



Wikidata workshop

SLV LAB WikiFest
27 August 2025

Introduction

What is Wikidata?

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

What can Wikidata do?

It can answer simple questions

Who is the current Prime Minister of Australia?

List all the Premiers of Victoria

What is the capital city of Florida?

What can Wikidata do?

It can answer complex questions

Show me all national flags which depict the constellation Crux (the Southern Cross)

List the top ten cities, by population, with a female mayor

Families where five generations have been members of the UK Parliament

List Australian electoral divisions named after women

What can Wikidata do?

It can provide information and linkages for Wikipedia and other projects (including your own!)

Infoboxes

Inter-language links

Translation

Queries in text and infoboxes means data is easier to update (e.g. populations)

What can Wikidata do?

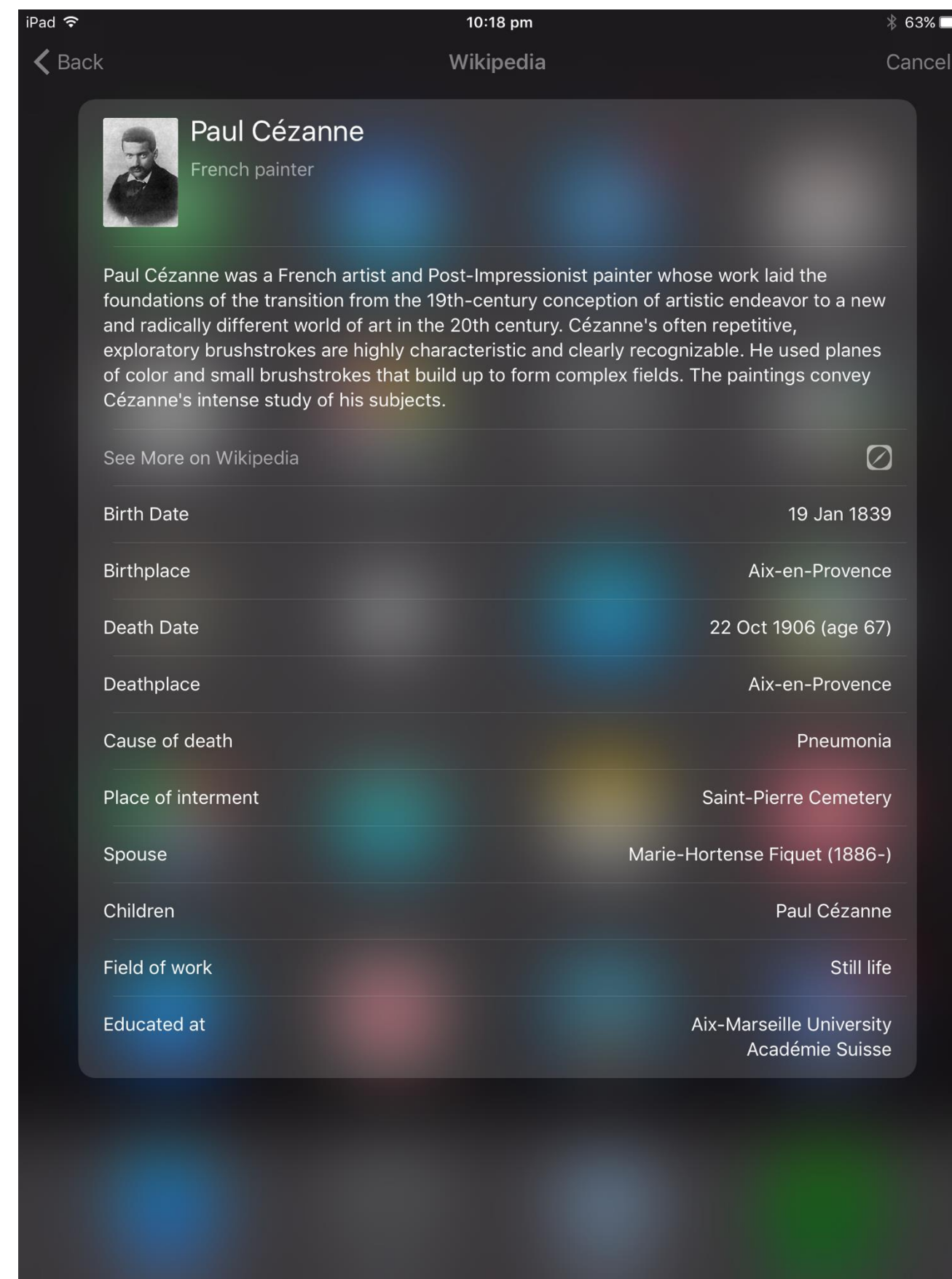
It can show gaps of coverage for Wikipedia and other projects

Articles on the English Wikipedia about people born in Wales without an article on the Welsh Wikipedia

Women on Wikidata employed or educated by the University of Melbourne without an article on the English Wikipedia

What can Wikidata do?

