

State of the Map Europe 2023

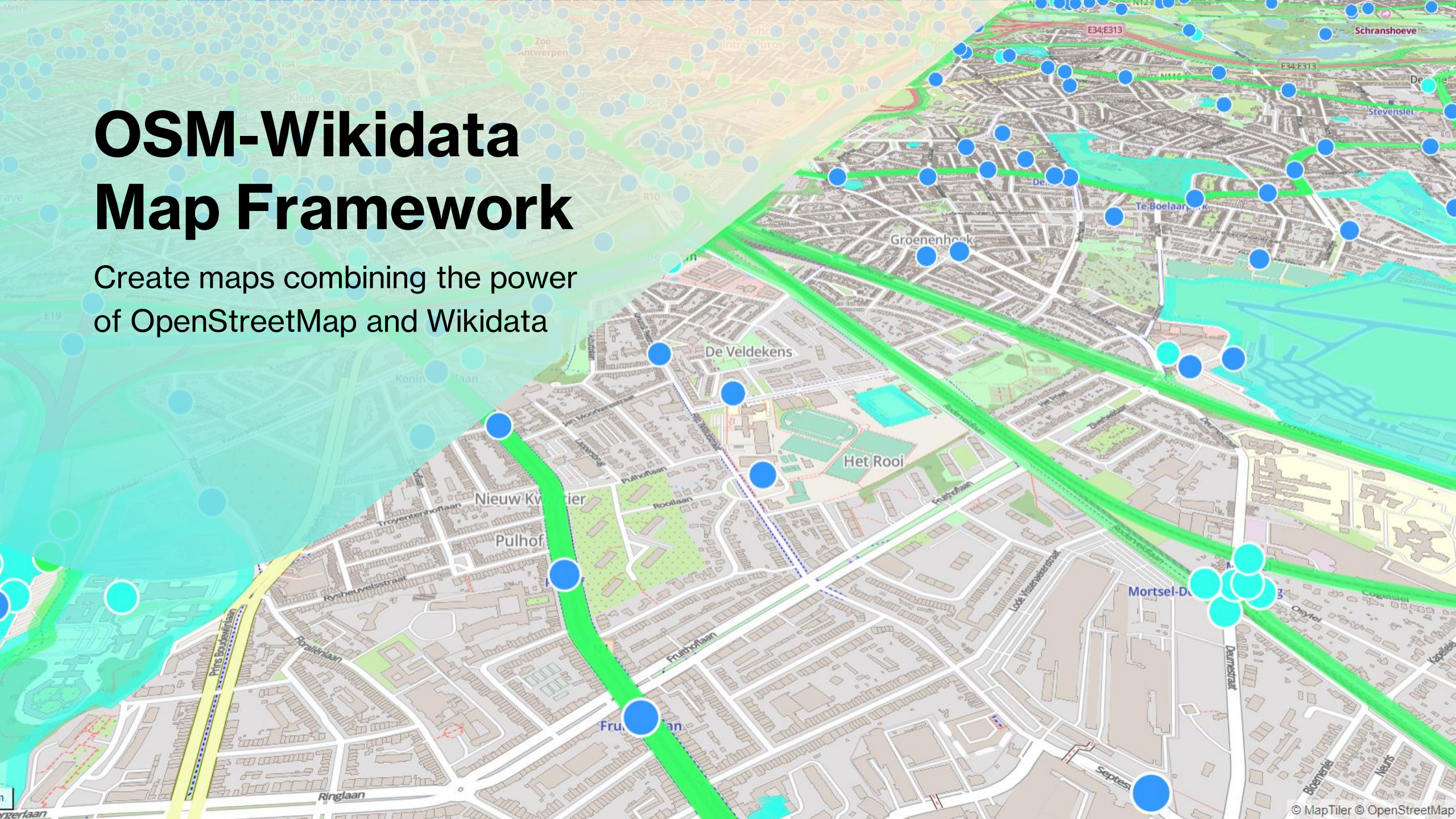
OSM-Wikidata Map Framework

By: Daniele Santini



OSM-Wikidata Map Framework

Create maps combining the power
of OpenStreetMap and Wikidata



\$ whoami

Daniele Santini

Computer engineer

Software developer @ GELLIFY

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Wiki*: [Danysan1](#)

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[dsantini.it](#)

