

# Wikidata API & Command-Line Tools

Daniel Garijo, Pedro Szekely  
Information Sciences Institute and  
Department of Computer Science

@dgarijov, @szeke  
{dgarijo, pszekely}@isi.edu

# Tools

## Wikibase API

<https://www.mediawiki.org/wiki/Wikibase/API>

querying, adding, removing and editing information on any Wikibase instance

## Wikibase command line interface

<https://github.com/maxlath/wikibase-cli>

the Command-line interface interface to Wikibase instances

## Wikidata taxonomy

<https://github.com/nichtich/wikidata-taxonomy>

<https://wdtaxonomy.readthedocs.io>

command-line tool and library to extract taxonomies from Wikidata

## Wikidata client library for Python

<https://github.com/dahlia/wikidata>

easy APIs to use Wikidata for Python

## Wikidata Integrator

<https://github.com/SuLab/WikidataIntegrator>

Python module integrating the MediaWiki API and the Wikidata SPARQL endpoint

## Wikidata extraction tools (old)

<https://github.com/jimbelton/wikidata>

extract items from a JSON dump of wikidata.org

# Wikibase API

<https://www.mediawiki.org/wiki/Wikibase/API>

<https://developer.ibm.com/articles/use-wikidata-in-ai-and-cognitive-applications-pt1/>

## The official and most comprehensive API

### Basics

- All Query modules
- Get properties of pages
- List pages matching a criterion
- Get module parameters information
- Get meta information about the wiki and us

### Authentication

- Get tokens for data modifying operations
- Login
- Logout

### Accounts and Users

- Create an account
- Block or unblock a user
- Get info about the current user
- Get the current user's watchlist as a feed
- Change user options
- Change user group membership
- Send an email

### Page Operations

- Parse content of a page
- Create and edit a page
- Upload a file
- Import a page
- Delete a page
- Watch or unwatch a page
- Purge cache for page(s)
- Rollback a page
- Move a page
- Patrol a page or revision
- Restore revisions of a deleted page
- Change a page's protection level
- Change a page's language
- More...

### Search

- Search for a title or text
- Fetch results in an OpenSearch format
- Search for wiki pages near a location
- Search for a language
- Perform a prefix search for page titles

### Developer Utilities

- Access libraries
- Cross-site requests
- Creating an API module in an extension
- Using the API in MediaWiki and extensions
- Restricting API usage
- Localisation
- Implementation Strategy

# Wikibase Command Line Interface

# Wikibase Command Line Interface

<https://github.com/maxlath/wikibase-cli>

## Installation:

```
npm install -g wikibase-cli
```

## Search for entities

```
$ wd search feinstein
Q21452207  Feinstein family name
Q7733638   The Feinstein Institute for Medical Research
Q3703178   David Feinstein
Q48705413  Feinstein and study design. scientific article publi
Q18354968  Feinstein AK Mag
Q49302322  Feinstein Lake lake of the United States of America
Q16250366  Feinstein International Center
Q43259048  Showcase Providence Place IMAX Theatre movie theater
Q230733    Dianne Feinstein United States Senator from Californ
Q2713108   10988 Feinstein asteroid
```

# Get Summary, Label and Aliases

```
$ wd summary Q230733
```

```
id Q230733
```

```
Label Dianne Feinstein
```

```
Description United States Senator from California
```

```
instance of (P31): human (Q5)
```

```
$ wd label Q230733 -l ru
```

```
Файнстайн, Дайэнн
```

```
$ wd aliases Q230733
```

```
Dianne Goldman Berman Feinstein
```

```
| Dianne Emiel Goldman
```

# Get Claims

```
$ wd claims Q230733
```

instance of (P31):	human (Q5)
name in native language (P1559):	Dianne Feinstein
place of birth (P19):	San Francisco (Q62)
sex or gender (P21):	female (Q6581072)
spouse (P26):	Richard C. Blum (Q7324532)

```
$ wd claims Q230733 birth
```

```
place of birth (P19): San Francisco (Q62)  
date of birth (P569): 1933-06-22T00:00:00.000Z
```

# Get Raw Data

```
$ wd data Q230733 Q7324532  
# A quick way to access an entity's raw JSON data
```

```
wd data Q230733 | jq . | less  
# format JSON with jq  
wd data --format ttl Q230733  
# get the data in RDF turtle
```

```
wd data --simplify Q230733 | jq .
```

```
{,  
  "claims": {  
    "P463": [  
      "Q218868"  
    ],  
    "P21": [  
      "Q6581072"  
    ],  
    "P373": [  
      "Dianne Feinstein"  
    ],  
    "P214": [  
      "26212006"
```



# Simple Queries

author

Isaac Asimov

```
$ wd query --property P50 --object Q34981  
# works that Asimov authored  
Q23758 Q260711 Q368390 Q372968 Q375422 ...
```

```
$ wd summary Q23758 Q260711 Q368390 Q372968
```

id Q23758

**Label** Three Laws of Robotics

**Description** set of rules devised by the science fiction author Isaac Asimov  
subclass of (P279): rule (Q1151067)

id Q260711

**Label** X Stands for Unknown

**Description** book

instance of (P31): written work (Q47461344)

id Q368390

**Label** Galactic Empire

**Description** trilogy by Isaac Asimov

# Wikidata Taxonomy

# Wikidata Taxonomy

<https://github.com/nichtich/wikidata-taxonomy>

<https://wntaxonomy.readthedocs.io>

## **Installation:**

```
npm install -g wikidata-taxonomy
```

# Wikidata Taxonomy

## Print taxonomies defined using any property

```
$ wdtaxonomy Q634
# subclasses of planet (Q634)

$ wdtaxonomy Q458 -P P463
# Members of (P463) the European Union (Q458)
```

## Print taxonomies in reverse order

```
$ wdtaxonomy Q634 -r
# super-classes of planet (Q634)

wdtaxonomy Q458 -P P463 -r
# Orgs that the European Union (Q458) is a member of (P463)
```

# Output Format

# connected Wikimedia sites

# instances

```
coreless planet (Q5278195) ●16 ↑↑ ...
└─ lava planet (Q15057366) ●15 ↑↑ ...
mega-Earth (Q17325117) ●15
└─ planet of the Solar System (Q17362350) ●2
    └─ outer planet (Q30014) ●25 x4 ↑↑↑
        └─ Inferior and superior planets (Q337768) ●17 ↑
            └─ superior planet (Q844911) ●8 x1
                └─ outer planet (Q30014) ●25 x4 ↑↑↑ ...
                    └─ inner planet (Q3504248) ●12 x4 ↑↑ ...
                        └─ inferior planet (Q3901935) ●6 x2 ↑ ...
giant planet (Q21857994) ●14
└─ outer planet (Q30014) ●25 x4 ↑↑↑ ...
    └─ gas giant (Q121750) ●81 x11
```

additional superclasses