It can inform AI systems, “knowledge engines” and virtual assistants



What can Wikidata do?

It can be used to model ontologies: a structure of concepts and their relationships

Authority control

Wikidata is called the “glue of the internet”:

- Cross-domain and multi-lingual
- One item for one entity or concept
- **Reconciliation** is important when creating items or importing data, to avoid creating duplicates
- **“Round-tripping”** – using Wikidata to cleanse consolidate other datasets, catalogues and other authority control repositories

How can I help?

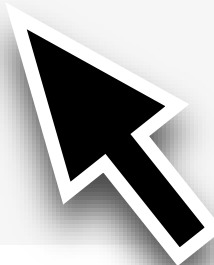
Interested in...

- Art?
- Politics?
- Science?
- Literature?
- Geography?
- Anything?

Curation

How can I help?

Recent changes
Random item
Query Service



No label defined (Q28499338)

No description defined [edit](#)

▼ In more languages [Configure](#)

Language	Label	Description	Also known as
English	No label defined	No description defined	
Irish	No label defined	No description defined	
Traditional Chinese	No label defined	No description defined	
Chinese	No label defined	No description defined	

[All entered languages](#)

Wikipedia (1 entry) [edit](#)

fr

Championnat de Suisse de hockey sur glace 1929-1930

Wikiquote (0 entries) [edit](#)

Wikiversity (0 entries) [edit](#)

Wiktionary (0 entries) [edit](#)

Random fixes/translation

How can I help?

**Person**

Many items about people on Wikidata have no "instance of" property. Decide if one of them is a [human](#), or skip the item if you are not sure.

**Gender**

Many items about people on Wikidata have no [gender property](#) set. Add a sex/gender statement "male" or "female", or skip the item if you are not sure.

**Occupation**

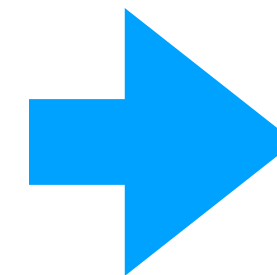
These people have no [occupation](#), but their articles suggest some.

**Alma mater**

These people have no [alma mater](#), but their articles suggest some.

**Country of citizenship**

These people have a birth place, but no country of citizenship ([P27](#)).



This person has no occupation property. The game offers occupations linked from the Wikipedia articles. If the correct occupation is not offered, click "not listed" even if the occupation is in the article text.

Item [Q11717032](#)

Jan Berger (polityk)

Jan Berger

date of birth

1945-11-14

educated at

Lodz University of Technology

given name

Jan

sex or gender

male

instance of

human

plwiki: Jan Berger (polityk)

pl.wikipedia.org: Jan Berger (polityk)

Jan Berger (ur. 14 listopada 1945) – polski polityk, oraz samorządowiec. Z wykształcenia jest inżynierem-mechanikiem, absolwentem Technikum Mechaniczno-Elektrycznego w Bielsku-Białej oraz Politechniki Łódzkiej. Pełnił funkcję burmistrza Czechowice-Dziedzice od 12 czerwca 1990 r. do 26 listopada 2006 roku. Obecnie jest zastępcą dyrektora Administracji Zasobów Komunalnych w Czechowicach-Dziedzicach. Żonaty z Kazimierą, ma trójkę dzieci....

mechanic

politician

Done

Not sure

Not listed

Wikidata Games

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

How can I help?

This tool can list entries of some external databases, and allows users to match them against Wikidata items.

Think 'red link lists on steroids'. See [the manual](#) for a how-to. For an alternative, see [OpenReconcile](#).

