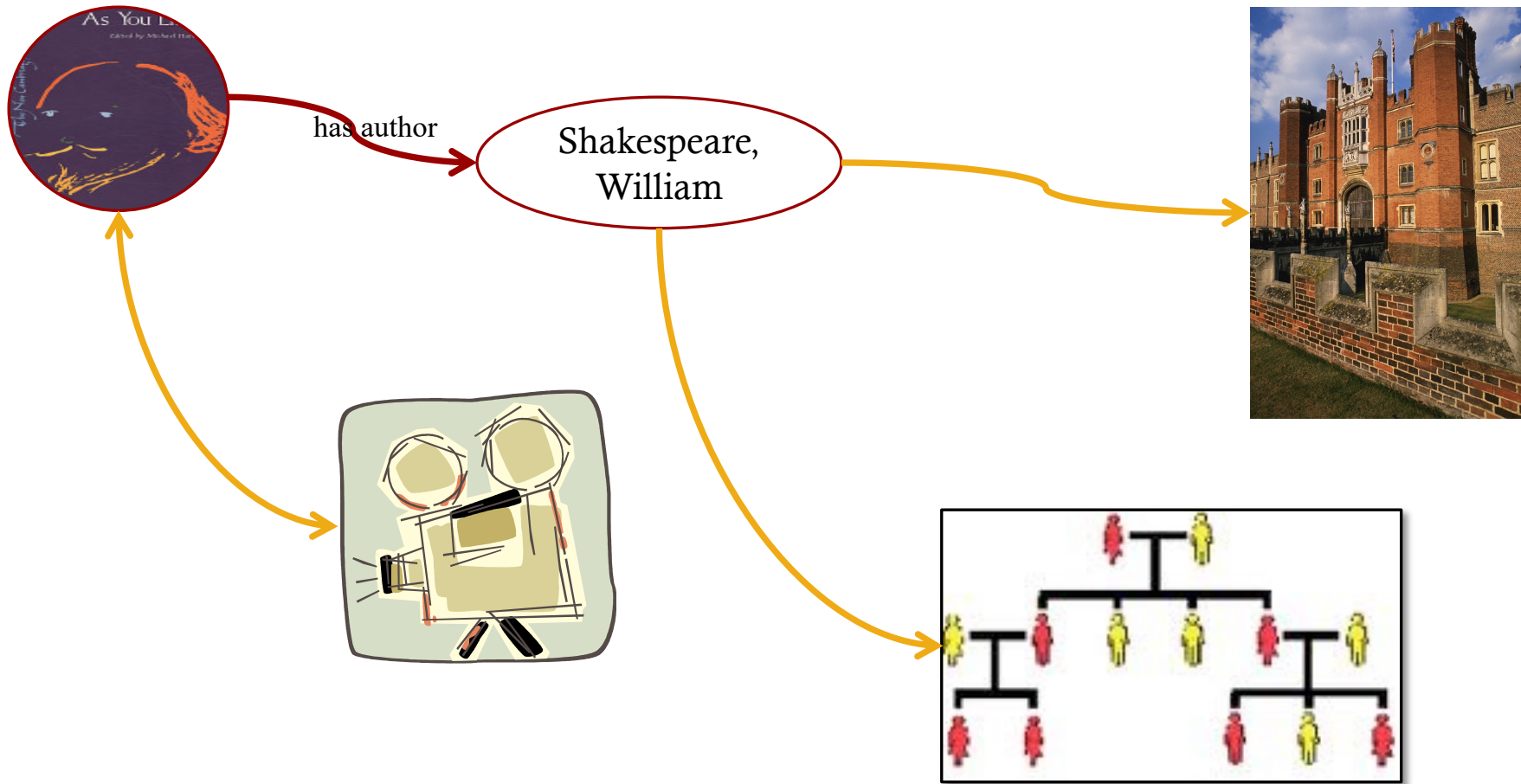
# Recombinant metadata



# Recombinant metadata



# Linked data





# Incremental steps

1. Create identifiers for things
2. Add identifiers to data and/or display
3. Begin linking

# RDFa & schema.org

Links and data within HTML

```
<p><strong>Author:</strong> Tolkien, J. R. R., 1892-1973 </p>
```

```
<span property="author" typeof="Person" resource="#author">  
  <link property="sameAs"  
href="http://viaf.org/viaf/95218067">  
  <p><strong> Author: </strong> <span property="name"  
content="Tolkien, J. R. R. (John Ronald Reuel)">J. R. R.  
