PARKINEO APP

OPEN DATA AND KNOWLEDGE GRAPHS

GROUP 12

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INTRODUCTION

Project’s aim

Solution development for efficient urban parking management in Madrid

- **-Integration of semantic technologies**
- **-Dataset: private + public parking facilities of Madrid**

Development of an interactive application

Facilitating

- **-Visualization in a map**
- **-Parking Search**
- **-Fee comparison**
- **-Informed decision-making**

ONTOLOGY CREATION

dc: http://purl.org/dc/elements/1.1/
rdfs: http://www.w3.org/2000/01/rdf-schema#
xsd: http://www.w3.org/2001/XMLSchema#
schema: http://schema.org
mv: http://schema.mobivoc.org/
dbpedia-owl: https://dbpedia.org/ontology/
clase2: http://grupo12_open_data.es/lcc/resource#
clase: http://grupo12_open_data.org#

dc:creator: grupo_14
owl:versionInfo: 0.0.1
dc:title: Ontology parkings

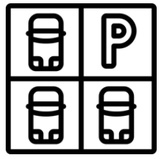
Drawio

Chowlk

OWL file
ontology-updated-with-links-v2.ttl

clase2:PriceSpecification

clase2:id_price :: xds:string
clase:estimationDate :: xsd:date
clase:estimated_price
xsd:decimal



clase2:hasPriceSpecification

clase2:ParkingOccupancy

clase2:id_occupancy :: xds:string
mv:rateOfOccupancy ::
xsd:decimal
dbpedia-owl:year :: xsd:integer
dbpedia-owl:month :: xsd:integer

clase2:hasOccupancy

clase2:ParkingFacility

schema:identifier :: xsd:String
schema:name :: xsd:String
clase2:same_as_wikidata_Street
:: xds:string
schema:additionalType ::
xsd:string
clase:average_price ::
xsd:decimal
dbpedia-
owl:numberOfParkingSpaces ::
xsd:integer

clase2:hasParkingSpace

clase2:hasDistrict

clase2:ParkingSpace

clase2:id_parking:space
:: xsd:string
clase:level :: xsd:integer
clase2:end_concession
:: xsd:date

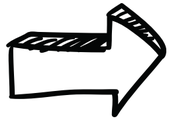
clase2:District

clase2:codeDistrict :: xsd:string
clase:districtName :: xds:stirng
clase2:same_as_wikidata_District
:: xds:string

DATA PREPARATION

Public parkings dataset

Private parkings dataset



Our dataset csv

PAR code
parking name
year
month
type
number spaces
district code
district
days calculation
average day vehicles
occupancy (%)
occupancy 9h-21h (%)

APAR code
parking name
parking space
extension parking space
level
end concession
estimated price
estimation date
average price parking

ID_parking
name_parking

parkingslot_updated_withlinks.csv

history.json

Valoracion_plazas_residente_individual_2023.csv

ocupacion_aparcamientos_rotaciones.csv

OPEN REFINE

DATA PREPARATION

Public parkings dataset

Our dataset csv

PAR code
parking name
year
month
type
number spaces
district code
district
days calculation
average day vehicles
occupancy (%)
occupancy 9h-21h (%)

ID_parking
name_parking
coordinate_location
same_as_wikidata_Street
type_parking
average_price_parking
number_spaces
id_occupancy
rateOfOccupancy
year
month
district_code
district_name
same_as_wikidata_District
id_parking_space
level
end_concession
estimation_date
id_price
estimated_price

DATA PREPARATION

Private parkings dataset

Our dataset csv

APAR code
parking name
parking space
extension parking space
level
end concession
estimated price
estimation date
average price parking