Group: None | [By type](#) Order: By ID | [By completeness](#) | [By name](#) Completed: Inline | [Section](#)

All catalogs

ODNB	Oxford Dictionary of National Biography	100%	✓
Art UK artist ID	BBC Your Paintings	61%	38%
CE1913	Catholic Encyclopedia (1913)	52%	
Appletons	Appletons' Cyclopaedia of American Biography	99%	
Houbraken	De groote schouburgh der Nederlantsche konstschilders en schil	100%	
BLSHL	Biographisches Lexikon fuer Schleswig-Holstein und Luebeck	8%	35%
HamBio	Hamburgische Biografie	100%	
LdEDA	Lexikon deutschsprachiger Epik und Dramatik von Autorinnen	100%	

VICNAMES

Official database of geographic names maintained by state government of Victoria, Australia. Database license is CC-BY 3.0. Note only REGISTERED names have been imported in this catalog (due to the difficulties posed by the duplication of non-registered n

Action ▾

1 2 3 4 5 6 7 ... 516

# Bradford Creek	stream in Loddon Shire, Victoria, Australia	Not matched
Search Wikidata Search en.wikipedia Google-search Wikipedias Google-search Wikidata		Set Q New item N/A
# Mount Barlow	mountain in Towong Shire, Victoria, Australia	Not matched
Search Wikidata Search en.wikipedia Google-search Wikipedias Google-search Wikidata		Set Q New item N/A
# Barmah Bridge	bridge in Moira Shire, Victoria, Australia	Not matched
Search Wikidata Search en.wikipedia Google-search Wikipedias Google-search Wikidata		Set Q New item N/A
# Barmah Creek	stream in Moira Shire, Victoria, Australia	Not matched
Search Wikidata Search en.wikipedia Google-search Wikipedias Google-search Wikidata		Set Q New item N/A
# Barmah Creek	stream in Moira Shire, Victoria, Australia	Not matched
Search Wikidata Search en.wikipedia Google-search Wikipedias Google-search Wikidata		Set Q New item N/A

Mix 'n' Match

<https://mix-n-match.toolforge.org/#/>

How can I help?

QuickStatements

ToolsGitTalk

This tool can add statements (with optional qualifiers and sources) to Wikidata items.

First column are articles from

Qxx Pxx value qualifier_Pxx value source_Sxx value

You need to authorize [WiDaR](#) to edit Wikidata on you behalf for this tool to work! [Show/hide HOWTO](#)

How to use

You can specify the statements to add by typing/pasting one row per statement into the above text area. Different parts of the statement are separated by a **TAB** character. As **TAB** is hard to type into a text area, you may want to use a text editor, and paste the statements into the text area later.

Hint: You can also use a spreadsheet software such as Excel; Copying/pasting the cells should automatically insert **TAB** s.

Each statement *must* consist of an **item** , a **property** , and a **value** . A **value** can be another **item** , a **string** , a **time** , a **location** , or a **quantity** , depending on the property type. A basic example:

Q4115189

TAB

P31

TAB

Q1

For the (initial) item of a statement, you can use an article name instead, *if* you fill in a `xxwiki` value in the input box above the text area; the correct item number (if available) will be retrieved automatically.

QuickStatements (data imports)

<https://quickstatements.toolforge.org/#/>

How can I help?

 **OpenRefine** VALA2023 [Permalink](#)

Facet / Filter

Undo / Redo 12 / 12

Using facets and filters

Use facets and filters to select subsets of your data to act on. Choose facet and filter methods from the menus at the top of each data column.

Not sure how to get started?
[Watch these screencasts](#)

1,001 records

Extensions Wikibase

Show as: rows records Show: 5 10 25 50 100 500 1000 records

« first < previous 1 - 35 next > last »

