

Wicked data with Wikidata

Dan Scott, Laurentian University
@denials



100 ₺a We love
authorities

Unifying and disambiguating

100 1 _ ‡a Trump, Donald, ‡d 1946-

400 1 _ ‡a Tramps, D. Dž. ‡q (Donalds Džons), ‡d
1946- National Library of Latvia

<https://viaf.org/viaf/49272447>

Hot cross references

‡150 — \$a Dictators

‡450 — \$a Tyrants

‡550 — \$w g \$a Heads of state

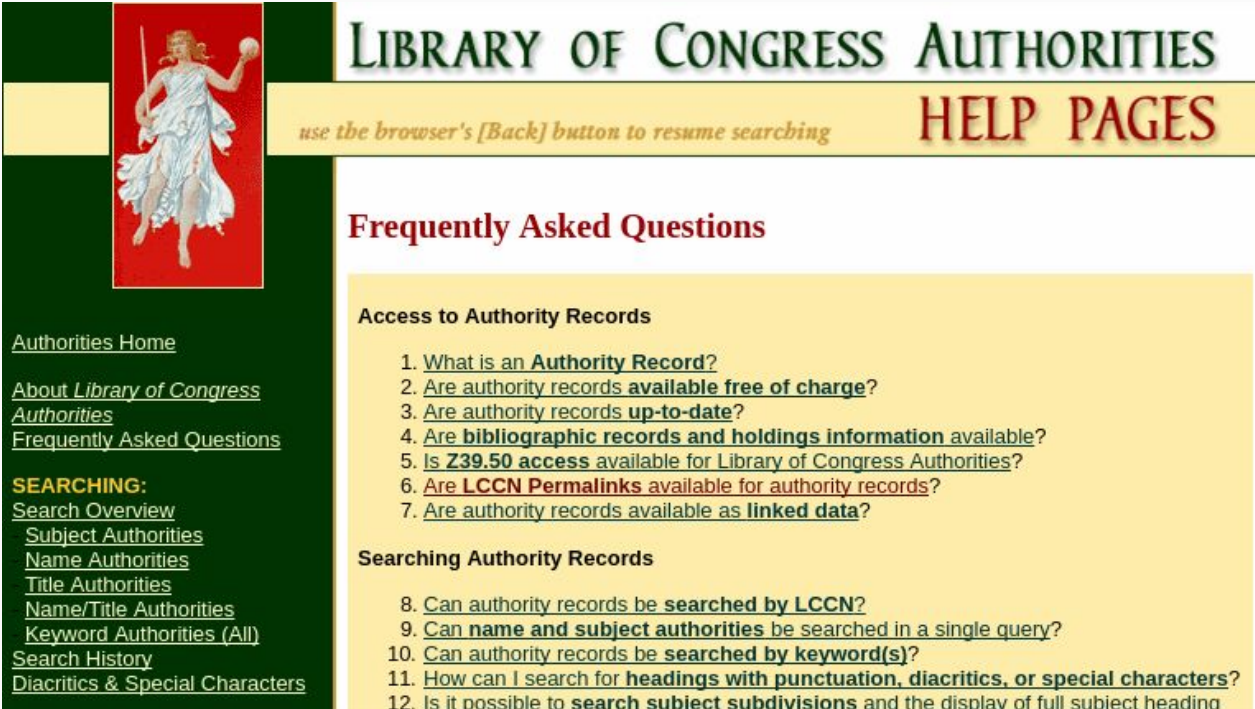
Authorities / overlords

Library of Congress

MeSH (NLM)

ISNI (ISO)

VIAF (OCLC)



LIBRARY OF CONGRESS AUTHORITIES
HELP PAGES

use the browser's [Back] button to resume searching

Frequently Asked Questions

Access to Authority Records

1. What is an Authority Record?
2. Are authority records available free of charge?
3. Are authority records up-to-date?
4. Are bibliographic records and holdings information available?
5. Is Z39.50 access available for Library of Congress Authorities?
6. Are LCCN Permalinks available for authority records?
7. Are authority records available as linked data?

Searching Authority Records

8. Can authority records be searched by LCCN?
9. Can name and subject authorities be searched in a single query?
10. Can authority records be searched by keyword(s)?
11. How can I search for headings with punctuation, diacritics, or special characters?
12. Is it possible to search subject subdivisions and the display of full subject heading

[Authorities Home](#)
[About Library of Congress Authorities](#)
[Frequently Asked Questions](#)

SEARCHING:
[Search Overview](#)
[Subject Authorities](#)
[Name Authorities](#)
[Title Authorities](#)
[Name/Title Authorities](#)
[Keyword Authorities \(All\)](#)
[Search History](#)
[Diacritics & Special Characters](#)

Google Knowledge Graph



Donald Trump

45th U.S. President

 donaldjtrump.com

Donald John Trump is an American businessman, television personality, politician, and the 45th President of the United States. [Wikipedia](#)

Born: June 14, 1946 (age 70 years), Jamaica Hospital Medical Center

Net worth: 3.7 billion USD (2017) [Forbes](#)

Spouse: [Melania Trump](#) (m. 2005), [Marla Maples](#) (m. 1993–1999), [Ivana Trump](#) (m. 1977–1992)

Children: [Ivanka Trump](#), [Tiffany Trump](#), [Eric Trump](#), [Donald Trump Jr.](#), [Barron Trump](#)

Education: [Wharton School of the University of Pennsylvania](#) (1968), [more](#)

Profiles



Twitter



Facebook



Instagram



YouTube



Google+

Movies and TV shows

[View 5+ more](#)



The



The Little



54



The



The

Browse

Browse through a virtual index of titles, authors, subjects, or series for a particular library, for a library system, or for all of PINES. If browsing by author, type in the first letters of the last name.

