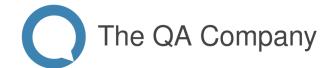
MASTERCLASS: WIKIBASE AND QUESTION ANSWERING

Dennis Diefenbach

The QA Company

@KGC 2023

08.05.2023





OUTLINE

- 1. Wikidata/Wikibase
- 2. Why Wikibase as an infrastructure for KGs?
- 3. Construct a KG over the KGC
- 4. Some QA ...
- 5. Conclusion

Wikidata/Wikibase

LET'S START WITH WIKIDATA

Wikimedia hosts many wikis...



























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Wikidata is one of them!

Read View history Search Wikidata Q

Knowledge Graph Conference (Q86935657)

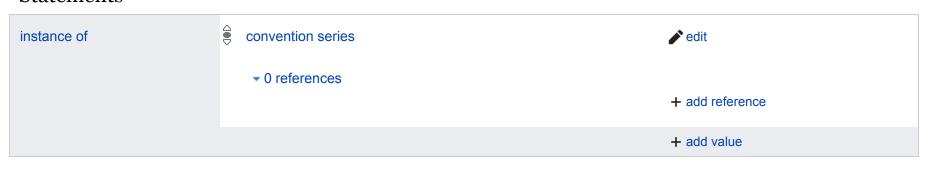
Conference Series KGC | The KGC | The Knowledge Graph Conference ✓ In more languages Configure

Language	Label	Description	Also known as
English	Knowledge Graph Conference	Conference Series	KGC The KGC The Knowledge Graph Conferen

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Wikidata contains so much more!

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Cornell Tech (Q5171546)

technology-focused campus of Cornell University located in New York City

tech.cornell.edu

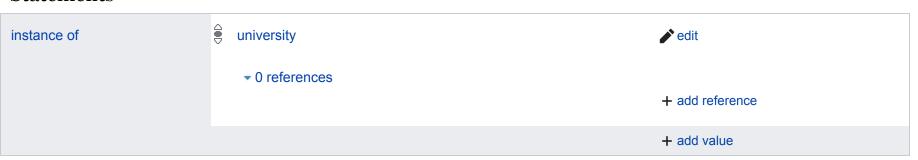
▼ In more languages

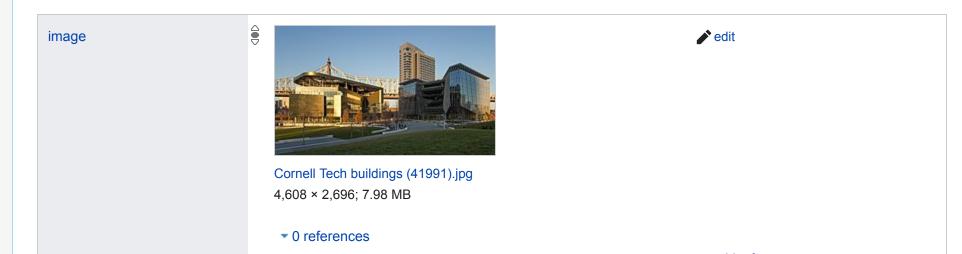
Configure

Language	Label	Description	Also known as
English	Cornell Tech	technology-focused campus of Cornell University located in New York City	tech.cornell.edu

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Dennis Diefenbach (Q47515110)

computer scientist edit

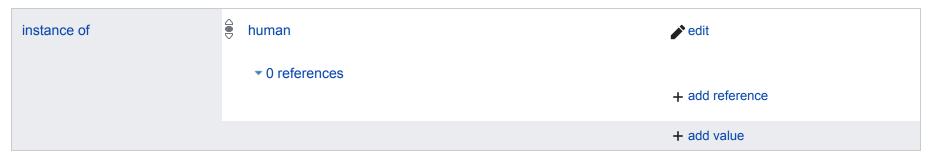
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Language	Label	Description	Also known as
English	Dennis Diefenbach	computer scientist	