Tolkien</span>  
  <span property="birthDate">1892</span>-<span  
property="deathDate">1973</span>.  
</span>
```

# RDFa & schema.org

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<p><strong>Author:</strong> Tolkien, J. R. R., 1892-1973 </p>
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<span property="author" typeof="Person" resource="#author">
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R. Tolkien</span>
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</span>
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  <span property="birthDate">1892</span>-<span
property="deathDate">1973</span>.
</span>
```

# Search engines



jrr tolkien



530.000 RESULTS

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**John Ronald Reuel Tolkien** (pronuncia / ˈtolkiːn / ; Bloemfontein , 3 gennaio 1892 – Bournemouth , 2 settembre 1973) è stato uno scrittore , filologo ...

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Si torna a parlare di **J.R.R. Tolkien** al Festival della Letteratura di Mantova. La diciottesima edizione della prestigiosa manifestazione, che si terrà a Mantova da ...

[J.R.R. Tolkien « Tutto sul mondo di J.R.R. ...](#) Translate this page

[www.jrrtolkien.it/jrr-tolkien](http://www.jrrtolkien.it/jrr-tolkien) ▾

**John Ronald Reuel Tolkien**, massimo studioso di letteratura medievale inglese, nacque il 3 gennaio 1892 a Bloemfontein, nel Sudafrica, da genitori inglesi originari di ...

[Images of jrr tolkien](#)

[bing.com/images](https://bing.com/images)



## John Tolkien



[en.wikipedia.org](https://en.wikipedia.org)

John Ronald Reuel Tolkien è stato uno scrittore, filologo, glottoteta e linguista britannico, spesso abbreviato in J. R. R. Tolkien. Importante studioso della lingu... +

[it.wikipedia.org](https://it.wikipedia.org)

**Born:** 3 gen 1892 · Bloemfontein, Sudafrica

**Died:** 2 set 1973 · Bournemouth, Regno Unito

**Height:** 1,74 m

**Spouse:** [Edith Bratt](#) (1916 - 1971)

**Children:** [Christopher Tolkien](#) · [Priscilla Tolkien](#) · [John Tolkien](#) · [Michael Tolkien](#)

**Parents:** [Arthur Tolkien](#) · [Mabel Tolkien](#)

Written works

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## Economic factors effecting salmon fisheries in Japan

RDF lod:live

Shimizu, I. (National Salmon Resources Center, Sapporo (Japan))

### Abstract:

Salmon fisheries in Japan are facing a serious crisis and are being pressed to enact structural reforms. Though there has been a decline in high seas salmon fisheries, the total amount of salmon catches has increased year after year with a success of salmon enhancement. Salmon markets in Japan have consequently been globalized, and the price of domestic salmon in wholesale markets has dropped. In this paper, I described the fluctuation of salmon prices in the landing markets in Hokkaido in order to make clear the factors of price change, from both the short-term and long-term standpoints. Factors regarding the price formation of salmon in the wholesale market in Japan were analyzed by the econometric method. The wholesale price of fresh salmon fell when the inventory of frozen salmon or imported fresh salmon increased, and also the prices of fresh salmon have dropped when the inventory of salted salmon roe and fresh salmon increased in recent years. Since there was an increase in the amount of imported fresh salmon produced by salmon aquaculture in winter, there was an increase in the inventory of fresh salmon. In order to reduce inventory and stabilize the wholesale price, it is necessary to expand the market for domestic salmon by maintaining its freshness, developing new processed food, and ensuring its safety.

Read More

Agrovoc Keywords

• economics

Bulletin of the National Salmon Resources Center  
(Journal)

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**Economic Factors Effecting Salmon Fisheries in Japan.** Ikutaro Shimizu . - **Salmon fisheries in Japan** are facing a serious crisis and are being pressed to enact.

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A review of Pacific salmon hatchery programmes on Hokkaido ...

