August 1-3, Foundation University, Dumaguete

PISTA NG MAPA

open data & software • free maps • community • talks • workshops


building
highway
name
source
amenity
addr:housenumber
addr:street
addr:city
addr:postcode
shop
surface
natural
landuse
oneway
man_made
operator
barrier
phone
tourism
leisure
waterway
maxspeed
website
refcraft
bridge
bicycle
tracktype
wheelchair
power
type
note
place
parking
crossing
fixme
opening_hours
religion
service
railway
cuisine
motor_vehicle
tunnel
historic
access
height
start_date
description
sport
area
lanes
width
incline
junction
route
water
shelter
admin_level
old_name
attribution
internet_access
backrest
footway
aeroway
import
min_height
club
horse
ele
ford
uic_ref
seats
icao
lcn
level
bench
rooms
golf
crop
url
is_in
pump
kerb
zoo
layer
psv
NHS
sac_scale
usage
trees
voltage
boundary
sidewalk
covered
noexit
ruins
industrial
capacity
leaf_type
from
mtb
FIXME
colour
network
wood
healthcare
indoor
hiking
smoking
cycleway
stars
fee
wall
ramp
office
lit
foot
email
wifi
bus
wires
atm
ski
toll
fax
to
genus
hgv
bin
boat
site
male
tram

data mining

OpenStreetMap

With

Overpass Turbo

n: erwin olario
e: erwin@ngnuity.xyz
m: https://t.me/GOwin

Pista ng Mapa, 2019 August, Dumaguete

OpenStreetMap (OSM)

- The world’s largest free and co-created database of geodata, and maps.
- Free and open, without legal, or technical restrictions.

https://openstreetmap.org

OSM data license

Freedoms

- **Share**: To copy, distribute and use the database.
- **Create**: To produce works from the database.
- **Adapt**: To modify, transform and build upon the database.

Conditions

- **Attribute**: You must attribute any public use of the database, or works produced from the database, in the manner specified in the ODbL.
- **Share-alike**: If you publicly use any adapted version of this database, or works produced from an adapted database, you must also offer that adapted database under the ODbL.
- **Keep open**: If you redistribute the database, or an adapted version of it, then you may use technological measures that restrict the work as long as you also redistribute a version without such measures.

https://opendatacommons.org/licenses/odbl/summary/

URLs for bulk OSM data

- planet.osm.org
- download.geofabrik.de
- download.bbbike.org
- export.hotosm.org

overpass-turbo.eu

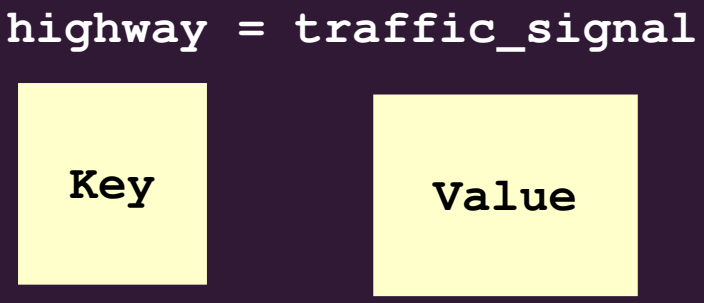
- **Overpass Turbo** is a web-based data-mining front-end for querying the powerful Overpass API, and display results on an interactive map.

OSM Elements

- OpenStreetMap objects are a combination of **geometries** and **tags**.
  - **Node** – a single point
  - **Way** – an ordered list of nodes
    - Polylines – first and last nodes do not coincide
    - Polygon – first and last nodes coincide
  - **Relation** – a logical grouping of nodes, ways, or other relations

OSM Elements

- OpenStreetMap objects are a combination of **geometries** and **tags**.
  - **Tags** are object attributes, and are composed of a **key-value** pair
  - Object may have at least one tag.



Examples:

amenity = bench

leisure = park

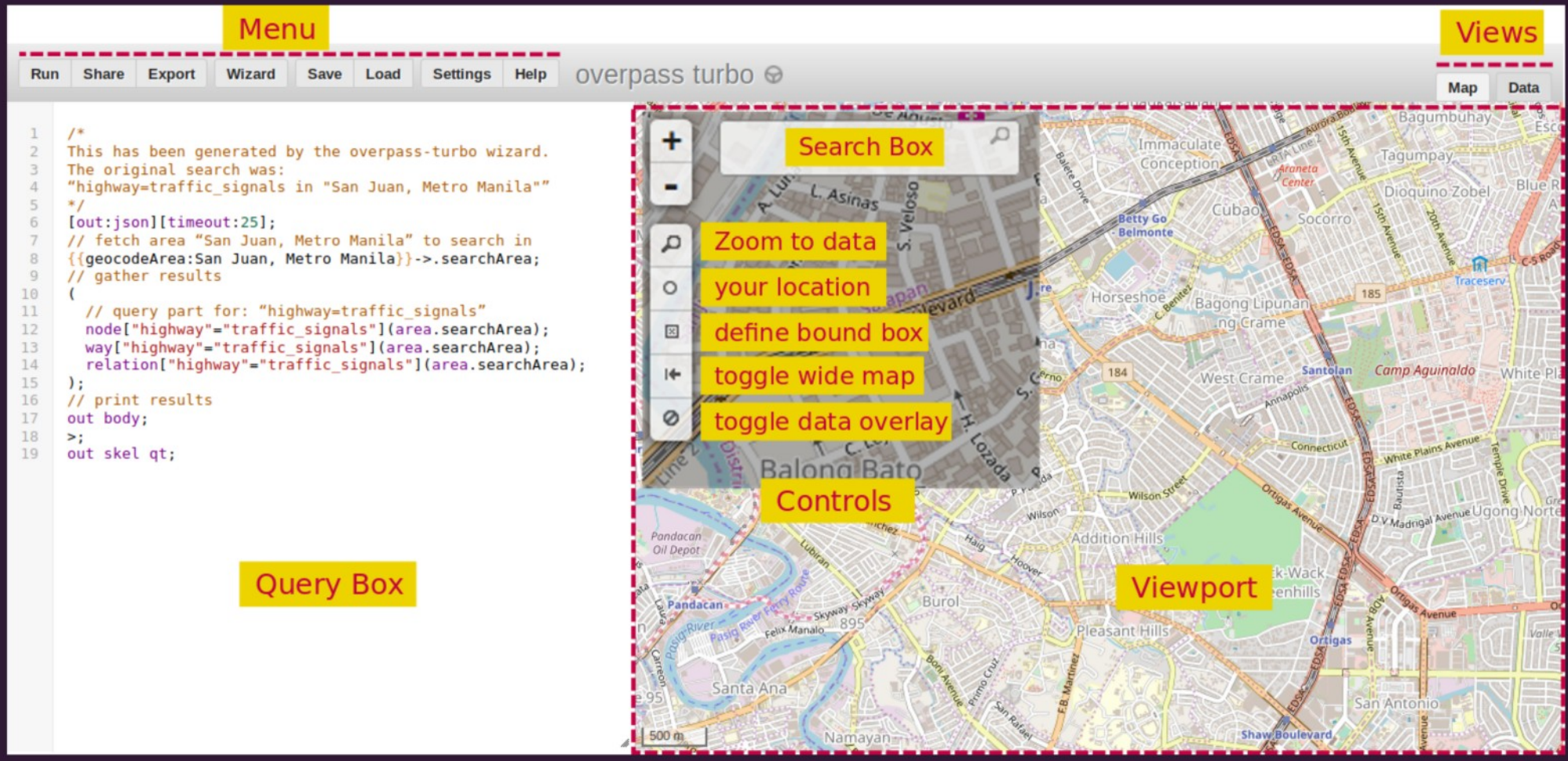
highway = residential

amenity = atm

http://wiki.osm.org/wiki/Map_Features

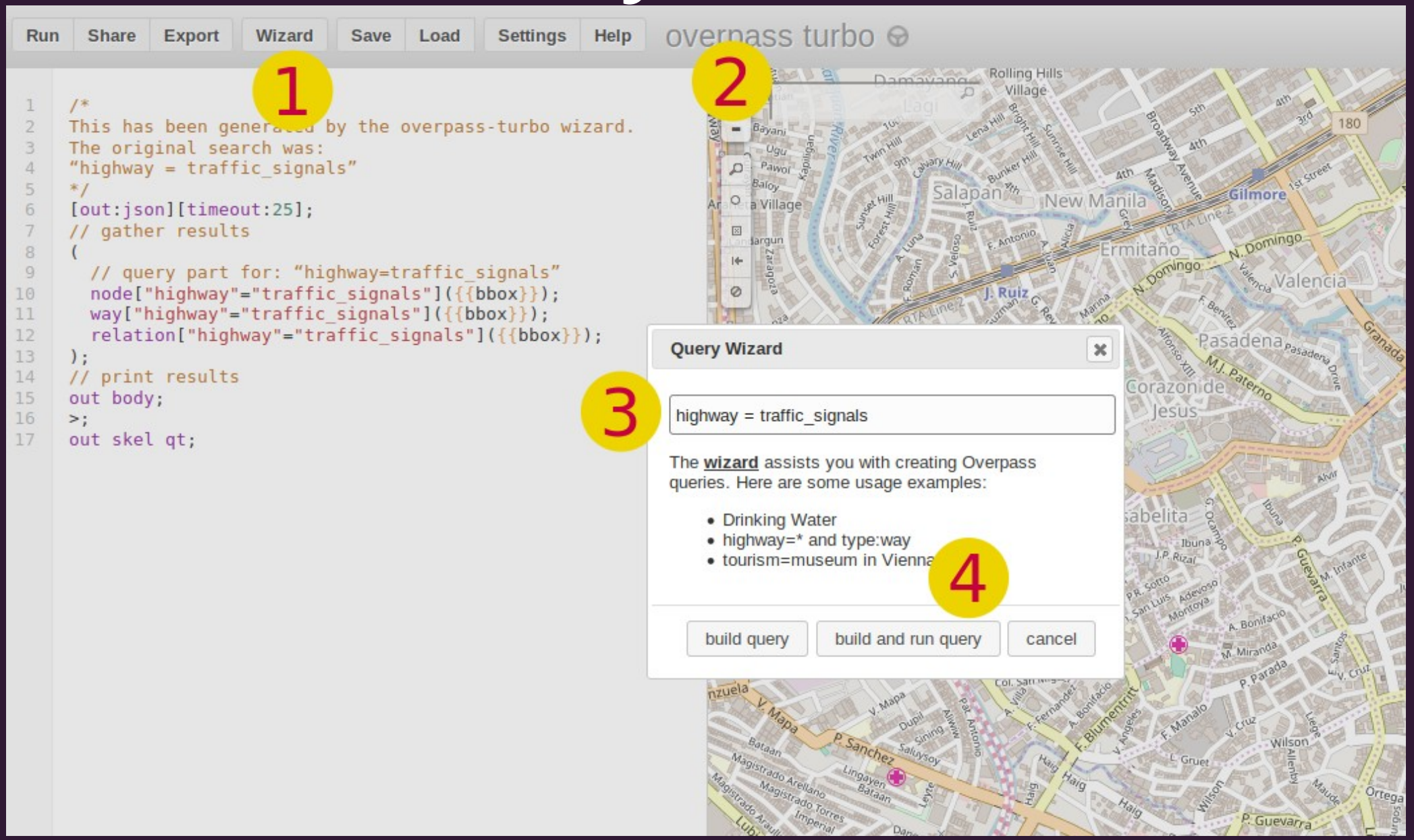
OSM Elements

The Interface

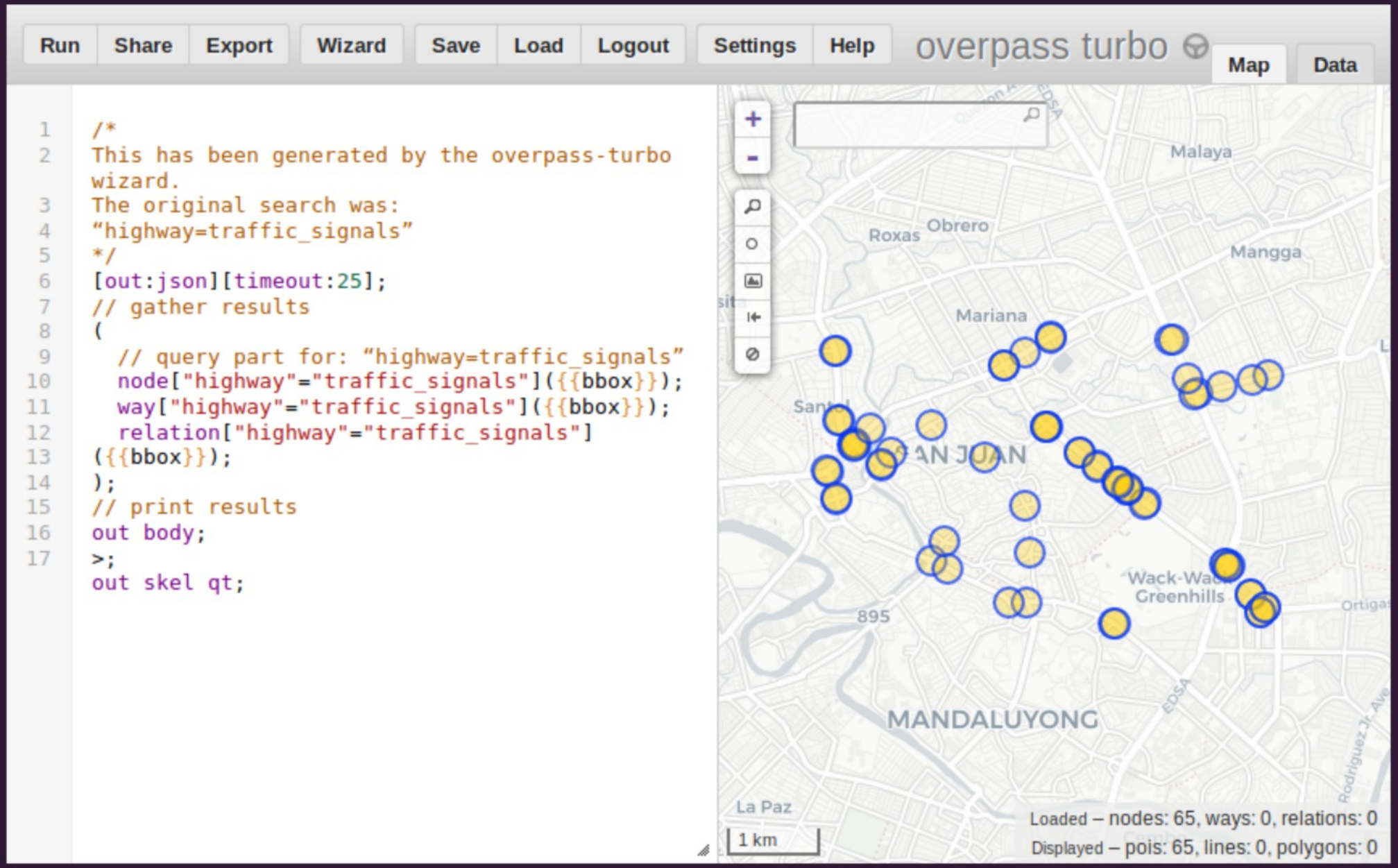


http://overpass-turbo.eu

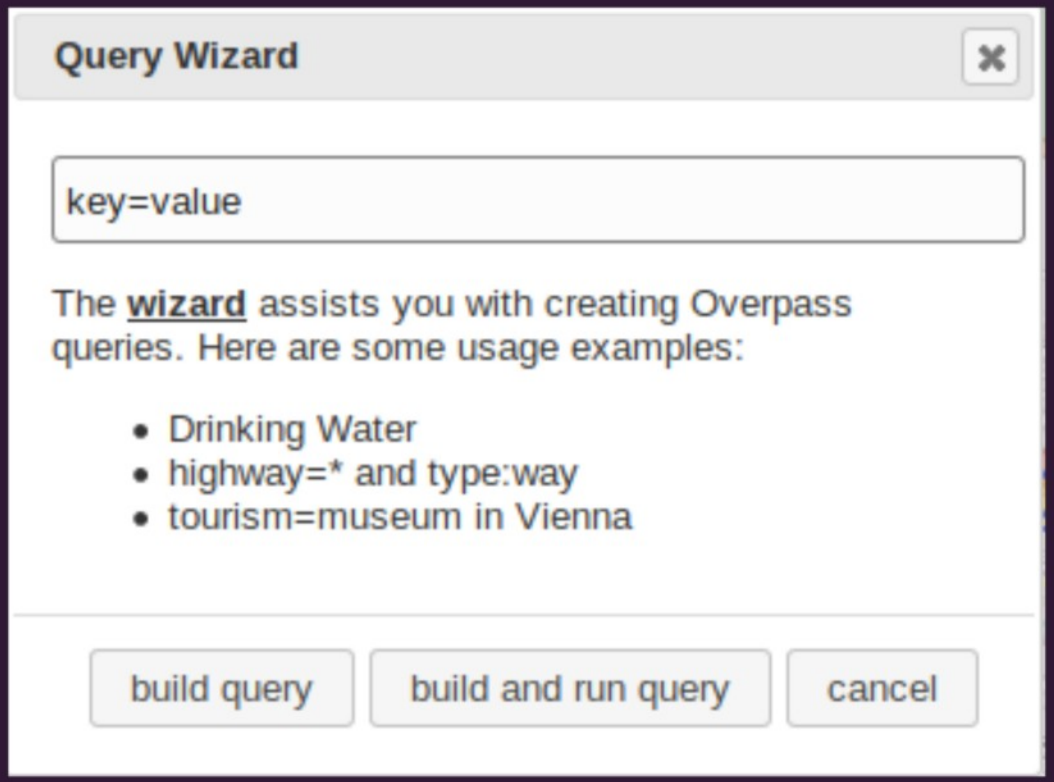
Query Wizard



Results


Run
Share
Export
Wizard
Save
Load
Logout
Settings
Help
overpass turbo
Map
Data
/*
This has been generated by the overpass-turbo wizard.
The original search was:
“highway=traffic_signals”
*/
[out:json][timeout:25];
// gather results
(
// query part for: “highway=traffic_signals”
node["highway"="traffic_signals"]({{bbox}});
way["highway"="traffic_signals"]({{bbox}});
relation["highway"="traffic_signals"]
({{bbox}});
);
// print results
out body;
>;
out skel qt;
Malaya
Roxas
Obrero
Mangga
Mariana
SAN JUAN
Wack-Wack
Greenhills
895
MANDALUYONG
La Paz
1 km
Loaded – nodes: 65, ways: 0, relations: 0
Displayed – pois: 65, lines: 0, polygons: 0