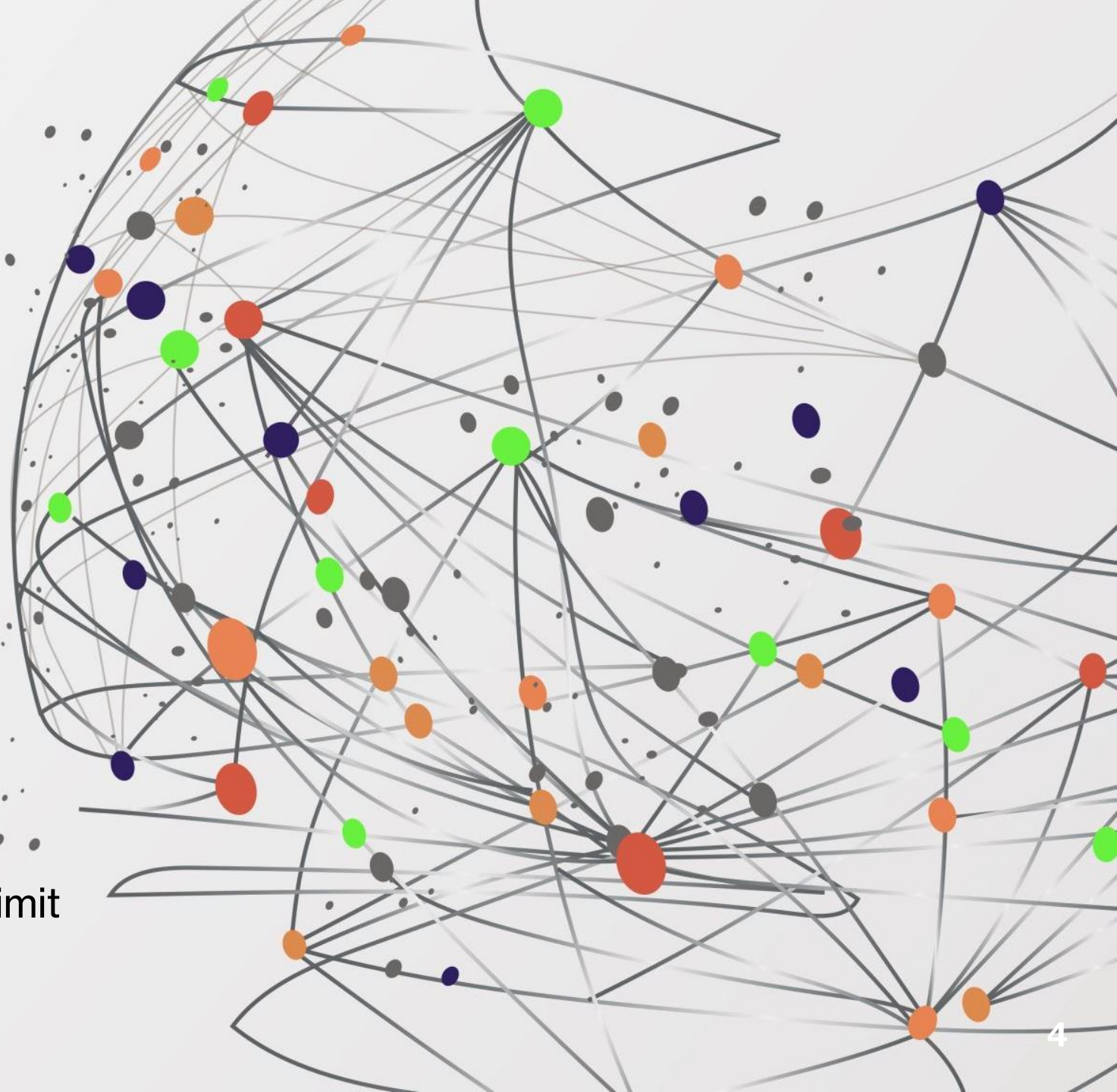


Wikidata

wikidata.org

Collaborative Knowledge graph

- Free (CC0)
- Multilingual
- Secondary (sources & links)
- General purpose, notability is the limit



Wikidata data model

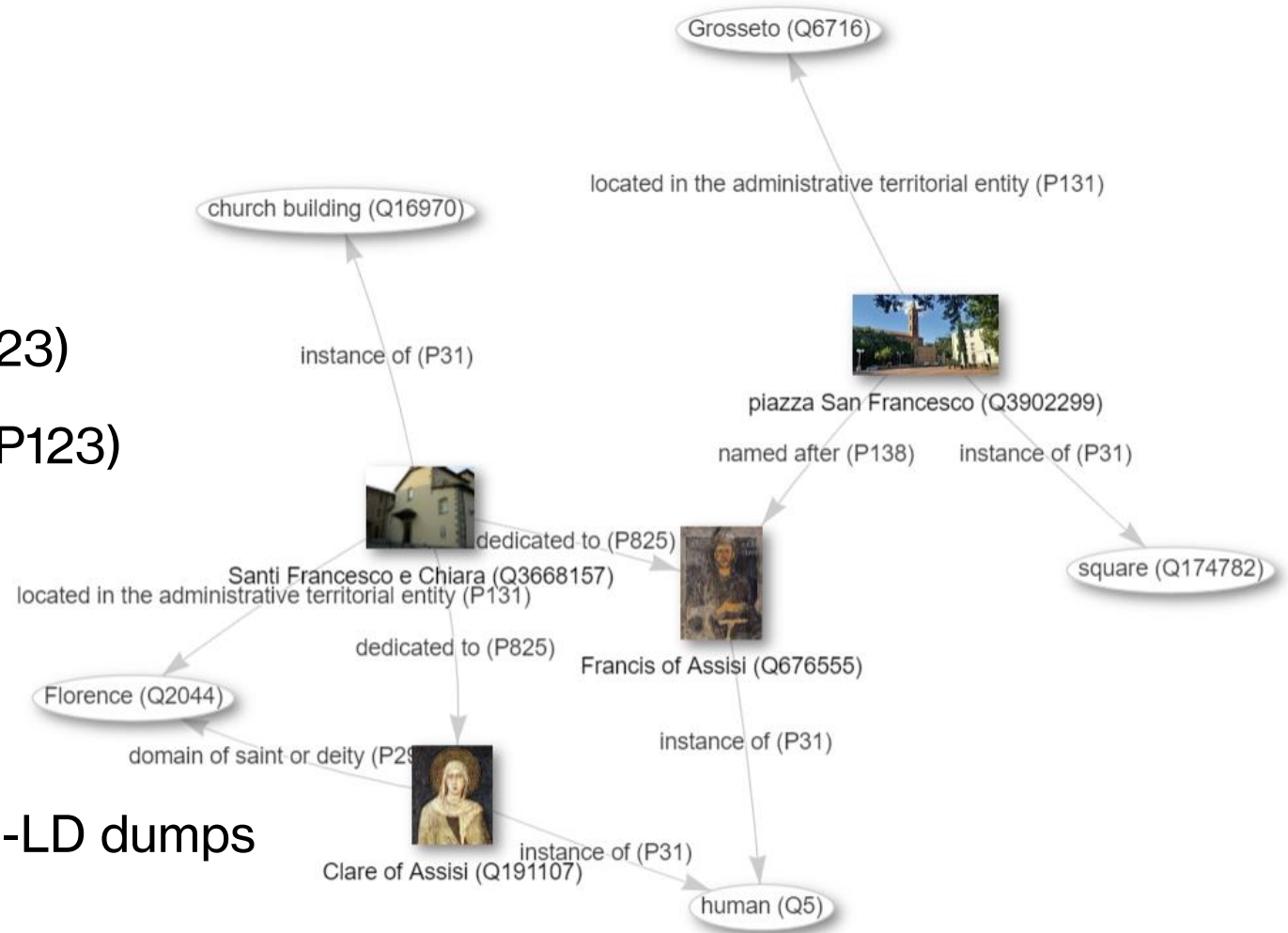
Entities identified by Q-IDs (ex: Q123)

