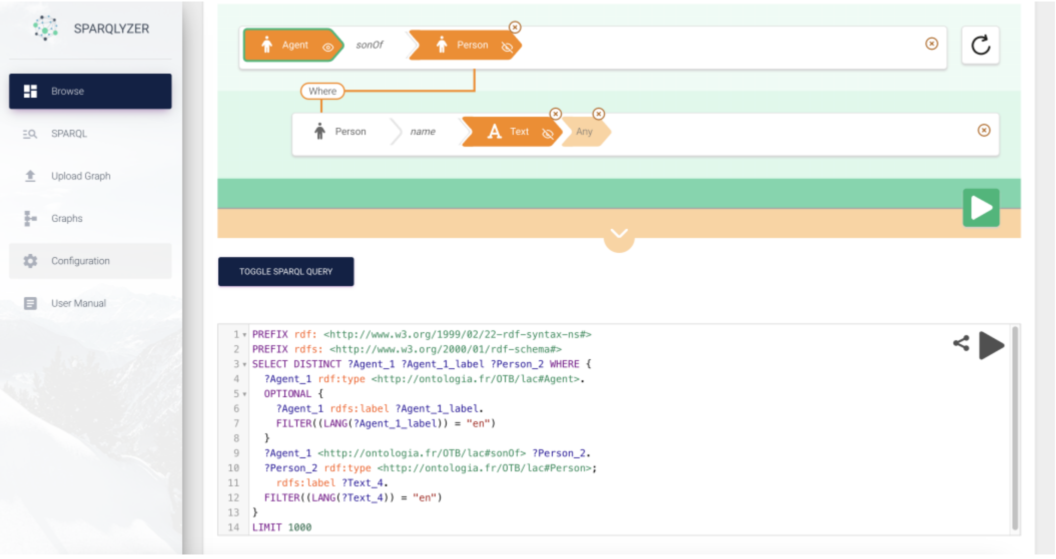
User Manual: SPARQLyzer

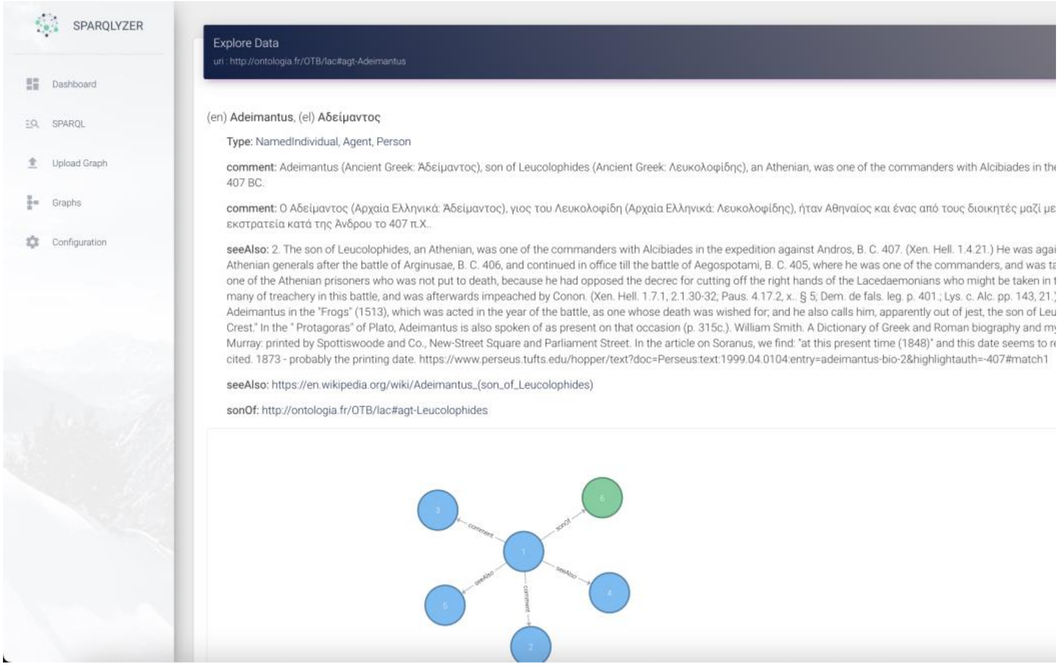
Description



```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
SELECT DISTINCT ?Agent_1 ?Agent_1_label ?Person_2 WHERE {
  ?Agent_1 rdf:type <http://ontologia.fr/OTB/lac#Agent>.
  OPTIONAL {
    ?Agent_1 rdfs:label ?Agent_1_label.
    FILTER((LANG(?Agent_1_label)) = "en")
  }
  ?Agent_1 <http://ontologia.fr/OTB/lac#sonOf> ?Person_2.
  ?Person_2 rdf:type <http://ontologia.fr/OTB/lac#Person>;
    rdfs:label ?Text_4.
  FILTER((LANG(?Text_4)) = "en")
}
LIMIT 1000
```

