

Wikibase: an open source and free tool to build your linked open knowledge base

ISKO UK
November 23rd, 2021



WIKIMEDIA
DEUTSCHLAND

Presented by Georgina Burnett and
Mohammed Sadat Abdulai

Software development department

We have a dedicated software development department. Our role is to create **innovative** and **useful open source software** that helps to provides more people with more access to more knowledge.



Let's start at the beginning: What is Wikidata?



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Wikidata: the basics

- **Wikimedia project** started in 2012
- **Free** and **open** knowledge base
- Contains **structured data**
- **Linked** to other databases
- Data available under **CC0 licence**
- Based on **statements** and **references**
- Made for **humans** and **machines**
- **Multilingual**
- **Collaborative**



Wikidata: the basics



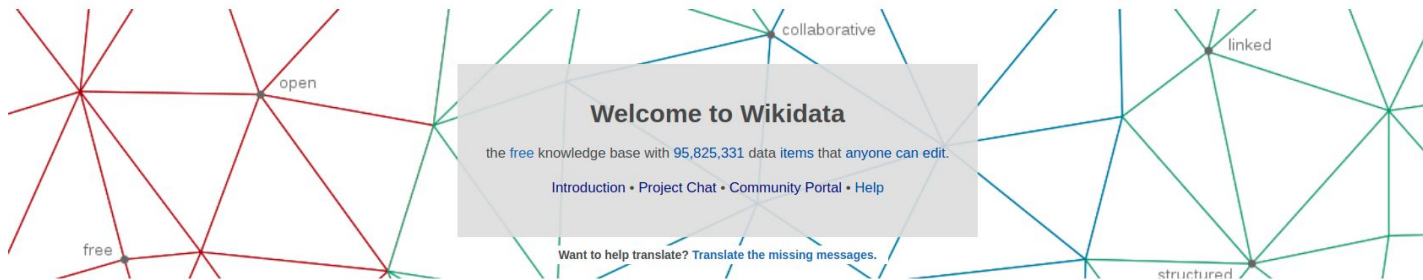
- Main page
- Community portal
- Project chat
- Create a new Item
- Recent changes
- Random Item
- Query Service
- Nearby
- Help
- Donate
- Lexicographical data
- Create a new Lexeme
- Recent changes
- Random Lexeme

- Tools
- What links here
- Related changes
- Special pages
- Permanent link
- Page information
- Wikidata item
- In other projects
- Wikimedia Commons
- MediaWiki
- Meta-Wiki
- Multilingual Wikisource
- Wikispecies
- Wikibooks
- Wikimania
- Wikinews
- Wikiquote
- Wikisource
- Wikiversity
- Wikivoyage
- Wiktionary

Main Page Discussion

Read View source View history

Search Wikidata



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, Wiktionary, 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

For a complete starters' guide, visit the **community portal**.

Learn about Wikidata




- What is Wikidata? Read the **Wikidata introduction**.
- Explore Wikidata by looking at a featured showcase item for author **Douglas Adams (Q42)**.
- Get started with Wikidata's **SPARQL query service**.

Contribute to Wikidata

- Learn to edit Wikidata: follow the **tutorials**.

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: <i>Earth</i> (Q2)	Property: <i>highest point</i> (P610)	custom value: <i>Mount Everest</i> (Q513)

Current highlights

- Freddie Mercury (Q15869) (pictured)
- Glen de Vries (Q108710624)
- Carole Meisner Hertz (Q109558436)



How is data modeled?

Users model the world in terms of **“triples”**. Triple structure: **Item, Property, Value**

Maya Angelou (Q19526) — **Item identifier (Q item)**

American poet and author (1928-2014)

 edit

Marguerite Annie Johnson | Marguerite Johnson | Marguerite Ann Johnson | Marguerite Anne Johnson

[▶ In more languages](#)

Statements

Property

instance of



human

Value

 edit

[▶ 1 reference](#)

[+ add value](#)

How is data modeled?