Browse for starting with in

- [Trumbull, James 1927-](#) (1)
- [Trumbull, John 1756-1843](#) (3)
- [Trumbull, Peter](#) (4)
- [Trumbull, Robert.](#) (9)
- [TRUMBULL, ROBERT OLIVER.](#) (1)
- [Trumbull Stickney/](#) (1)
- [Trumbull Stickney \(1874-1904\) /](#) (1)
- [Trumèn, G., 1884-1972](#)
 - [See Also From Tracing -- Corporate Name \[United States. President \\(1945-1953 : Truman\\)\]\(#\)](#) (1)
 - [Heading -- Personal Name \[Truman, Harry S., 1884-1972\]\(#\)](#) (164)
- [Trump, David H.](#) (2)
- [Trump, Donald 1946-](#) (51)
- [TRUMP DONALD J.](#) (1)
- [Trump, Donald J.](#) (2)
- [Trump, Donald J..](#) (1)
- [Trump, Fred.](#) (1)
- [Trump, Ivana](#) (7)
- [Trump, Ivanka 1981-](#) (3)
- [Trump, Kenneth S.](#) (1)
- [Trump, Richard F. 1912-](#) (1)
- [Trump, Shawn.](#) (2)
- [Trump University.](#) (4)

Rich relationships



Donald Trump

45th U.S. President

 donaldjtrump.com

Donald John Trump is an American businessman, television personality, politician, and the 45th President of the United States. [Wikipedia](#)

Born: June 14, 1946 (age 70 years), Jamaica Hospital Medical Center

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Education: [Wharton School of the University of Pennsylvania](#) (1968), [more](#)

Profiles



Twitter



Facebook



Instagram



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Google+

Movies and TV shows

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The



The Little



54



The



The

1,191,376,874

Facts
(and counting)

A community-curated database of well-known people, places, and things

Sign in with your Google account to join the community

Data

Schema

Queries

Apps

Loads

Review Tasks

Users

Explore Freebase Data

Domain	ID	Topics	Facts
Music	/music	24M	161M
Media	/media_common	7M	23M
Books	/book	6M	37M
People	/people	3M	13M
TV	/tv	1M	15M
Film	/film	1M	13M
Location	/location	1M	16M
Organization	/organization	772K	4M
Business	/business	711K	2M
Fictional Universes	/fictional_universe	538K	846K
Sports	/sports	361K	2M
Biology	/biology	278K	3M
Education	/education	244K	2M
Awards	/award	199K	2M
Government	/government	142K	795K
Soccer	/soccer	127K	1M
Architecture	/architecture	124K	401K
Video Games	/cvg	118K	915K

How can you get started?

Learn how it works

Discover what kind of information Freebase contains, how it's organized, and how Freebase allows you to uniquely identify identities anywhere on the web

[Keep reading »](#)

Use Freebase data

Freebase data is free to use under an [open license](#). You can:

- Query Freebase using our [Search](#), [Topic](#), or [MQL APIs](#)
- [Download](#) our weekly data dumps

Join the Community

- Follow [Freebase on G+](#)
- Subscribe to the mailing list for community discussion:

[Read the List Archive](#)

"We believe strongly in a robust community-driven effort to collect and curate structured knowledge about the world" - [Google](#)



100,000 requests
per day, free

The screenshot shows the Google Search interface for the Knowledge Graph Search API documentation. The page title is "Google Knowledge Graph Search API". A navigation breadcrumb shows "Products > Search > Knowledge Graph Search API > Guides". A table of contents lists "Contents", "Typical use cases", "Sample request", and "Knowledge Graph entities". The main text explains that the API finds entities in the Google Knowledge Graph using standard schema.org types and JSON-LD. A section titled "Typical use cases" includes an upward arrow icon and lists three examples: getting a ranked list of entities, predictively completing search boxes, and annotating content. A note states the API is read-only. A link to the API Reference is provided at the bottom.

Google Search

Products > Search > Knowledge Graph Search API > Guides

Google Knowledge Graph Search API


- Contents
- Typical use cases
- Sample request
- Knowledge Graph entities

The Knowledge Graph Search API lets you find entities in the [Google Knowledge Graph](#). The API uses standard [schema.org](#) types and is compliant with the [JSON-LD](#) specification.

Typical use cases

Some examples of how you can use the Knowledge Graph Search API include:

- Getting a ranked list of the most notable entities that match certain criteria.
- Predictively completing entities in a search box.
- Annotating/organizing content using the Knowledge Graph entities.

 **Note:** The Knowledge Graph Search API is a read-only API.

For detailed information about the API methods and parameters, see the [API Reference](#).

