

CALIDAD DEL AIRE

Grupo 5:

Rosana Sánchez Cañadas

Rubén Palomo Yuste

Daniel Rodriguez Rodriguez

Javier de la Fuente Muñoz

Índice

1. Dataset.
2. Ontología.
3. Limpieza y transformación de los datos.
4. Creación .yaml y .rml.
5. Obtención del .nt
6. Demo aplicación.

Dataset

provincia	Provincia URI	municipio	Municipio URI	estacion	magnitud	punto_muestreo	ano	mes	dia	h01	v01
Madrid Province	https://wikidata.org/entity/Q24004405	Orusco de Tajuña	https://wikidata.org/entity/Q520988	1	1	28102001-1-38	2021	10	1	3	V
Madrid Province	https://wikidata.org/entity/Q24004405	Orusco de Tajuña	https://wikidata.org/entity/Q520988	1	6	28102001-6-48	2021	10	1	4	V
Madrid Province	https://wikidata.org/entity/Q24004405	Orusco de Tajuña	https://wikidata.org/entity/Q520988	1	7	28102001-7-8	2021	10	1	1	V
Madrid Province	https://wikidata.org/entity/Q24004405	Orusco de Tajuña	https://wikidata.org/entity/Q520988	1	8	28102001-8-8	2021	10	1	4	V
Madrid Province	https://wikidata.org/entity/Q24004405	Orusco de Tajuña	https://wikidata.org/entity/Q520988	1	10	28102001-10-49	2021	10	1	16	V
Madrid Province	https://wikidata.org/entity/Q24004405	Orusco de Tajuña	https://wikidata.org/entity/Q520988	1	12	28102001-12-8	2021	10	1	6	V
Madrid Province	https://wikidata.org/entity/Q24004405	Orusco de Tajuña	https://wikidata.org/entity/Q520988	1	14	28102001-14-6	2021	10	1	78	V
Madrid Province	https://wikidata.org/entity/Q24004405	Puerto de Cotos	https://wikidata.org/entity/Q3925446	1	7	28120001-7-8	2021	10	1	1	V
Madrid Province	https://wikidata.org/entity/Q24004405	Puerto de Cotos	https://wikidata.org/entity/Q3925446	1	8	28120001-8-8	2021	10	1	2	V
Madrid Province	https://wikidata.org/entity/Q24004405	Puerto de Cotos	https://wikidata.org/entity/Q3925446	1	9	28120001-9-49	2021	10	1	1	V
Madrid Province	https://wikidata.org/entity/Q24004405	Puerto de Cotos	https://wikidata.org/entity/Q3925446	1	10	28120001-10-49	2021	10	1	2	V
Madrid Province	https://wikidata.org/entity/Q24004405	Puerto de Cotos	https://wikidata.org/entity/Q3925446	1	12	28120001-12-8	2021	10	1	4	V
Madrid Province	https://wikidata.org/entity/Q24004405	Puerto de Cotos	https://wikidata.org/entity/Q3925446	1	14	28120001-14-6	2021	10	1	81	V
Madrid Province	https://wikidata.org/entity/Q24004405	Rivas-Vaciamadrid	https://wikidata.org/entity/Q644481	2	7	28123002-7-8	2021	10	1	1	V
Madrid Province	https://wikidata.org/entity/Q24004405	Rivas-Vaciamadrid	https://wikidata.org/entity/Q644481	2	8	28123002-8-8	2021	10	1	33	V
Madrid Province	https://wikidata.org/entity/Q24004405	Rivas-Vaciamadrid	https://wikidata.org/entity/Q644481	2	10	28123002-10-49	2021	10	1	29	V
Madrid Province	https://wikidata.org/entity/Q24004405	Rivas-Vaciamadrid	https://wikidata.org/entity/Q644481	2	12	28123002-12-8	2021	10	1	35	V
Madrid Province	https://wikidata.org/entity/Q24004405	Rivas-Vaciamadrid	https://wikidata.org/entity/Q644481	2	14	28123002-14-6	2021	10	1	32	V
Madrid Province	https://wikidata.org/entity/Q24004405	Aranjuez	https://wikidata.org/entity/Q486792	2	7	28013002-7-8	2021	10	1	1	V
Madrid Province	https://wikidata.org/entity/Q24004405	Aranjuez	https://wikidata.org/entity/Q486792	2	8	28013002-8-8	2021	10	1	5	V
Madrid Province	https://wikidata.org/entity/Q24004405	Aranjuez	https://wikidata.org/entity/Q486792	2	10	28013002-10-49	2021	10	1	31	V
Madrid Province	https://wikidata.org/entity/Q24004405	Aranjuez	https://wikidata.org/entity/Q486792	2	12	28013002-12-8	2021	10	1	7	V
Madrid Province	https://wikidata.org/entity/Q24004405	Aranjuez	https://wikidata.org/entity/Q486792	2	14	28013002-14-6	2021	10	1	44	V
Madrid Province	https://wikidata.org/entity/Q24004405	San Martín de Valdeiglesias (Madrid)	https://wikidata.org/entity/Q19823810	2	7	28133002-7-8	2021	10	1	1	V
Madrid Province	https://wikidata.org/entity/Q24004405	San Martín de Valdeiglesias (Madrid)	https://wikidata.org/entity/Q19823810	2	8	28133002-8-8	2021	10	1	3	V
Madrid Province	https://wikidata.org/entity/Q24004405	San Martín de Valdeiglesias (Madrid)	https://wikidata.org/entity/Q19823810	2	10	28133002-10-49	2021	10	1	10	V
Madrid Province	https://wikidata.org/entity/Q24004405	San Martín de Valdeiglesias (Madrid)	https://wikidata.org/entity/Q19823810	2	12	28133002-12-8	2021	10	1	5	V
Madrid Province	https://wikidata.org/entity/Q24004405	San Martín de Valdeiglesias (Madrid)	https://wikidata.org/entity/Q19823810	2	14	28133002-14-6	2021	10	1	68	V
Madrid Province	https://wikidata.org/entity/Q24004405	Arganda del Rey	https://wikidata.org/entity/Q497692	2	7	28014002-7-8	2021	10	1	1	V
Madrid Province	https://wikidata.org/entity/Q24004405	Arganda del Rey	https://wikidata.org/entity/Q497692	2	8	28014002-8-8	2021	10	1	23	V
Madrid Province	https://wikidata.org/entity/Q24004405	Arganda del Rey	https://wikidata.org/entity/Q497692	2	10	28014002-10-49	2021	10	1	37	V