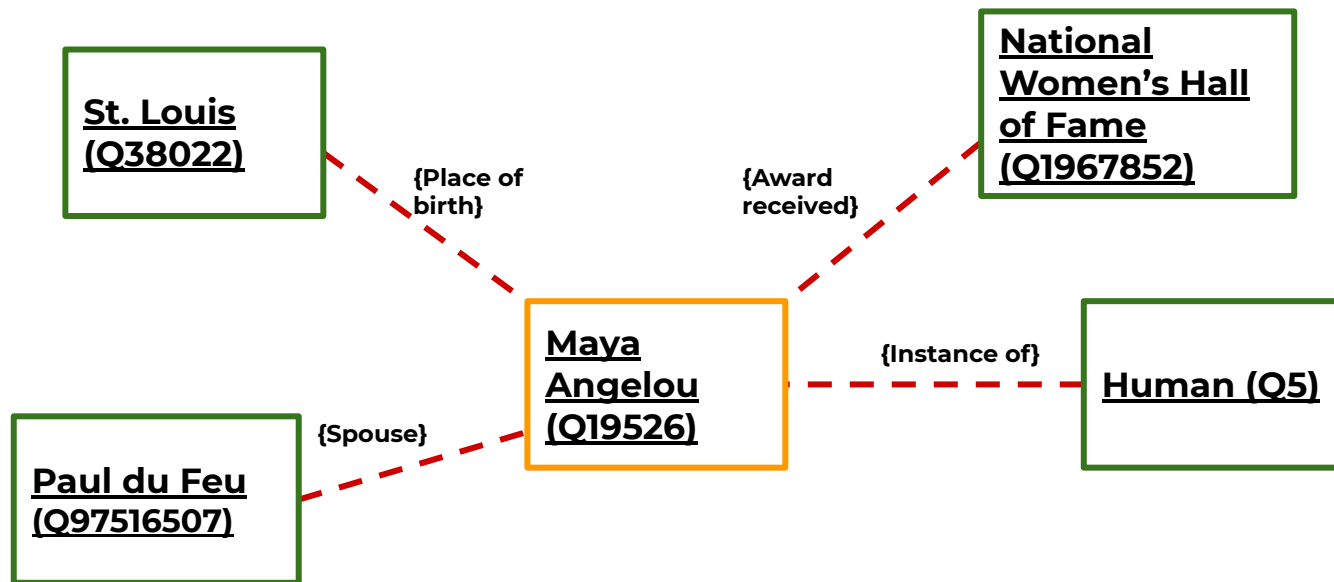
Adding extra detail beyond the triple structure: qualifiers and references

The image shows a Wikidata property page for "award received". The property name is highlighted in a red box and labeled "Property". The value is "National Women's Hall of Fame", highlighted in a green box and labeled "Value". A "point in time" qualifier is set to "1998", labeled "Qualifier". A "reference" is provided with the URL "https://www.womenofthehall.org/inductee/maya-angelou/", labeled "Reference". There is also an "edit" button and a "+ add reference" link.

award received	National Women's Hall of Fame	edit
	point in time 1998	Qualifier
	1 reference	
	reference URL https://www.womenofthehall.org/inductee/maya-angelou/	Reference
		+ add reference

How is data modeled?

Linking data: items are linked to each other



Querying Wikidata



Wikidata Query Service

Examples

Help

More tools



```
1 #defaultView:Map
2 SELECT ?item ?itemLabel ?coord ?image
3 WHERE
4 {
5   ?item wdt:P708 wd:Q869096.
6   ?item wdt:P625 ?coord.
7   OPTIONAL {
8     ?item wdt:P18 ?image
9   }
10  SERVICE wikibase:label { bd:serviceParam wikibase:language "en".
11 }
```

Wikidata Query Builder

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...

<input type="checkbox"/> With	<input type="checkbox"/> Without	Property [⊙] <input type="text" value="Enter a property"/>	<input type="text" value="matching"/>	Value [⊙] <input type="text" value="Enter a value"/>	References [⊙] <input type="text" value="with and without references"/>	<input type="checkbox"/>
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Add condition

Settings

Limit the number of results to

Show IDs instead of labels (may prevent timeout)

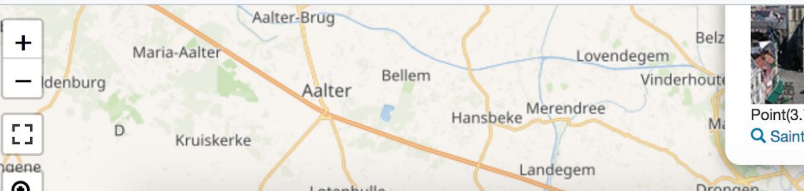
Get a shareable link

[Show query in the Query Service](#)

Results

Results will be displayed here

Map [?]



