

Wikidata Training

Introduction



Photo: Deadvlei (Sossusvlei, Namibia) by Sonse, Flickr, CC-BY 2.0

Africa Environment WikiFocus

This March, join the Wikimedia movement WikiFocus to add content to **Wikipedia** about the climate and environmental impact on Africa.

Africa Environment WikiFocus : bit.ly/AfriEnviro23



Hello :)

User : Yamen

 **@yamenbousrih**

Co-founder of Wikimedia Tunisia

Co-founder of Wiki World Heritage User Group

Co-founder of the conference Wiki Wikiarabia



Wikidata Training

Introduction

Credit: some parts of this presentation are copied or inspired from the presentation "[Introduction to Wikidata](#)" by User:Ranjithsiji (CC-BY-SA-4.0)

A sister project of Wikipedia, by Wikimedia



Overview

Wikidata is a collaboratively edited multilingual **knowledge graph**.

It is a common **source of open data** that Wikimedia projects such as Wikipedia, and anyone else, can use under the **CC0 public domain license**.



Welcome to Wikidata

the free knowledge base with 100,563,457 data items that anyone can edit.

Wikidata in a nutshell:

01

A Database



02

Crowdsourced



03

Open



04

Interconnected



05

Structured



06

Computer-readable



07

Language-independent



Overview



- 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
- Concept URI
- Cite this page

Item [Discussion](#)

Rwanda (Q1037)

sovereign state in Africa
Republic of Rwanda | rw | rw

[↕ In more languages](#)

[Configure](#)

Language	Label	Description	Also known as
English	Rwanda	sovereign state in Africa	Republic of Rwanda rw rw
French	Rwanda	pays d'Afrique équatoriale	République Rwandaise RW la République du Rwanda
Turkish	Ruanda	Orta Afrika'da bulunan bir ülke	
Arabic		رواندا	دولة في شرق أفريقيا

[All entered languages](#)

Statements

instance of	 republic ↕ 0 references
	 sovereign state ↕ 0 references
	 landlocked country ↕ 0 references
	 country ↕ 0 references

Overview

Find entries by searching. Suggestions appear as you type.

Sign in to keep track of your editing via "Contributions" and "Watchlist" or to set editing "Preferences"

Labels tell people the names of things in different languages.

Q-numbers are unique item identifiers – they mean each page can exist in multiple languages.

Description tells people they've found the correct entry when searching / linking.

You can create a brand new entry or query existing entries – links are in the sidebar.

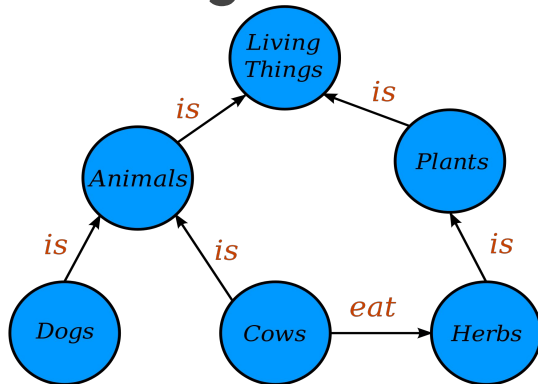
Each statement tells you about the subject by showing a "property", and then a "value" for a specific property that subject has (e.g. sex or gender: female).

You can "edit" any existing statements or "add" new ones to an article. To add a new statement, scroll down past all the existing ones to find the "add statement" button.

The screenshot shows the Wikidata page for 'June Almeida' (Q1512266). The page includes a sidebar with navigation links, a search bar, a language selector, and a table of labels in various languages. Below the labels is a 'Statements' section with a table of properties and values. The table has columns for 'property', 'value', and 'edit'. The 'sex or gender' property is highlighted with a red box, and the 'add statement' button is also highlighted.

Structured and Interconnected Data

- Structured data: Each unit of information is described by three: **subject, predicate, and object** or as Wikidata says: **item, property, value**.
- Data statements link to each other, enabling **discovery** and **reasoning**.



Item: Earth (Q2)



Structured and Interconnected Data

Wikidata: language-independent, structured, factual statements, and **better search possibilities.**

Unstructured prose

The **Old town of Ghadames** (Arabic: مدينة غدامس القديمة) is the old city of the modern city of **Ghadames**, **Libya** and one of Libya's major **desert** cities. Called the "***Jewel of the Desert***" the site is registered as a **UNESCO world heritage** since 1986.^[1]



Structured data

Old Town of Ghadames

is: Old Town
Part of: Ghadames
Alias: Jewel of the Desert
Country: Libya
Heritage designation: UNESCO World Heritage site



Structure of Wikidara

We have a Q (item)

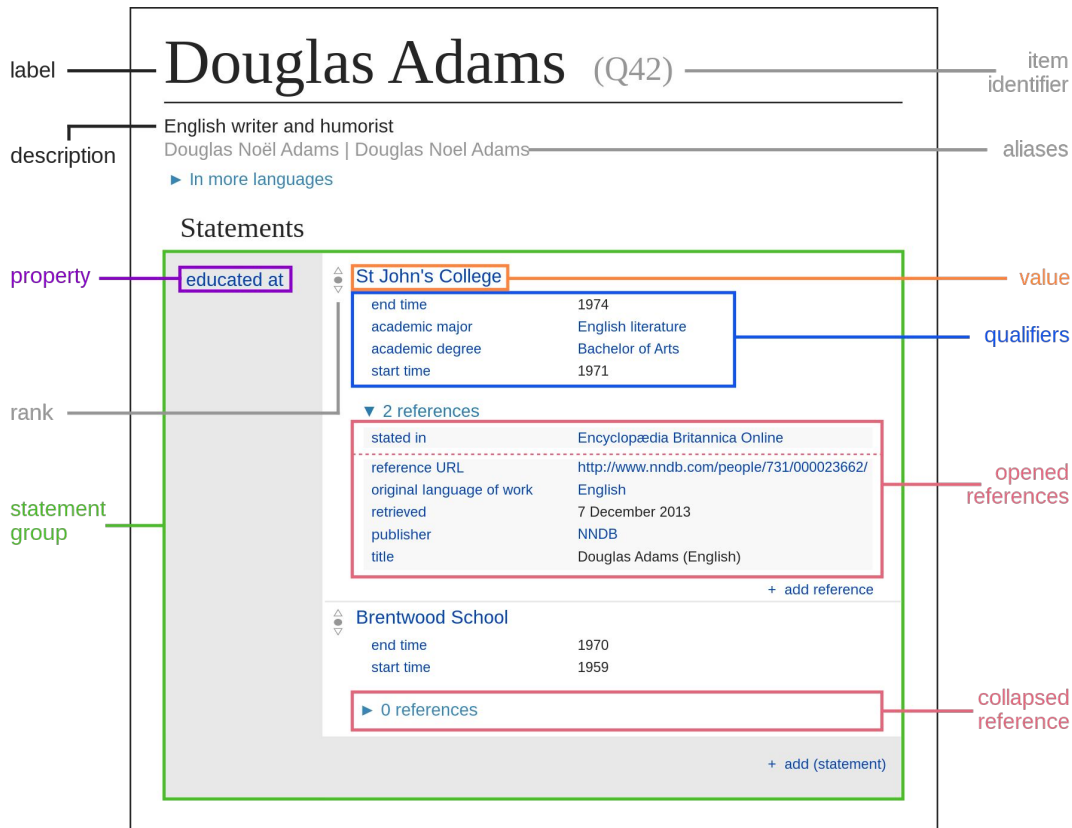
Q have a property P

P have a value Another Q

This is called a Statement

Statement = Item --> Property --> Value

Components



Examples

- Universe_ (Q1)
- Rwanda (Q1037)
- WikiAfrica_ (Q4053138)
- and / instance of (P31) <- Property