Google Knowledge Graph Search API result != Knowledge Graph card info

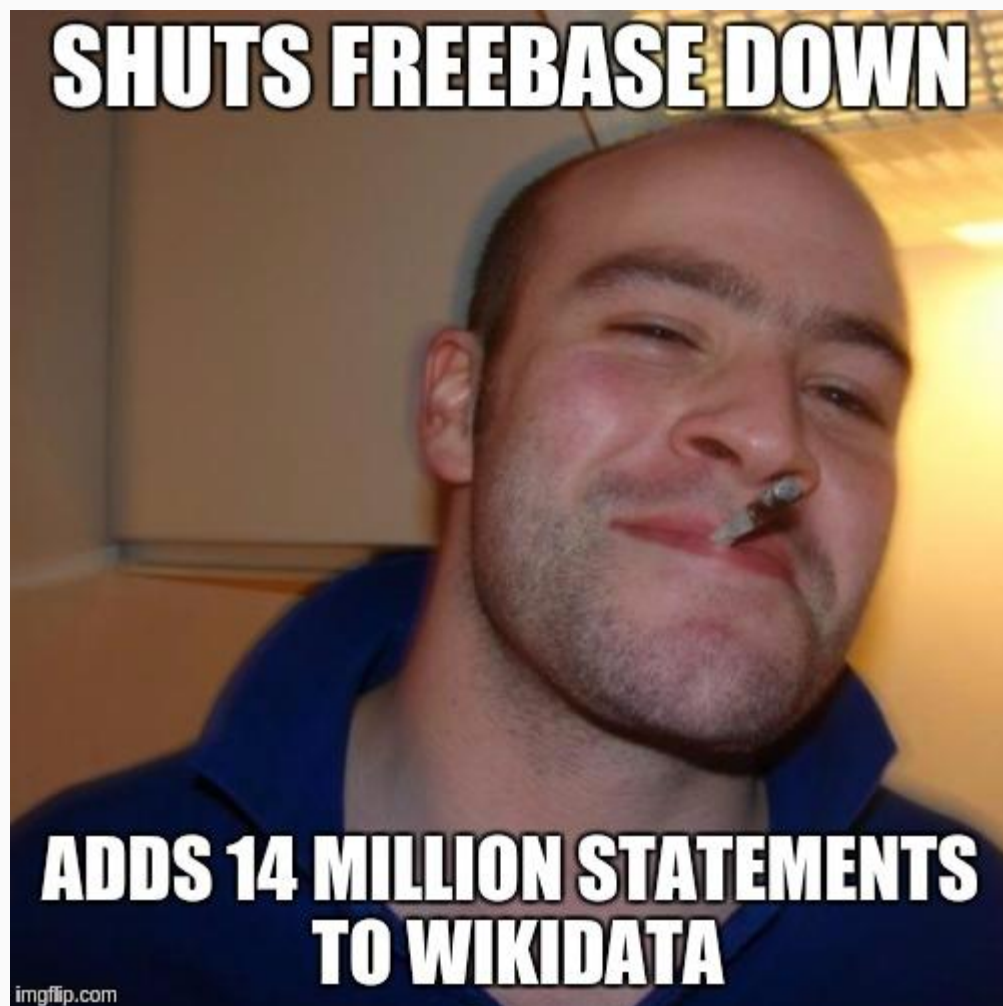
```
{
  "@type": "EntitySearchResult",
  "result": {
    "@id": "kg:/m/0cqt90",
    "name": "Donald Trump",
    "@type": [ "Person", "Thing" ],
    "description": "45th U.S. President",
    "image": {
      "contentUrl":
"http://t2.gstatic.com/images?q=tbn:ANd9GcRJNzU33KiweQzfvzmlUgMp8vXBA5jGMRfylj5FQ7
TwJz0JlNuI",
      "url":
"https://en.wikipedia.org/wiki/Donald_Trump_and_Billy_Bush_recording",
      "license": "http://creativecommons.org/licenses/by-sa/2.0"
    },
    "detailedDescription": {
      "articleBody": "Donald John Trump is an American businessman, television
personality, politician, and the 45th President of the United States.\nBorn and
raised in Queens, New York City, Trump received an economics degree from the
Wharton School of the University of Pennsylvania in 1968. ",
      "url": "https://en.wikipedia.org/wiki/Donald_Trump",
      "license":
"https://en.wikipedia.org/wiki/Wikipedia:Text_of_Creative_Commons_Attribution-Shar
eAlike_3.0_Unported_License"
    },
    "url": "https://www.donaldjtrump.com/"
  },
  "resultScore": 1670.089844
}
```

Google Knowledge Graph Search API result != Knowledge Graph card info

```
{
  "@type": "EntitySearchResult",
  "result": {
    "@id": "kg:/m/0cqt90",
    "name": "Donald Trump",
    "@type": [ "Person", "Thing" ],
    "description": "45th U.S. President",
    "image": {
      "contentUrl": "http://t2.gstatic.com/images?q=tbn:ANd9CqR8vXBA5jGMRfylj5FQ7TwJz0JlNuI",
      "url": "https://en.wikipedia.org/wiki/Donald_Trump#/media/File:Donald Trump, 8vXBA5jGMRfylj5FQ7",
      "license": "https://en.wikipedia.org/wiki/Wikipedia:Text_of_Creative_Commons_Attribution-ShareAlike_3.0_Unported_License",
      "detailedDescription": "an, television\nates.\nBorn and\nree from the",
      "articleBody": "personality, political\nraised in Queens, NY\nWharton School of Business",
      "url": "https://www.donaldjtrump.com/"
    },
    "detailedDescription": "an, television\nates.\nBorn and\nree from the",
    "articleBody": "personality, political\nraised in Queens, NY\nWharton School of Business",
    "url": "https://www.donaldjtrump.com/"
  },
  "resultScore": 1670.089844
}
```

No facts or relationships

Bad guy Google /
good guy Google?