All	Title	Authors	Language	DOI	ISSNs	journal-details	jour
 	1. The Fisher Thermodynamics of Quasi-Probabilities	Flavia Pennini	EN	edit 10.3390/e17127853	1099-4300	<pre>{ "status": "ok", "message-type": "journal", "message-version": "1.0.0", "message": { "last-status-check-time": 1689562663388, "counts": { "current-dois": 4557, "backfile-dois": 6601, "total-dois": 11158, "breakdowns": { "dois-by-issued-year": [[2022, 1866], [2021, 1717], [2020, 1443], [2019, 1274], [2018, 999], [2023, 974], [2017, 694], [2016, 459], [2015, 453], [2014, 328], [2013, 284], [2012, 137], [2010, 119], [2011, 101], [2009, 69], [2008, 55], [2003, 39], [2004, 33], [2001, 21], [2005, 20], [2006, 18], [2007, 17], [1999, 16], [2000, 12], [2002, 10]] }, "publisher": "MDPI AG", "coverage": { "affiliations-current": 0.1906956330919465, "similarity-checking-current": 1.0, "descriptions-current": 0.0, "ror-ids-current": 0.0, "funders-backfile": 0.2787456445993031, "licenses-backfile": 0.9993940312073928, "funders-current": 0.5878867676102699, "affiliations-backfile": 0.001211937585214361, "resource-links-backfile": 0.0, "orcid-backfile": 0.447507953340403, "update-policies-current": 0.002852754004827738, "ror-ids-backfile": 0.0, "orcid-current": 0.8347597103357473, "similarity-checking-backfile": 0.9993940312073928, "references-backfile": 0.9819724284199364, "descriptions-backfile": 0.0, "award-numbers-backfile": 0.2749583396455083, "update-policies-backfile": 0.003484320557491289, "licenses-current": 1.0, "award-numbers-current": 0.5740618828176433, "abstracts-backfile": 0.5058324496288441, "resource-links-current": 0.0, "abstracts-current": 1.0, "references-current": 0.9907834101382488, "title": "Entropy", "subjects": [["ASJC": 3100, "name": "General Physics and Astronomy"]], "coverage-type": "all", "last-status-check-time": 1689562663388, "affiliations": 0.07859127161932072, "abstracts": 0.7075902858679093, "orcid": 0.6056098216686083, "licenses": 0.9995519311766287, "references": 0.9854825701227709, "funders": 0.4049646025629537, "similarity-checking": 0.9995519311766287, "award-numbers": 0.3970785912716193, "ror-ids": 0.0, "update-policies": 0.003226095528273143, "resource-links": 0.0, "descriptions": 0.0, "backfile": { "last-status-check-time": 1689562663388, "affiliations": 0.001211937585214361, "abstracts": 0.5058324496288441, "orcid": 0.447507953340403, "licenses": 0.9993940312073928, "references": 0.9819724284199364, "funders": 0.2787456445993031, "similarity-checking": 0.9993940312073928, "award-numbers": 0.2749583396455083, "ror-ids": 0.0, "update-policies": 0.003484320557491289, "resource-links": 0.0, "descriptions": 0.0, "current": { "last-status-check-time": 1689562663388, "affiliations": 0.1906956330919465, "abstracts": 1.0, "orcid": 0.8347597103357473, "licenses": 1.0, "references": 0.9907834101382488, "funders": 0.5878867676102699, "similarity-checking": 1.0, "award-numbers": 0.5740618828176433, "ror-ids": 0.0, "update-policies": 0.002852754004827738, "resource-links": 0.0, "descriptions": 0.0, "flags": { "deposits-abstracts-current": true, "deposits-orcid-current": true, "deposits-affiliations-backfile": true, "deposits-update-policies-" } } } } } } }</pre>	Entropy



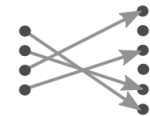
Faceting

Drill through large datasets using facets and apply operations on filtered views of your dataset.



Clustering

Fix inconsistencies by merging similar values thanks to powerful heuristics.



Reconciliation

Match your dataset to external databases via reconciliation services.



Infinite undo/redo

Rewind to any previous state of your dataset and replay your operation history on a new version of it.



Privacy

Your data is cleaned on your machine, not in some dubious data laundering cloud.



Wikibase

Contribute to Wikidata, the free knowledge base anyone can edit, and other Wikibase instances.

