



Tutorial: Linking, Extending, Exploiting and Enhancing Tabular Data with Wikidata

Part 4: Applications

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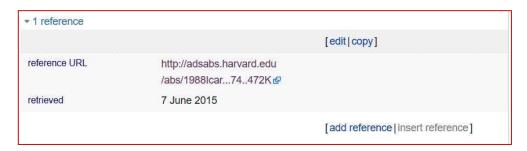
Wikidata Applications

Wikidata Tools: Overview

- Edit data
 - Help editing content, quality assurance, finding duplicates
- Query data
 - Completeness, natural language support, linked items
- Improve user interface
 - Hovering, enhanced search, summaries, keywords
- Visualize data
 - Maps, graph charts, etc. from queries
- Working with the schema
 - Find properties, classes
- Lexicographic
 - Lexeme forms and building, term sensing
- Tools for programmers
 - Manipulate Wikidata answers in JSON

Find all tools at: https://www.wikidata.org/wiki/Wikidata:Tools (Some are Wikibase gadgets)

Wikidata Tools: Edit (Highlights)



Duplicate references from an entry



Find nearby elements with no photo and upload one



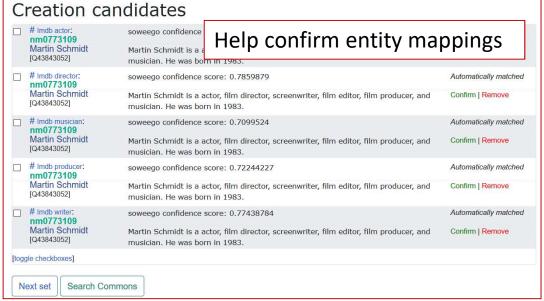
Wikidata Tools: Edit (Highlights)

BnF To Wikidata

Import records from other KGs to Wikidata

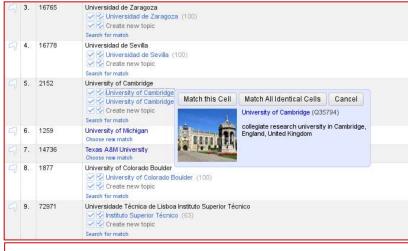


Help editing (dragging and dropping terms into other terms)



Wikidata Tools: Query (Highlights)





Link and map statements (Open Refine)

List items by category

Wiki enwiki
Category Wikidata

Offset 0 Limit 50 Recursion level* 0

Format HTML

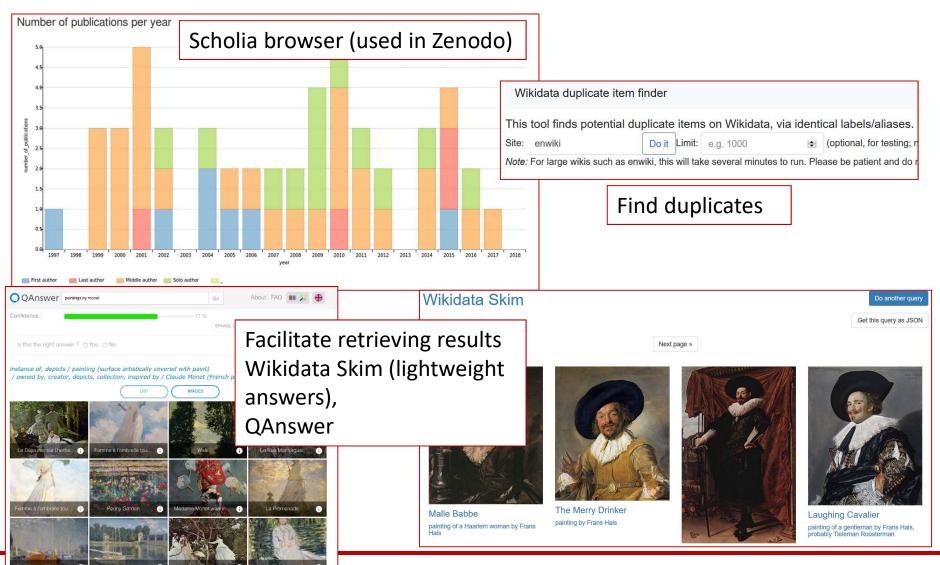
scauch resel

Tool written by User:Bene* - Documentation - Translate - Home Language: en Select