Statement = Item --> Property --> Value

Earth --> highest-point --> Mount Everest

Mount Everest --> elevation above sea level --> 8848 meters

Earth --> deepest point --> Challenger Deep

Challenger Deep --> elevation above sea level --> -10,994±1 metre



Statement = Item --> Property --> Value

Earth (Q2) --> highest-point (P610) --> Mount Everest (Q513)

**Mount Everest (Q513) --> elevation above sea level (P2044) -->
8848 meters**

**Earth (Q2) --> deepest point (P1589) --> Challenger Deep
(Q459173)**

**Challenger Deep (Q459173) --> elevation above sea level
(P2044) --> -10,994±1 metre**



Only Numbers Now.

Q2 --> P610 --> Q513

Q513 --> P2044 --> 8848 meters

Q2 --> P1589 --> Q459173

Q459173 --> P2044 --> -10,994±1 meters



Why Numbers ?

Language-neutral - not everybody speaks English!

Robot-friendly (robots love numbers ;)

Labels are ambiguous:

What is London?

City in England, City in Canada, family name,



(Just) A handful of Wikidata uses

1. Describe data with flexible level of detail or abstraction
2. Centralize data and avoid duplication of effort
3. Avoid multiple copies falling out of sync
4. Connect disparate IDs and align datasets
5. Serve as discovery platform for data elsewhere
6. Massively multilingual aligned vocabularies
7. Lateral querying across arbitrary vectors

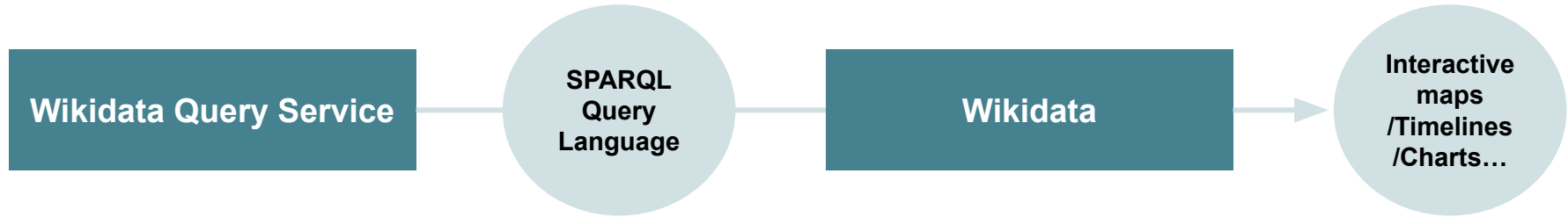
Querying Wikidata



Querying Wikidata

- * query Wikidata using `[[SPARQL]]`
- * Wikidata will tell you everything it knows, but no more
- * The more data and the more links in Wikidata, the more useful it becomes (so contribute!)

Wikidata Query Service: Concept



Wikidata is a knowledge database. It contains millions of statements.

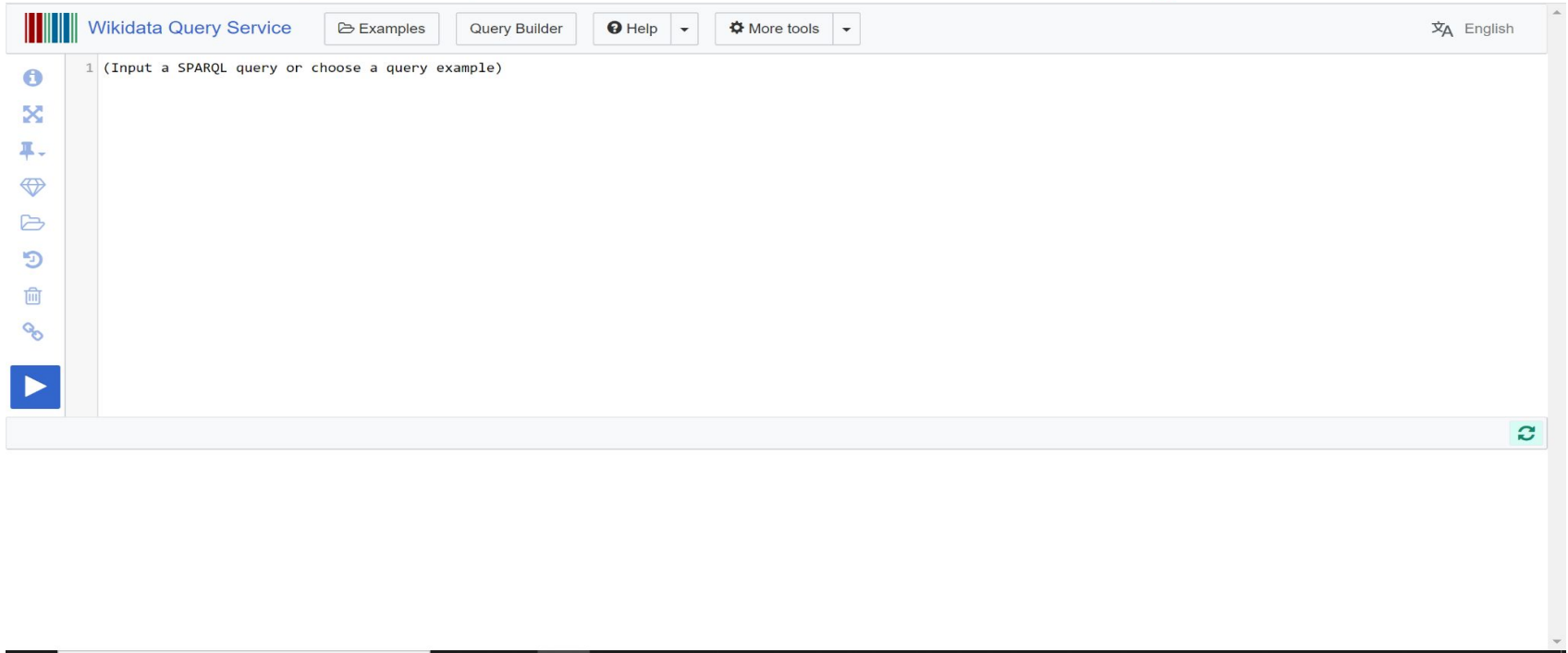
SPARQL is a language to formulate questions (queries) for knowledge databases.