Shops in Dumaguete



- The Query Wizard allows anyone to query OSM features

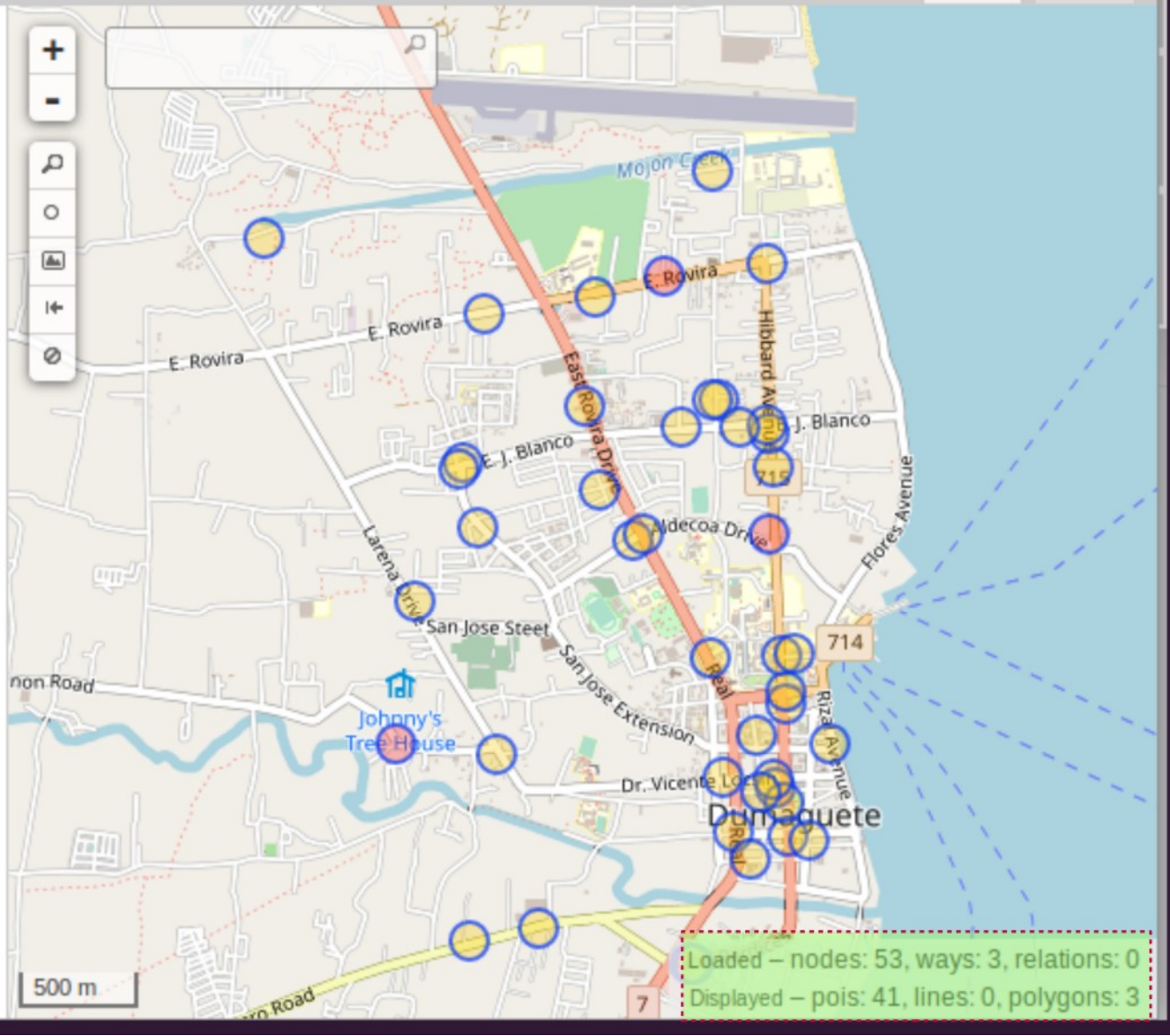
http://overpass-turbo.eu/s/L8B

Shops in the area

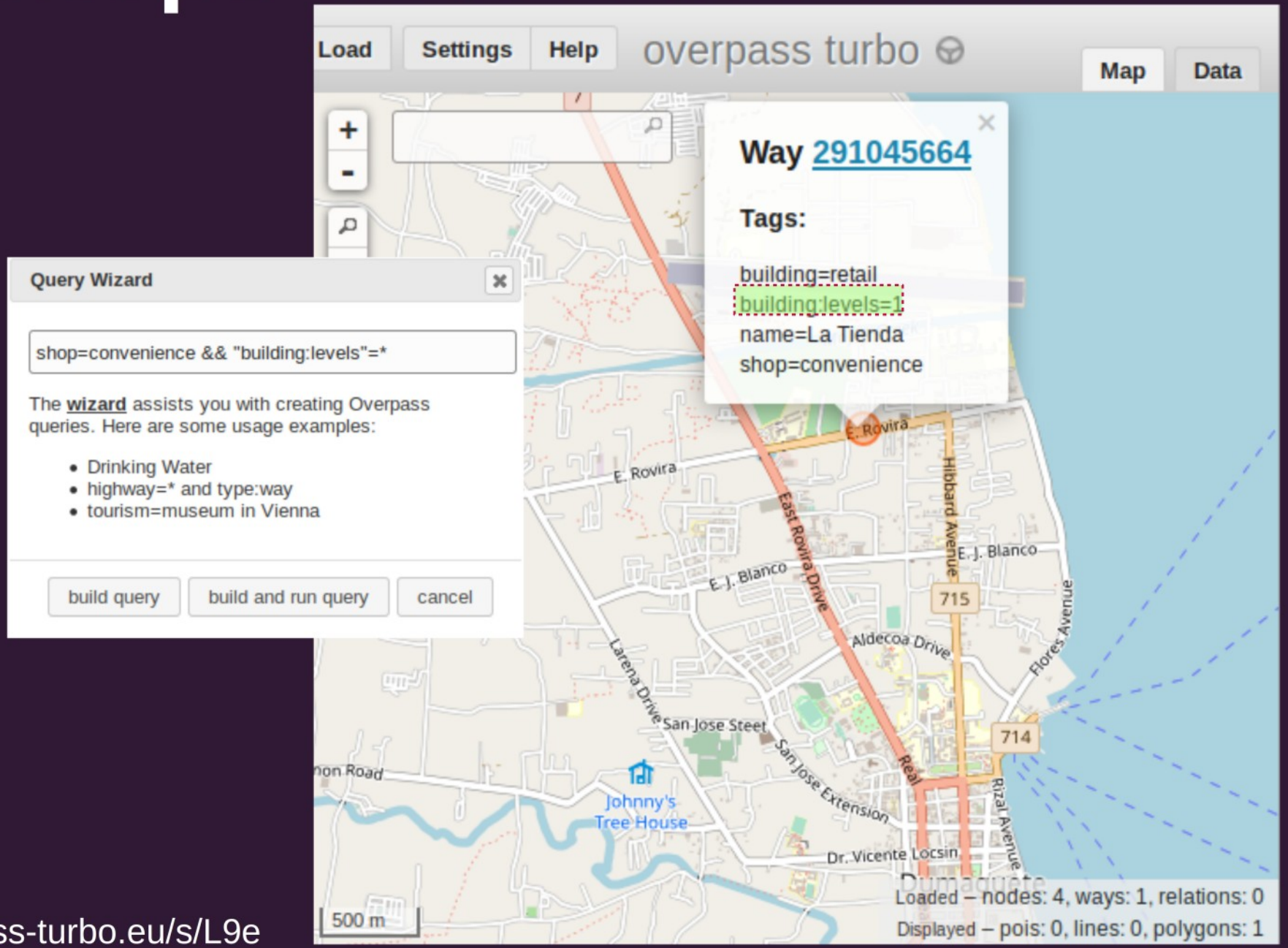
Run | Share | Export | Wizard | Save | Load | Settings | Help | overpass turbo | Map | Data

```
/*
This has been generated by the overpass-turbo wizard.
The original search was:
“shop=convenience”
*/
[out:json][timeout:25];
// gather results
(
  // query part for: “shop=convenience”
  node["shop"="convenience"]({{bbox}});
  way["shop"="convenience"]({{bbox}});

  relation["shop"="convenience"]({{bbox}});
);
// print results
out body;
>;
out skel qt;
```