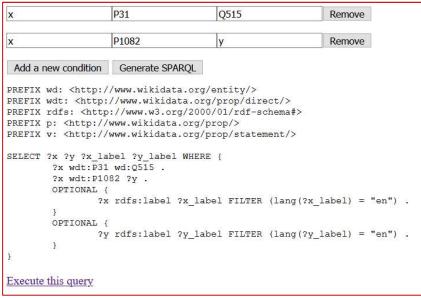


Wikidata Tools: Query (Highlights)

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Wikidata Tools: Query Builders (Highlights)

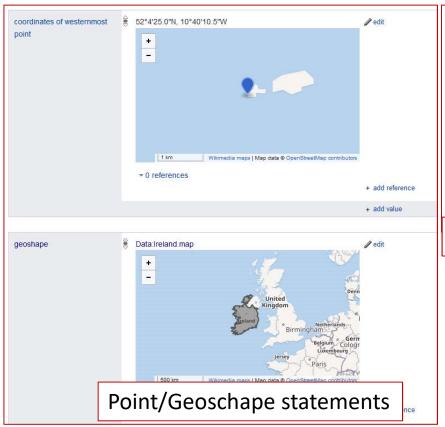


Query builders help autocomplete and offer guidance when doing your queries



Wikidata Tools: Improve User Interface (Highlights)

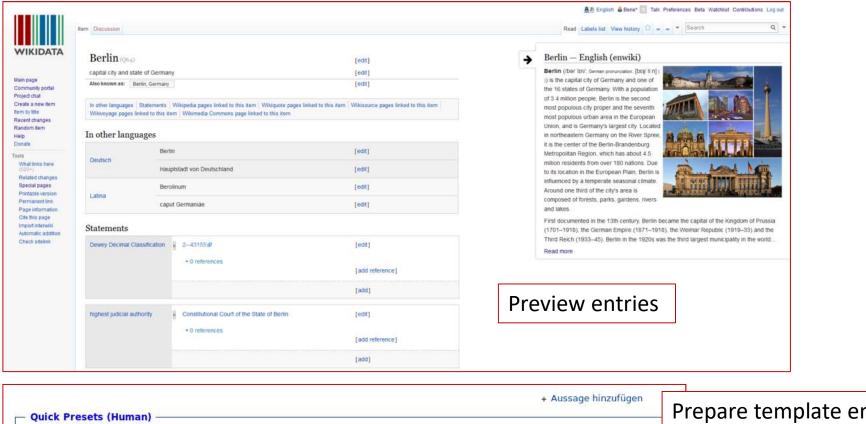
- CheckShex (validate entity against a Shex schema)
- Navigation (request deleting, show more languages...)