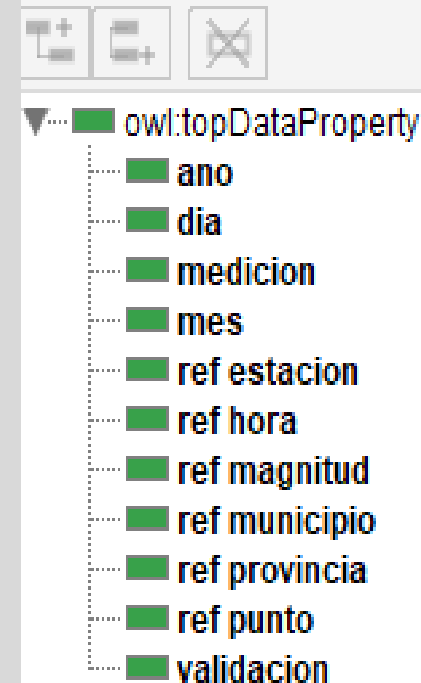
Ontología

Class hierarchy:



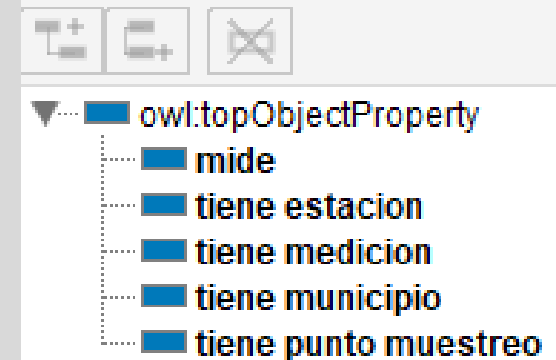
Punto Muestreo
Provincia

Data property hierarchy:



validacion
ref punto

Object property hierarchy:



tiene punto muestreo
tiene municipio

Limpieza y transformación de los datos

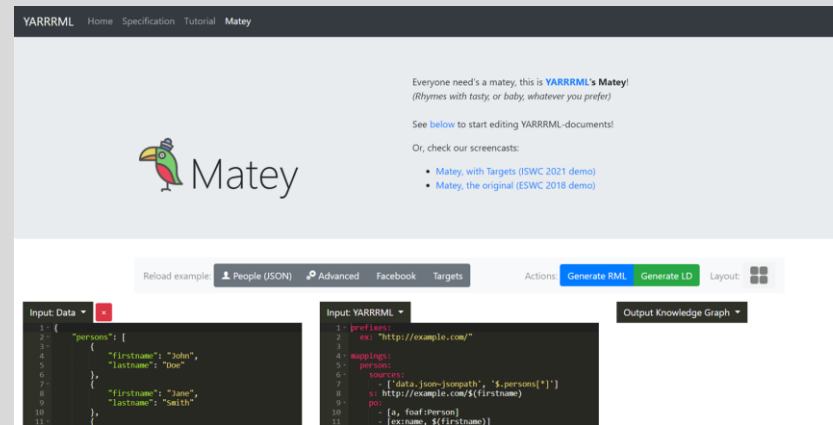
	provincia	URI_provincia	municipio	URI_municipio	estacion	magnitud	punto_muestreo	ano	mes	dia	h01	v01
1.	Madrid-Province	https://wikidata.org/entity/Q24004405	Orusco-de-Tajuña	https://wikidata.org/entity/Q520988	1	1	28102001-1-38	2021	10	1	3	V
2.	Madrid-Province	https://wikidata.org/entity/Q24004405	Orusco-de-Tajuña	https://wikidata.org/entity/Q520988	1	6	28102001-6-48	2021	10	1	0.4	V
3.	Madrid-Province	https://wikidata.org/entity/Q24004405	Orusco-de-Tajuña	https://wikidata.org/entity/Q520988	1	7	28102001-7-8	2021	10	1	1	V
4.	Madrid-Province	https://wikidata.org/entity/Q24004405	Orusco-de-Tajuña	https://wikidata.org/entity/Q520988	1	8	28102001-8-8	2021	10	1	4	V
5.	Madrid-Province	https://wikidata.org/entity/Q24004405	Orusco-de-Tajuña	https://wikidata.org/entity/Q520988	1	10	28102001-10-49	2021	10	1	16	V
6.	Madrid-Province	https://wikidata.org/entity/Q24004405	Orusco-de-Tajuña	https://wikidata.org/entity/Q520988	1	12	28102001-12-8	2021	10	1	6	V
7.	Madrid-Province	https://wikidata.org/entity/Q24004405	Orusco-de-Tajuña	https://wikidata.org/entity/Q520988	1	14	28102001-14-6	2021	10	1	78	V
8.	Madrid-Province	https://wikidata.org/entity/Q24004405	Puerto-de-Cotos	https://wikidata.org/entity/Q3925446	1	7	28120001-7-8	2021	10	1	1	V
9.	Madrid-Province	https://wikidata.org/entity/Q24004405	Puerto-de-Cotos	https://wikidata.org/entity/Q3925446	1	8	28120001-8-8	2021	10	1	2	V
10.	Madrid-Province	https://wikidata.org/entity/Q24004405	Puerto-de-Cotos	https://wikidata.org/entity/Q3925446	1	9	28120001-9-49	2021	10	1	1	V
11.	Madrid-Province	https://wikidata.org/entity/Q24004405	Puerto-de-Cotos	https://wikidata.org/entity/Q3925446	1	10	28120001-10-49	2021	10	1	2	V
12.	Madrid-Province	https://wikidata.org/entity/Q24004405	Puerto-de-Cotos	https://wikidata.org/entity/Q3925446	1	12	28120001-12-8	2021	10	1	4	V
13.	Madrid-Province	https://wikidata.org/entity/Q24004405	Puerto-de-Cotos	https://wikidata.org/entity/Q3925446	1	14	28120001-14-6	2021	10	1	81	V
14.	Madrid-Province	https://wikidata.org/entity/Q24004405	Rivas-Vaciamadrid	https://wikidata.org/entity/Q644481	2	7	28123002-7-8	2021	10	1	1	V
15.	Madrid-Province	https://wikidata.org/entity/Q24004405	Rivas-Vaciamadrid	https://wikidata.org/entity/Q644481	2	8	28123002-8-8	2021	10	1	33	V
16.	Madrid-	https://wikidata.org/entity/Q24004405	Rivas-	https://wikidata.org/entity/Q644481	2	10	28123002-10-49	2021	10	1	29	V