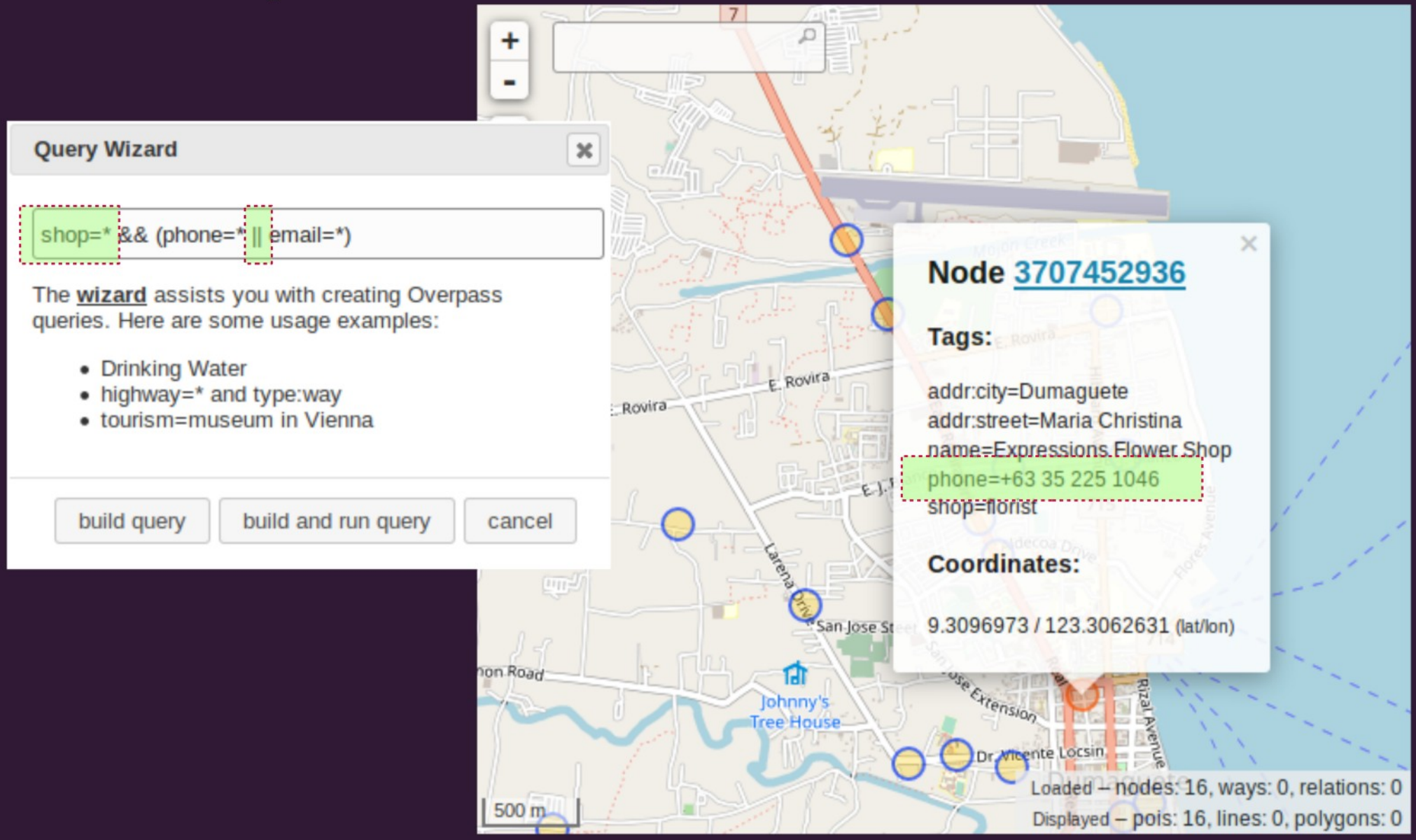


Shops with multi-floors



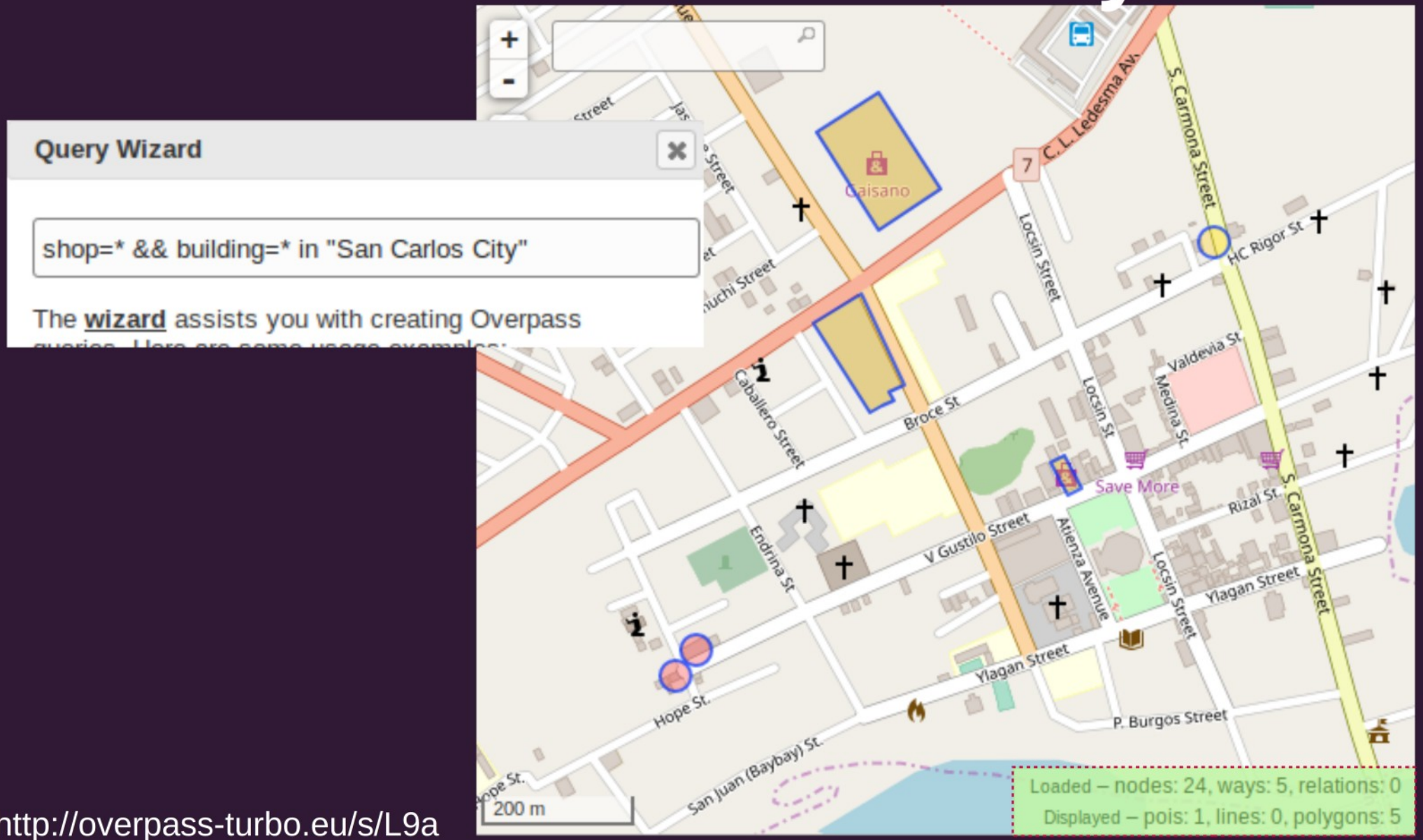
http://overpass-turbo.eu/s/L9e

Shops with phone or email



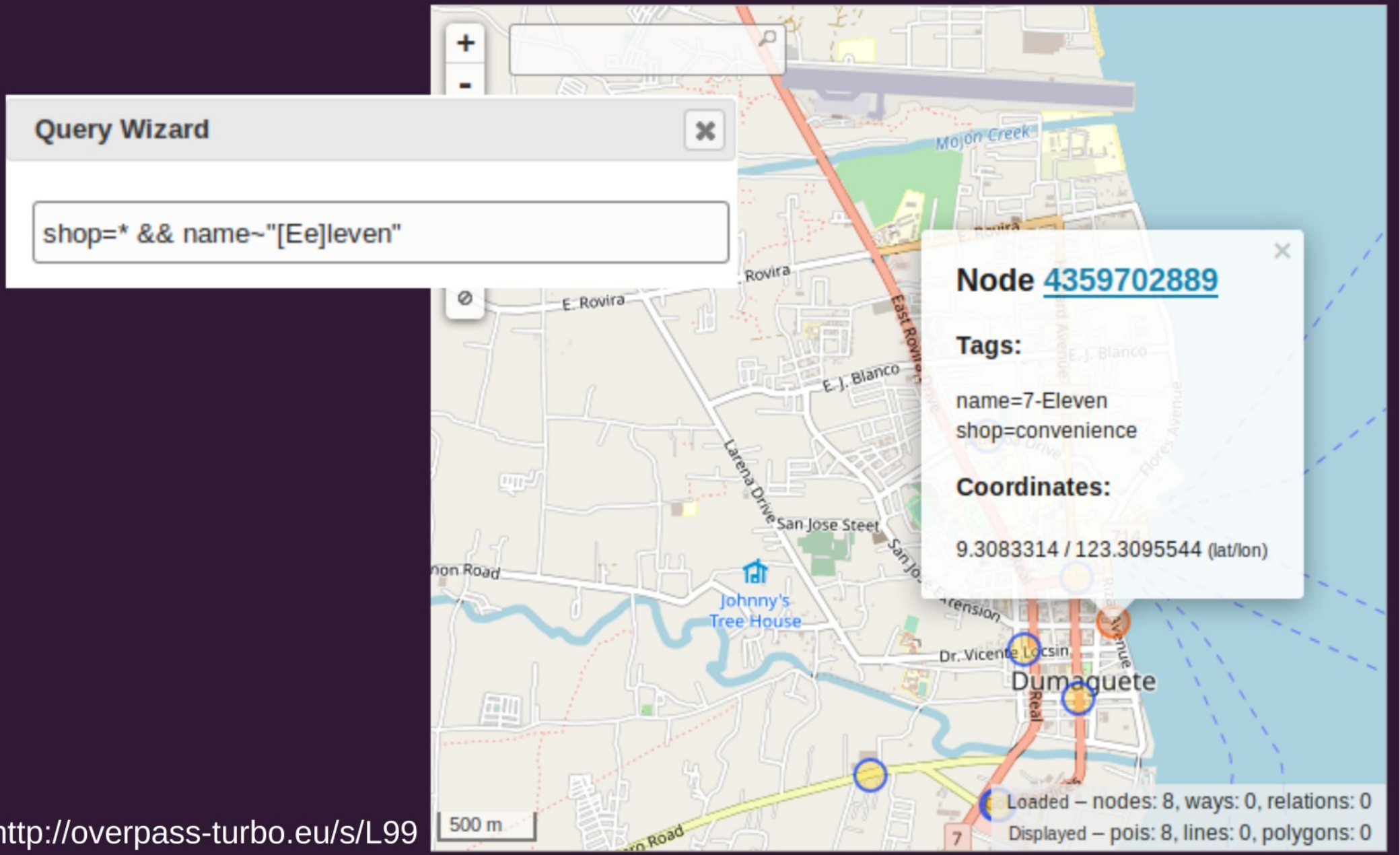
http://overpass-turbo.eu/s/L9c

Shops tagged as buildings in San Carlos City



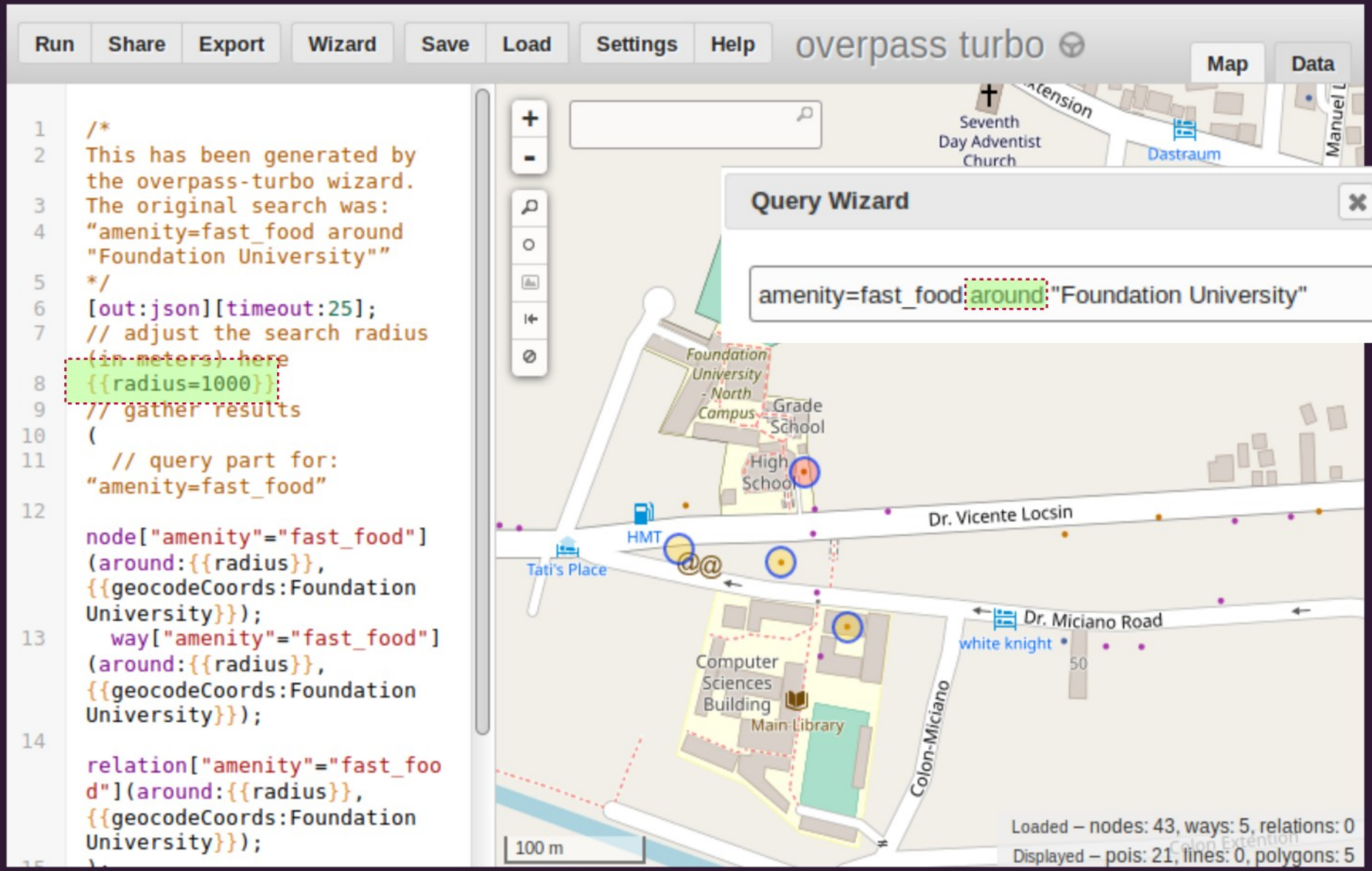
http://overpass-turbo.eu/s/L9a

Shops with “eleven”



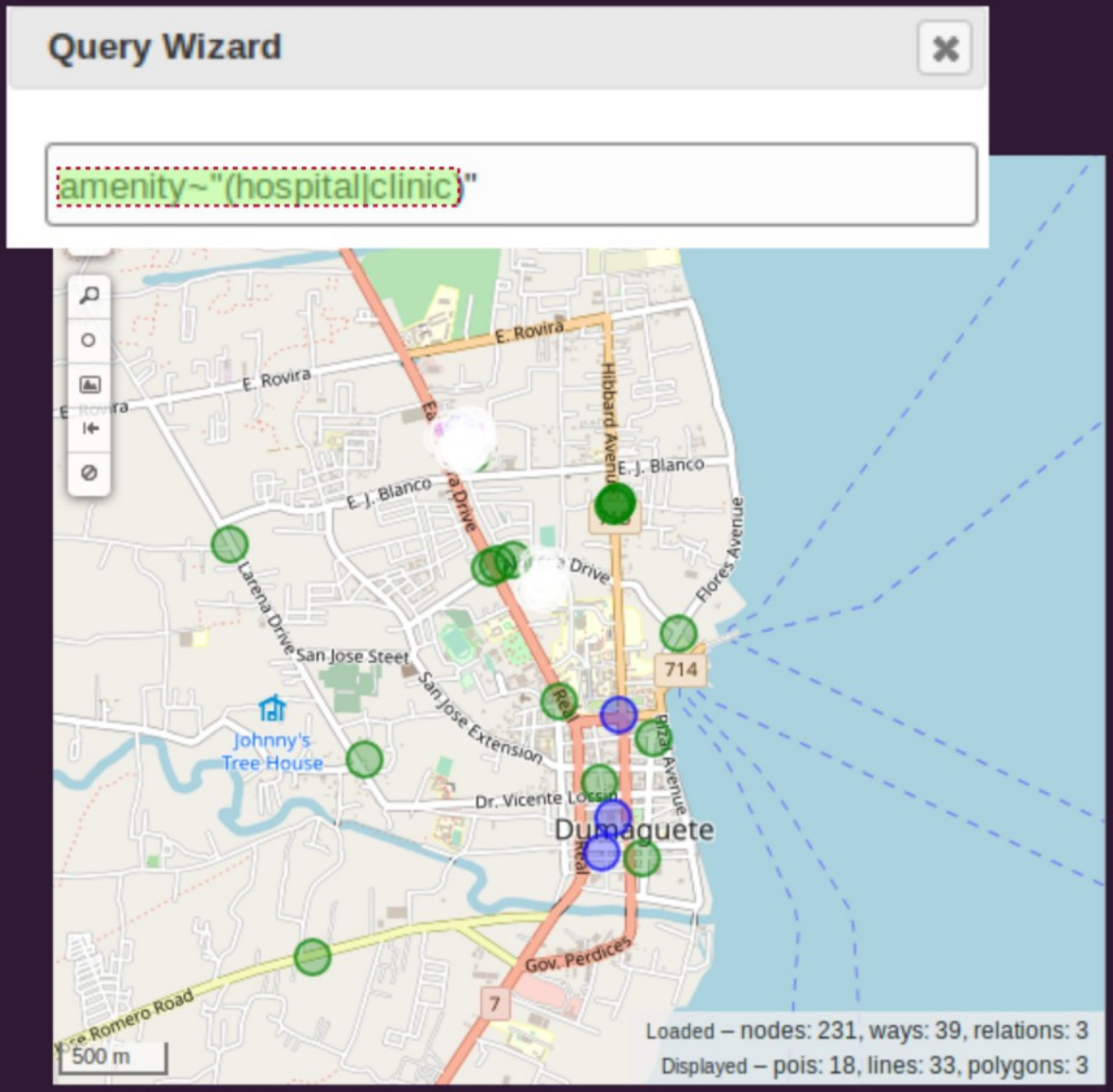
http://overpass-turbo.eu/s/L99

Using “around” vs “in”



http://overpass-turbo.eu/s/L96

MapCSS - Color Coding




```
{{style:

node, area
{ color:white; fill-
color:white; }

node[amenity=hospital]
{ color:blue; fill-
color:blue; }

node[amenity=clinic]
{ color:green; fill-
color:green; }

}}
```

http://overpass-turbo.eu/s/L93

MapCSS – with text


```
{{style:

node, way,
relation{text: name;}

}}
```

http://overpass-turbo.eu/s/L9i

MapCSS – Using Icons


```
{{style:

node[amenity=clinic] {

  icon-image:
url('icons/maki/hospital-12.png');

  icon-width: 18;

}


node[amenity=bank] {

  icon-image:
url('https://wiki.osm.org/w/images/thu
mb/3/3b/Bank-16.svg/16px-Bank-
16.svg.png');

  icon-width: 18;

}

}}
```

