



WEB
SEMÁNTICA

EMT
PARKING

Grupo 20

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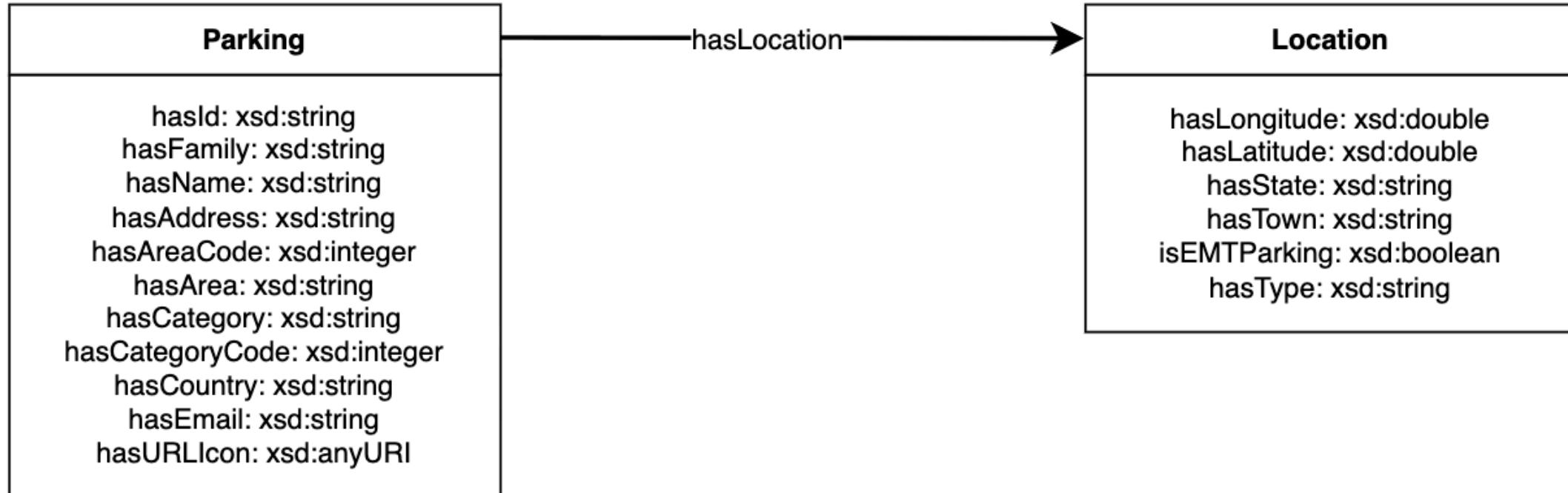
REQUISITOS

DATASET

- **R1** - Pertenencia al dominio 'Smart City'
- **R2** - Formato CSV
- **R3** - Licencia abierta para su utilización y publicación
- **R4** - Facilidad de enlace con entidades del mundo real
- **R5** - Documentación existente
- **R6** - Posibilidad de integración con múltiples fuentes

APLICACIÓN

- **Funcionales:** búsqueda por tipo/localización, aplicación de filtros, visualización en mapa/lista, gestión de favoritos y atribución a 'EMT Madrid'
- **No funcionales:** rendimiento (respuesta < 2 s), usabilidad, escalabilidad e internalización (soporte para español)



```

@base: https://data.smartcitymadrid.es/ontology/parking#
ns: https://data.smartcitymadrid.es/ontology/parking#
xsd: http://www.w3.org/2001/XMLSchema#
rdf: http://www.w3.org/1999/02/22-rdf-syntax-ns#
rdfs: http://www.w3.org/2000/01/rdf-schema#
owl: http://www.w3.org/2002/07/owl#
dcterms: http://purl.org/dc/terms/
vann: http://purl.org/vocab/vann/
mod: https://w3id.org/mod#
xml: http://www.w3.org/XML/1998/namespace#