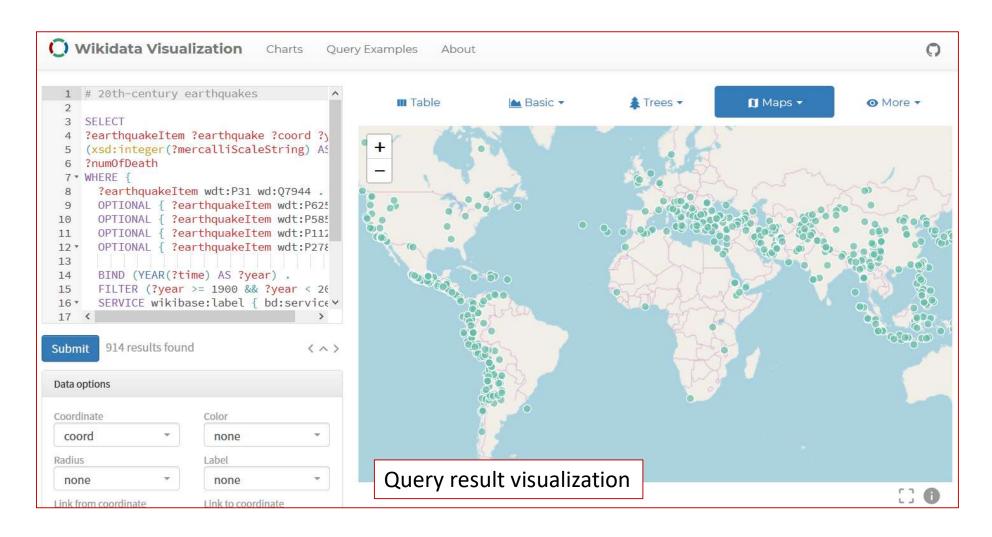




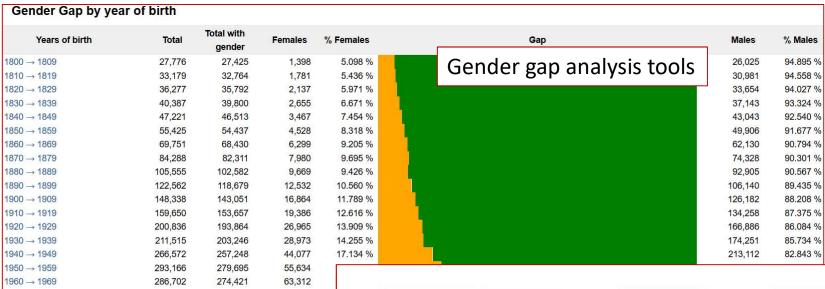
Wikidata Tools: Improve User Interface (Highlights)



Wikidata Tools: Visualize Data (Highlights)



Wikidata Tools: Visualize Data (Highlights)