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image



Dennis Diefenbach.jpg 300 × 300; 65 KB

edit

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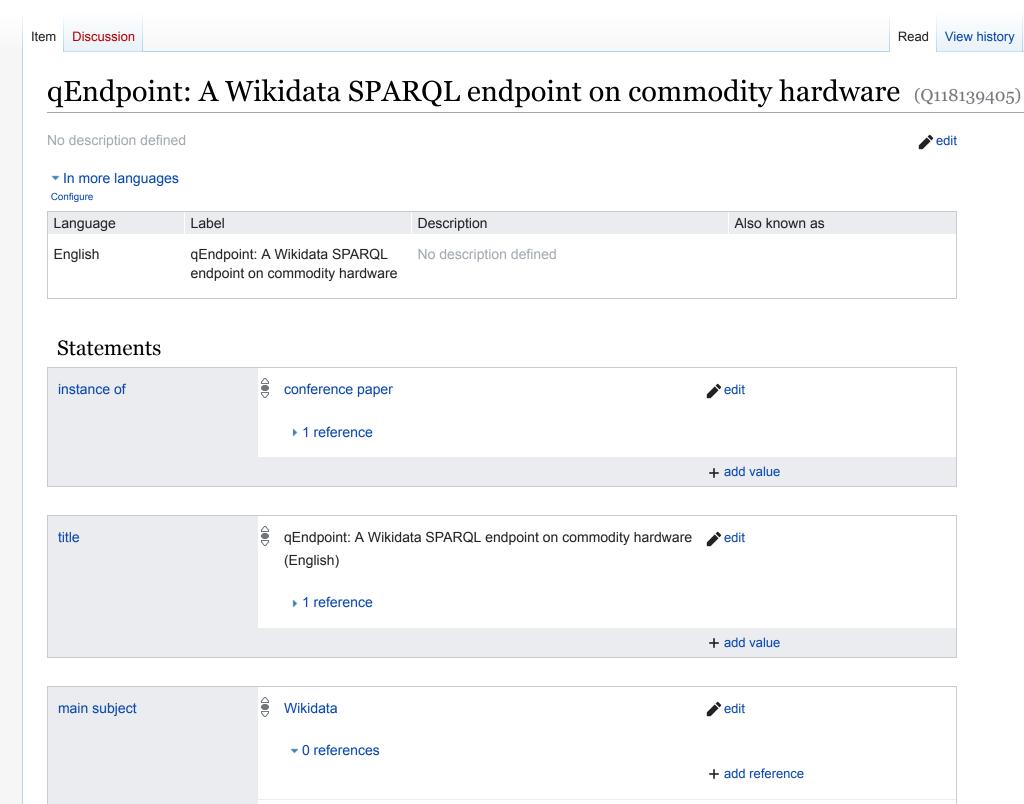
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edit

SPARQL endpoint



ⓑ Explore topics ∧

Search or Browse questions and pick one to see answers

Q

Monthly overview

Wikidata

Q

Reading

Total page views

254M

April **↓** -2.64% month over month



4B ↓ -53.06% year over year

Last 12 Months (May 2022 - Apr 2023)

Unique devices

3M

April **↓** -15.90% month over month



3M \bullet -25.87% year over year

12 Month Average (May 2022 - Apr 2023)

Page views by country

Countries with the most views for April

15M	United States of A
2M	Germany

1M India

904K France

Contributing

Edits

21M

April **↓** -7.55% month over month



256M \checkmark -7.05% year over year

New registered users

2K

April **↓** -20.23% month over month



32K ♦ -6.15% year over year

Active editors **① 12K**April **↓** -2.37% month over month **12K** ↑ 0.89% year over year

WHAT IS WIKIBASE?



WIKIBASE

Showcase Wikibase Cloud Wikibase Suite Docs Contact

Wikibase is open-source software for creating collaborative knowledge bases, opening the door to the Linked Open Data web.

Learn more



Why Wikibase?



as and Onen

Why Wikibase as an infrastructure for KGs?