About the Query Builder

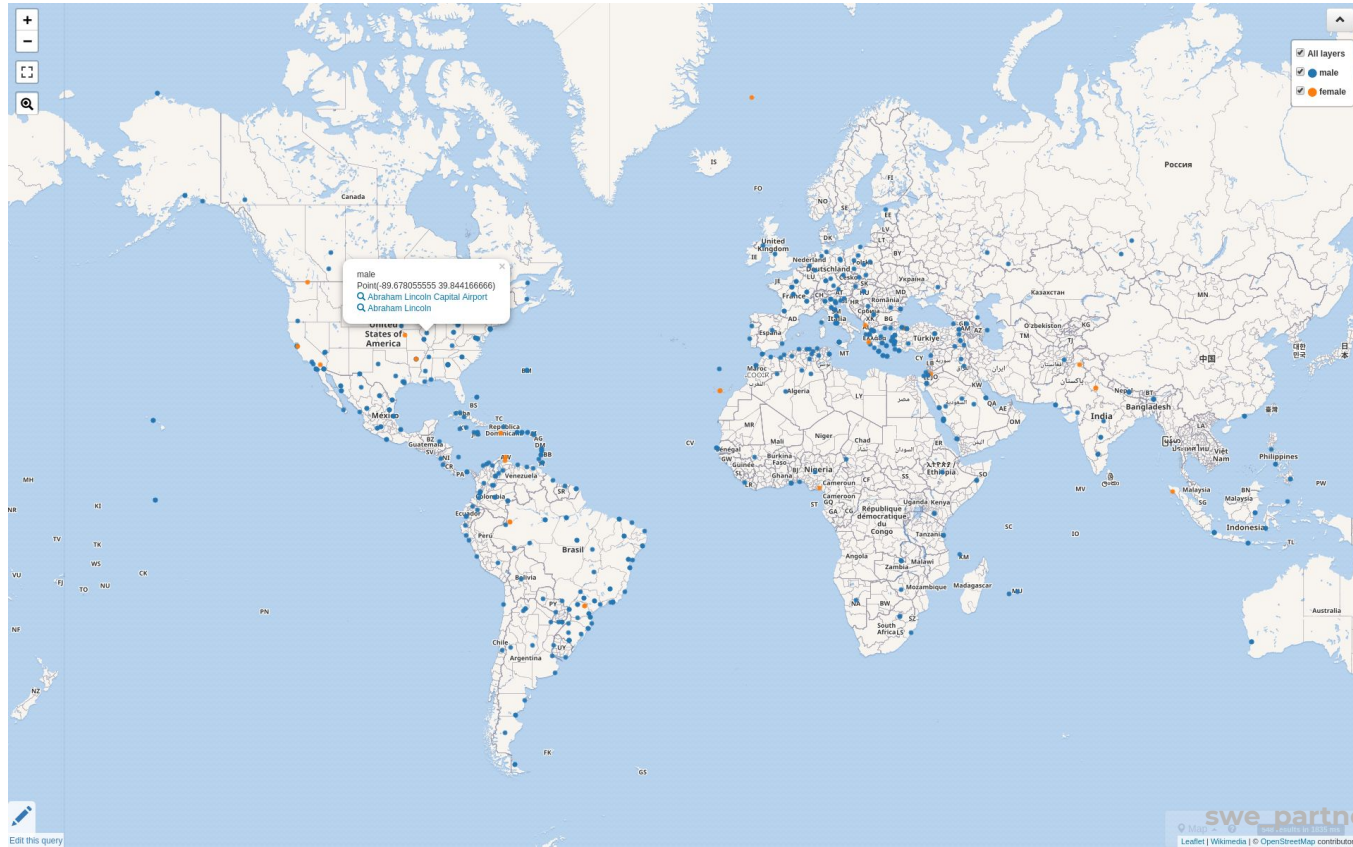
Licensed under [BSD 3-Clause License](#)
Last build at [Thu, 19 Aug 2021 08:44:30 GMT](#)
[View Source](#)
[Report a bug](#)