```

ONTOLOGÍA DATASET

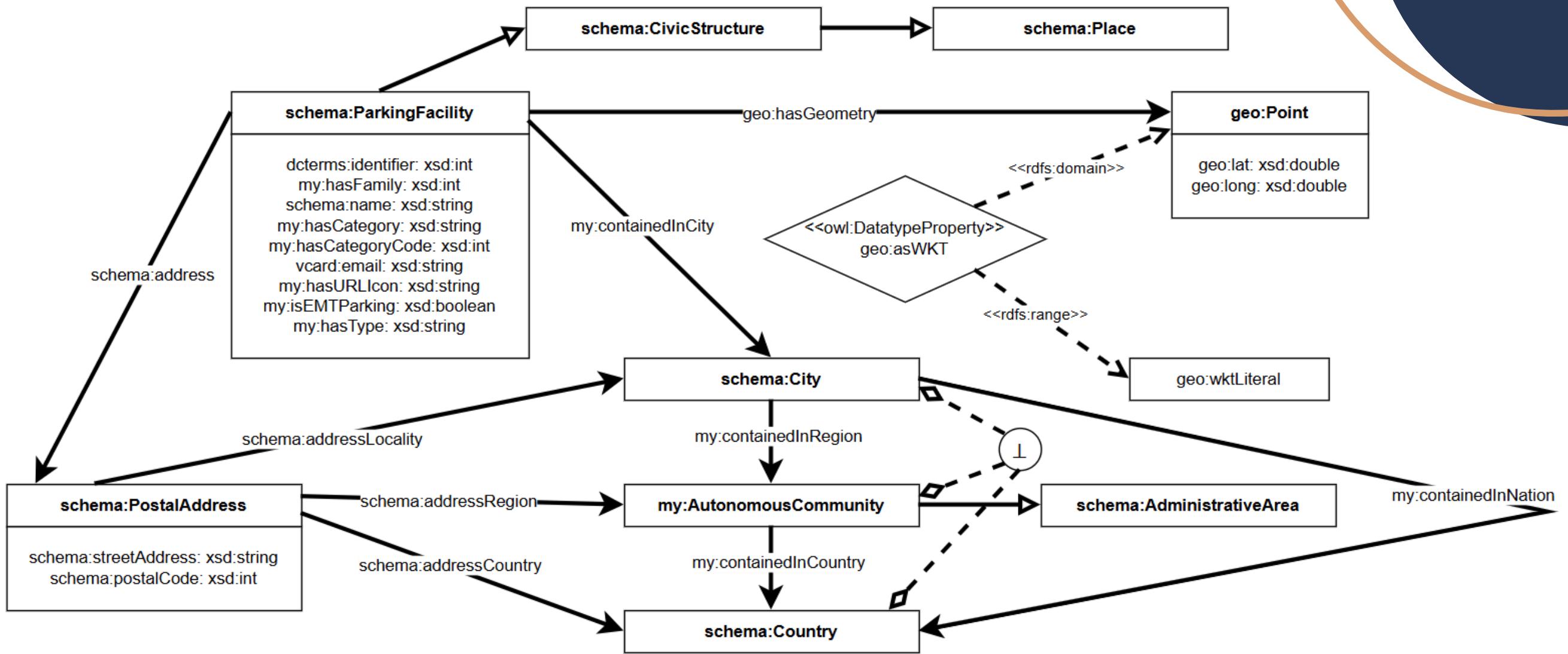
```

owl:Ontology: <https://data.smartcitymadrid.es/ontology/parking#>
dcterms:title: "Parking ontology"@en
dcterms:description: "Ontology that describes parkings and their locations."@en
dcterms:created: "2025-10-07"^^xsd:date
dcterms:creator: <https://example.org/people#AuthorURI>
dcterms:contributor: <https://example.org/people#ContributorURI>
dcterms:license: <https://creativecommons.org/licenses/by/4.0/>
vann:preferredNamespaceUri: <https://data.smartcitymadrid.es/ontology/parking#>
vann:preferredNamespacePrefix: "ns"
owl:versionIRI: <https://data.smartcitymadrid.es/ontology/parking/1.0.0>
owl:versionInfo: "1.0.0"

```

Versión inicial

- Clases **Parking** y **Location**
- Prefijo '**ns**'