Properties identified by P-IDs (ex: P123)

<subject, predicate, object> triples

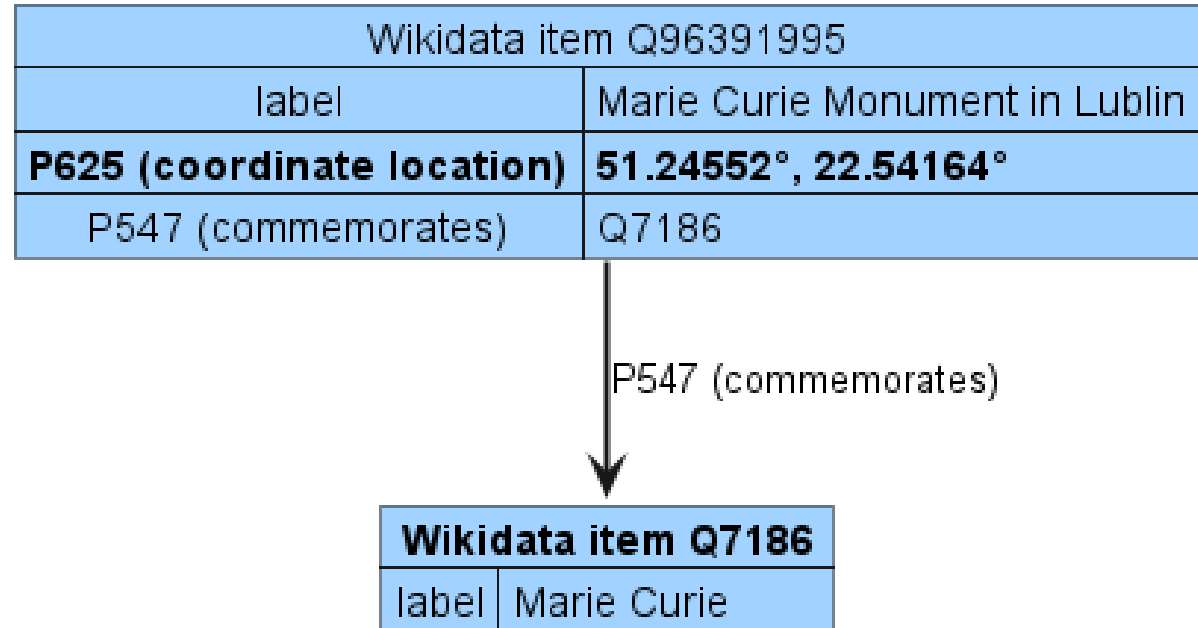
Main usage methods:

- SPARQL endpoint
- JSON / RDF / N-Triples / JSON-LD dumps



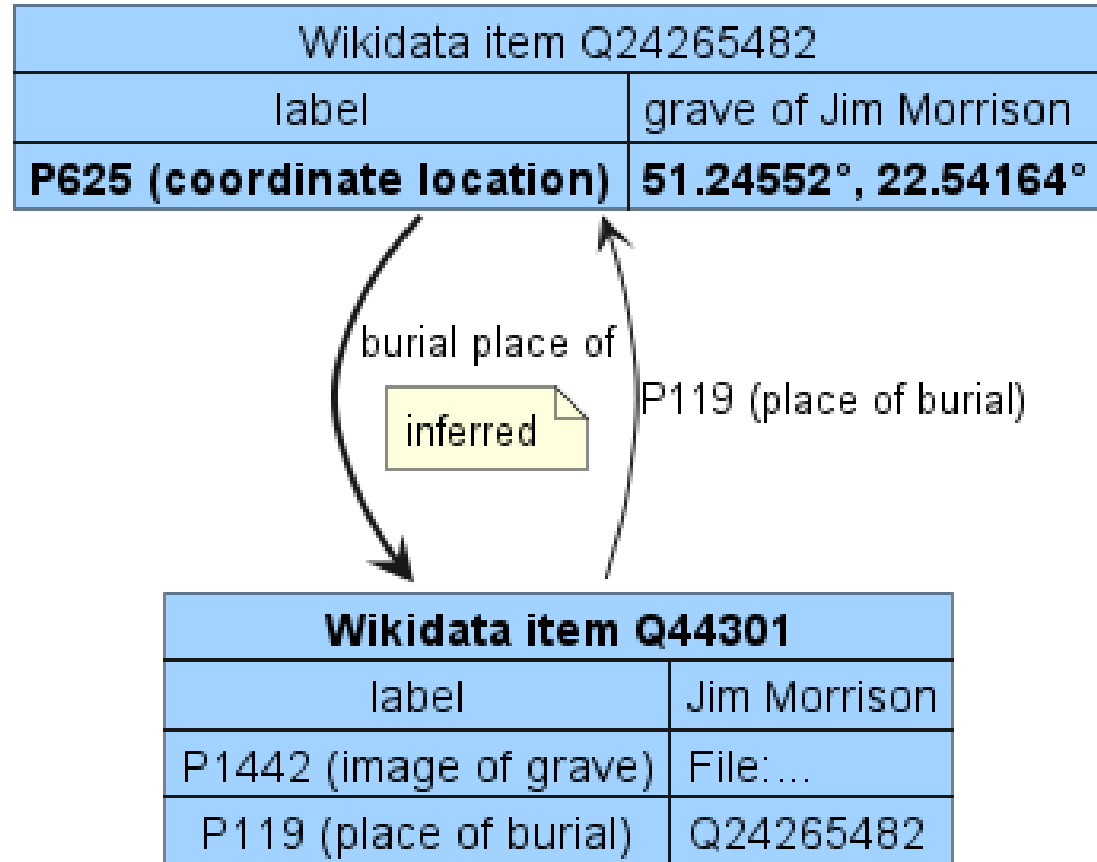
Geographic patterns: P625 + Direct properties

Wikidata item with a **coordinate location (P625)** and a **property** linking to another Wikidata item which **describes a certain aspect** of the first one



Geographic patterns: P625 + Inverse properties

Wikidata item with a **coordinate location (P625)**, referenced with an **«inverse» property** by another Wikidata item which **describes a certain aspect** of the first one



Geographic patterns: P625 qualifier on inverse properties

Wikidata item with
a **coordinate**
location (P625) qualifier on a
statement of an inverse
property to another Wikidata
item which **describes a**
certain aspect of the first one

Wikidata item Q8772		
label	Jean Baptiste Joseph Fourier	
P1442 (image of grave)	File:...	
P119 (place of burial)	value	Q311 (Père Lachaise Cemetery)
	P625 (coordinate location)	48.86005°, 2.394004°

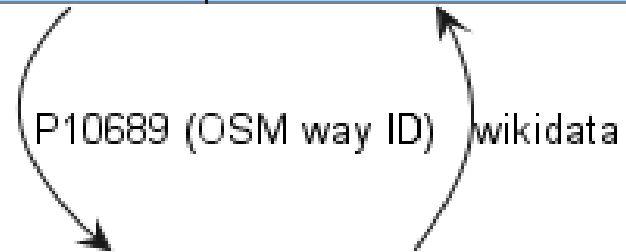
OSM Wikidata

Geographic data patterns in OpenStreetMap & Wikidata

OSM wikidata=*

Q-ID of the Wikidata item
describing the exact same entity
represented by the OSM element

Wikidata item Q1548496	
label	Marie-Curie-Gymnasium Dresden
P138 (named after)	Q7186
P10689 (OSM way ID)	291879720



OSM Way 291879720	
name	Marie-Curie-Gymnasium
wikidata	Q1548496

Editors: [OSM <-> Wikidata matcher](#), [OWL Map](#), ...

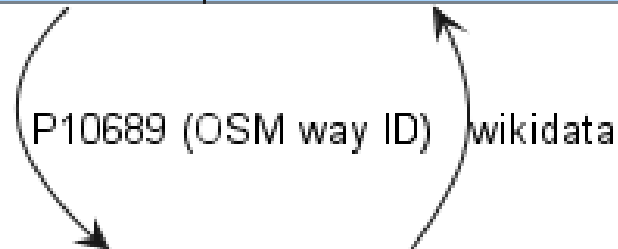
Wikidata -> OSM

ID of the OSM element **representing the exact same entity** described in the Wikidata item

- [P11693](#) (OSM **node** id)*
- [P10689](#) (OSM **way** ID)*
- [P402](#) (OSM **relation** ID)

* Discussion under way on the sufficient stability of nodes and ways

Wikidata item Q1548496	
label	Marie-Curie-Gymnasium Dresden
P138 (named after)	Q7186
P10689 (OSM way ID)	291879720