OpenRefine

<https://openrefine.org>

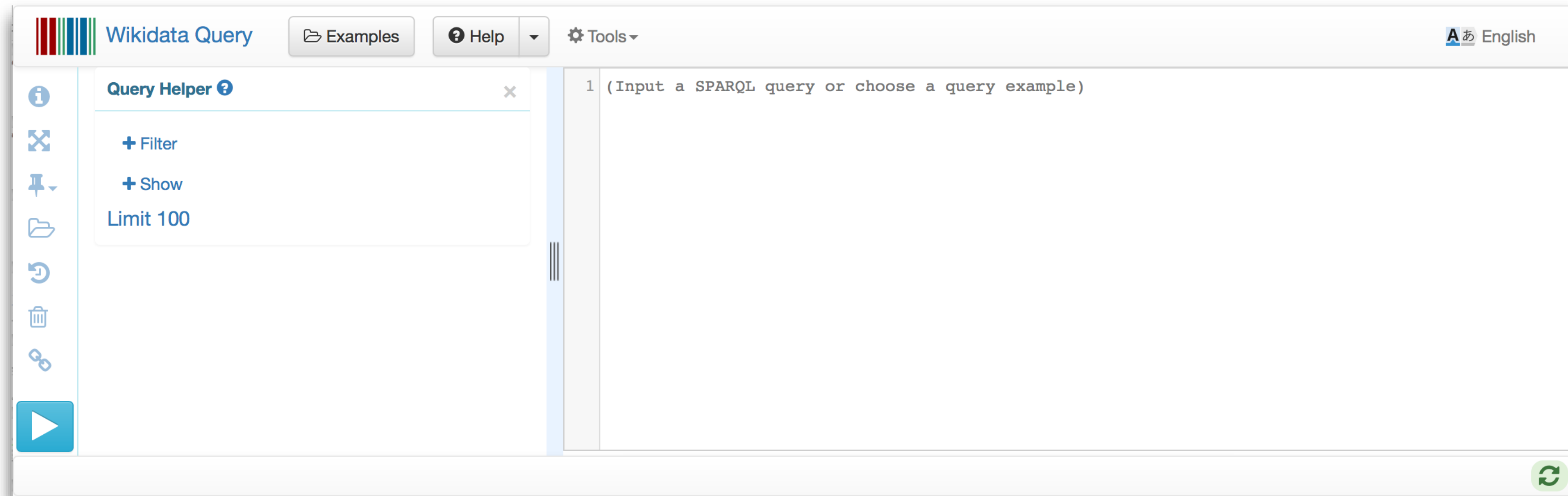
Querying Wikidata

Querying Wikidata

```
SELECT ?person ?personLabel ?personDescription
WHERE {
    ?person wdt:P31 wd:Q5 .
    ?person wdt:P108 wd:Q1200052
    SERVICE wikibase:label { bd:serviceParam wikibase:language
"en" }
}
ORDER BY ?personLabel
```

SPARQL

Querying Wikidata



SPARQL endpoint: query.wikidata.org

Querying Wikidata

Maps Dimensions

Tree maps

Bubble charts

Timelines

Tables

Area charts

Image grids

Query result types

Querying Wikidata

Tips:

- Use the Query Helper
- Control + Space is your friend
- Use and adapt the examples
- Save cool and useful queries in a text file

Querying Wikidata

QueryBuilder: a visual,
menu-based interface
for querying Wikidata

 WIKIDATA QUERY BUILDER 🌐 English

About this tool

The Wikidata Query Builder provides a visual interface for building a simple Wikidata query. It is ideal for users with little or no experience in [SPARQL](#), the powerful query language. The Query Builder doesn't offer SPARQL's full functionality, but you can always open your query in the Query Service, where you can view, edit or expand it via the link above the results. [Feedback is welcome here.](#)

Query

Find all items...

With

Without

Property ⓘ
Enter a property

matching ▼

Value ⓘ
Enter a value

References ⓘ
with and without references ▼

🗑️

Add condition

Settings

☒ Limit the number of results to

☐ Show IDs instead of labels (may prevent timeout)

Run query

🔗 Copy link to query

<https://query.wikidata.org/querybuilder/?uselang=en>

Querying Wikidata

Using AI/LLMs to write a query for Wikidata

ChatGPT >  

Write a SPARQL query so I can query Wikidata to get a list of librarians educated at the University of Melbourne.

Here's a SPARQL query you can run in the [Wikidata Query Service](#) to get a list of **librarians (occupation) who were educated at the University of Melbourne**:

sparql  Copy

```
SELECT ?person ?personLabel ?personDescription
WHERE {
  ?person wdt:P106 wd:Q16334295;      # occupation: librarian
          wdt:P69 wd:Q3116274.        # educated at: University of Melbourne

  SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO_LANGUAGE],en". }
}
ORDER BY ?personLabel
```

Explanation

- wdt:P106 → property *occupation*
- wd:Q16334295 → item *librarian*
- wdt:P69 → property *educated at*
- wd:Q3116274 → item *University of Melbourne*
- ?personLabel and ?personDescription will return the human-readable name and description.
- The SERVICE wikibase:label makes sure results come back in English (or your default language).