WDQS, the [Wikidata Query Service](#), brings the two together: You enter a SPARQL query, it runs it against Wikidata's dataset and shows you the result.

Wikidata Query Service

Wikidata Query Service is a powerful tool to provide insight into Wikidata's content.

<https://query.wikidata.org>



The screenshot shows the Wikidata Query Service interface. At the top, there is a header with the Wikidata logo, the text "Wikidata Query Service", and navigation buttons for "Examples", "Query Builder", "Help", and "More tools". The language is set to "English". Below the header is a large text input area with a placeholder text "1 (Input a SPARQL query or choose a query example)". On the left side of the input area, there is a vertical toolbar with icons for information, expand, pin, diamond, folder, undo, redo, and a blue play button. At the bottom right of the input area, there is a green refresh icon.

Wikidata Query Service

<https://query.wikidata.org>

Writing Wikidata SPARQL queries

Wikidata is a collaboratively edited knowledge base. The data there can be queried to find information and help identify missing information. This guide shows you how its interface works.

This is the query helper tool, which allows you to create or modify a query without knowing SPARQL. There is a guide with videos and gifs on how to use it here:
https://www.wikidata.org/wiki/Wikidata:SPARQL_query_service/Query_Helper

Wikidata ignores things starting with # - they are comments rather than instructions. I use them to help me remember what the numbers mean. There is an exception: typing #defaultView at the start of your query gives you the option to tell Wikidata how you'd like your results to appear when you click execute (play), e.g. graph, timeline.

Both buttons open the examples folder. The easiest way to create a query as a beginner is find one similar to what you want and tweak and adjust it for your purposes.

The help button dropdown offers options including a User manual and to request a query.

Tools to help with specific Wikidata things like editing or visualising.

SELECT is the part of a query where you specify what you want to see. The question mark is something you are looking for and provides headings for your results table. Adding Label with a capital L means you will see text in your chosen language rather than just a Wikidata reference number.

Fullscreen button.

Prefixes – not beginner-friendly!

Format query button automatically adds service and limits to 100 results.

Restore previous query takes you back to the query as it was the last time you pressed execute query (play).

Clear query deletes everything.

Short URL creates a link to your query that is more space-efficient than copying and pasting from your browser address bar. Useful for sharing work or asking for help or feedback.

The execute query or "play" button gives you the results based on what you've typed into the query window. You may see a blue running query bar, then a green rendering results bar, and then your results will appear.

Full screenshot of the Wikidata Query Service interface showing a SPARQL query and its components. The query is:

```
1 #Women chemists for map
2 SELECT DISTINCT ?item ?itemLabel ?date_of_birth ?image ?coord
3 WHERE {
4   SERVICE wikibase:label { bd:serviceParam wikibase:language "en". }
5   ?item wdt:P31 wd:Q5; #human
6     wdt:P21 wd:Q6581072; #woman
7     (wdt:P106/(wdt:P279*)) wd:Q593644. #chemist
8   ?item wdt:P19 ?pob. #place of birth
9   ?pob wdt:P625 ?coord. #co-ordinates of that place
10  OPTIONAL { ?item wdt:P106 ?occupation. }
11  OPTIONAL { ?item wdt:P569 ?date_of_birth. }
12  OPTIONAL { ?item wdt:P18 ?image. }
13 }
14 ORDER BY (?item)
```

WHERE gives the criteria to narrow down your search. This includes everything within the squiggly brackets.

In this query the item should be "type of thing, human", with "gender, female".

OPTIONAL lets you request things that you would like to see but that aren't essential. If you do not specify something as OPTIONAL, any item that does not have the property will not appear in your results.

The next part, within brackets requests occupation (P106) and any subset (P279) – so as well as chemists, the query will find people listed as more specific types of a thing, e.g. organic chemists, etc.

The query then asks for the place of birth. Instead of asking for a specific date of birth, adding another ? term afterwards tells Wikidata to show people with any place of birth and to report the place under this heading in a table. The next row asks for the coordinates of the place of birth to be added as another column.

Wikidata Query Service: the Query logic

In simple words:

1. **Select** all the **items** that **fulfill** one or more **statements**
2. Choose **What** to display
3. Choose **How** to display



Select

info1 / info2 / info3

of items that fulfill

statement 1 / statement 2 ..

Display this way

Query components: SPARQL Language

A query is constructed from 2 main blocks:

Select:

?Item (link to Wikidata page)

?Info 1 to display

?Info 2 to display

Where:

?Item Statement 1 ?Info1

?Item Statement 2 ?Info2

?Item Statement 3

+ **Additional block** (optional):

Language / Limit / Order..

Query components: SPARQL Language

Prefixes and punctuation:

Select

?Item ?ItemLabel ?City ?Image

Where {

?Item **wdt:Pxx** (standing for city) **wd:Qxx** (Identifier of the city I want) ?City .

?item **wdt:Pxx** (standing for Image) ?image .

SERVICE wikibase:label { bd:serviceParam wikibase:language
"[AUTO_LANGUAGE]". }

}

Example 1: Cats!



Wikidata Query Service

Examples

Query Builder

Help

More tools



```
1 #Cats
2 SELECT ?item ?itemLabel ?image WHERE {
3   ?item wdt:P31 wd:Q146.
4   SERVICE wikibase:label { bd:serviceParam wikibase:language "[AUTO_LANGUAGE],en". }
5   OPTIONAL { ?item wdt:P18 ?image. }
6 }
```

Example 2: Ksour, displayed by construction material

www.ksour.wiki

Wikidata Query Service

Examples Query Builder Help More tools English

```
1 #Locations of ksour
2 #defaultView:Map
3 SELECT ?image ?ksar ?ksarLabel ?layer ?type ?coordinate_location WHERE {
4   ?ksar (wdt:P31/(wdt:P279*)) wd:Q89691.
5   OPTIONAL { ?ksar wdt:P625 ?coordinate_location. }
6   OPTIONAL { ?ksar wdt:P18 ?image. }
7   OPTIONAL { ?ksar wdt:P186 ?type. }
8   SERVICE wikibase:label {
9     bd:serviceParam wikibase:language "en,fr,ar".
10    ?type rdfs:label ?layer.
11  }
12 }
```

Wikidata Query Service interface showing a SPARQL query for finding locations of Ksour. The query includes a WHERE clause with several OPTIONAL conditions and a SERVICE block for labeling. The interface includes a toolbar with icons for help, examples, query builder, and more tools, and a language selector set to English.