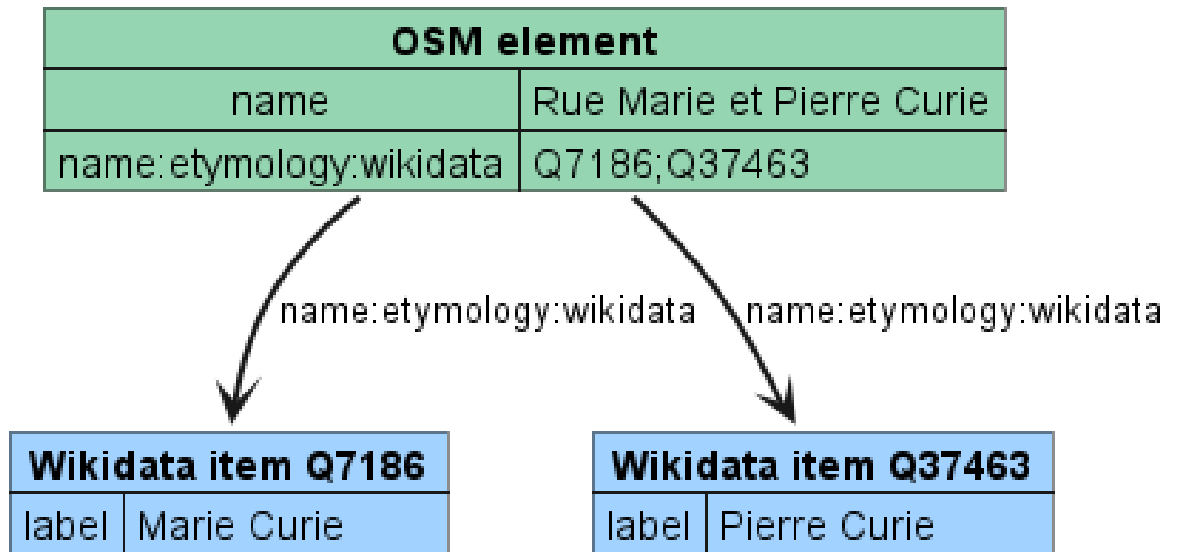


OSM Way 291879720	
name	Marie-Curie-Gymnasium
wikidata	Q1548496

OSM [*:wikidata=*](#) a.k.a. secondary Wikidata tags

Q-ID of the Wikidata item **describing a specific aspect** of the OSM element:

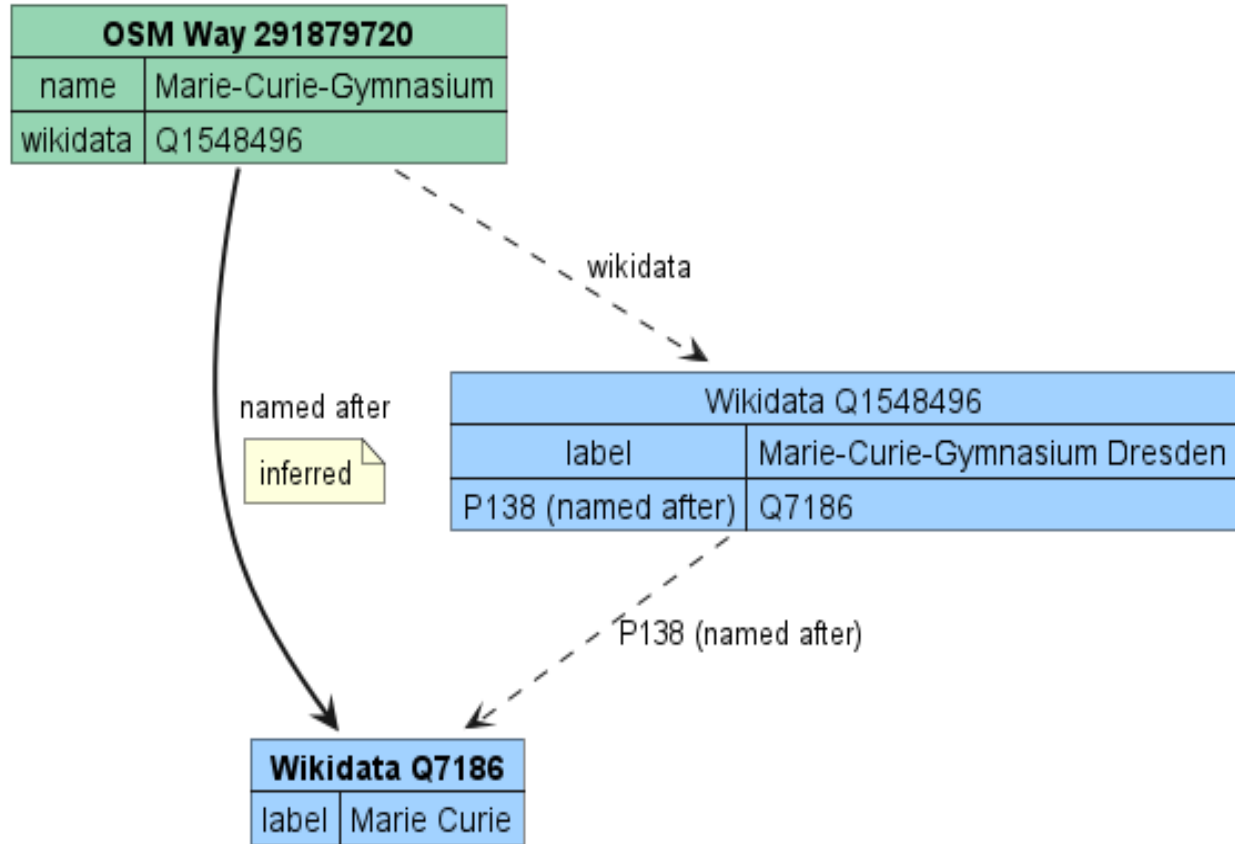
- `artist_name=*` => `artist:wikidata=*`
- `brand=*` => `brand:wikidata=*`
- `subject=*` => `subject:wikidata=*`
- `model=*` => `model:wikidata=*`
- `architect=*` => `architect:wikidata=*`
- ...



Editors: MapComplete ([etymology](#), [artwork](#), ...)