Querying Wikidata

With your own code or application:

Wikidata libraries/packages available for many languages:

- PHP, jQuery, JavaScript, Java, Perl, Python, Ruby, R, Matlab, etc.
- APIs available for Wikidata and other Wikimedia projects
- PetScan is a visual front-end for the Wikimedia API

```
1 # pip install sparqlwrapper
2 # https://rdflib.github.io/sparqlwrapper/
3
4 import sys
5 from SPARQLWrapper import SPARQLWrapper, JSON
6
7 endpoint_url = "https://query.wikidata.org/sparql"
8
9 query = """SELECT ?person ?personLabel ?personDescription
10 WHERE {
11   ?person wdt:P31 wd:Q5 .
12   ?person wdt:P108 wd:Q1200052
13   SERVICE wikibase:label { bd:serviceParam wikibase:language "en" }
14 }
15 ORDER BY ?personLabel
16 """
17
18
19 def get_results(endpoint_url, query):
20     user_agent = "WDQS-example Python/%s.%s" % (sys.version_info[0], sys.version_info[1])
21     # TODO adjust user agent; see https://w.wiki/CX6
22     sparql = SPARQLWrapper(endpoint_url, agent=user_agent)
23     sparql.setQuery(query)
24     sparql.setReturnFormat(JSON)
25     return sparql.query().convert()
26
27
28 results = get_results(endpoint_url, query)
29
30 for result in results["results"]["bindings"]:
31     print(result)
32
```

```
1 #http://www.r-bloggers.com/sparql-with-r-in-less-than-5-minutes/
2
3 library(SPARQL) # SPARQL querying package
4 library(ggplot2)
5
6 endpoint <- "https://query.wikidata.org/sparql"
7 query <- 'SELECT ?person ?personLabel ?personDescription\nWHERE {\n?person wdt:P31 wd:Q5 .\n?
8 person wdt:P108 wd:Q1200052\nSERVICE wikibase:label { bd:serviceParam wikibase:language "en"
9 }\n}\nORDER BY ?personLabel\n'
10 useragent <- paste("WDQS-Example", R.version.string) # TODO adjust this; see https://w.wiki/CX6
11
12 qd <- SPARQL(endpoint,query,cur\args=list(useragent=useragent))
13 df <- qd$results
14
```

```
1 function makeSPARQLQuery( endpointUrl, sparqlQuery, doneCallback ) {
2   var settings = {
3     headers: { Accept: 'application/sparql-results+json' },
4     data: { query: sparqlQuery }
5   };
6   return $.ajax( endpointUrl, settings ).then( doneCallback );
7 }
8
9 var endpointUrl = 'https://query.wikidata.org/sparql',
10 sparqlQuery = "SELECT ?person ?personLabel ?personDescription\n" +
11   "WHERE {\n" +
12   "?person wdt:P31 wd:Q5 .\n" +
13   "?person wdt:P108 wd:Q1200052\n" +
14   "SERVICE wikibase:label { bd:serviceParam wikibase:language \"en\" }\n" +
15   "}\n" +
16   "ORDER BY ?personLabel\n" +
17   """;
18
19 makeSPARQLQuery( endpointUrl, sparqlQuery, function( data ) {
20   $( 'body' ).append( $( '<pre>' ).text( JSON.stringify( data ) ) );
21   console.log( data );
22 }
23 );
```

```
1 #gem install sparql
2 #http://www.rubydoc.info/github/ruby-rdf/sparql/frames
3
4 require 'sparql/client'
5
6 endpoint = "https://query.wikidata.org/sparql"
7 sparql = <<'SPARQL'.chop
8 SELECT ?person ?personLabel ?personDescription
9 WHERE {
10   ?person wdt:P31 wd:Q5 .
11   ?person wdt:P108 wd:Q1200052
12   SERVICE wikibase:label { bd:serviceParam wikibase:language "en" }
13 }
14 ORDER BY ?personLabel
15
16 SPARQL
17
18 client = SPARQL::Client.new(endpoint,
19                               :method => :get,
20                               # TODO adjust user agent; see https://w.wiki/CX6
21                               headers: {'User-Agent' => 'WDQS-example Ruby'})
22 rows = client.query(sparql)
23
24 puts "Number of rows: #{rows.size}"
25 for row in rows
26   for key,val in row do
27     # print "#{key.to_s.ljust(10)}: #{val}\t"
28     print "#{key}: #{val}\t"
29   end
30   print "\n"
31 end
32
```