Data from CGRIS Germplasm:

Trader

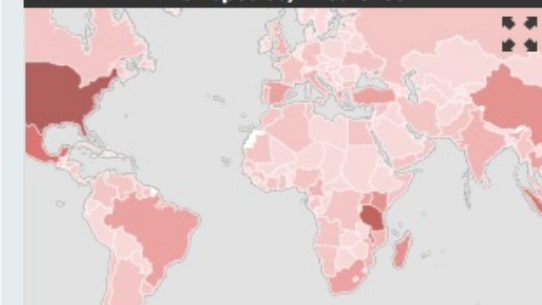
Dunar 1/3/Nap Hal/Trader//Ns 7

Nap Hal-Trader"S"

Rousa/Ka/3/Nap Hal/Trader/2/NS

Data from World Bank (double-click an area to zoom)

### Fish species, threatened



### Fish species, threatened

1 236

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<http://kcoyle.net/presentations/links.html>

# Exercise: Making statements



<http://kcoyle.net/d636.7/>

d636.7 has name “Dewey”

d636.7 is a dog.

d636.7 birthday is 12-25

d636.7 birth year is 2003

# Statements



name

Dewey



species

dog



birthday

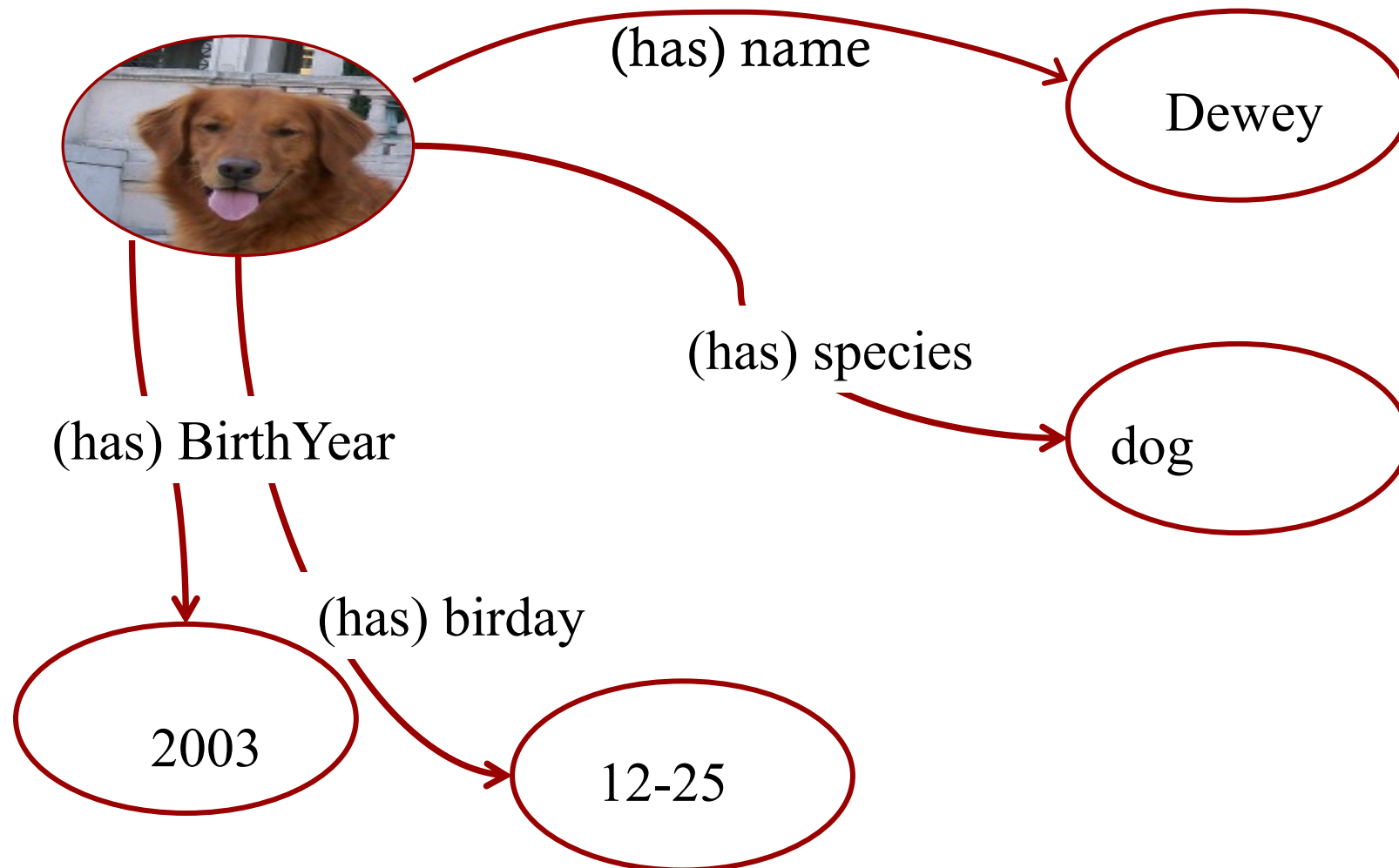
12-25



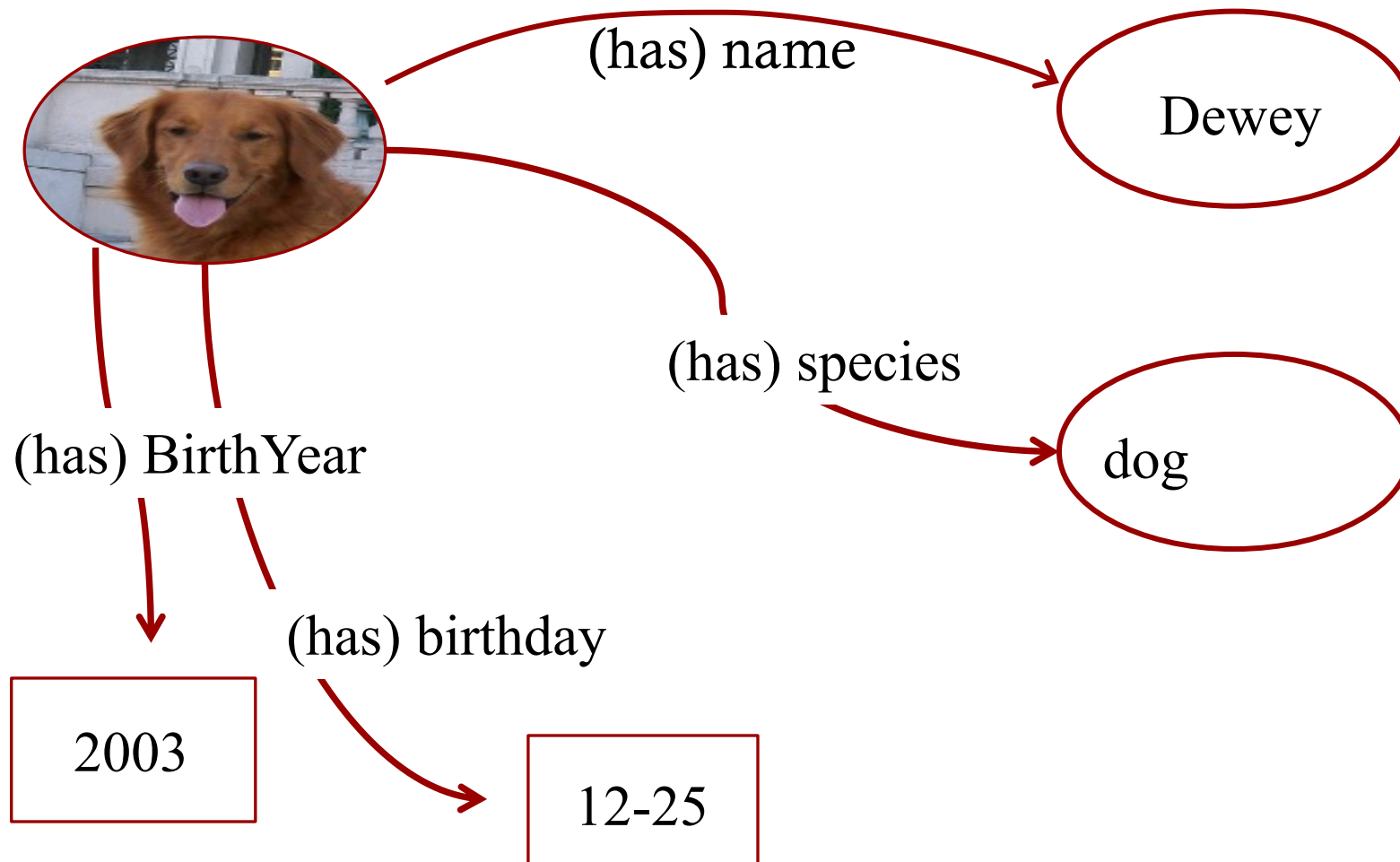
birth year

2003

# The graph



# The graph



# Exercise: Making statements in graphs



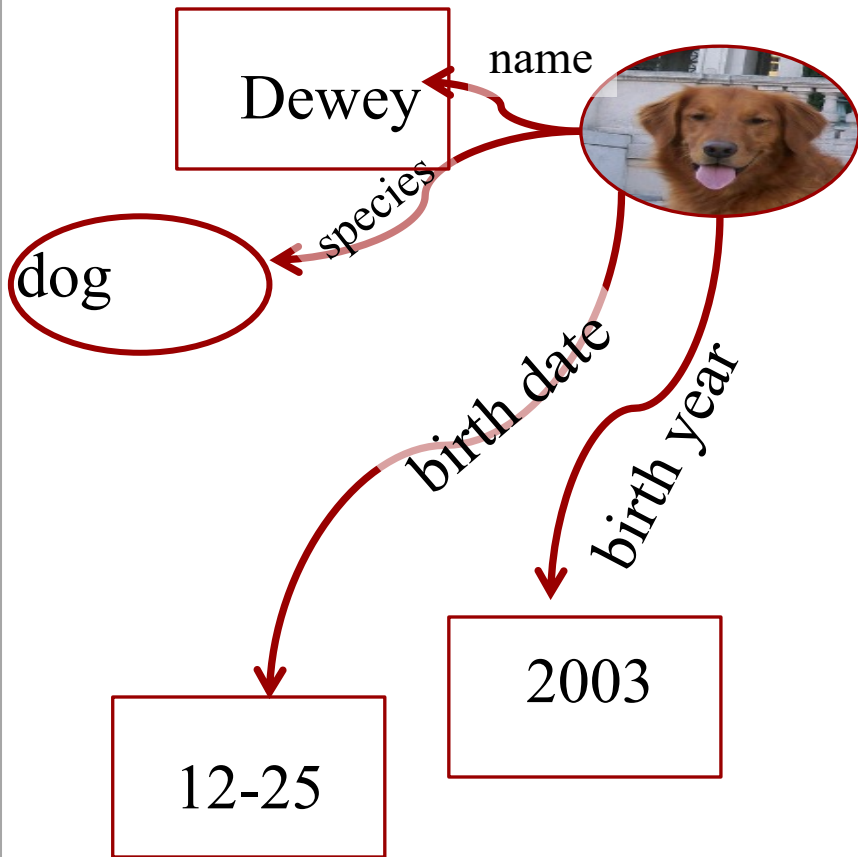
d636.7 has name “Dewey”

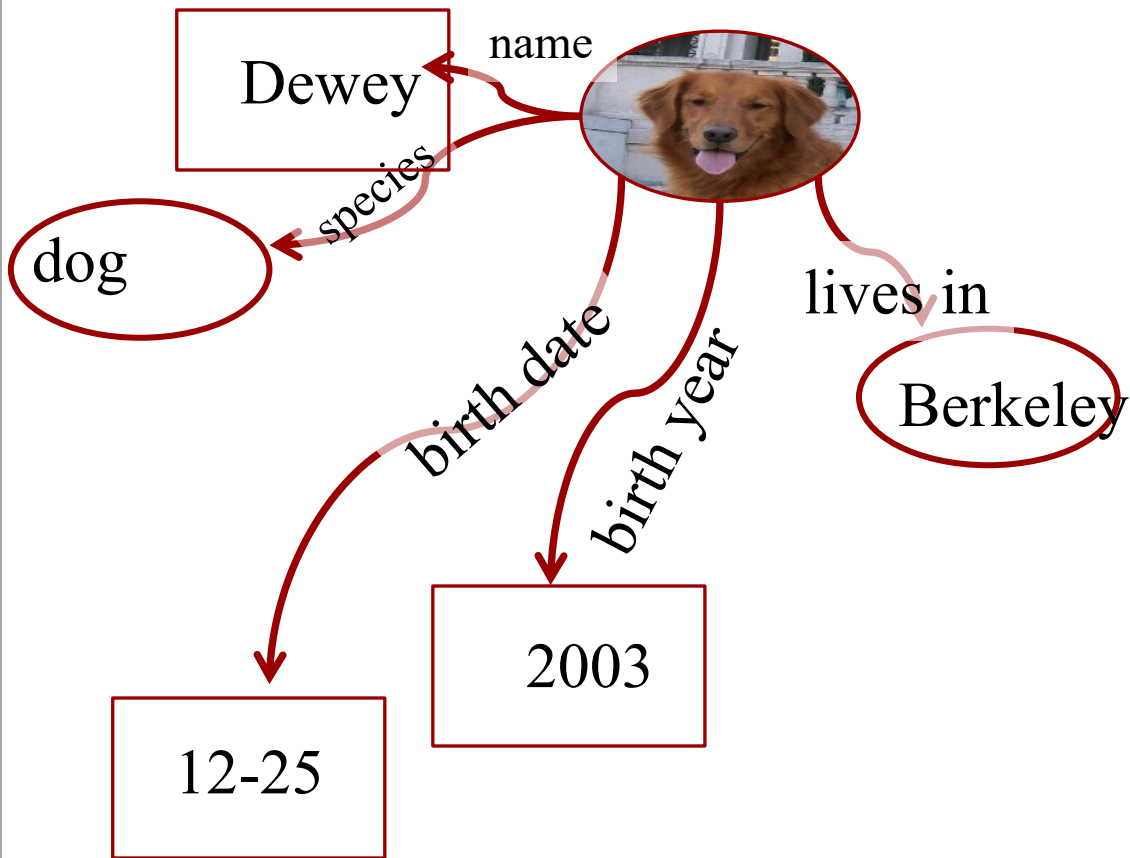
d636.7 is a dog.