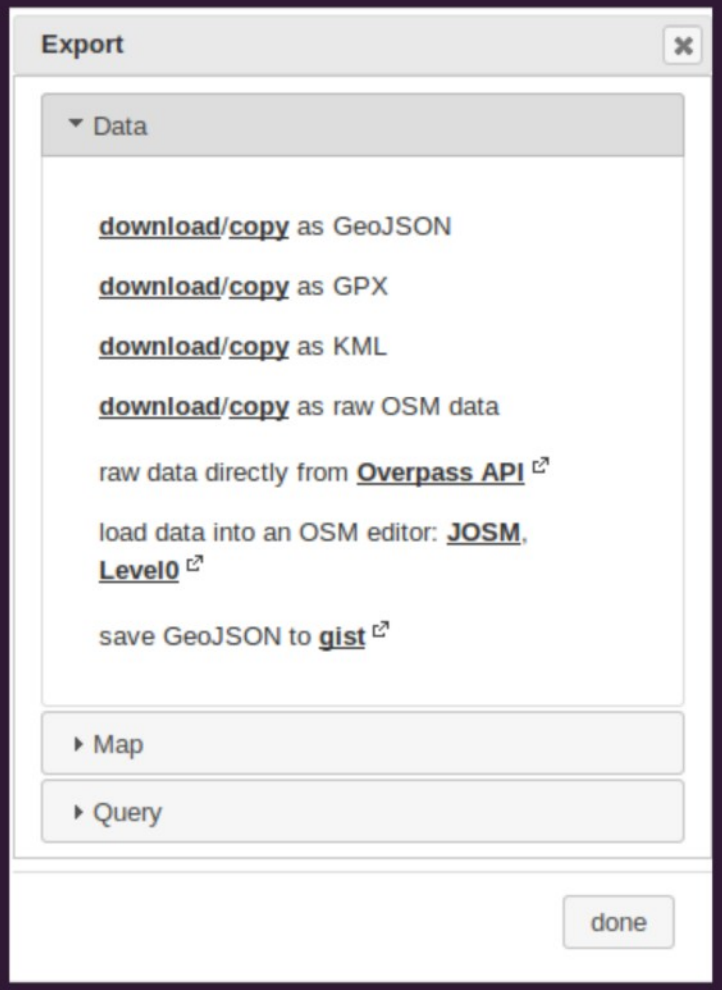
http://overpass-turbo.eu/s/L9h

Changing Tile Servers

- http://{s}.tile.openstreetmap.fr/hot/{z}/{x}/{y}.png
- http://{s}.tile.stamen.com/watercolor/{z}/{x}/{y}.png
- https://maps.wikimedia.org/osm-intl/{z}/{x}/{y}.png
- More: https://wiki.osm.org/wiki/Tile_servers

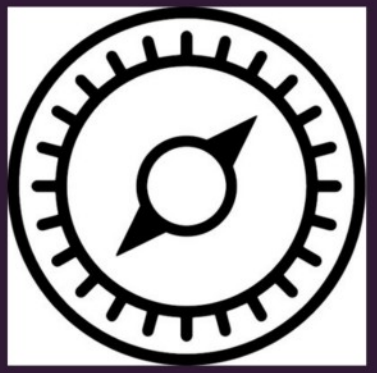
Exporting Results

- Data
- Map
- Query

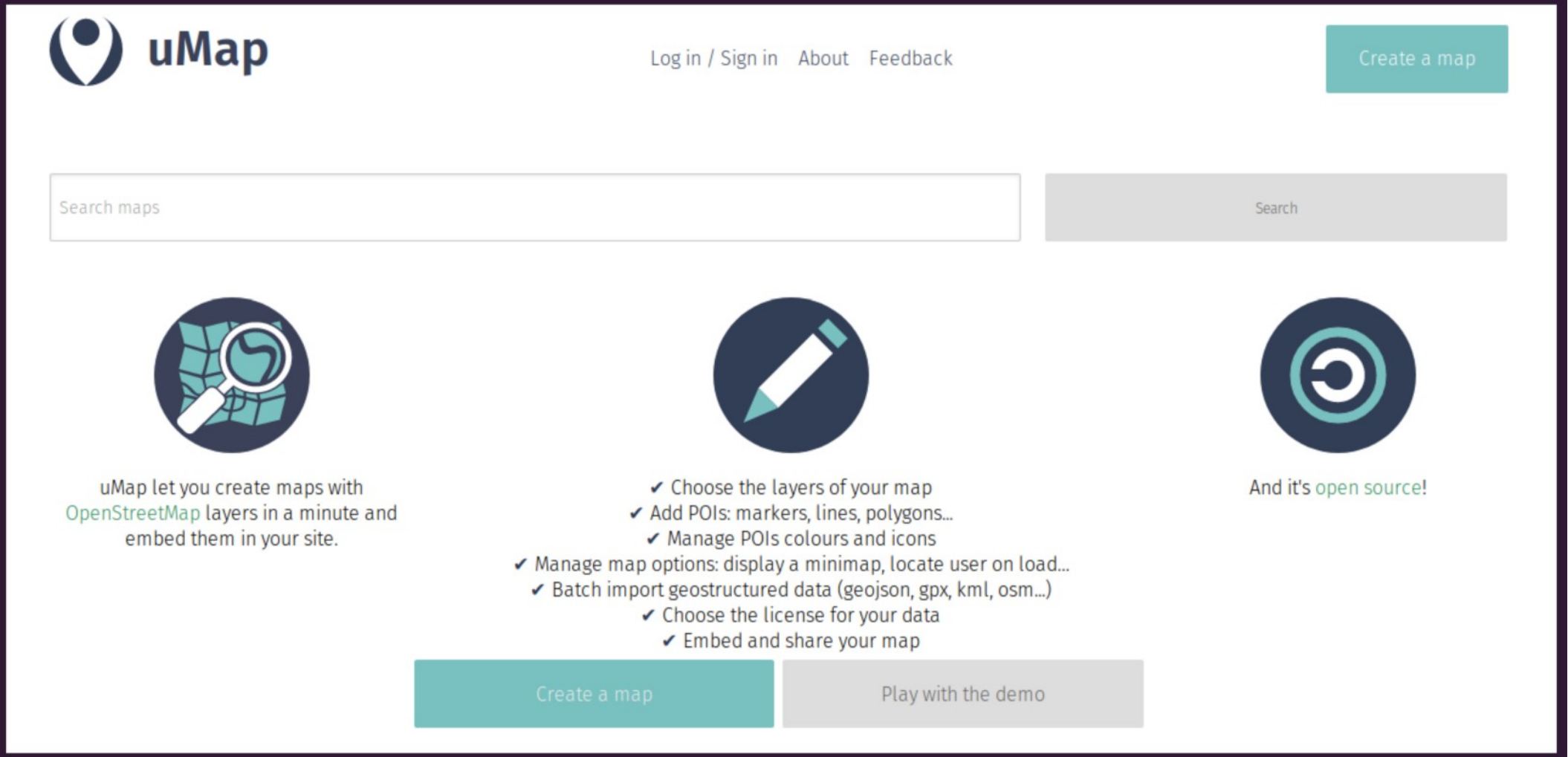


Overpass at work ...

- JOSM
- MapRoulette
- MapContrib
- OsmHydrant
- Umap
- ...