Timeline analysis

269,770

274,909

189.279

13,563

214

261,836

267,715

183,239

12,855

179

69,470

77,791

51.559

5,205

94

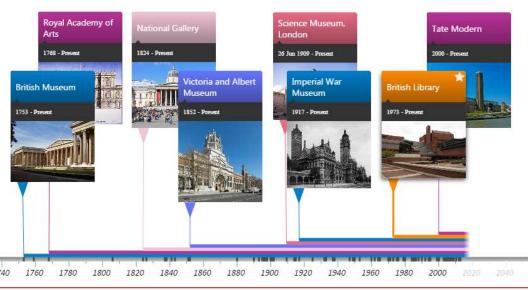
 $1970 \rightarrow 1979$

1980 → 1989

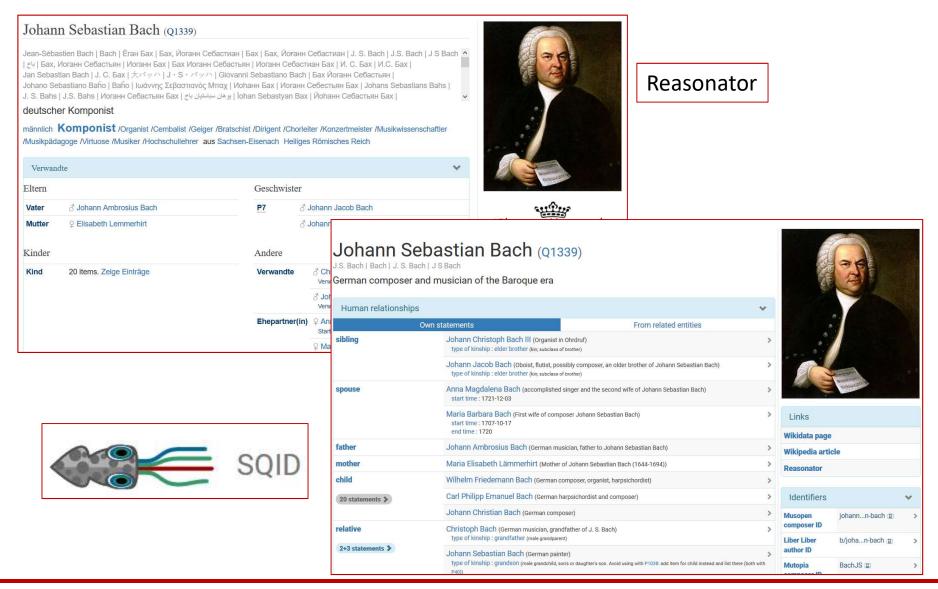
 $1990 \to 1999$

 $2000 \rightarrow 2009$

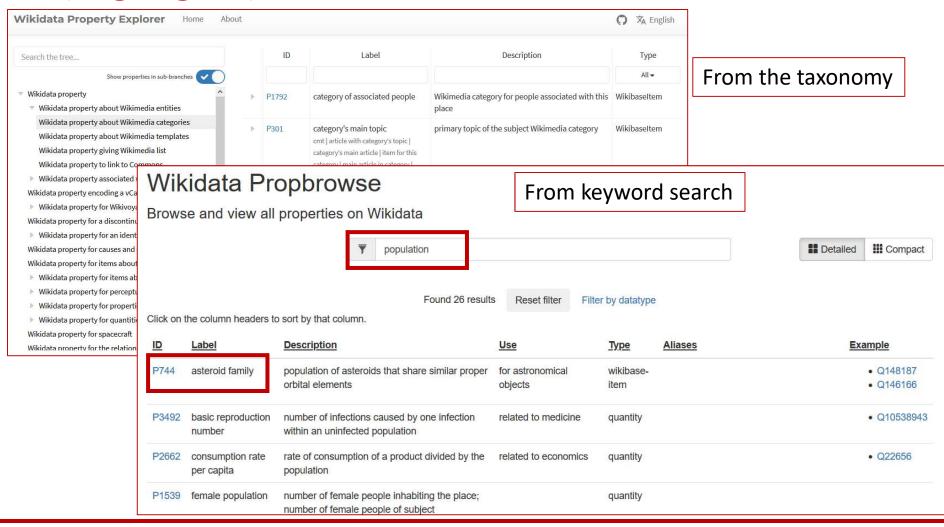
 $2010 \rightarrow 2019$



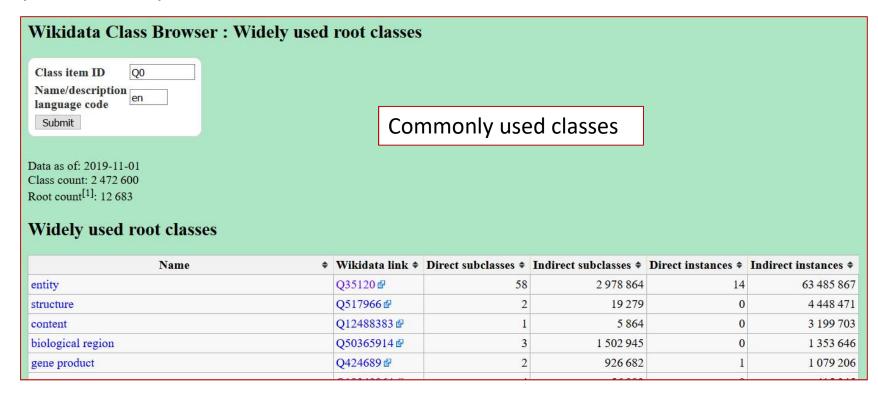
Wikidata Tools: Entity Browsing



Wikidata Tools: Working with the Schema (Highlights)



Wikidata Tools: Working with the Schema (Classes)



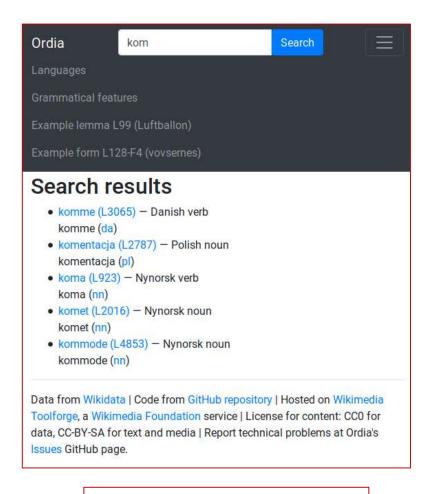
• Entity browsers (SQID, Reasonator) can also be used to browse classes

Wikidata Tools: Working with the Schema (Classes)

- Command line tools such as wdtaxonomy or wdq are the best option
- Very easy to navigate over properties, equivalent classes...

```
C:\Users\dgarijo>wdtaxonomy Q634 -v
planet (0634) •215
  extrasolar planet (044559) •94 ×2994
     -circumbinary planet (0205901) •16 ×10
     -super-Earth (0327757) •39 ×49
     -hot Jupiter (0382979) •40 ×6
     -Hot Neptune (0420490) •25 ×1
     -trojan planet (0847083) •5
     -carbon planet (0862203) •26 ×1
     -puffy planet (0911454) •5
     -Chthonian planet (0928495) •24
     -ocean planet (01045138) •29 ×1
     -pulsar planet (01142835) •20 ×5
     -eccentric Jupiter (01196165) •18
     -extragalactic planet (02578855) •18
     -coreless planet (03278193) •16
     -super-Jupiter (04021955) •15
     -ice planet (05985491) •17
     gas giant with water clouds (Q13424716) •2
     -lava planet (015057366) •15
     -??? (015121300) •2
     -sub-Earth (015129745) •12
      gas dwarf (017119317) •7
```

Wikidata Tools: Lexicographic Tools (Highlights)