Wikidata growing nicely

Wikidata Stats

Tools Git Talk



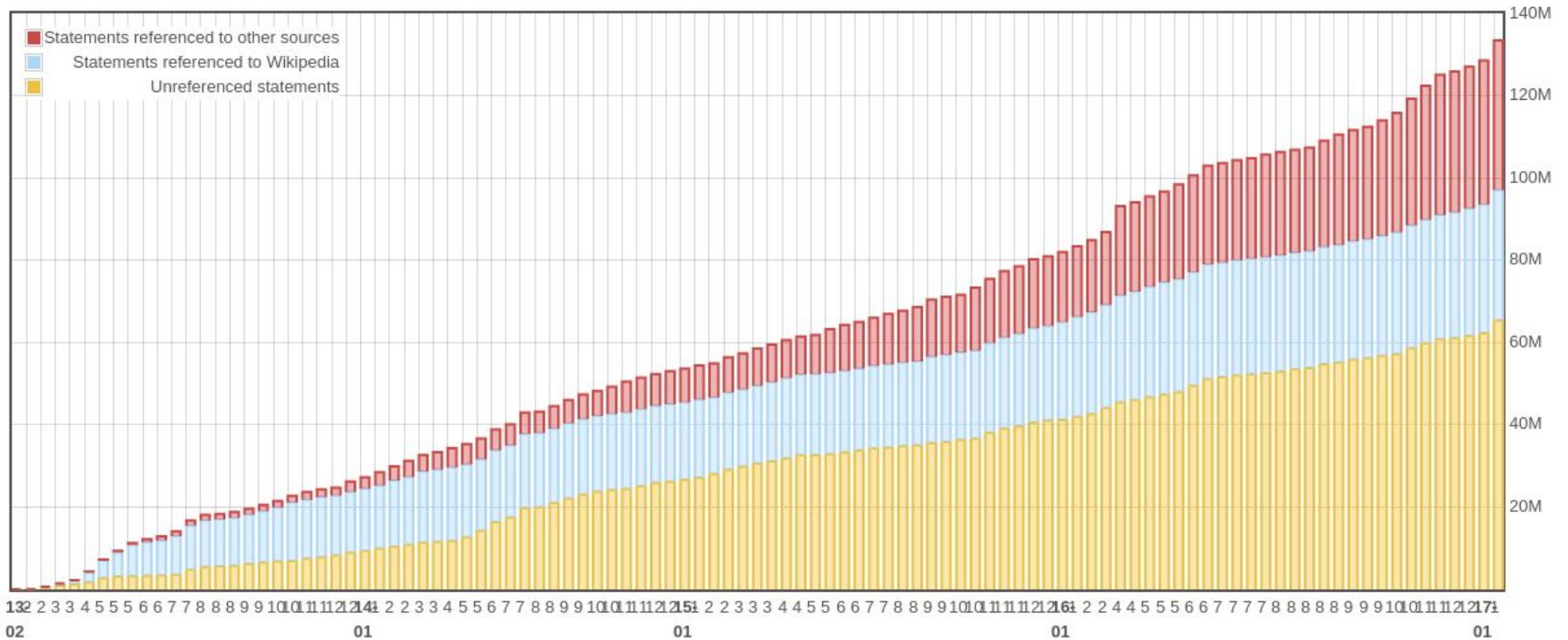
These statistics are based on bi-weekly Wikimedia snapshots. *Note:* Statements can be referenced to both Wikipedia and other sources.

Show [reverse stacks](#)

Overview

Table

Plot



<https://tools.wmflabs.org/wikidata-todo/stats.php>



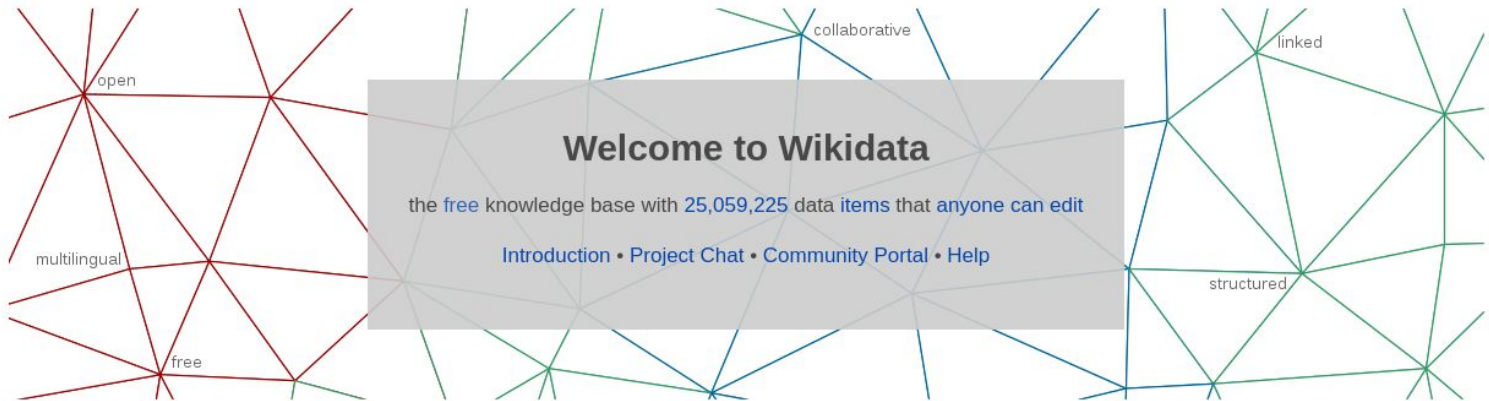
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- Print/export
- Create a book
- Download as PDF
- Printable version