User-friendly

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WIKIDATA

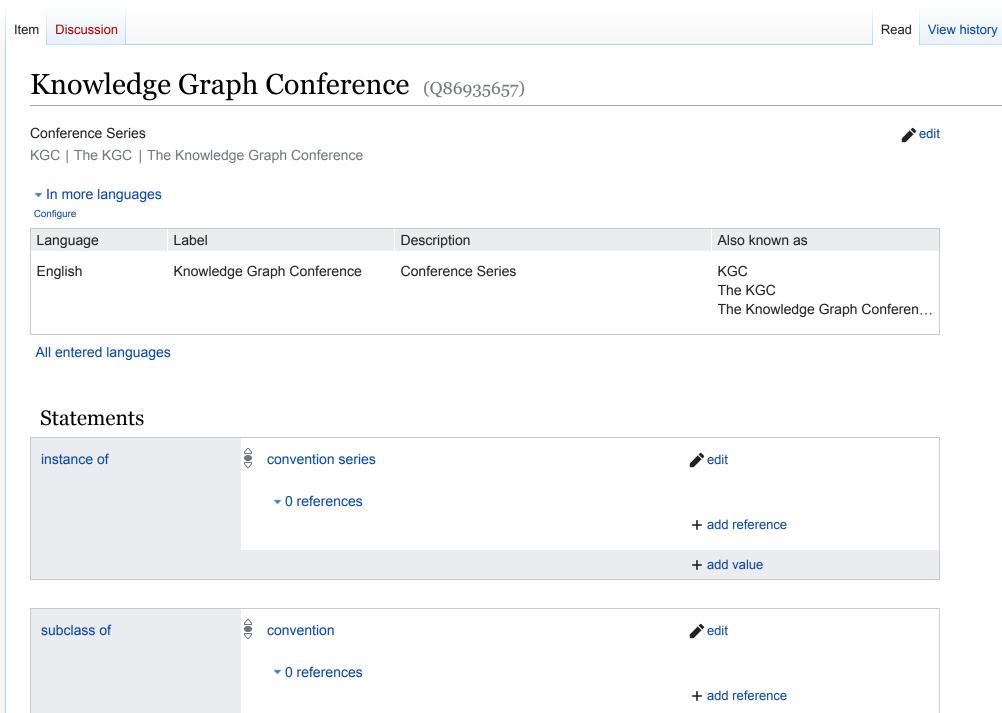
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€ 2019

inception

+ add value

edit

Q -

Collaborative

Wikidata allows thousands of users to edit common knowledge

Graph structure

Can be queried

Full track of changes!

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WIKIDATA

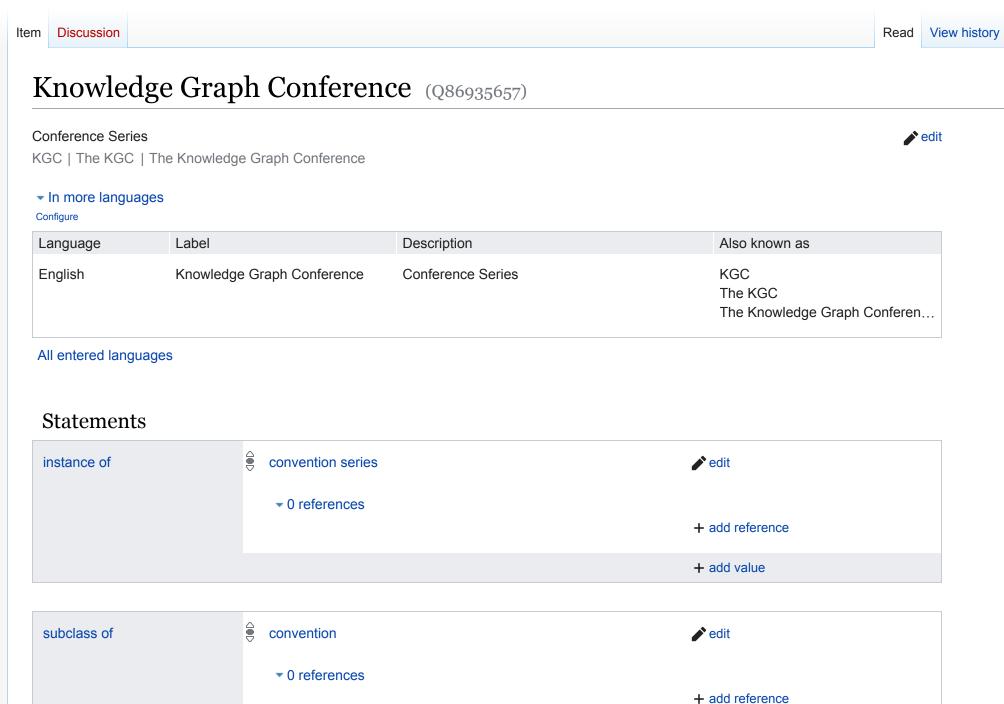
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€ 2019