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[Made by the Wikidata team](#)

swe_partnerships@wikimedia.de

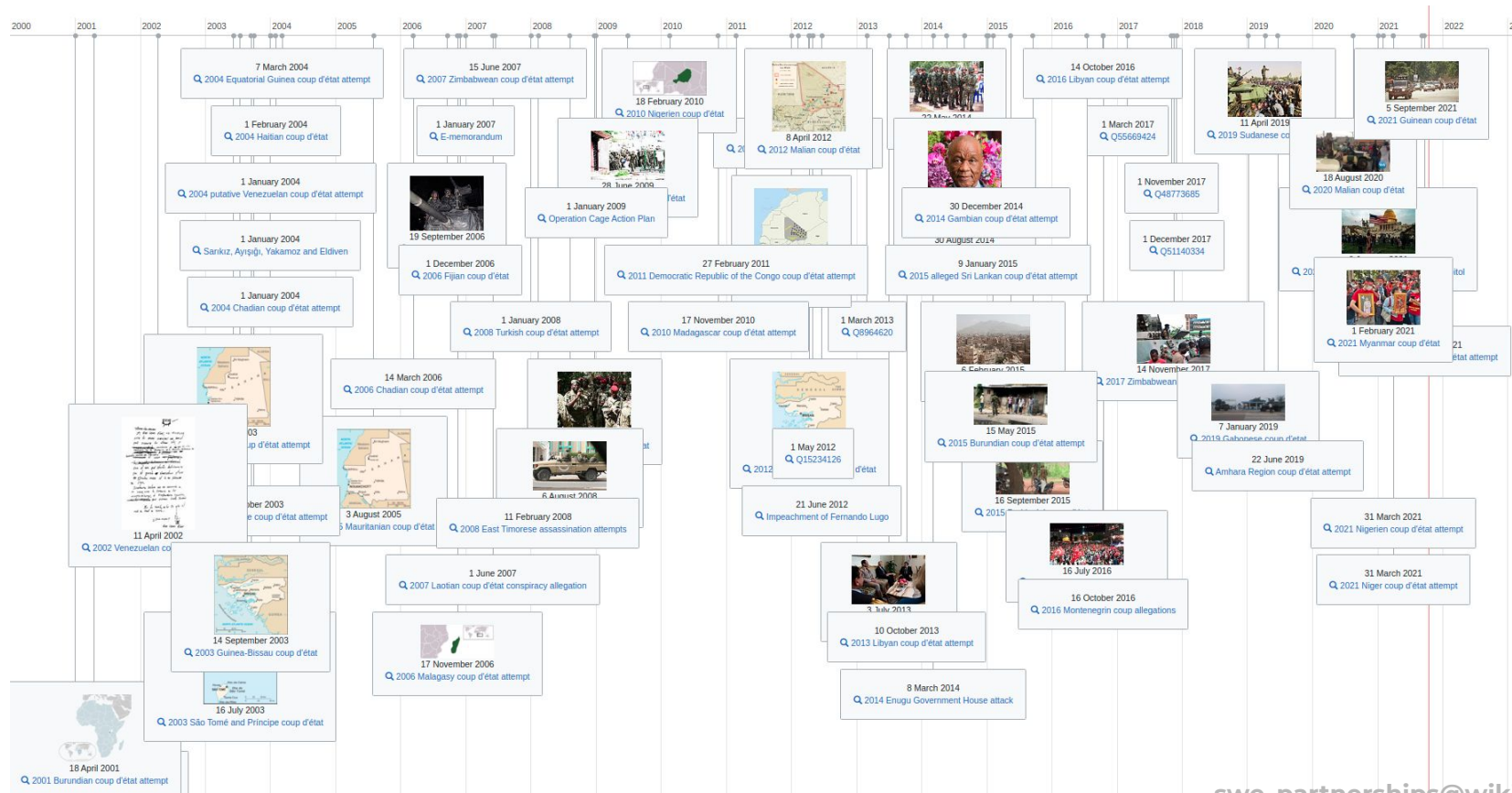
Example query: Airports named after a person, color-coded by gender



Example query: Cause of death of members of noble families



Example query: timeline of coups d'état during the 21st century



So, then, what is Wikibase?



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Wikibase is the software underlying Wikidata

It is a **free** and **open source** software suite launched in 2012 by **Wikimedia Deutschland**. We continue to develop and maintain it today.

Wikibase powers **Wikidata** and increasingly, a wide range of other **linked open data projects**.



What does Wikibase offer

- Users can **create** and **manage** their own linked open **knowledge base**
- Its flexibility allows users to build their own **data model** to suit their needs
- A MediaWiki interface means users can easily **access** and **update** data
- Just like on Wikidata, users can interact with their data using **SPARQL**, the powerful query language



Wikibase is ideal for...