Inference: OSM wikidata=* + Wikidata properties

Combine OSM **wikidata=*** and a Wikidata property to find the Wikidata item **describing a certain aspect** of the OSM element



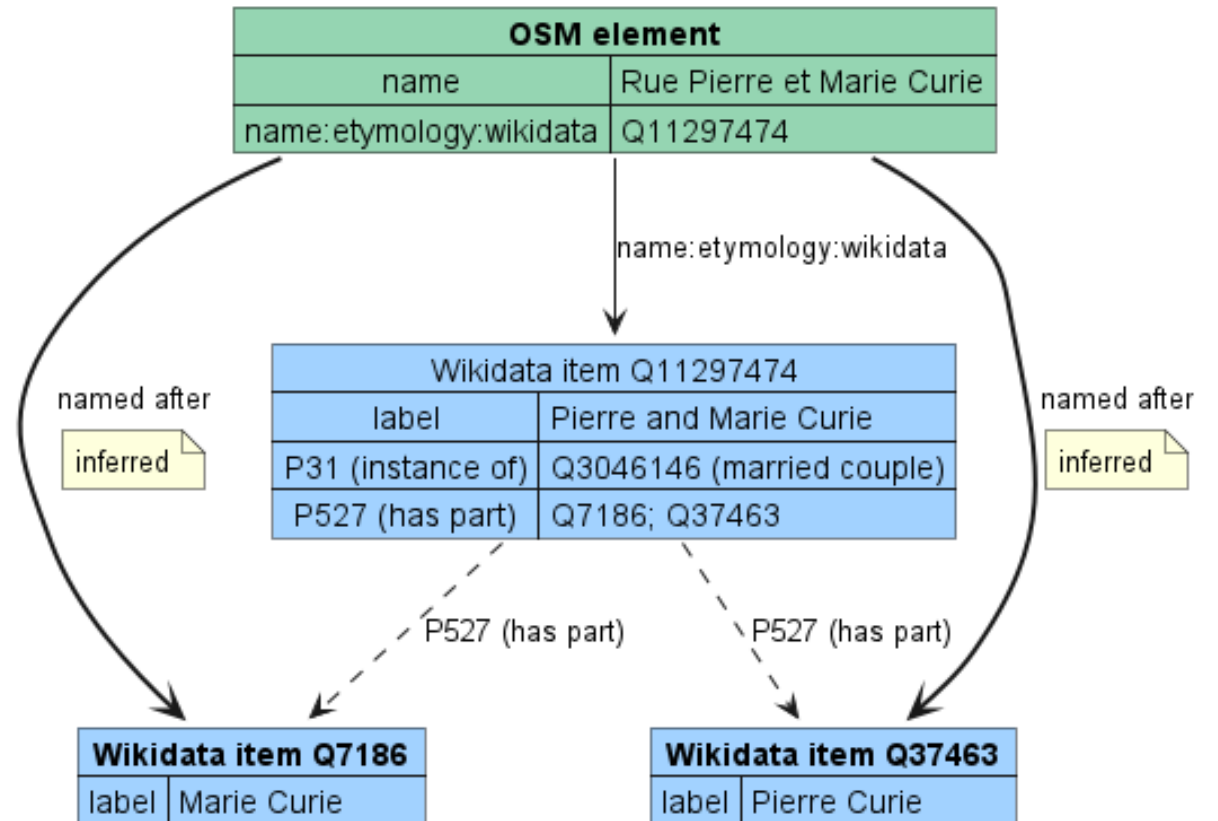
Inference: OSM *:wikidata=* + P527

Q-ID of the Wikidata item **describing a certain aspect** of the OSM element.

Use «**has part(s)**» (**P527**) to include **parts of the linked entity**.

Example:

Williams sisters ([Q1180052](#)) = Serena W. ([Q11459](#)) + Venus W. ([Q11578](#))



Usage and viewers

- i18n of labels of vector tiles by [Mapbox](#) and [MapTiler](#)
- I18n of geocoding by [Nominatim](#), [Mapbox](#) and [MapTiler](#)
- JOSM + “Wikipedia” extension
- iD + [Name Suggestion Index](#)
- [Sophox](#)
- [OSM-Wikipedia tag validator](#)
- [OSM-Wikidata Map Framework](#) (OWMF)



What is OSM-Wikidata Map Framework

Tool for creating data-driven maps based on OSM and Wikidata.

Allows you to **use the above patterns** choosing OSM tags and Wikidata properties.

Includes **i18n, statistics, tabular view, quick links to editors**.

- **Basic mode** (Overpass & Wikidata **APIs only**): no DB necessary, simple patterns only.
- **With DB** (to be initialized): Advanced patterns and propagations.
- **With pmtiles** (to be initialized): Advanced patterns and propagations.

Uses Docker+ PHP + PostGIS; Apache Airflow + Osmium; Typescript + MapLibre GL JS

Configure OWMF (APIs only, no DB)

1. Download the default configuration ([.env.example](#)) into the file “.env” .

```
curl -o .env https://gitlab.com/openetymologymap/osm-wikidata-map-framework/-/raw/main/.env.example
```

2. Edit .env customizing tags and properties

- owmf_osm_filter_tags
- owmf_osm_wikidata_keys, owmf_osm_text_key & owmf_osm_description_key
- owmf_osm_wikidata_properties
- owmf_wikidata_indirect_property, owmf_wikidata_image_property

3. Run OWMF and make it available on <http://localhost>

```
docker run --rm --env-file .env -p 80:80 registry.gitlab.com/openetymologymap/osm-wikidata-map-framework:latest
```

[Complete guide here](#)

Configure OWMF (with DB)

1. `git clone https://gitlab.com/openetymologymap/osm-wikidata-map-framework.git`
 2. Copy **.env.example** in **.env** and customize tags and properties
 3. In **.env** enable the DB (**owmf_db_enable**) and set its password (**owmf_db_password**)
 4. `docker-compose --profile airflow --profile airflow-init up -d`
 5. Launch the DB initialization from Apache Airflow (<http://localhost:8080>)
 6. `docker-compose --profile prod up --d`
- OWMF is now available on <http://localhost>

Result

Museo d'Orsay

("Musée d'Orsay - Valéry Giscard d'Estaing")

museo di Parigi



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Victor Alexandre Frédéric Laloux

architetto francese



Victor Laloux è stato un architetto francese.