SPARQLyzer is standalone web application with a key role in allowing users to:

- Browse/explore data using the sparnatural library on uploaded graphs
- Upload RDF data (.owl, .Fl, .rdf) to a triplestore
- Query a SPARQL endpoint
- Delete graphs from the triplestore



Explore Data
uri : http://ontologia.fr/OTB/lac#agt-Adeimantus

(en) Adeimantus, (el) Αδείμαντος

Type: NamedIndividual, Agent, Person

comment: Adeimantus (Ancient Greek: Ἀδείμαντος), son of Leucolophides (Ancient Greek: Λευκολοφίδης), an Athenian, was one of the commanders with Alcibiades in the
407 BC.

comment: Ο Αδείμαντος (Αρχαία Ελληνικά: Ἀδείμαντος), γιος του Λευκολοφίδη (Αρχαία Ελληνικά: Λευκολοφίδης), ήταν Αθηναίος και ένας από τους διοικητές μαζί με
εκστρατεία κατά της Άνδρου το 407 π.Χ..

seeAlso: 2. The son of Leucolophides, an Athenian, was one of the commanders with Alcibiades in the expedition against Andros, B. C. 407. (Xen. Hell. 1.4.21.) He was agai
Athenian generals after the battle of Arginusae, B. C. 406, and continued in office till the battle of Aegospotami, B. C. 405, where he was one of the commanders, and was ta
one of the Athenian prisoners who was not put to death, because he had opposed the decrec for cutting off the right hands of the Lacedaemonians who might be taken in t
many of treachery in this battle, and was afterwards impeached by Conon. (Xen. Hell. 1.7.1, 2.1.30-32; Paus. 4.17.2, x.. § 5; Dem. de fals. leg. p. 401.; Lys. c. Alc. pp. 143, 21.)
Adeimantus in the "Frogs" (1513), which was acted in the year of the battle, as one whose death was wished for; and he also calls him, apparently out of jest, the son of Leu
Crest." In the " Protagoras" of Plato, Adeimantus is also spoken of as present on that occasion (p. 315c.). William Smith. A Dictionary of Greek and Roman biography and my
Murray: printed by Spottiswoode and Co., New-Street Square and Parliament Street. In the article on Soranus, we find: "at this present time (1848)" and this date seems to re
cited. 1873 - probably the printing date. https://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.04.0104:entry=adeimantus-bio-2&highlightauth=-407#match1

seeAlso: https://en.wikipedia.org/wiki/Adeimantus_(son_of_Leucolophides)

sonOf: http://ontologia.fr/OTB/lac#agt-Leucolophides

The tool has the ability to **dynamically** export all classes and properties of the uploaded data, allow the users to construct SPARQL queries in a graphical and easy to use interface, execute the queries and start exploring/navigating the data.

Technical README can be found here.