- Structured data collections that call for a **flexible** data model
- **Linking** databases to external sources
- **Collaborative projects** where lots of people edit and manipulate data
- Data that should be **both human and machine** readable
- Projects involving **multilingual labeling**



Wikibase in action: Enslaved.org

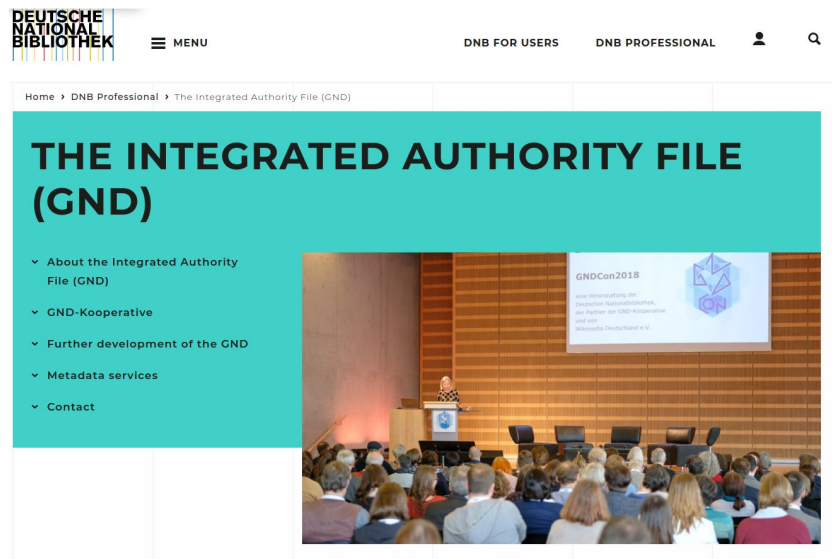
- Enslaved is a linked open database about the **history of transatlantic slave trade**
- Using Wikibase as a **linking and reconciliation hub**, Enslaved unites seven separate scholarly databases
- It contains more than **850 thousand records** about (People, Events, Places and sources)



A screenshot of the Enslaved.org website. The top section features a historical illustration of a slave market. Below the illustration, the title 'Enslaved' is prominently displayed in white, followed by the subtitle 'Peoples of the Historical Slave Trade'. A dark green navigation bar contains the text 'Explore or reconstruct the lives of individuals who were enslaved, owned slaves, or participated in the historical trade.' and a 'Learn More' link. Below this, a search bar is present with the text 'Start a search across 613458 records from the historical slave trade' and a 'Go to Advanced Search' link. The search bar contains the placeholder text 'Search People, Events, and Places'. The bottom section is titled 'Explore' and includes the text 'Browse People, Events, Places, and Sources'. To the right of this section is a list of categories with their respective record counts: 'People' (384380), 'Events' (212537), 'Places' (14033), and 'Sources' (2508). Each category has a right-pointing arrow next to its count.

Wikibase in action: German National Library

- The German National Library is piloting Wikibase for its **integrated authority file**
- The ***Gemeinsame Normdatei*** represents and describes entities then used in cataloguing. It is authoritative **across German-speaking countries**
- The idea is to enable **collaborative maintenance** of the authority file



Wikibase and the future



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Our vision for Wikibase

“**Wikibase** makes it easier than ever before to **create, connect, and grow** a collaborative linked knowledge base. We are enabling the co-creation of the **world’s largest knowledge graph** of free and open data which will be used to **create new knowledge** for the world.”

*Linked Open Data Strategy 2021**



*Read our linked open data strategy here
<https://meta.wikimedia.org/wiki/LinkedOpenData/Strategy2021/Wikibase>

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Federation

The full power of Wikibase will be unlocked when different Wikibases can **“talk”** to each other, link content, query across instances, and re-use ontologies.

All of this falls within the topic of **Federation**, or federated Wikibases.



Step 1: Federated properties

We have taken the first step towards federation: **federated properties**.

This allows a newly created Wikibase instance to adopt properties from an existing Wikibase instance.

This could be Wikidata, or any other instance.

Local item in a custom Wikibase

Properties directly from Wikidata (no local properties are possible)

The screenshot shows a Wikibase item page for "Mrs. Owen's Queen of Puddings (Q47)". The item is described as a "traditional British dessert pudding recipe from the Victorian Era". The page displays a list of statements under the heading "Statements".