15/11/1850 (Tours) - 13/7/1937 (Parigi)

Francia

maschio

architetto

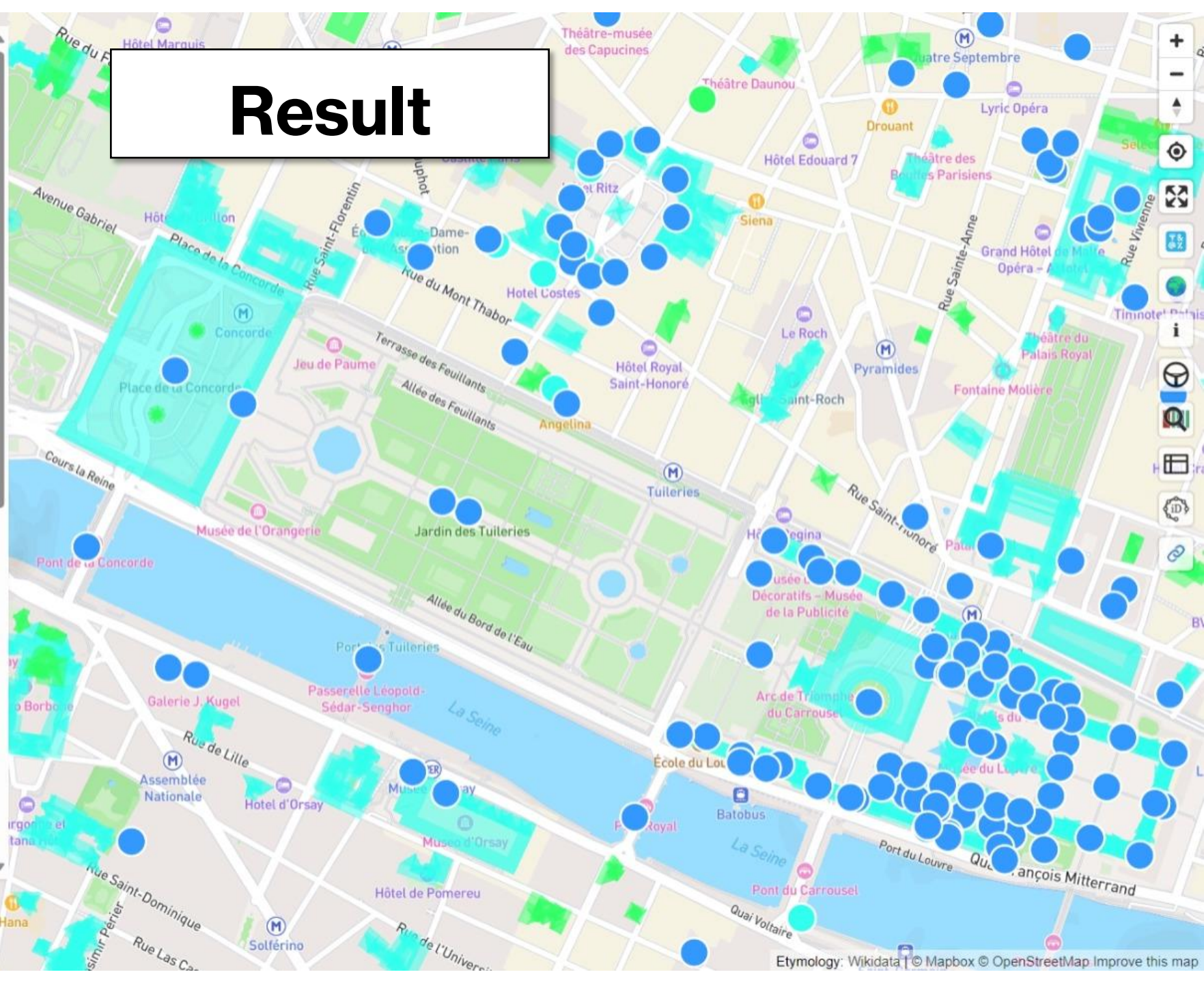


















































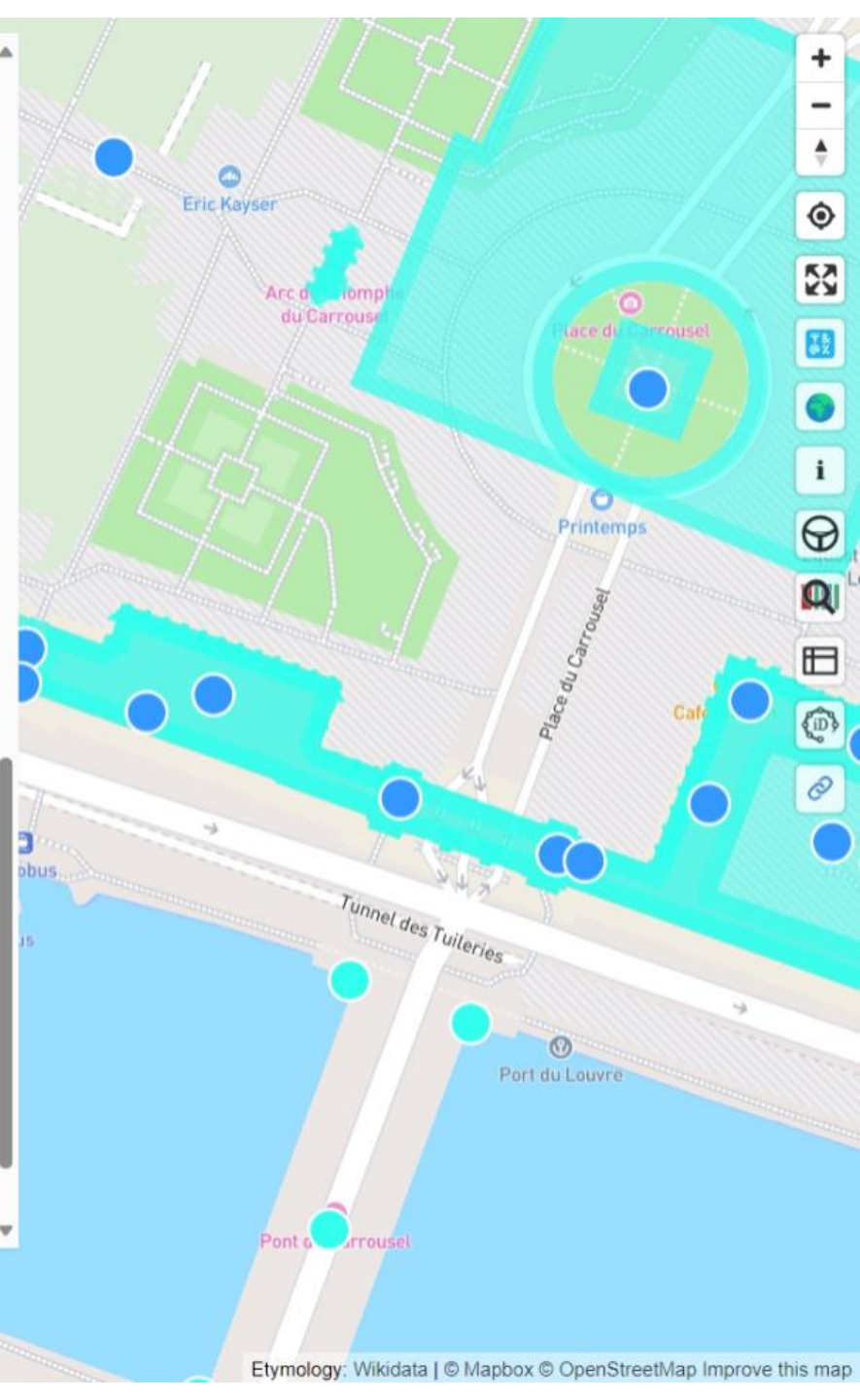
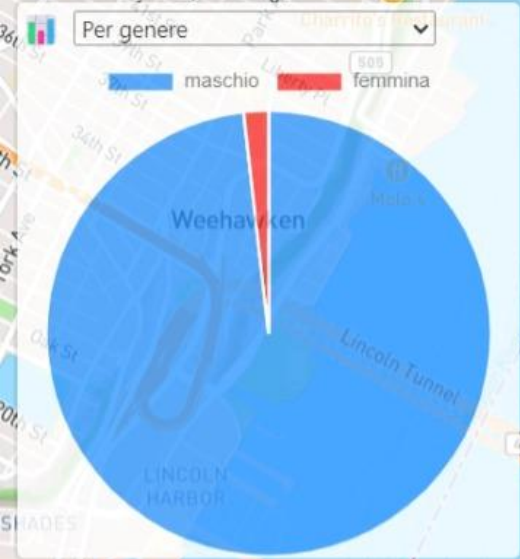


Table view

Fontaine du Louvre		     	<ul style="list-style-type: none">Hector LefuelLouis Visconti
Aile Mollien			<ul style="list-style-type: none">Hector LefuelLouis Visconti
Arc de Triomphe du Carrousel		     	<ul style="list-style-type: none">Pierre-François-Léonard Fontaine
Carrousel du Louvre		     	<ul style="list-style-type: none">J. M. Pei
Louvre Museum		     	<ul style="list-style-type: none">J. M. PeiCharles Le BrunClaude PerraultPierre Lescot
Louvre Palace		     	<ul style="list-style-type: none">J. M. PeiLouis Le VauHector LefuelPierre LescotJacques Lemercier
Hôtel de Pomereu		     	<ul style="list-style-type: none">Louis Thérèse David de Pénanrun
		   	
		   	
Museum of Orsay	Musée d'Orsay	     	<ul style="list-style-type: none">Victor Laloux



Map statistics



Existing instances

[OSM-Wikidata Map](#) - Wikidata geo features & OSM features linking to Wikidata

[Open Etymology Map](#) - Source of the name of streets and POIs

[Open Burial Map](#) - Burial places of notable people

[Open Artist Map](#) - Artists who designed or created artworks and buildings

[Open Architect Map](#) - Architects who designed buildings and structures

Thank you for your attention!