- In other projects
- Wikimedia Commons
- MediaWiki
- Meta-Wiki
- Wikispecies
- Wikibooks
- Wikinews
- Wikipedia
- Wikiquote
- Wikisource
- Wikiversity
- Wikivoyage

- Tools
- What links here
- Related changes
- Special pages
- Permanent link
- Page information
- Wikidata item

- In Wikipedia
- Qafár af
- Агъушәә
- Acèh
- Адыгабзэ
- Afrikaans



Welcome!

Wikidata is a free and open knowledge base that can be read and edited by both humans and machines.

Wikidata acts as central storage for the **structured data** of its Wikimedia sister projects including Wikipedia, Wikivoyage, Wikisource, and others.

Wikidata also provides support to many other sites and services beyond just Wikimedia projects! The content of Wikidata is available under a free license, exported using standard formats, and can be interlinked to other open data sets on the linked data web.

Get involved


Explore the project:

- Learn all about Wikidata and how it works
- Check out a showcase item for author Douglas Adams
- Browse the Frequently Asked Questions
- Understand how to navigate the site
- Test out the software at the Wikidata sandbox
- Find help and relevant documentation


Start contributing:

Learn about data


New to the wonderful world of data? Develop and improve your data literacy through content designed to get you up to speed and feeling comfortable with the fundamentals in no time.



item: *Earth* (Q2)




property: *highest point* (P610)



custom value: *Mount Everest* (Q513)

Popular items

- John Hurt (Q200405) (pictured)
- Brunhilde Pomsel (Q21005215)
- 2017 Quebec City mosque shooting (Q28549976)



DBpedia is not Wikidata



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Projects

Use Cases



Towards a Public Data Infrastructure for a Large,
Multilingual, Semantic Knowledge Graph