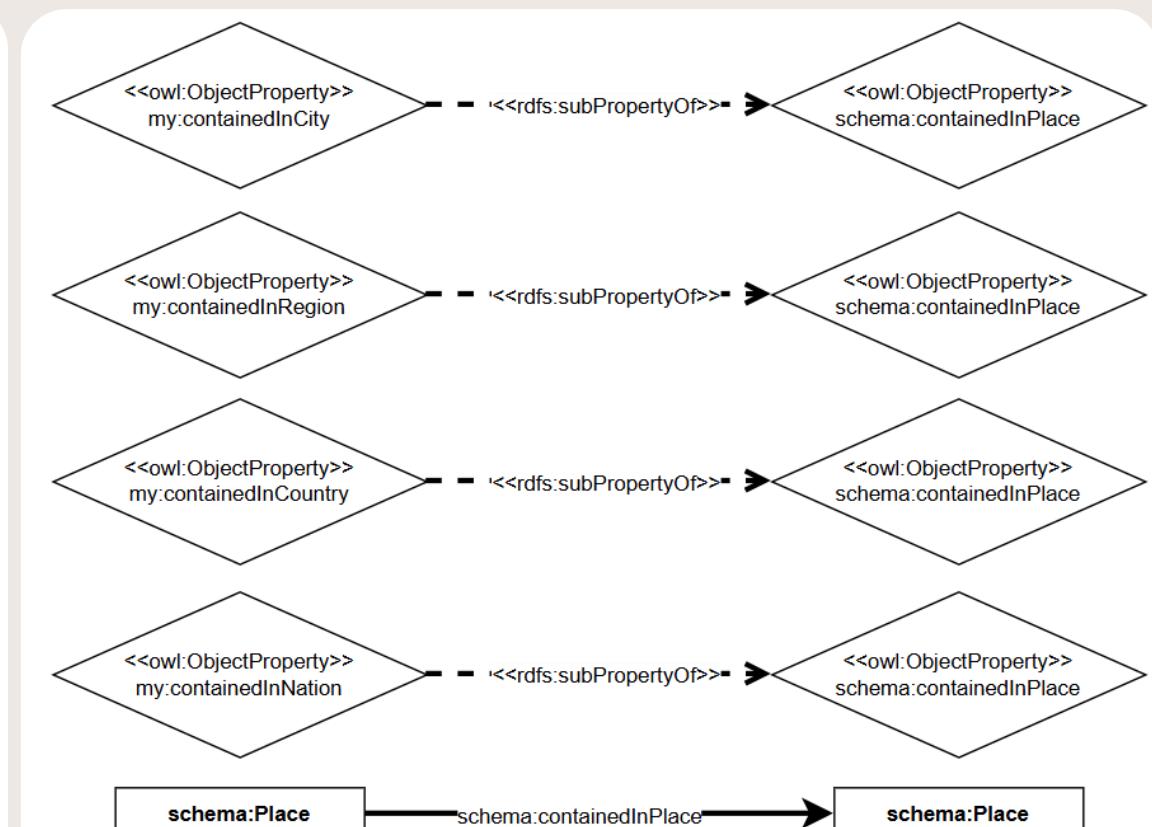


```

@base: https://data.smartcitymadrid.es/ontology/parking#
my: https://data.smartcitymadrid.es/ontology/parking#
xsd: http://www.w3.org/2001/XMLSchema#
rdf: http://www.w3.org/1999/02/22-rdf-syntax-ns#
rdfs: http://www.w3.org/2000/01/rdf-schema#
owl: http://www.w3.org/2002/07/owl#
dcterm: http://purl.org/dc/terms/
vann: http://purl.org/vocab/vann/
mod: https://w3id.org/mod#
xml: http://www.w3.org/XML/1998/namespace#
vcard: http://www.w3.org/2006/vcard/ns#
geo: http://www.opengis.net/ont/geosparql#
schema: http://schema.org/

```

owl:Ontology: <https://data.smartcitymadrid.es/ontology/parking#>
dcterms:title: "Parking ontology"@en
dcterms:description: "Ontology that describes parking facilities managed by EMT Madrid, including their locations and attributes."@en
dcterms:created: "2025-10-07"^^xsd:date
dcterms:modified: "2025-11-07"^^xsd:date
dcterms:creator: "Group 20 in Web Semantics, Linked Data and Knowledge Graphs, UPM"@en
dcterms:contributor: "Laura Gilgado Romero"@es, "María Jiménez Álvarez"@es, "Nerea Tanarro Ferrero"@es, "Sergio Caro Rodríguez"@es, "Sergio Zaballos Herrera"@es
dcterms:license: <https://creativecommons.org/licenses/by/4.0/>
vann:preferredNamespaceUri: <https://data.smartcitymadrid.es/ontology/parking#>
vann:preferredNamespacePrefix: "my"
owl:versionIRI: <https://data.smartcitymadrid.es/ontology/parking/1.0.0>
owl:versionInfo: "1.0.0"