ID_parking
name_parking
coordinate_location
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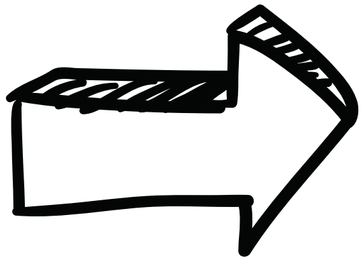
type_parking
average_price_parking
number_spaces
id_occupancy
rateOfOccupancy
year
month
district_code
district_name
same_as_wikidata_District
id_parking_space
level
end_concession
estimation_date
id_price
estimated_price

DATA LINKING

STABLISH THE TYPE PARKING VARIABLE

DEFINE THE IDs

ID_parking
name_parking
coordinate_location
same_as_wikidata_Street
type_parking
average_price_parking
number_spaces
id_occupancy
rateOfOccupancy
year
month
district_code
district_name
same_as_wikidata_District
id_parking_space
level
end_concession
estimation_date
id_price
estimated_price



ID_parking
name_parking
coordinate_location
same_as_wikidata_Street
type_parking
average_price_parking
number_spaces
id_occupancy
rateOfOccupancy
year
month
district_code
district_name
same_as_wikidata_District
id_parking_space
level
end_concession
estimation_date
id_price
estimated_price

LINKING WITH WIKIDATA

ADD COORDINATES

MAPPINGS & RDF GENERATION

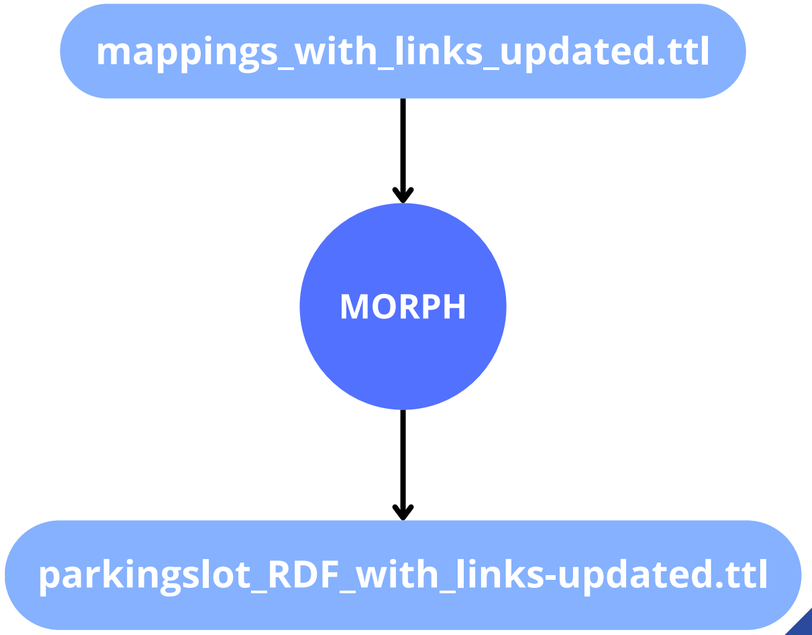
```
########################################## Parking Facility Resource###################

clase2:ParkingFacility a rr:TriplesMap;
  rml:logicalSource [
    rml:source "./csv/parkingslot_updated_withlinks_final.csv" ;
    rml:referenceFormulation ql:CSV
  ];
  rr:subjectMap [
    rr:template "http://grupo12_open_data.org#/resource/ParkingFacility/{id_parking}";
    rr:class clase:ParkingFacility
  ];

#####datatype properties

  rr:predicateObjectMap [
    rr:predicate schema:identifier;
    rr:objectMap [
      rml:reference "id_parking";
      rr:datatype xsd:string
    ]
  ];
#####object properties

  rr:predicateObjectMap [
    rr:predicate clase:hasParkingSpace;
    rr:objectMap [
       rr:template "http://grupo12_open_data.org#/resource/ParkingSpace/{id_parking_space}";
    ]
  ];
```



PARKINEO MADRID

APP FOR EXPLOITING OUR KNOWLEDGE GRAPH

THANK YOU

ANY QUESTIONS?

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