FEATURED PROJECTS



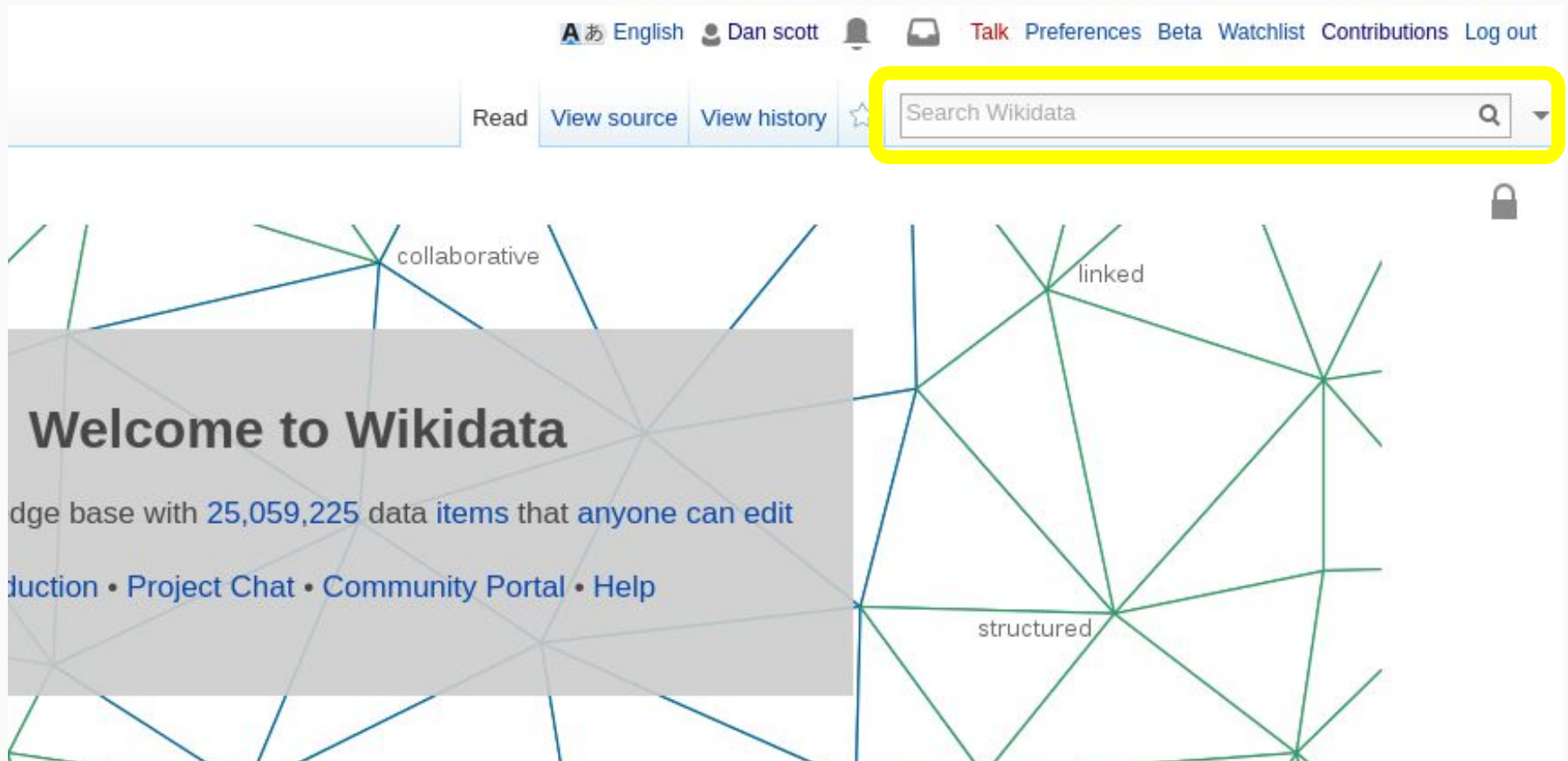
PROJECT

RelFinder

Are you interested in how things are related with each other? The flash-based [RelFinder](#) helps to get an overview: It extracts and visualizes relationships between given objects in RDF data and makes these relationships interactively explorable.



Searching Wikidata for entities



The image shows the Wikidata homepage. At the top, there is a navigation bar with the following items: [English](#), [Dan scott](#), [Talk](#), [Preferences](#), [Beta](#), [Watchlist](#), [Contributions](#), and [Log out](#). Below this, there are buttons for [Read](#), [View source](#), and [View history](#). A search bar labeled "Search Wikidata" is highlighted with a yellow border. The main content area features a large network diagram with nodes and edges. The text "collaborative" is positioned above a node on the left, "linked" is above a node on the right, and "structured" is below a node on the right. A grey semi-transparent box on the left contains the following text:

Welcome to Wikidata

Knowledge base with **25,059,225** data items that anyone can edit

[Introduction](#) • [Project Chat](#) • [Community Portal](#) • [Help](#)

Complete with auto-complete

The image shows a screenshot of the Wikidata website. At the top, there is a navigation bar with links for 'English', 'Dan scott', 'Talk', 'Preferences', 'Beta', 'Watchlist', 'Contributions', and 'Log out'. Below this, there are buttons for 'Read', 'View source', 'View history', and a star icon. A search bar contains the text 'donald t'. A dropdown menu is open, showing a list of search results for 'donald t':

- Donald Trump**
45th President of the United States of America
- Donald Tansley**
- Donald Tusk**
polish politician
- Donald Trump Jr.**
US businessman, son of President Donald Trump
- Donald Tsang**
Hong Kong politician
- Donald Thomas**
Athletics competitor
- Donald Regan (*Donald Thomas Regan*)**
American cabinet official

At the bottom of the dropdown, there is a 'more' link and a section labeled 'containing...' with the text 'donald t'. On the left side of the page, there is a large grey box with the text 'Welcome to Wikidata' and 'knowledge base with 25,059,225 data items that anyone can edit'. Below this, there are links for 'Introduction', 'Project Chat', 'Community Portal', and 'Help'. The word 'collaborative' is written in green above the grey box. The entire page is overlaid with a network of green and blue lines, suggesting a graph structure.



- Main page
- Community portal
- Project chat
- Create a new item
- Item by title
- Recent changes
- Random item
- Query Service
- Nearby
- Help
- Donate

- Tools
- What links here
- Related changes
- Special pages
- Permanent link
- Page information
- Concept URI
- Cite this page

Item Discussion

Read View history

Search Wikidata

Donald Duck (Q6550)

animal cartoon character
Donald Fauntleroy Duck

edit

In more languages Configure

Language	Label	Description	Also known as
English	Donald Duck	animal cartoon character	Donald Fauntleroy Duck
French	Donald Duck	personnage de l'univers de Disney	
Italian	Paperino	personaggio immaginario della Disney	Paolino Paperino
German	Donald Duck	Comic- und Zeichentrick-Figur aus dem Disney-Studio	

All entered languages

Statements

instance of	fictional duck	edit
	0 references	+ add reference
	funny animal	edit
	0 references	+ add reference
		+ add

image	The Spirit of 43-Donald Duck, cropped version.jpg	edit
	0 references	+ add reference
		+ add

Wikipedia (80 entries) edit

- af Donald Duck
- als Donald Duck
- ar بطوط
- az Donald Dak (personaj)
- bg Доналд Дък
- bo ལྷོ་ལྷོ་
- br Donald Duck
- bs Pajo Patak
- ca Ànec Donald
- ceb Donald Duck
- cs Kačer Donald
- da Anders And
- de Donald Duck
- el Ντόναλντ Ντακ
- en Donald Duck
- eo Donaldo Anaso
- es Pato Donald
- et Piilupart Donald
- eu Donald ahatea
- fa دانلد داک
- fi Aku Ankka
- fo Dønnaldur Dunna
- fr Donald Duck
- fy Donald Duck
- ga Donald Duck
- gl Pato Donald
- gu ડોનાલ્ડ ડક
- he דאָנאַלד דאָק
- hi डोनाल्ड डक
- hr Paško Patak
- hu Donald kacsa



- Main page
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Item Discussion

Read View history Search Wikidata

Donald Duck (Q6550)

animal cartoon character
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[edit](#)

[In more languages](#) Configure

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German	Donald Duck	Comic- und Zeichentrick-Figur aus dem Disney-Studio	

All entered languages

Statements

instance of	fictional duck edit
	<div style="text-align: right;"> ▼ 0 references + add reference </div>
funny animal	<div style="text-align: right;"> edit ▼ 0 references + add reference + add </div>

image	The Spirit of 43-Donald Duck, cropped version.jpg edit
	<div style="text-align: right;"> ▼ 0 references + add reference + add </div>

sex or gender	male edit
---------------	---------------------------

Wikipedia (80 entries) [edit](#)