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+ add value

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Q -

Can be edited by humans and by bots

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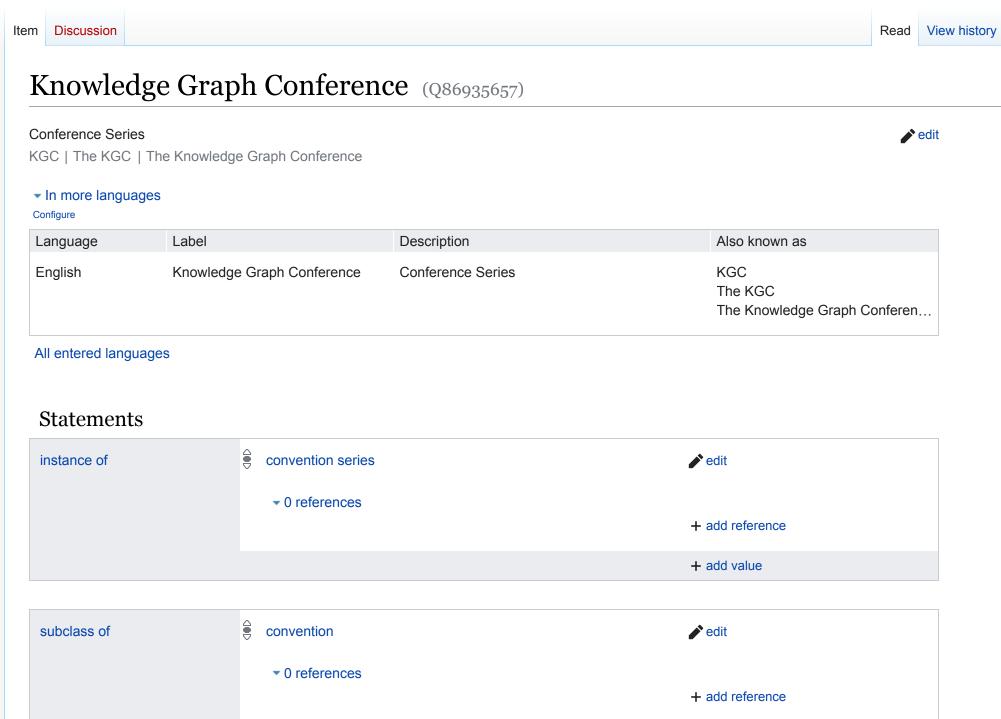
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€ 2019

inception

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Q -

Scales well

Wikibase hosts Wikidata, one of the largest existing KG which contains 17 billion triples