Query helper



Wikidata Query Service

Examples

Query Builder

Help

More tools



Query Helper



+ Filter

instance of

any

ksar

subclass of

+ Show

coordinate location

image

made from material

Limit



```
1 #Locations of ksour
2 #defaultView:Map
3 SELECT ?image ?ksar ?ksarLabel ?layer ?type ?coordinate_location WHERE {
4   ?ksar (wdt:P31/(wdt:P279*)) wd:Q89691.
5
6   OPTIONAL { ?ksar wdt:P625 ?coordinate_location. }
7   OPTIONAL { ?ksar wdt:P18 ?image. }
8   OPTIONAL { ?ksar wdt:P186 ?type }
9
10  SERVICE wikibase:label {
11
12    bd:serviceParam wikibase:language "en,fr,ar".
13                    ?type rdfs:label ?layer.
14                    }
15
16
17 }
```

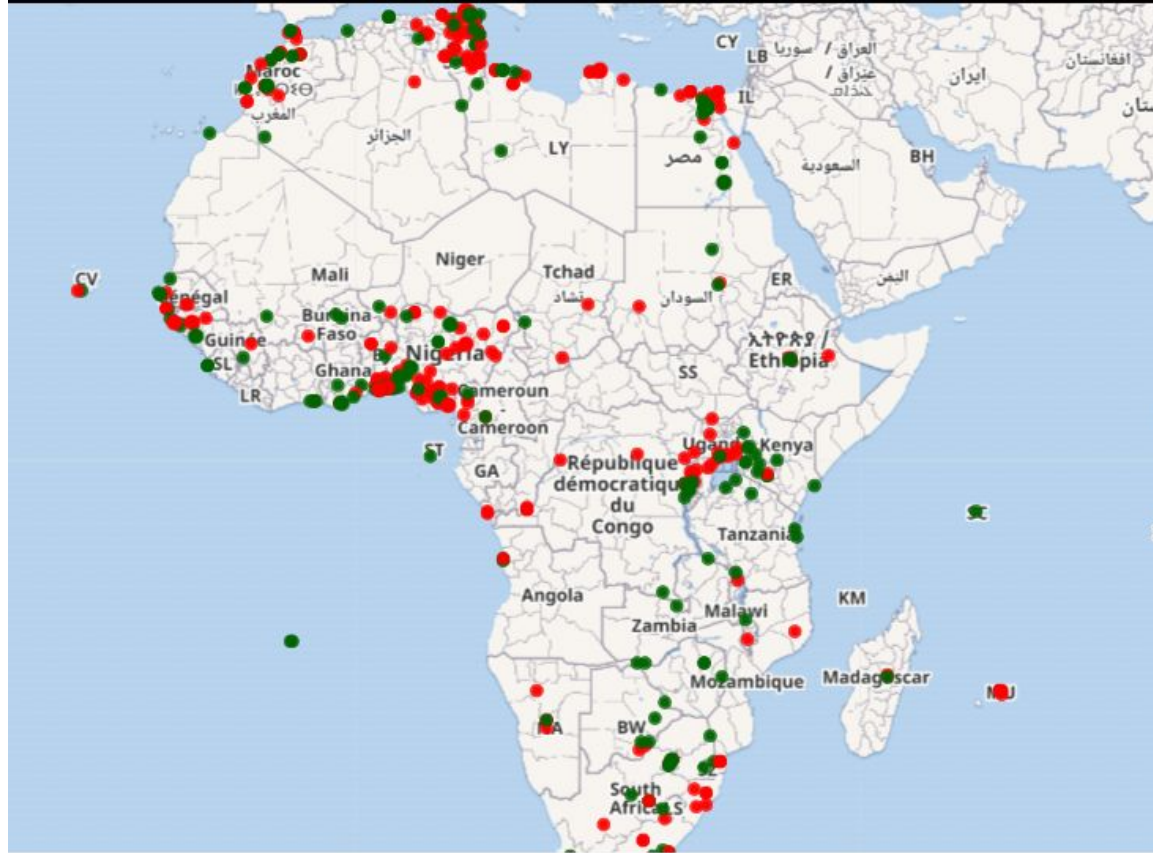
Choose visualization option

The screenshot shows a data visualization tool interface. At the top, there is a code editor with lines 13, 14, and 15. Below the code editor is a play button. The main area displays a table with 6 columns: ksar, ksarLabel, layer, type, and coordinate_location. The table contains 7 rows of data. A search bar is located at the top right of the table area. On the left side, a menu is open, listing various visualization options: Table, Image grid, Graph builder, Map, Line chart, Bar chart, Scatter chart, Area chart, Bubble chart, Tree map, Tree, Timeline, Dimensions, and Graph. The 'Table' option is currently selected.

	ksar	ksarLabel	layer	type	coordinate_location
copie copy.jpg	Q309436				Point(-7.13333333 31.05)
sguen, Ghardaia.jpg	Q817274				Point(3.696194444 32.47522222)
-soltane.jpg	Q2670896		mud	Q170449	Point(10.514567 32.788533)
	Q3200131				Point(-5.31778 31.767092)
arka-Bab Jdid.jpg	Q3200135		mud	Q170449	Point(-4.21472 31.6386)
	Q3818705				Point(10.9855 31.868)
if.JPG	Q11736787				Point(10.15715 33.291183)
commons:ksar Beni Barka - Tunisia.jpg	Q12233025				Point(10.434117 32.886283)

Utility

Museums in Africa with and without Wikipedia articles (www.makumbusho.wiki)



Utility

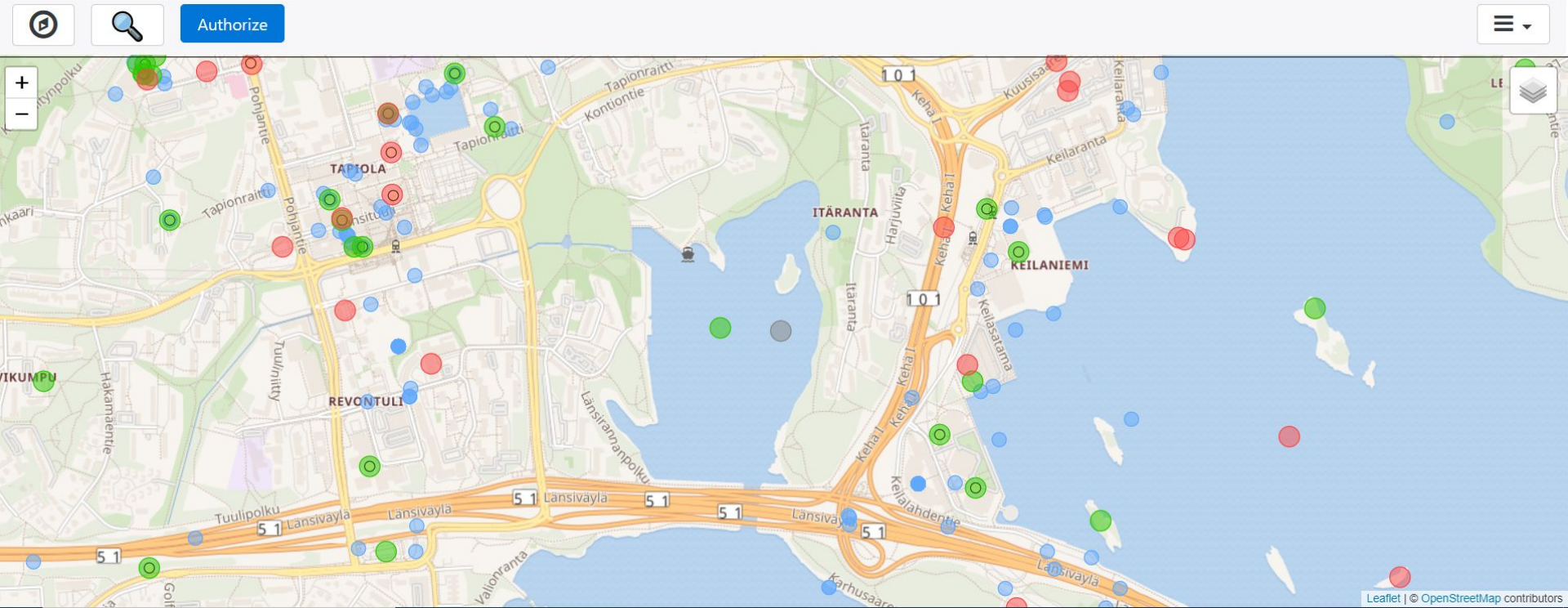
[Wikidata Query](#) can shed light on content gaps, visualize them, suggest articles for editathons, and much more