- af Donald Duck
- als Donald Duck
- ar بطوط
- az Donald Dak (personaj)
- bg Доналд Дък
- bo ལྷ་ལྷ་ལྷ་
- br Donald Duck
- bs Pajo Patak
- ca Ànec Donald
- ceb Donald Duck
- cs Kačer Donald
- da Anders And
- de Donald Duck
- el Ντόναλντ Ντακ
- en Donald Duck
- eo Donaldo Anaso
- es Pato Donald
- et Piilupart Donald
- eu Donald ahatea
- fa دانلد داک
- fi Aku Ankka
- fo Dønnaldur Dunna
- fr Donald Duck
- fy Donald Duck
- ga Donald Duck
- gl Pato Donald
- gu ડોનાલ્ડ ડક
- he דאָנאַלד דאָק
- hi डोनाल्ड डक
- hr Paško Patak
- hu Donald kacsa

<https://www.wikidata.org/wiki/Q6550.json>

```
{
  "entities": {
    "Q6550": {
      "pageid": 7674,
      "ns": 0,
      "title": "Q6550",
      "lastrevid": 439312714,
      "modified": "2017-01-30T10:54:43Z",
      "type": "item",
      "id": "Q6550",
      "labels": {
        "fr": { "language": "fr", "value": "Donald Duck" },
        "en": { "language": "en", "value": "Donald Duck" },
        "ar": { "language": "ar", "value": "بطوط" }
      },
      "claims": {
        "P1080": [
          {
            "mainsnak": {
              "snaktype": "value",
              "property": "P1080",
              "datavalue": {
                "value": {
                  "entity-type": "item",
                  "numeric-id": 12301358,
                  "id": "Q12301358"
                }
              },
              "type": "wikibase-entityid"
            }
          ]
        }
      }
    }
  }
}
```

SPARQL is magic



Awards received by Donald Trump

```
SELECT ?awardLabel ?year ?forWorkLabel
WHERE {
  BIND ( wd:Q22686 as ?human ) .
  ?human p:P166 ?awardStmt .
  ?awardStmt ps:P166 ?award .
  ?awardStmt pq:P585 ?date .
  BIND(YEAR(?date) AS ?year) .
  OPTIONAL { ?awardStmt pq:P1686 ?forWork . }
  SERVICE wikibase:label { bd:serviceParam wikibase:language "en"
}
}
ORDER BY DESC(?year)
```

<http://tinyurl.com/gmpeen5z>

awardLabel	year	forWorkLabel
Time Person of the Year	2016	
Star on Hollywood Walk of Fame	2007	
Golden Raspberry Award for Worst Supporting Actor	1990	Ghosts Can't Do It
Ellis Island Medal of Honor	1986	
Jewish National Fund Tree of Life Award	1983	

Other humans who have received the same awards

<http://tinyurl.com/hd2ww2m>

```
1 SELECT ?humanLabel ?awardLabel ?year ?forWorkLabel
2 WHERE {
3   ?human p:P166 ?awardStmt .
4   ?human wdt:P31 wd:Q5 .
5   ?awardStmt ps:P166 ?award .
6   ?awardStmt pq:P585 ?date .
7   wd:Q22686 wdt:P166 ?award .
8   BIND(YEAR(?date) AS ?year) .
9   OPTIONAL { ?awardStmt pq:P1686 ?forWork . }
10  SERVICE wikibase:label { bd:serviceParam wikibase:language "en" }
11 }
12 ORDER BY DESC(?year)
```

Find instance of human with Donald Trump award received

Show award received , for work

Limit

Press [CTRL-SPACE] to activate auto completion.

Data updated **a few seconds** ago

Run Clear **33 Results in 294 ms**

Display Download Link

humanLabel	awardLabel	year	forWorkLabel
Donald Trump	Time Person of the Year	2016	
Angela Merkel	Time Person of the Year	2015	
Ellen DeGeneres	Star on Hollywood Walk of Fame	2012	
Barack Obama	Time Person of the Year	2012	
Billy Ray Cyrus	Golden Raspberry Award for Worst Supporting Actor	2009	Hannah Montana: The Movie
Barack Obama	Time Person of the Year	2008	
Vladimir Putin	Time Person of the Year	2007	



Item Discussion

Read View history

Search Wikidata

Mother Mother (Q2739716)

No description defined

edit

In more languages Configure

Language	Label	Description	Also known as
English	Mother Mother	No description defined	
French	Mother Mother	groupe de musique canadien	

Statements

inception

2005

edit

2 references

imported from	English Wikipedia
reference URL	https://www.thestar.com/entertainment/music/2011/03/08/mother_mothers_musical_moves.html
stated in	Toronto Star
title	Mother Mother's musical moves (English)
publication date	8 March 2011

+ add reference

+ add

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Tools

- What links here
- Related changes
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- Page information
- Concept URI
- Cite this page

Wikidata in its first phases has two main goals: **to centralize interlanguage links** across Wikimedia projects and **to serve as a general knowledge base** for the world at large.

An item is notable if "[i]t fulfills some structural need, for example: it is needed to make statements made in other items more useful."