Multilingual

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WIKIDATA

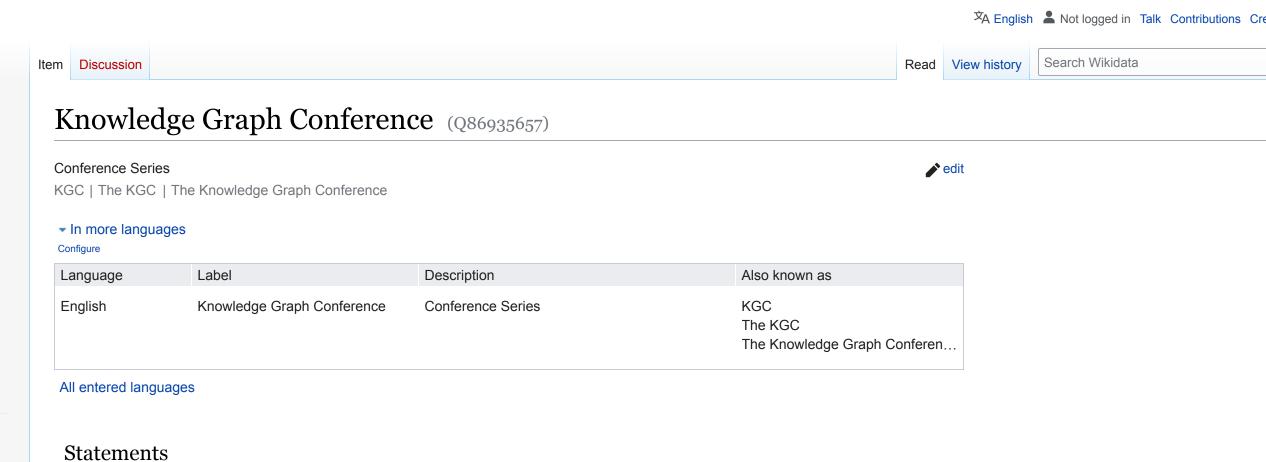
Lexicographical data

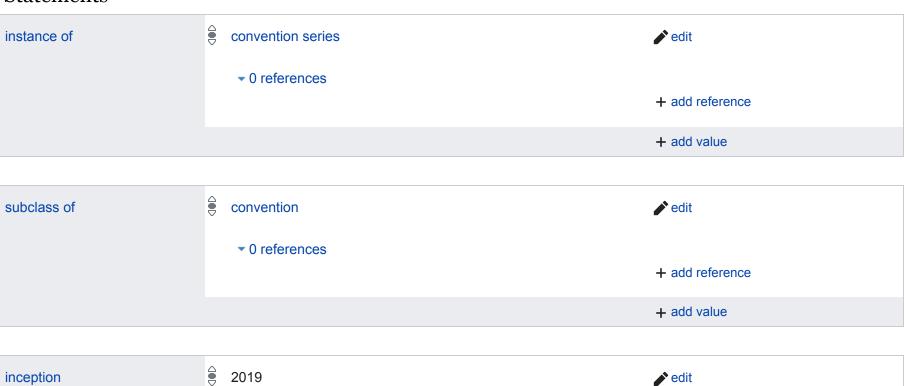
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Use cases

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Search EU Knowledge Graph

The EU Knowledge Graph

(Redirected from Main Page)

Welcome to the EU Knowledge Graph!

This graph contains structured information about the European Union.

In particular, it contains information about:

- institutions of the European Union (like the European Parliament ☑ and the Council of the European Union ☑)
- countries in the world and in particular countries in the European Union (like Hungary ☑ and Italy ☑)
- capitals of European Countries (like Athens ☑ and Tallinn ☑)
- DGs from the European Commission (like DG CNECT ☑ and DG REGIO ☑)
- 1 832 112 & projects financed by the European Union under the Kohesio & project (like [1] & and [2] &)
- 643 760 Deneficiaries of European projects, of which 10% could be linked back to Wikidata so that the corresponding data is complementing the information from the Commission (like the University of Pisa 🗗)
- the Nomenclature of Territorial Units for Statistics of 2021 (NUTS 2021), i.e. subdivisions of countries used for statistical purposes by Eurostat (like the Provincia di Asti 2).
- buildings ([3] &), canteens ([4] &), cafeterias ([5] &) and parkings ([6] &) of the European Commission
- Linked Data solutions like ERA RCC([7] 🗗) or ArCo([8] 🗗). To add your Linked Data solution to the graph, request([9] 🗗) an account to the Publications Office of EU.

The query service can be accessed under https://query.linkedopendata.eu &.

Instructions on how to connect an **OpenRefine** instance can be found here &.

Exports of the data contained in the EU Knowledge Graph can be accessed under https://data.linkedopendata.eu &.

New knowledge will be added continuously. If you are interested to collaborate, please contact us at CNECT-ECDORIS@ec.europa.eu ₺.