Versión final

- Clases
ParkingFacility, PostalAddress, City, AutonomousCommunity, Country, Point, etc.
- Prefijos '**my**', '**schema**', '**geo**' y '**vcard**'

GENERACIÓN RDF DATASET

Input: Data sources ▾

```
1 identifier,family,name,email,streetAddress,postalCode,autonomousCommunity,category,categoryCode,country,URLIcon
2 ,001,Colón,,Plaza De Colón S/n,28001,Community of Madrid,General,001,Spain,https://servicios.emtmadrid.es:844
3 ,001,Corazón De María Ii,,Calle Corazón De María (final Calle),28027,Community of Madrid,General,001,Spain,ht
4 ,001,Encuentro,,Plaza Encuentro,28030,Community of Madrid,General,001,Spain,https://servicios.emtmadrid.es:84
5 ,001,Nuestra Señora Del Recuerdo,recuerdo@emtmadrid.es,"Calle Hiedra, 26",28036,Community of Madrid,General,0
6 ,001,Corona Boreal,,Plaza Corona Boreal Y Calle Marqués Camarines,28023,Community of Madrid,General,001,Spain
7 ,001,Avenida De Portugal,avenida.de.portugal@emtmadrid.es,"Avenida De Portugal, S/n. Frente Al Nº 51",28011,0
8 ,001,Plaza Del Carmen,,Plaza Del Carmen,28013,Community of Madrid,General,001,Spain,https://servicios.emtmadr
9 ,001,Paseo De Recoletos,recoletos@emtmadrid.es,"Paseo De Recoletos, 4",28001,Community of Madrid,General,001,
10 ,001,Condesa De Gavia,,Plaza Condesa De Gavia,28020,Community of Madrid,General,001,Spain,https://servicios.
11 ,001,Almagro,almagro@emtmadrid.es,"Calle Almagro, 11",28010,Community of Madrid,General,001,Spain,https://se
12 ,001,Luna-tudescos,,P. Sta Mª Soledad Torres Acosta Callev Calleluna),28004,Community of Madrid,General,001,
13 ,001,Jacinto Benavente,jacinto.benavente@emtmadrid.es,"Plaza Jacinto Benavente, S/n",28012,Community of Madr
14 ,001,América,,Avenida América (intercambiador),28006,Community of Madrid,General,001,Spain,https://servicios
15 ,001,Arquitecto Ribera (barceló),,"Calle Barceló, 2",28004,Community of Madrid,General,001,Spain,https://ser
16 ,001,Brasil,,Avenida Brasil (entre General Yagüe Y Pedro Texeira),28020,Community of Madrid,General,001,Spai
17 ,001,Casino De La Reina ,Calle Casino 28005 Community of Madrid,General,001,Spain https://servicios.emtmadri
18
```

Input: YARRMML rules ▾

```
1 prefixes:
2   ex: "http://group20.linkeddata.es/parkings/resource/"
3   my: "https://data.smartcitymadrid.es/ontology/parking#"
4   schema: "http://schema.org/"
5   geo: "http://www.opengis.net/ont/geosparql#"
6   dct: "http://purl.org/dc/terms/"
7   xsd: "http://www.w3.org/2001/XMLSchema#"
8
9 sources:
10 - [parkings-updated.csv~csv]
11
12 mappings:
13
14 ParkingFacility:
15   sources:
16     - [parkings-updated.csv~csv]
17     s: ex:${identifier}
18   pp:
```