Utility

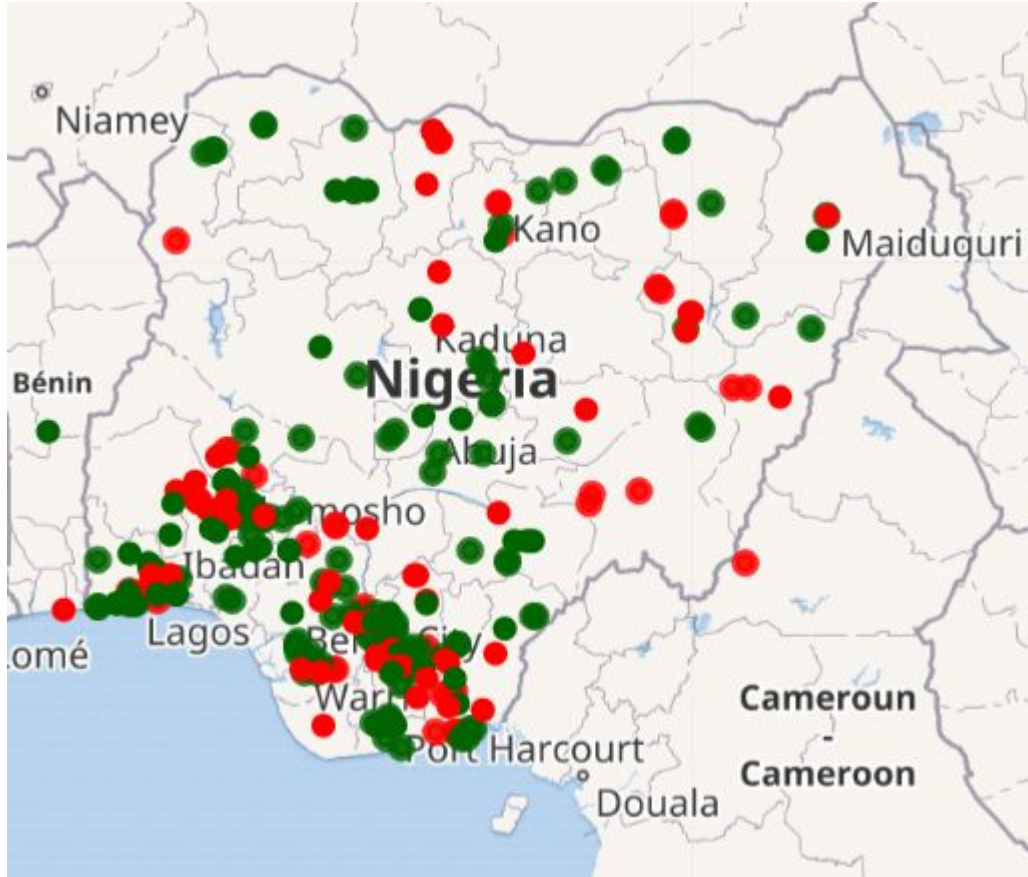
Discover missing photographic coverage by location. Plan photo trips. Upload on the go.

[WikiShootMe](#), enable location on your device or search for a location. Red dots need photos!

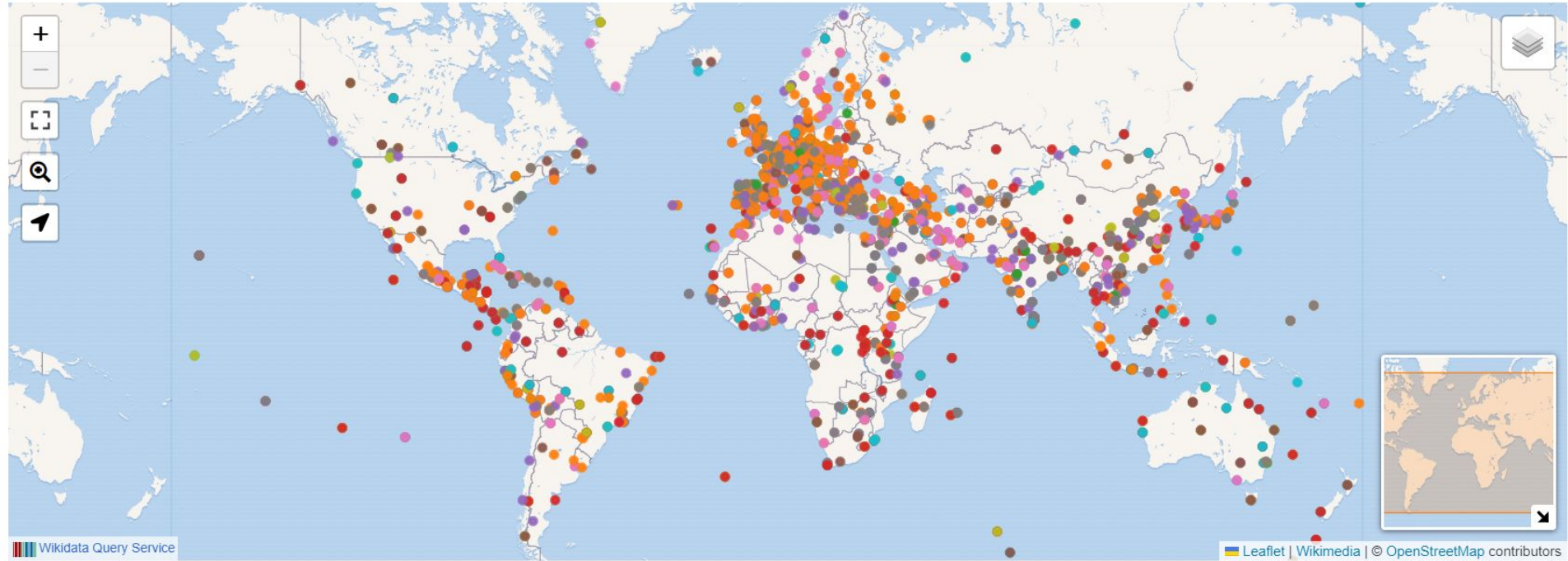


Utility

Women from Nigeria with and without Wikipedia article (www.explorenigeriadata.wiki/)