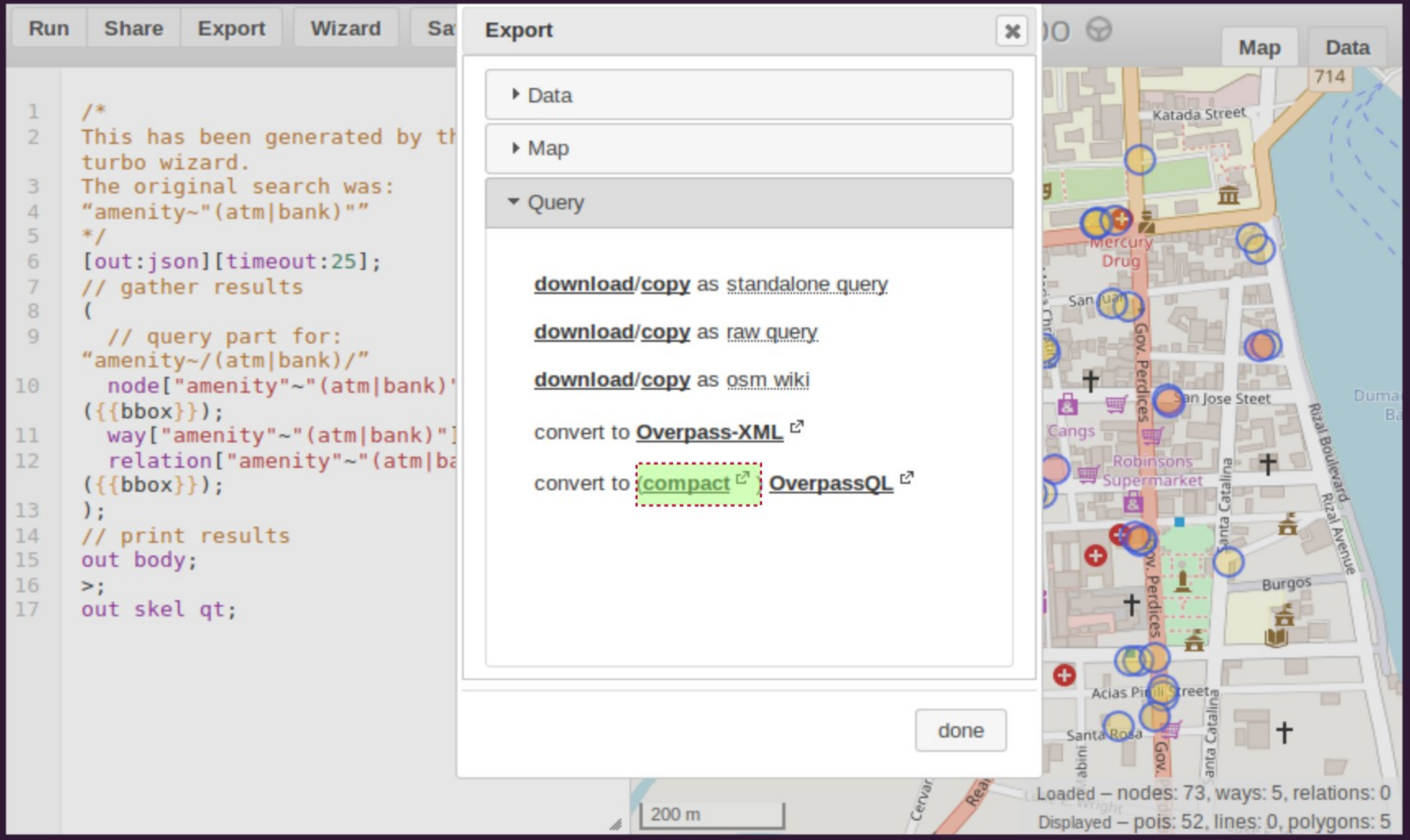


Up-to-date map with Umap



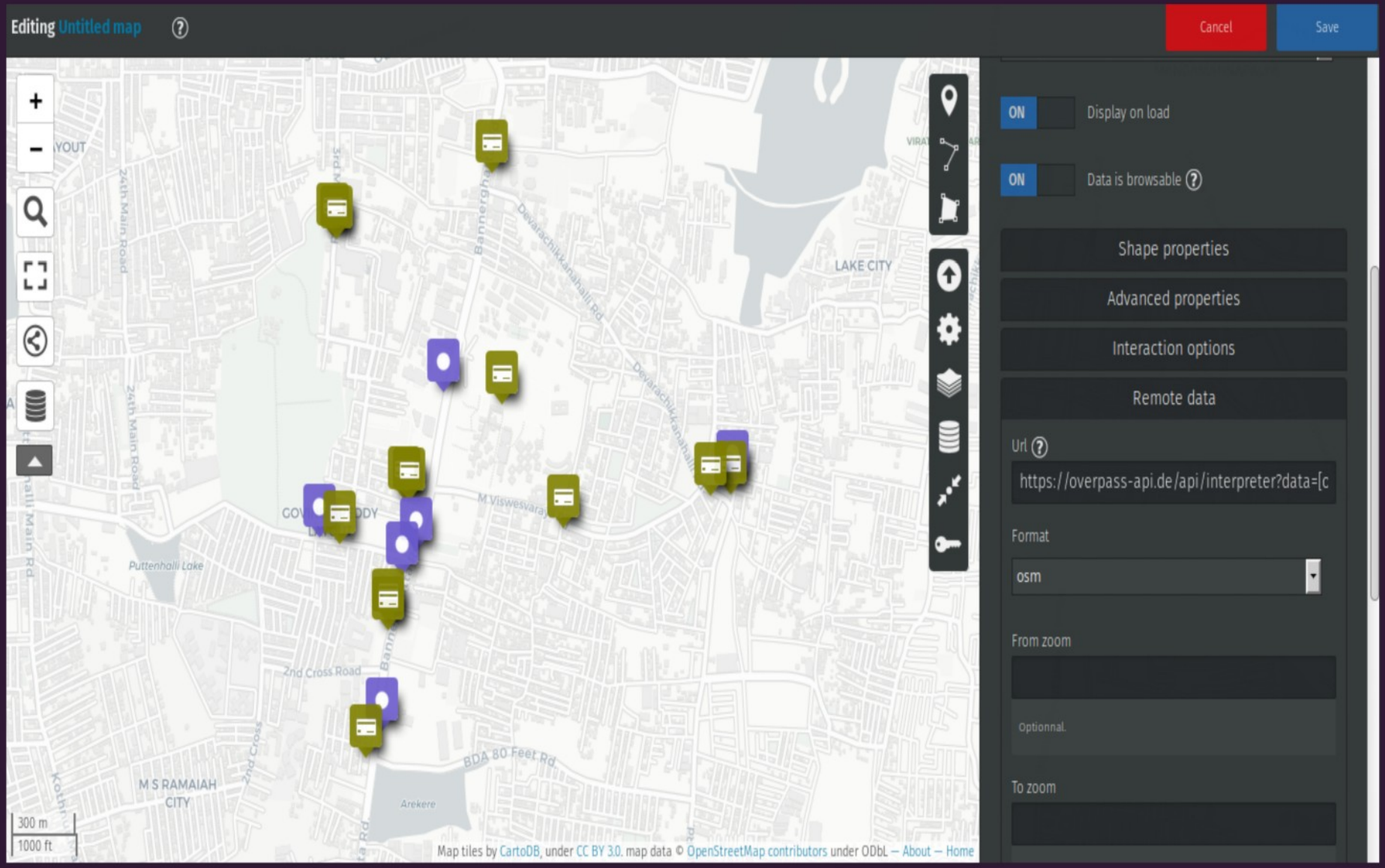
https://umap.openstreetmap.fr/en/

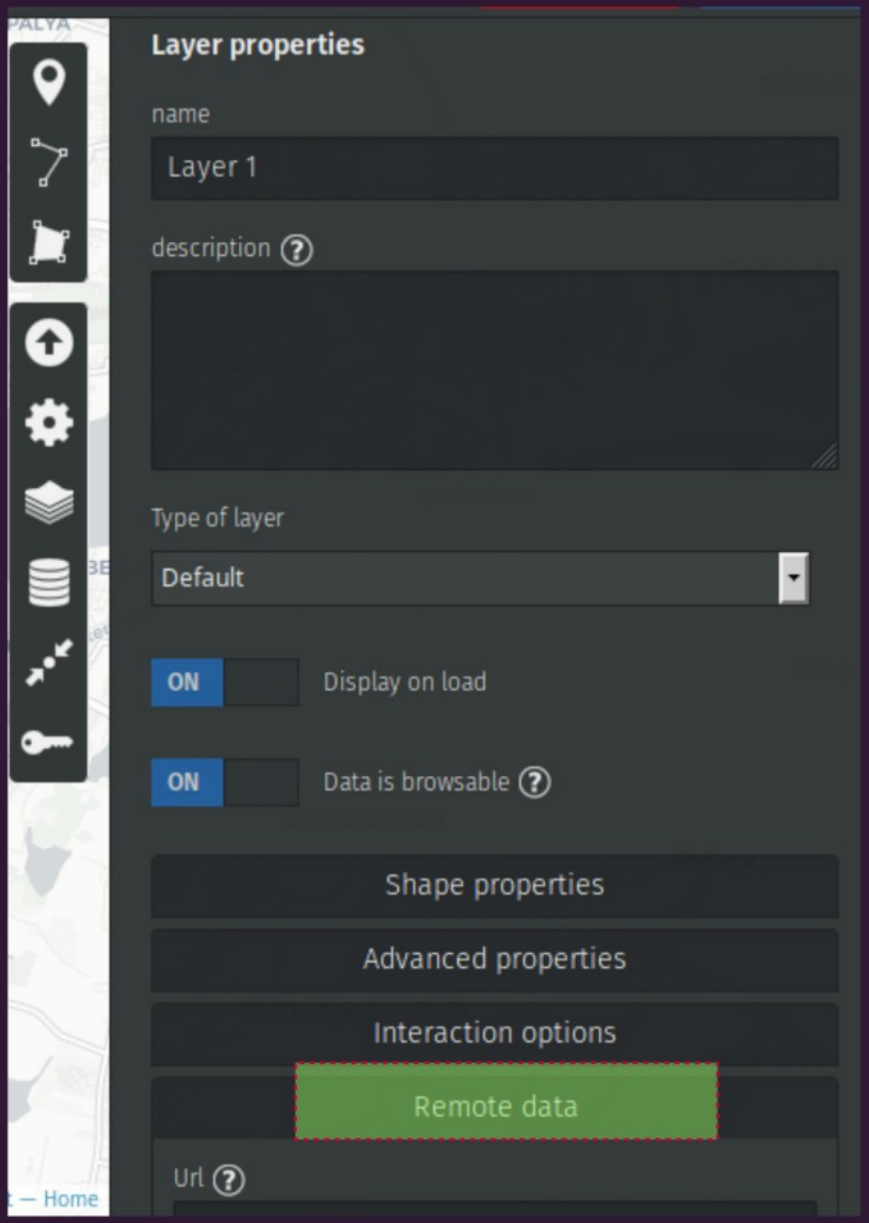
Export query to “compact”