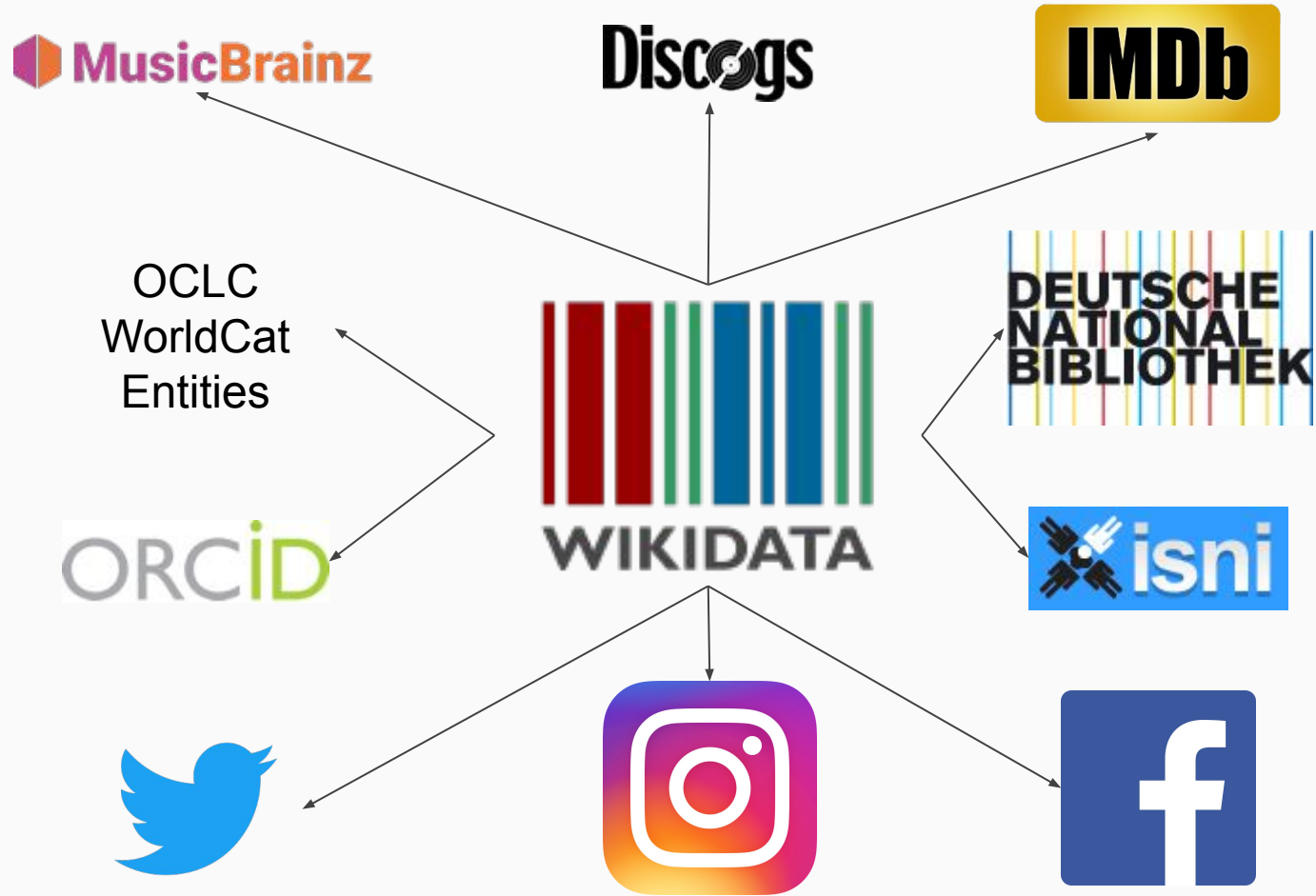
<https://www.wikidata.org/wiki/Wikidata:Notability>

Anonymous or authenticated edits



https://commons.wikimedia.org/wiki/File:Anonymous_Guy_Fawkes_Mask_Scientology_Protest_Minneapolis_2255698712.jpg

Promiscuous authority linkage



From old inline Wikipedia markup:

```
{{Authority control |VIAF=xxxxxx |LCCN=n/xx/xxxxxx |ISNI=xxxx  
xxxx xxxx xxxx |ORCID=xxxx-xxxx-xxxx-xxxx |GND=xxxxxx  
|SELIBR=xxxxxx |SUDOC=xxxxxxxx |BNF=xxxxxx |BPN=xxxxx  
|RID=xxxxx |BIBSYS=xxxxx |ULAN=xxxxx |MBA=xxxxxx |NLA=xxxxxxxx  
|NDL=xxxxxxxx}}
```

To new inline Wikipedia markup:

```
{{Authority control}}
```

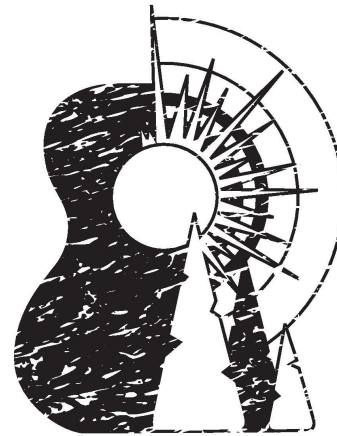
Opportunity:

- Rich local collections
- Autonomy
- Authority control
- Globally visible

Amplify
Canadian music
in Wikipedia!



**MARIPOSA
FOLK FESTIVAL**



**NORTHERN
LIGHTS
FESTIVAL
BORÉAL**

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