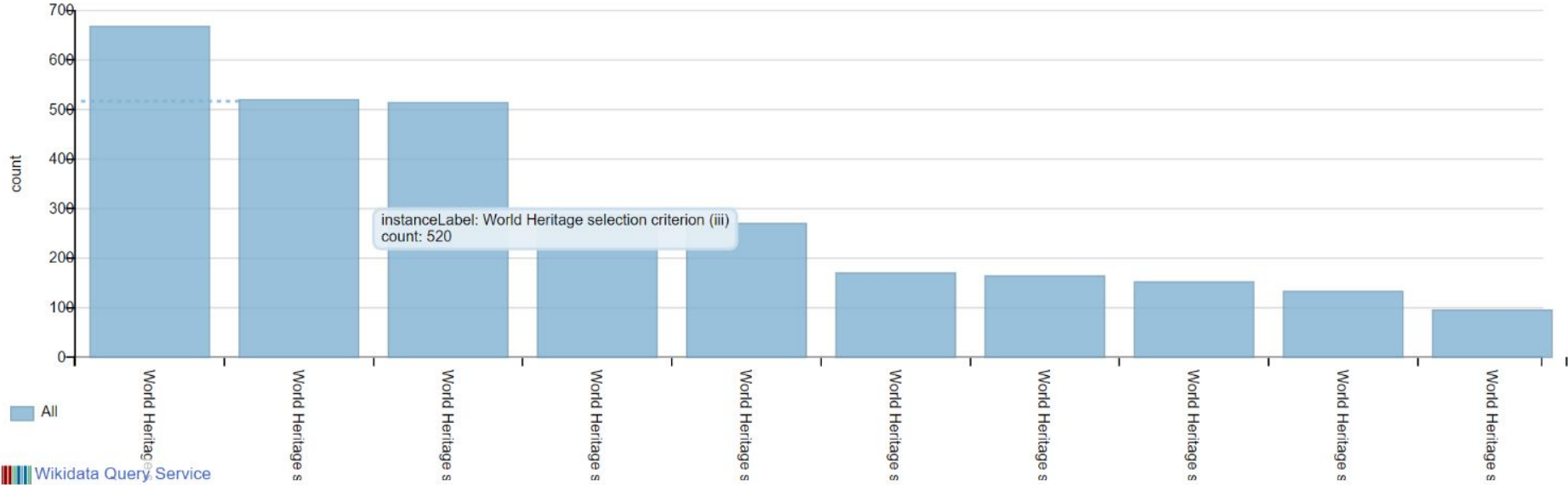


Dataviz possibilities: Layered map (<https://w.wiki/4Gym>)

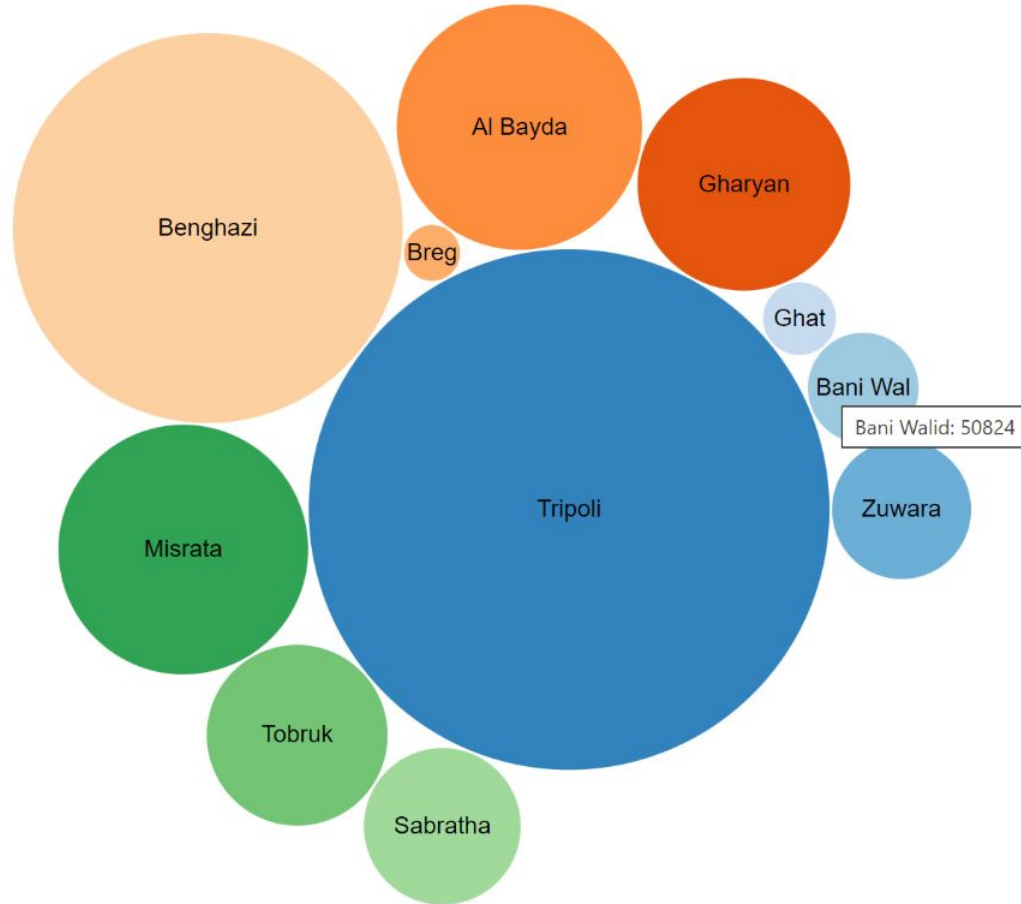


World Heritage Sites around the world

Dataviz possibilities: Chart



Dataviz possibilities: Bubble chart



Dataviz possibilities: Image grid



[commons:Al Gore, Vice President of the Unit...](#)
Q Al Gore



[commons:Stefan Rahmstorf, 2013 \(cro...](#)
Q Stefan Rahmstorf



[commons:Steven Chu official DOE portrait.jpg](#)
Q Steven Chu



[commons:Alice Walker.jpg](#)
Q Alice Walker



[commons:Naomi Klein at Berkeley, Cal...](#)
Q Naomi Klein



[commons:Joy Harjo smiling, 2019.jpg](#)
Q Joy Harjo



[commons:Nijpels, Ed - SFA0080073...](#)
Q Ed Nijpels



[commons:Uitslag Tweede Kamer verkiezingen 1999 Nijpels. Bestanddeeln...](#)
Q Ed Nijpels