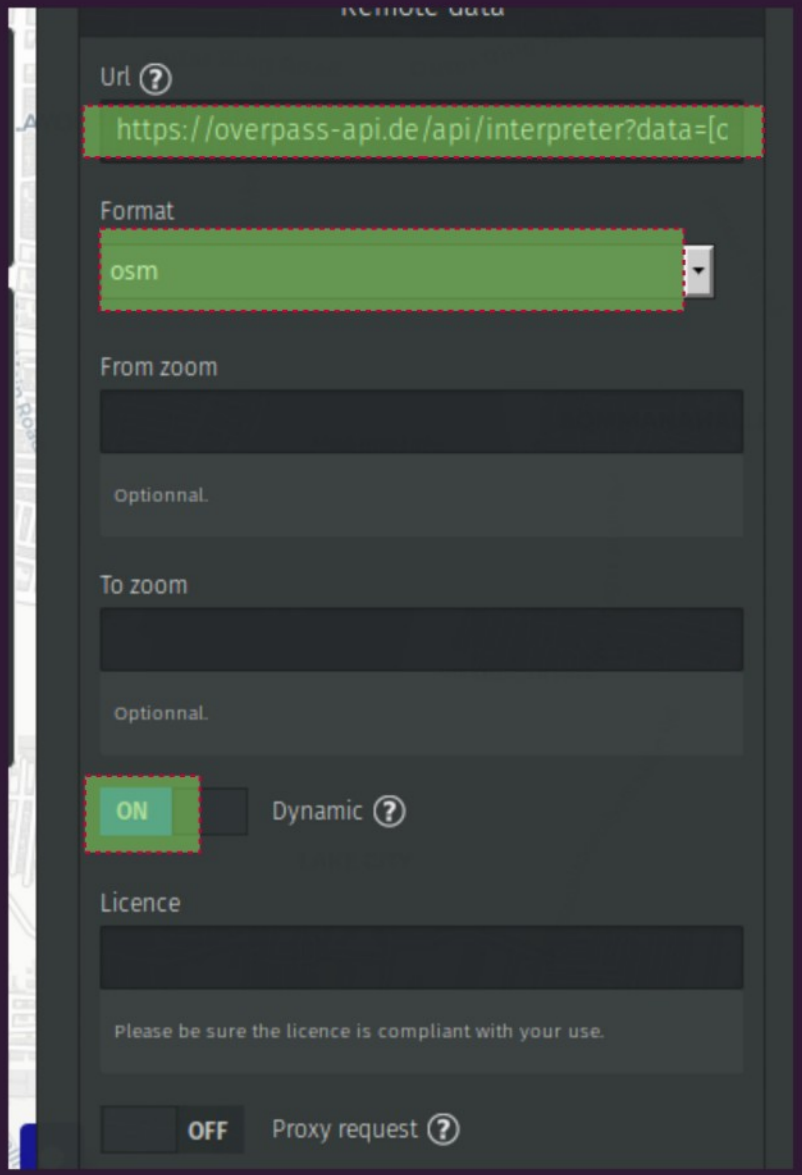

```
/*
This has been generated by th
turbo wizard.
The original search was:
“amenity~"(atm|bank)"”
*/
[out:json][timeout:25];
// gather results
(
  // query part for:
“amenity~/(atm|bank)/”
  node["amenity"~"(atm|bank)"
({{bbox}});
  way["amenity"~"(atm|bank)"]
  relation["amenity"~"(atm|ba
({{bbox}});
);
// print results
out body;
>;
out skel qt;
```

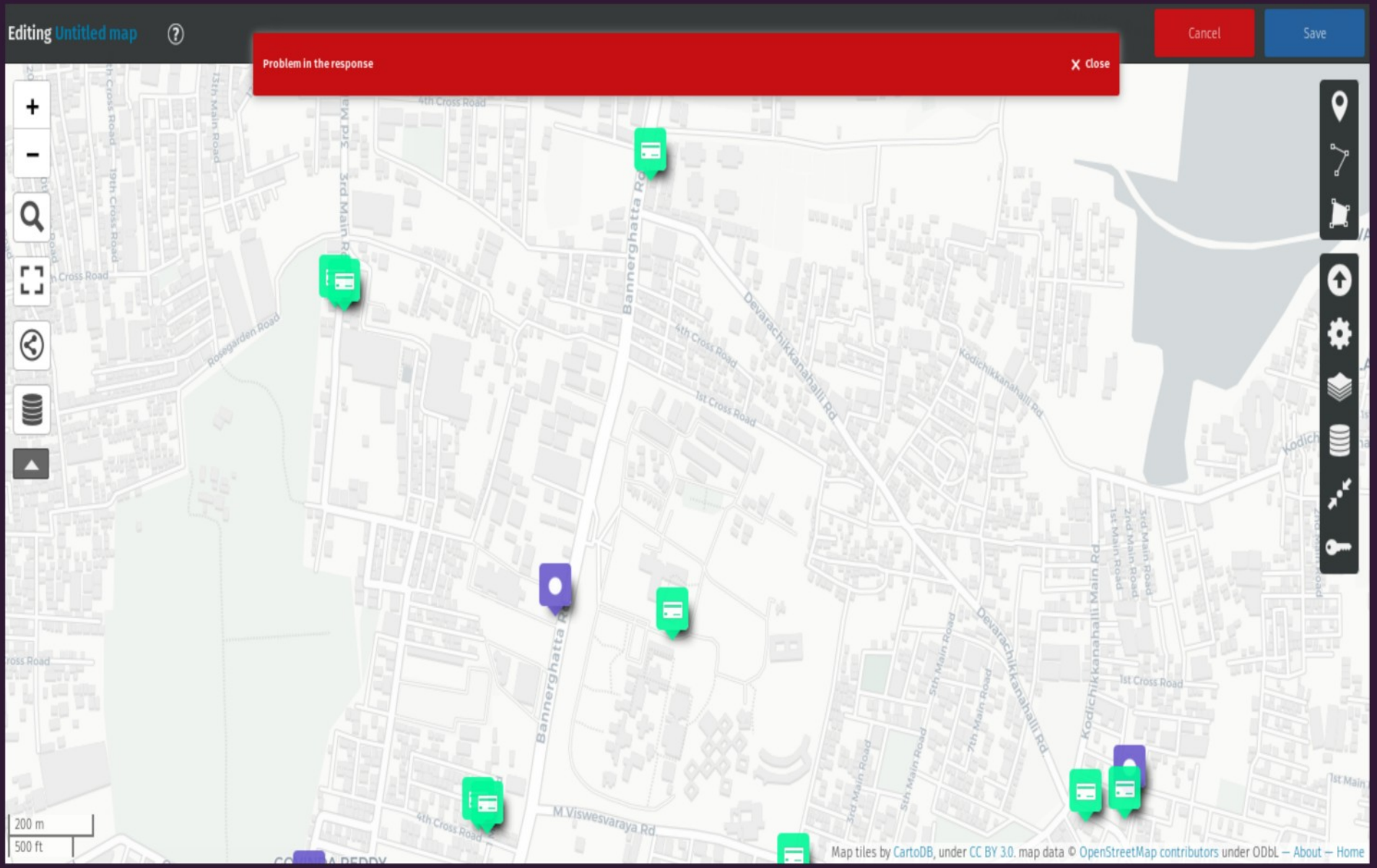
Banks and ATMs






```
https://overpass-api.de/api/interpreter?data=[out:json][timeout:25];(nwr["amenity"="bank"](around:1500,12.89558285,77.602621922761););out;>;out skel qt;
```


Remote data
Url
https://overpass-api.de/api/interpreter?data=[c
Format
osm
From zoom
Optionnal.
To zoom
Optionnal.
ON
Dynamic
Licence
Please be sure the licence is compliant with your use.
OFF
Proxy request


Editing Untitled map
Cancel
Save
Problem in the response
Close
Bannerghatta Rd
Devarachikkanahalli Rd
Kodichikkanahalli Main Rd
4th Cross Road
1st Cross Road
M Viswesvaraya Rd
200 m
500 ft
Map tiles by CartoDB, under CC BY 3.0. map data © OpenStreetMap contributors under ODbL – About – Home

References

- Project - github.com/tyrasd/overpass-turbo
- Reference - osm.org/wiki/Overpass_turbo
- OSM features - osm.org/wiki/Map_Features
- Deck copy - speakerdeck.com/gowin/data-mining-openstreetmap-with-overpass-turbo

Questions?