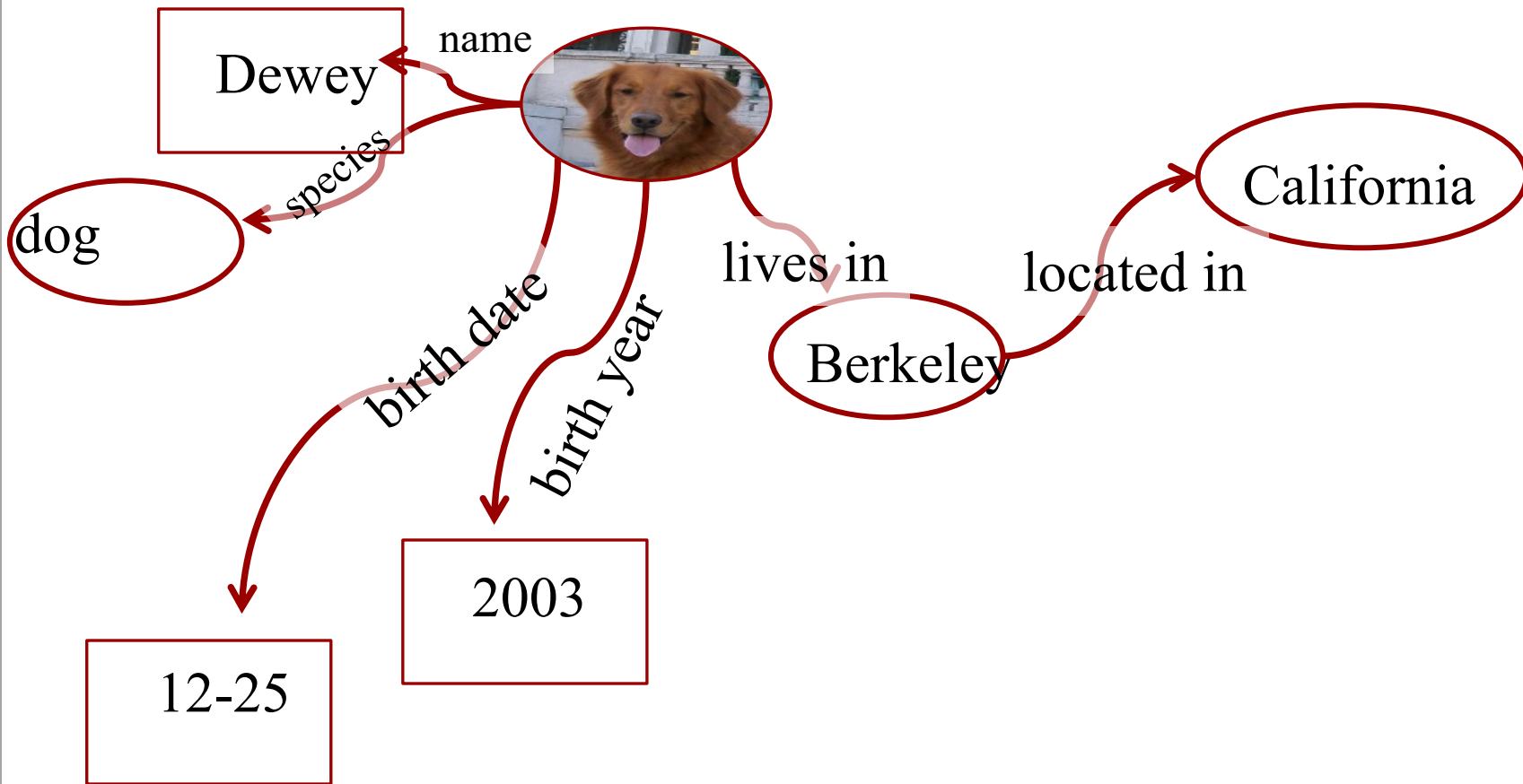
d636.7 birthday is 12-25

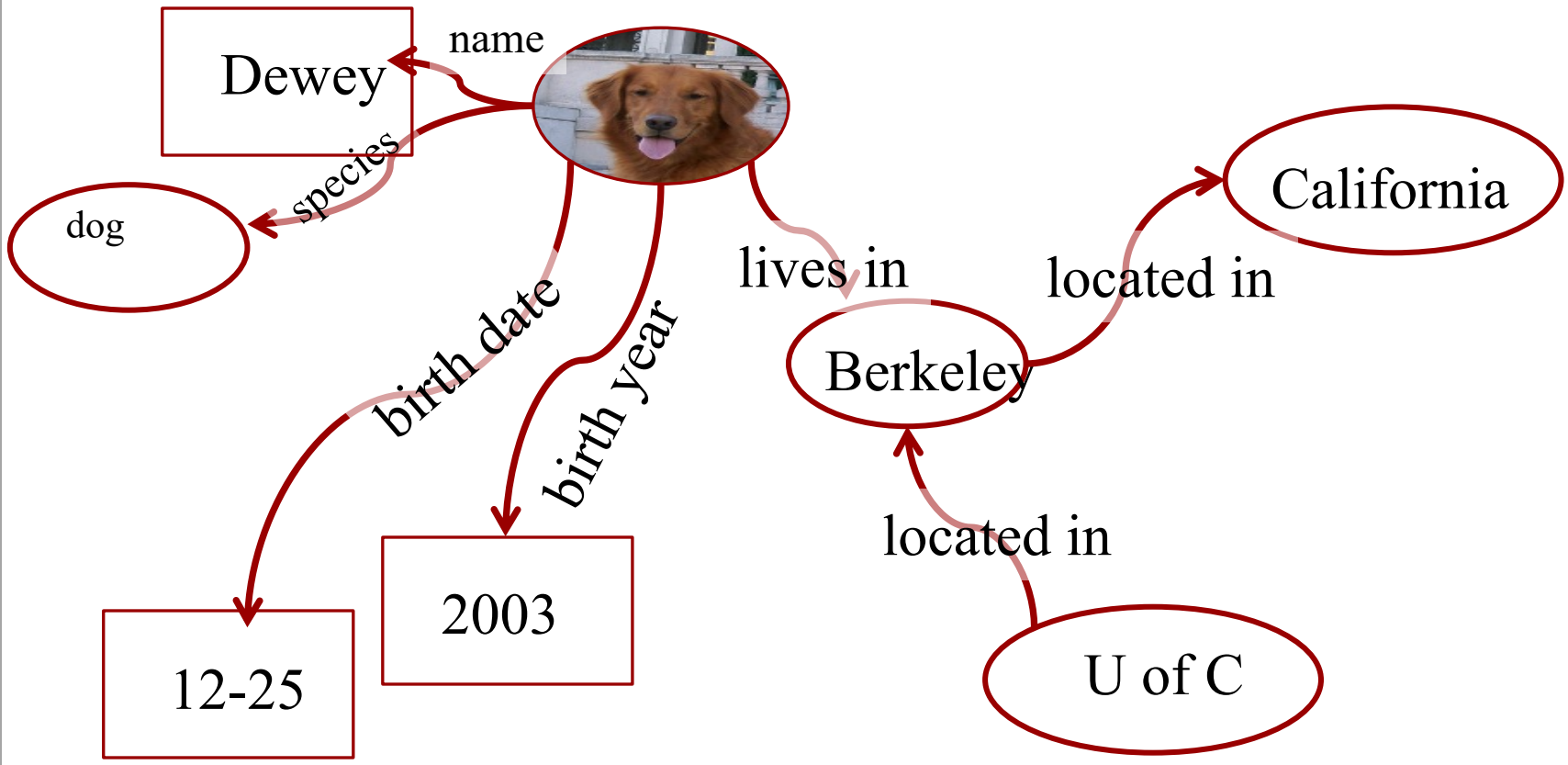
d636.7 birth year is 2003

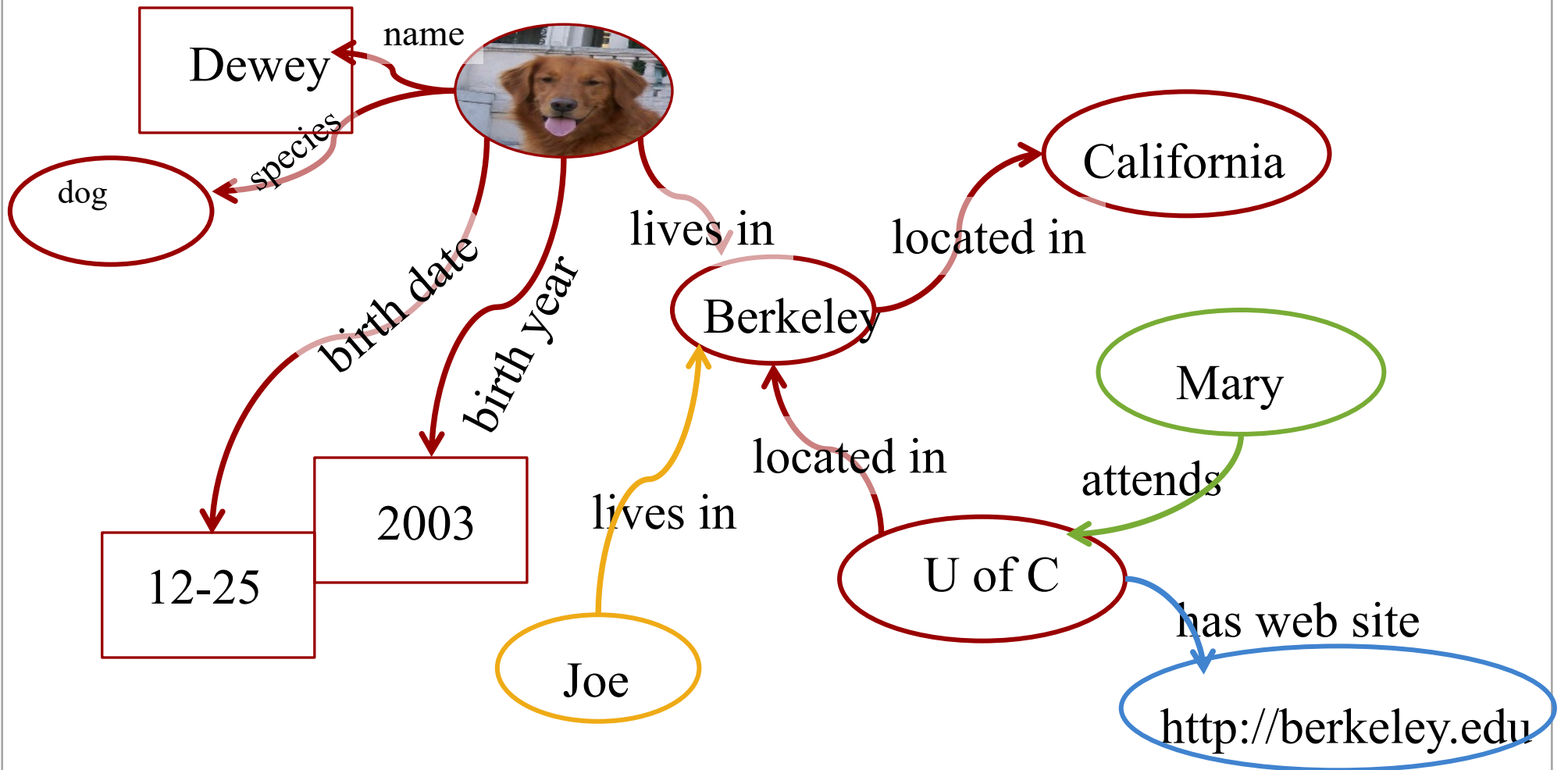
- d636.7 lives in Berkeley.
- Berkeley is in California.
- The University of California is in Berkeley











# Some terms & acronyms

- RDF – Resource Description Framework
- OWL – Web Ontology Language
- Ontology – a set of predicates
- Vocabulary – not distinguished from ontology
- SPARQL – Search language, like SQL



Thank you, and....

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<http://kcoyle.net/presentations/>

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