For features requests and bug reports, please use https://github.com/ec-doris/EuKnowledgeGraph/issues &.

Awards:

- Semantics 2021 ☑, "Best industry Contribution" ([10] ☑)
- ISWC 2021 ₺, "Candidate for best paper in the In-Use Track" ([11] ₺)

This page was last edited on 5 April 2023, at 07:07.





Check our talk on May 11 "The EU Knowledge Graph"

Museums, Automotive, Pharma

Goal: make a KG about the Knowledge Graph Conference!

WE BROUGHT A WIKIBASE:)

Available at https://kgc.the-qa-company.com

LET'S CHECK IT A BIT...

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Search Wikibase Knowledge Graph Conference Q

KGC Knowledge Graph

Wikidata is a very successful Knowledge Graph and Wikibase is the software behind it. Create your own "Wikidata" and reuse the technologies and workflows used by thousands of editors that contribute to Wikidata every day.

This solution is already in production in many institution. Most notably we maintain the Wikibase instance of the European Commission called The EU Knowledge Graph available at [1] № .

This Wikibase instance comes with:

- a query service like under https://query.kgc.the-qa-company.com ₺;
- exports of the **data** like the ones available at https://data.kgc.the-qa-company.com₺;
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This Wikibase is intended as a playground to test the different functionalities. It is an open wiki, feel free to test, explore and edit.

Q1 is ? click ₺

Complexity in a Data Driven Z Comellitect NYC & Online, N

This page was last edited on 3 May 2023, at 19:33.

Privacy policy About Wikibase Knowledge Graph Conference Disclaimers



1. DATA EXPORTS

Available at https://data.kgc.the-qa-company.com

Index of /

<u>/</u>		
<pre>dump 2023-05-03.ttl</pre>	03-May-2023 01:00	619103
<u>dump 2023-05-03 truthy.ttl</u>	03-May-2023 01:00	573534
<u>dump 2023-05-04.ttl</u>	04-May-2023 01:00	1952753
<u>dump 2023-05-04 truthy.ttl</u>	04-May-2023 01:00	1741580
dump 2023-05-05.ttl	05-May-2023 01:00	1955276
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dump 2023-05-06.ttl	06-May-2023 01:00	1955276
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dump 2023-05-07.ttl	07-May-2023 01:00	2267088
<u>dump 2023-05-07 truthy.ttl</u>	07-May-2023 01:00	2003560
dump 2023-05-08.ttl	08-May-2023 01:00	2267088
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dump 2023-05-09.ttl	09-May-2023 01:00	2545440
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dump latest.ttl	09-May-2023 01:00	2545440
dump latest truthy.ttl	09-May-2023 01:00	2143239
	-	

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Q1 is ? click ₺

Complexity in a Data Driven Z Comellitect NYC & Online, N

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4. OPEN REFINE

Data can be ingested using OpenRefine





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OpenRefine

This page contains instructions to connect OpenRefine to this Wikibase instance. We offer a reconciliation service against this Wikibase that makes it easy to use OpenRefine.

Contents [hide]

- 1 Requirements
- 2 Setup
- 3 Configure Open Refine for this Wikibase
- 4 Reconcile your data
- 5 Model your data using the Wikibase Schema
- 6 Upload your data

Requirements [edit | edit source]

• an account on the Wikibase instance allowing to make edits

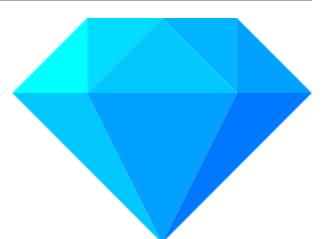
Setup [edit | edit source]

- Download OpenRefine (we tested with version 3.7.2)
- Upload your data. For example
 - Create Project
 - Clipboard
 - Insert the data in the Table below
 - Next
 - Create Project

Name	Institution
Dennis Diefenbach	The QA Company
Jonathan Mallet	The QA Company

Configure Open Refine for this Wikibase [edit | edit | source]

- On the top right click on the Extensions Wikidata button and select "Select Wikibase instance"
- Add Wikibase



WE STARTED ALREADY ...