1 RDF output and RML rules ▾

```
1 @prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
2 @prefix ma: <http://www.w3.org/ns/ma-ont#> .
3 @prefix xsd: <http://www.w3.org/2001/XMLSchema#> .
4 @prefix sd: <http://www.w3.org/ns/sparql-service-description#> .
5 @prefix schema: <http://schema.org/> .
6 @prefix ex: <http://group20.linkeddata.es/parkings/resource/> .
7 @prefix my: <https://data.smartcitymadrid.es/ontology/parking#> .
8 @prefix geo: <http://www.opengis.net/ont/geosparql#> .
9 @prefix dct: <http://purl.org/dc/terms/> .
10
11 ex:10 dct:identifier "10"^^xsd:int ;
12   schema:address <http://group20.linkeddata.es/parkings/resource/address/10> ;
13   schema:name "Condesa De Gavia" ;
14   geo:hasGeometry <http://group20.linkeddata.es/parkings/resource/geom/10> ;
15   rdf:type schema:ParkingFacility ;
16   my:containedInCity <http://group20.linkeddata.es/parkings/resource/city/Madrid> ;
17   my:hasCategory "General" ;
```



rmlmapper-8.0.0-r378-all

GENERACIÓN DE LINKS

DATASET

Region:

sources:

- [parkings-updated-with-links.csv~ csv]

s: ex:region/\${autonomousCommunity}

po:

- [a, my:AutonomousCommunity]
- [schema:name, \${autonomousCommunity}]
- [my:containedInCountry, ex:country/\${country}~iri]
- [**owl:sameAs, \${wikidataAutonomousCommunity}~iri**]

Facet	Value	Category
Facet	'Q5756'	General
Text filter	'Q5756'	General
Edit cells	'Q5756'	General
Edit column	'Q5756'	General
Transpose		
Sort...	'Q5756'	General
View		
Reconcile	Start reconciling...	
	https://wikidata.org/entity/Q5756	
	Facets	
	Action	Reconcile text
		Copy reconciliation data...
		Use values as identifiers...
		Add column with URLs of matched entities...
		Add entity identifiers column...
	https://wikidata.org/entity/Q5756	

PUBLICACIÓN DATASET

The screenshot shows the GraphDB interface with a sidebar and a main query editor and results area.

Left Sidebar:

- GraphDB logo
- Import
- Explore
- SPARQL (selected)
- GraphQL
- Monitor
- Setup
- Lab
- Help

Query Editor (Top Right):

```
11 # Query 4: OpenStreetMap Links
12 #####
13 SELECT DISTINCT ?id ?name ?link
14 WHERE {
15   ?p a schema:ParkingFacility ;
16   schema:name ?name ;
17   dct:identifier ?id ;
18   geo:hasGeometry ?geom .
19   ?geom owl:sameAs ?link .
20 }ORDER BY ASC(?id)
21 LIMIT 10
```

parking_madrid

Run

Keyboard shortcuts

Results Area:

Table Raw response Pivot Table Google Chart

Download as

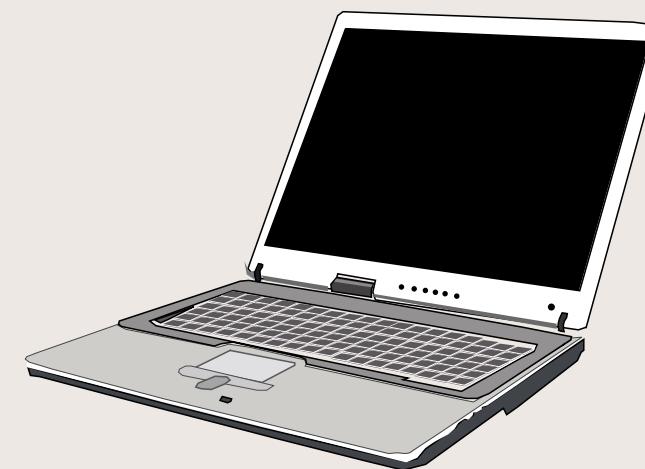
Filter query results Compact view Hide row numbers

Showing results from 0 to 10 of 10. Query took 0.1s, on 2025-11-10 at 19:45:23

	id	name	link
1	"2"^^xsd:int	"Colón"	https://www.openstreetmap.org/?mlat=40.4247093&mlon=-3.6899392#map=18/40.4247093/-3.6899392
2	"3"^^xsd:int	"Corazón De María II"	https://www.openstreetmap.org/?mlat=40.4385248&mlon=-3.6455254#map=18/40.4385248/-3.6455254
3	"4"^^xsd:int	"Encuentro"	https://www.openstreetmap.org/?mlat=40.4054645&mlon=-3.6513541#map=18/40.4054645/-3.6513541

APLICACIÓN

DEMO



MUCHAS
GRACIAS