Add lexeme or define a sense to an existing one

Search for existing lexemes

Wikidata Tools: Programmer Tools (Highlights)

```
GraphiQL
                        Prettify
                                   History
                                                                            GraphQL support
1 * {
                                                     "data": {
2 +
      entity(id: "Q65") {
        label(lang: "en")
3
                                                       "entity": {
        head of government{
4 +
                                                        "label": "Los Angeles",
5 *
          mainsnak{
                                                        "head_of_government": [
            label(lang: "en")
6
                                                             "mainsnak": {
7 4
            place of birth {
8
              mainsnak {
                                                               "label": "Eric Garcetti",
9
                label(lang: "en")
                                                               "place of birth": [
10
11
                                                                   "mainsnak": {
12
                                                                     "label": "Good Samaritan Hospital"
13
14
15
16
```

```
from qwikidata.entity import WikidataItem, WikidataLexeme, WikidataProperty
from qwikidata.linked_data_interface import get_entity_dict_from_api

# create an item representing "Douglas Adams"
Q_DOUGLAS_ADAMS = "Q42"
q42_dict = get_entity_dict_from_api(Q_DOUGLAS_ADAMS)
q42 = WikidataItem(q42_dict)

# create a property representing "subclass of"
P_SUBCLASS_OF = "P279"
p279_dict = get_entity_dict_from_api(P_SUBCLASS_OF)
p279 = WikidataProperty(p279_dict)

# create a lexeme representing "bank"
L_BANK = "L3354"
13354_dict = get_entity_dict_from_api(L_BANK)
13354 = WikidataLexeme(13354_dict)
```

Qwikidata python package (among many others)

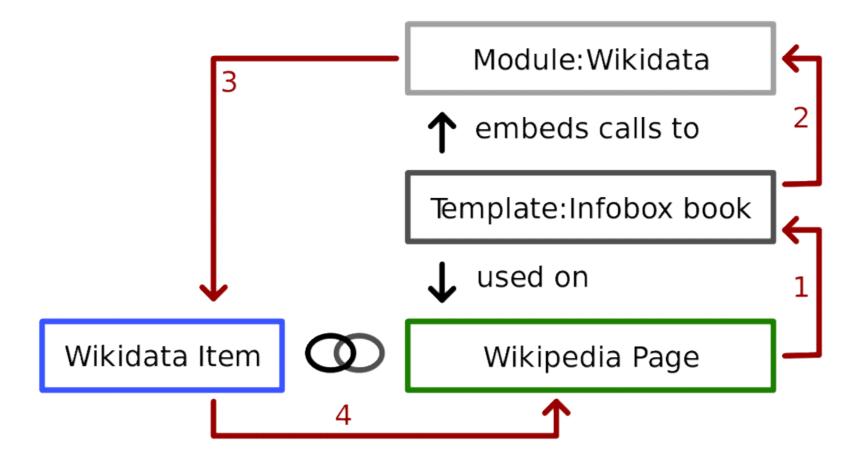
Connecting Wikidata and Wikipedia Infoboxes

Wikipedia/Wikidata Infobox Overview



- Infoboxes: short human –readable summaries of the information about an entity
- Tabular format
- Include images
- Source for Semantic Web efforts such as DBPedia

Wikipedia/Wikidata Infobox Connection



Wikipedia Template Modules



Before Wikidata

```
name
image
| image size
border
| alt
caption
author
| audio read by
| title orig
| orig lang code
| title working
| translator
lillustrator
| cover artist
country
| language
| series
| release number
subject
genre
set in
publisher
| publisher2
| pub date
| english pub date =
```

published
media_type
pages

| awards

Lisbn

{{Infobox book

```
{{infobox book
              = Capital in the Twenty-First Century
l name
              = Le Capital au XXIe siècle
| title orig
 translator
              = [[Arthur Goldhammer]]
              = File:Capital in the Twenty-First Century (front cover).jpg
 image
 caption
              = <small>Hardcover edition</small>
 author
              = [[Thomas Piketty]]
 language
              = French
              = [[Capitalism]], [[economic history]], [[economic inequality]
subject
              = Non fiction
 genre
 publisher
              = [[Éditions du Seuil]], <br />[[Harvard University Press|Belkn
| pub date
              = August 2013
| english pub date = April 15, 2014
              = Print ([[Hardcover|Hardback]])
| media type
pages
              = 696 pp.
l isbn = 978-0674430006
}}
```

Wikidata Template Modules



```
{{infobox person/Wikidata | fetchwikidata=ALL}}
```

- Done!
- You can customize how you import/show Wikidata terms:

```
{{infobox person/Wikidata | suppressfields=occupation children | dateformat = dmy | noicon=on | Custom "edit on Wikidata" links | ... }
```

Example: https://en.wikipedia.org/wiki/Template:Infobox person/Wikidata

How does it work? Mapping to Wikidata

Wikidata on demand:

What if there are several values for the resource?