[commons:David Suzuki \(arms crossed\).png](#)
Q David Suzuki



[commons:Right Livelihood Award 2...](#)
Q David Suzuki



[commons:Risto Isomäki, 2009 \(cr...](#)
Q Risto Isomäki



[commons:Severn Cullis-Suzuki.jpg](#)
Q Severn Cullis-Suzuki



[commons:George beach crop4.jpg](#)
Q George Monbiot

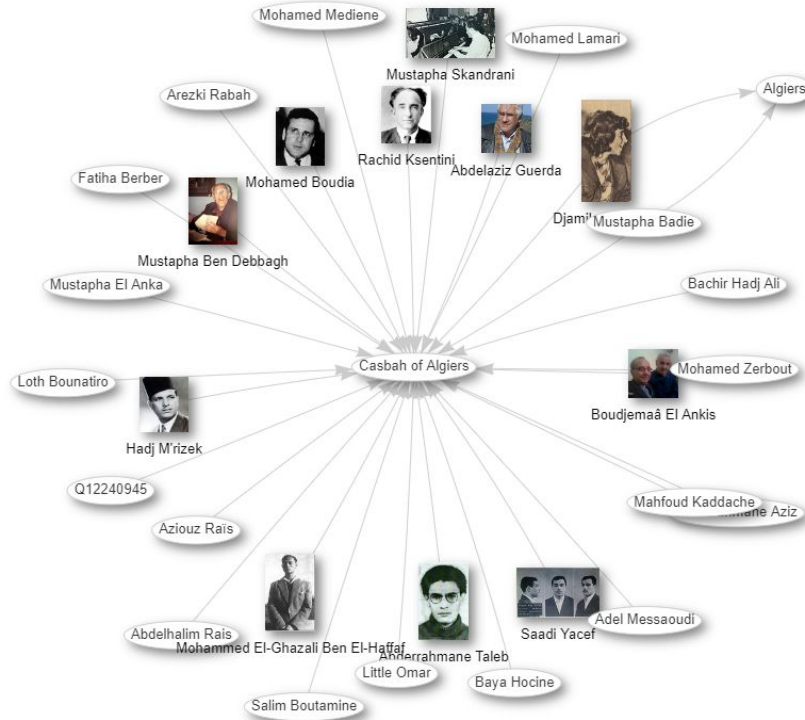


[commons:Biskop Sofie Petersen, Grania...](#)
Q Sofie Petersen

Climate Activists

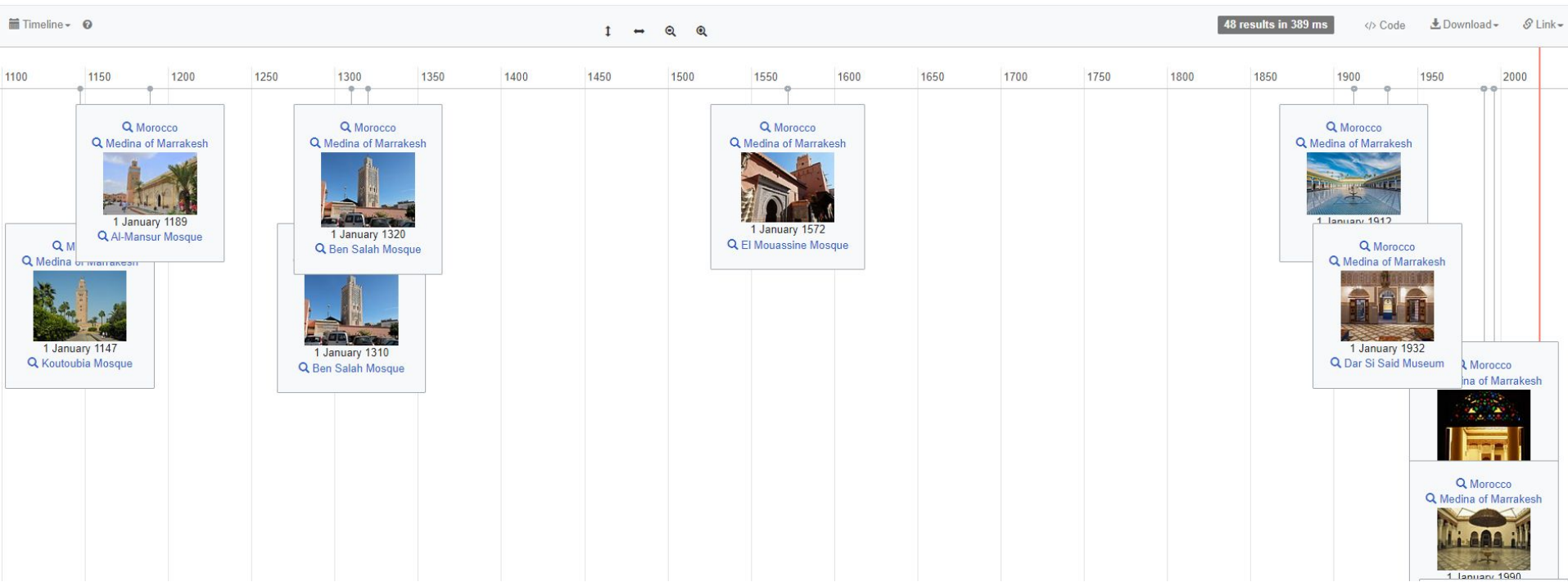
Dataviz possibilities: Graph

<https://wikiworldheritage.org/told-cities/#people>



Dataviz possibilities: Timeline

<https://wikiworldheritage.org/told-cities/#timelines>



Amazing things

built on top of Wikidata

Crotos Art Browser <http://zone47.com/crotos>



Crotos

Cosmos
Callisto
Lab

Search

139 Results

- Everything
- Everything
- Painting
- Sculpture
- Drawing
- Print
- Photograph
- Mosaic
- Installation
- Handscroll
- Tapestry
- Stained glass

Creator : Michelangelo

-40000

1 2 3 4 5 ... 7 Random



Pitti Tondo
Michelangelo - Bargello



Young Slave
Michelangelo - Galleria
dell'Accademia



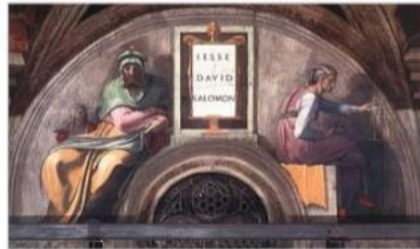
The Drunkenness of Noah
Michelangelo - Sistine Chapel