Creación .yaml y .rml

Escritura a mano del archivo yaml y posterior transformación a .xml

```
prefixes:
  rr: <http://www.w3.org/ns/r2rml#>
  foaf: <http://xmlns.com/foaf/0.1/>
  xsd: <http://www.w3.org/2001/XMLSchema#>
  rdfs: <http://www.w3.org/2000/01/rdf-schema#>
  rev: <http://purl.org/stuff/rev#>
  schema: <http://schema.org/>
  dct: <http://purl.org/dc/terms/>
  rml: <http://semweb.mmlab.be/ns/rml#>
  ql: <http://semweb.mmlab.be/ns/ql#>
  rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
  vocab: <http://calidadAire.com#>

mappings:
  Provincia:
    sources:
      - [calidad_aire_datos_mes-updated.csv-csv]
    s: <http://calidadAire.com/refProvincia/{provincia}>
    po:
      - [a, vocab:Provincia]
      - [vocab:refProvincia, ${provincia}, xsd:string]
      - [owl:sameAs, ${URI_provincia}-iri]
      - p: vocab:tieneMunicipio
        o:
          mapping: Municipio
  Municipio:
    sources:
      - [calidad_aire_datos_mes-updated.csv-csv]
    s: <http://calidadAire.com/refMunicipio/{municipio}>
    po:
      - [a, vocab:Municipio]
      - [vocab:refMunicipio, ${municipio}, xsd:string]
      - [owl:sameAs, ${URI_municipio}-iri]
      - p: vocab:tieneEstacion
        o:
          mapping: Estacion
```



<https://rml.io/yarrml/matey/>

```
@prefix rr: <http://www.w3.org/ns/r2rml#>.
@prefix rml: <http://semweb.mmlab.be/ns/rml#>.
@prefix ql: <http://semweb.mmlab.be/ns/ql#>.
@prefix transit: <http://vocab.org/transit/terms/>.
@prefix xsd: <http://www.w3.org/2001/XMLSchema#>.
@prefix wgs84_pos: <http://www.w3.org/2003/01/geo/wgs84_pos#>.
@prefix vocab: <http://www.calidadAire.com#>.
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#>.
@prefix owl: <http://www.w3.org/2002/07/owl#>.
@base <http://example.com/ns#>.

<#TriplesMap> a rr:TriplesMap;
  rml:logicalSource [
    rml:source "calidad_aire_datos_mes-updated-csv-with-links.csv" ;
    rml:referenceFormulation ql:CSV
  ];
  rr:subjectMap [
    rr:template "http://www.calidadAire.com/refProvincia/{provincia}";
    rr:termType rr:IRI;
    rr:class vocab:Provincia
  ];
  rr:predicateObjectMap [
    rr:predicate vocab:tieneURIProvi; rr:termType rr:IRI;
    rr:objectMap [
      rr:template "{URI_provincia}";
      rr:datatype <http://www.w3.org/2001/XMLSchema#string>;
      rr:termType rr:Literal
    ]
  ];
  rr:predicateObjectMap [
    rr:predicate vocab:tieneMunicipio; rr:termType rr:IRI;
    rr:objectMap [
      rr:template "http://www.calidadAire.com/refProvincia/{provincia}/tieneMunicipio/{municipio}";
      rr:datatype <http://www.w3.org/2001/XMLSchema#string>;
      rr:termType rr:Literal
    ]
  ].
```

Obtención .nt

Obtenemos el .nt por medio de la herramienta rml.io. Al principio tuvimos dificultades ya que no conseguimos ejecutar la herramienta Helio , posteriormente cuando cambiamos a rml.io nos resultó mas fácil y pudimos arreglar los errores gracias a los mensajes que mostraba por pantalla.



DEMO APLICACIÓN