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Knowledge Graph Conference (Q1)

Conference Series edit KGC | The KGC | The Knowledge Graph Conference

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Configure

Language	Label	Description	Also known as	
English	Knowledge Graph Conference	Conference Series	KGC The KGC The Knowledge Graph Conferen	
German	No label defined	No description defined		
Czech	No label defined	No description defined		

All entered languages

Statements

instance of	convention series	∕ edit
	▼ 0 references	
		+ add reference
		+ add value

short name	€ KGC (English)	∕ edit
	▼ 0 references	+ add reference
		+ add value

WE HAVE SOME STRUCTURED DATA LYING AROUND ...

OPEN REFINE IS OUR TOOL!

WHAT SHOULD THE KGC KNOWLEDGE GRAPH CONTAIN?

IDEAS

- 1. Participants
- 2. Presentations/Talks
- 3. Locations
- 4. More?!?

IT'S TIME FOR YOU ...

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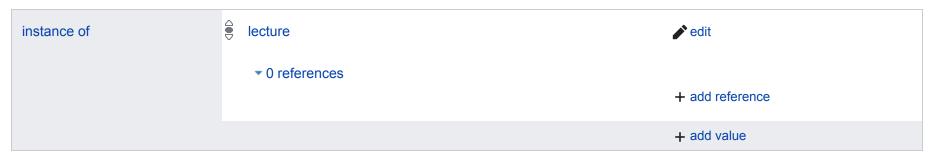
The EU Knowledge Graph (Q264)

▼ In more languages

Configure

Language	Label	Description	Also known as
English	The EU Knowledge Graph	Talk at the KGC 2023	
German	No label defined	No description defined	
Czech	No label defined	No description defined	

Statements



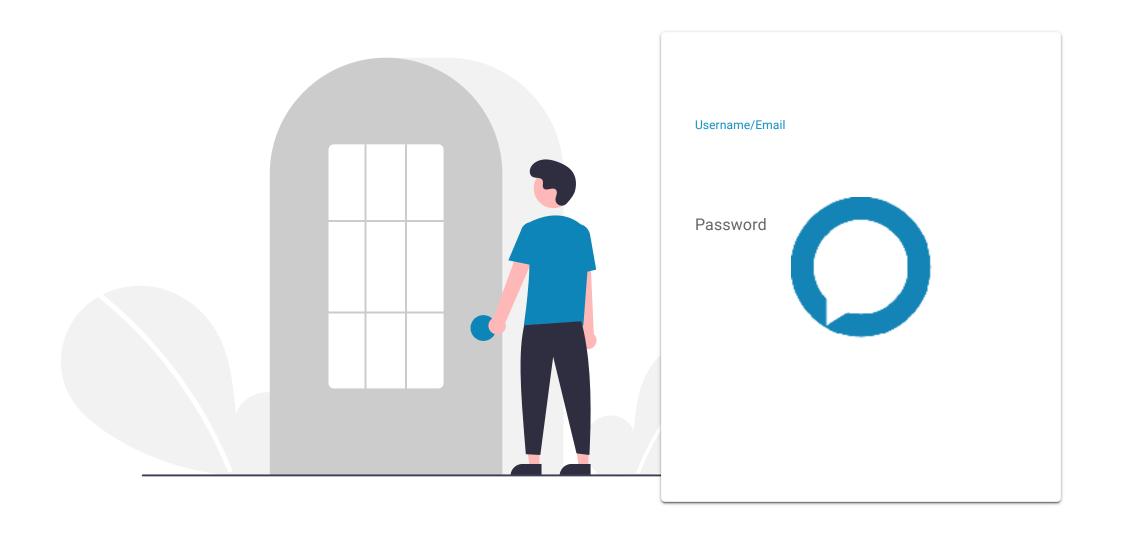
presenter	9	Dennis Diefenbach	∕ edit
		▼ 0 references	+ add reference
			+ add value

location	Cornell Tech	∕ edit
	▼ 0 references	L add reference

Some QA







Thank you!