Atlas Slave
Michelangelo - Galleria
dell'Accademia



New Sacristy
Michelangelo - Basilica of San
Lorenzo

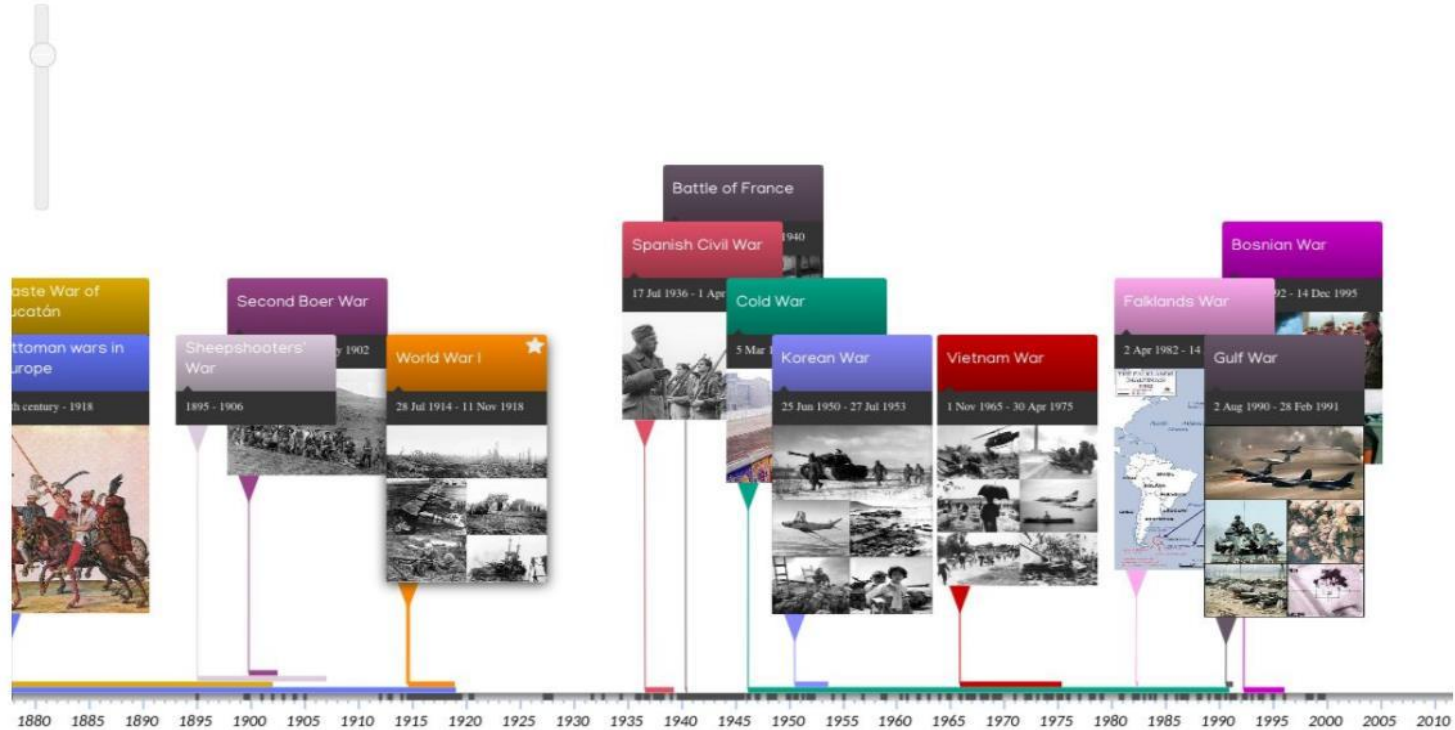


Histropedia <http://histropedia.com/>



Top 20 Timelines

Start searching for your topic...



Open ArtBrowser <https://openartbrowser.org/>

The screenshot displays the Open ArtBrowser website interface. At the top left, the logo "open ArtBrowser" is visible. On the top right, there are icons for search, a globe, and a menu. The main content area features a grid of eight category cards, each with a representative image, a title, and a category label with an icon. The cards are arranged in two rows of four.

- Card 1:** Image of the signing of the Declaration of Independence. Title: "Declaration Of Independence". Category: "Artwork" (camera icon). Link: "All Artworks >".
- Card 2:** Image of James Ensor's painting. Title: "James Ensor". Category: "Artist" (person icon). Link: "All Artists >".
- Card 3:** Image of a woman in Art Nouveau style. Title: "Art Nouveau". Category: "Movement" (network icon). Link: "All Movements >".
- Card 4:** Image of a gallery filled with art. Title: "Work Of Art". Category: "Type" (person with camera icon). Link: "All Types >".
- Card 5:** Image of the National Gallery of Art building. Title: "National Gallery Of Art". Category: "Location" (building icon). Link: "All Locations >".
- Card 6:** Image of a crumpled piece of paper. Title: "Paper". Category: "Material" (paper icon). Link: "All Materials >".
- Card 7:** Image of a classical history painting. Title: "History Painting". Category: "Genre" (diamond icon). Link: "All Genres >".
- Card 8:** Image of a large tree. Title: "Tree". Category: "Motif" (eye icon). Link: "All Motifs >".

EntiTree <https://www.entitree.com/>

Elizabeth II

family tree ▾

2 ^ 👤

5
<
👤



George VI

King of the United Kingdom from 1936 to 1952, Emperor of India from 1936 to 1948
14 Dec 1895 - 6 Feb 1952

2 ^ 👤

9
<
👤



Queen Elizabeth, The Queen Mother

Queen consort of King George VI, mother of Queen Elizabeth II
4 Aug 1900 - 30 Mar 2002

2 v 👤



Princess Margaret, Countess of Snowdon

younger daughter of King George VI and Queen Elizabeth II
21 Aug 1930 - 9 Feb 2002



Elizabeth II

Queen of the United Kingdom from 1952 to 2022
21 Apr 1926 - 8 Sep 2022



Prince Philip, Duke of Edinburgh

member of the British royal family, husband of Queen Elizabeth II
10 Jun 1921 - 9 Apr 2021

4 ^ 😊



Charles III

King of the United Kingdom since 2022
14 Nov 1948



Anne, Princess Royal

daughter of Queen Elizabeth II and Prince Philip, Duke of Edinburgh
15 Aug 1950



Prince Andrew, Duke of York

second son and third child of Queen Elizabeth II and Prince Philip, Duke of Edinburgh
19 Feb 1960



Prince Edward, Earl of Wessex

youngest child of Elizabeth II and Prince Philip, Duke of Edinburgh
10 Mar 1964

More Tools

https://www.wikidata.org/wiki/Wikidata:Tools/Visualize_data

Project page

Discussion

Read

Edit

View history



More ▾

Search Wikidata



Wikidata:Tools/Visualize data

[< Wikidata:Tools](#)

Translate this page; This page contains changes. Please contact a translation admin to mark them for translation.

Visualize data

Other languages: [Bahasa Indonesia](#) [Basa Bali](#) [Deutsch](#) **[English](#)** [Esperanto](#) [Nederlands](#) [Sunda](#) [asturianu](#) [azərbaycanca](#) [dansk](#) [español](#) [français](#) [latviešu](#) [polski](#) [português](#) [slovenščina](#) [svenska](#) [čeština](#) [Ελληνικά](#) [македонски](#) [русский](#) [українська](#) [العربية](#) [ไทย](#) [中文](#) [日本語](#)

[Ancient intellectual network](#)

Dataviz map of the relationships between master and student from Socrates to the end of the Hellenistic Period.