Property	Value	Quantity	Unit	References
has part	Bread crumbs	1	dry pint	0 references
has part	milk	1	liquid quart	0 references
has part	granulated sugar (white)	4	fluid ounce	0 references
has part	Egg yolk	4		0 references
has part	Lemon zest			0 references
part of	Mrs. Owen's Illinois cook book			0 references

At the bottom of the page, a dropdown menu is open, showing a list of federated properties from Wikidata:

- date
- date of publication (date when this work was published)
- date of birth (date on which the subject was born test)
- date retrieved (date that information was retrieved from a database or website (For use in online Sources))

Each property in the dropdown has an "add reference" or "add statement" button next to it. A red box highlights the "date" property, and a red arrow points to it from the text "Properties directly from Wikidata (no local properties are possible)".

Federated properties v2

There are some limitations to the existing federated properties feature.

This year, **we have spent time improving the feature**. These improvements will make it possible to **mix properties** from another **Wikibase instance**, such as Wikidata, with **local properties** in your Wikibase instance.

Local item in a custom Wikibase

Properties directly from Wikidata or own local properties

The screenshot shows a Wikibase item page for "Mrs. Owen's Queen of Puddings (Q47)". The item is described as a "traditional British dessert pudding recipe from the Victorian Era". The page is divided into sections: "Statements" and "part of".

Statements:

Property	Value	Quantity	References	Actions
has part	Bread crumbs	1 dry pint	0 references	edit, add reference
has part	milk	1 liquid quart	0 references	edit, add reference
has part	granulated sugar (white)	4 fluid ounce	0 references	edit, add reference
has part	Egg yolk	4	0 references	edit, add reference
has part	Lemon zest		0 references	edit, add reference, add value

part of:

Property	Value	References	Actions
part of	Mrs. Owen's Illinois cook book	0 references	edit, add reference, add value

Property Selection:

A dropdown menu is open, showing a search bar and a list of properties:

- date
- date of publication (date when this work was published)
- date of birth (date on which the subject was born test)
- date retrieved (date that information was retrieved from a database or website (For use in online Sources))

Buttons for "save", "cancel", and "add qualifier" are visible at the bottom right of the dropdown.

Wikibase.cloud

Wikibase.cloud is a new platform based on WBstack code, but managed and maintained by Wikimedia Deutschland.

It is a **“Wikibase as a service”** platform that will offer open knowledge projects a new way to create Wikibases quickly and easily.

The new service will launch in **early 2022**.

Your open data..

..starting with a Wikibase stack

[Wikibase](#) is an open source software suite for running a collaborative knowledge base. -- [learningwikibase.com CC-BY 4.0](#)

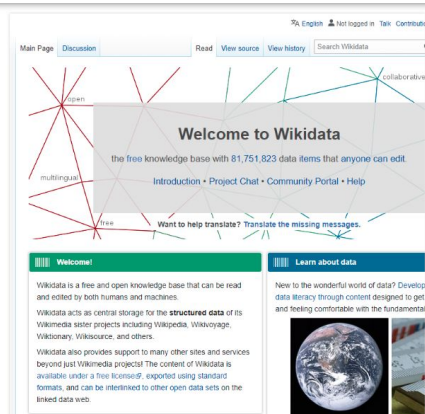
WbStack is an [open source](#) alpha release platform for shared hosting of Wikibase sites.

If you would like an invitation please contact Addshore on [Twitter](#) or [by email](#)

You can learn more about it in the blog posts below.

Blog Posts

- [WikibaseManifest, Federated Properties, Lexeme](#)
- [2021 Infrastructure overview](#)
- [Open Sourcing WBStack](#)
- [2020 Update #2 \(May\)](#)
- [2020 Update #1](#)
- [2019 November review](#)
- [2019 October introduction](#)



Joining the Wikibase community

The Wikibase user community **continues to grow**. Whether to remain informed about our continued work with **Wikibase.cloud** or to **engage with other community members**, there are a number of avenues to connect with the community:

- [Wikibase Community User Group](#)
- [Mailing list](#)
- [Telegram channel](#)
- [Monthly Live Sessions](#)



Joining the Wikibase community

Further support resources are available on mediawiki.org, including detailed **documentation** on how to set up Wikibase using the **docker images** or **manually**. You can also find a useful **FAQ** <https://www.mediawiki.org/wiki/Wikibase>

If you need **technical support**, we maintain a space where third party support providers can list their services https://meta.wikimedia.org/wiki/Wikibase/Consultants_and_Support_Providers



Questions?

Reach out to us at swe_partnerships@wikimedia.de



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