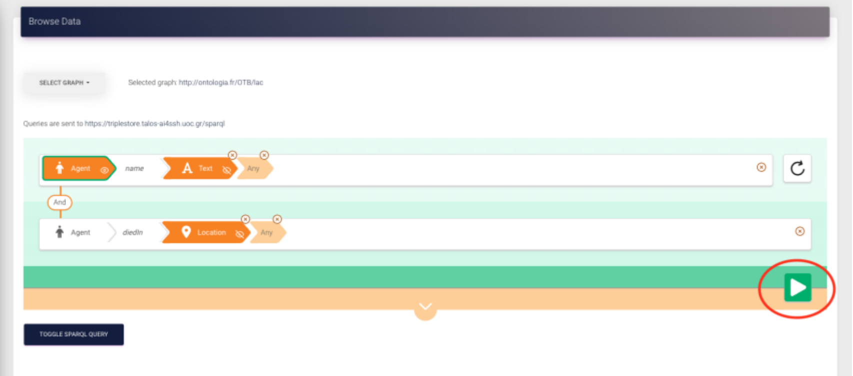
Quick Start

The following steps must be taken for users to upload RDF data and start exploring:

1. Navigate to the **Upload Graph** tab and fill all in the fields accordingly [more details here]:
    - Graph URI: the URI of the uploaded ontology **as it appears in the data** (eg. For the LACRIMALit ontology the graph URI should be http://ontologia.fr/OTB/lac).
    - Triplestore username and password (credentials will be sent to eligible users)
    - Upload the RDF data from your computer by clicking the 📎 button.
    - Click on the Upload button. If all the above fields are filled in correctly, the graph will be ready to start querying.

2. Navigate to the **Browse** tab and select the desired graph from the drop-down list. The tool will dynamically extract all the classes, properties and domains of the selected ontology display them in the sparnatural environment and construct SPARQL queries in a graphical user interface.

3. After constructing the desired query, it can be executed by clicking on the button below [more details here]:

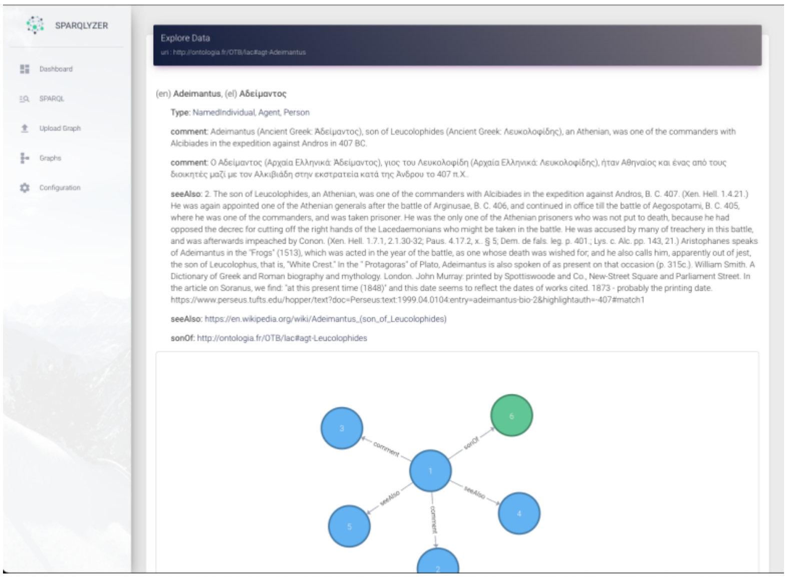


Browse Data

SELECT GRAPH ▾ Selected graph: http://ontologia.fr/OTB/lac

Queries are sent to https://triplestore.talos-ai4ssh.uoc.gr/sparql

and the results will be available on the generated table. Every result is clickable and when clicked the selected uri opens in a new tab with its label, type and all properties with their domains [more details here]:



Explore Data

uri : http://ontologia.fr/OTB/lac#agt-Adeimantus

(en) **Adeimantus**, (el) **Αδείμαντος**

Type: NamedIndividual, Agent, Person

comment: Adeimantus (Ancient Greek: Ἀδείμαντος), son of Leucolophides (Ancient Greek: Λευκολοφίδης), an Athenian, was one of the commanders with Alcibiades in the expedition against Andros in 407 BC.

comment: Ο Αδείμαντος (Αρχαία Ελληνικά: Ἀδείμαντος), γιος του Λευκολοφίδη (Αρχαία Ελληνικά: Λευκολοφίδης), ήταν Αθηναίος και ένας από τους διοικητές μαζί με τον Αλκιβιάδη στην εκστρατεία κατά της Άνδρου το 407 π.Χ..

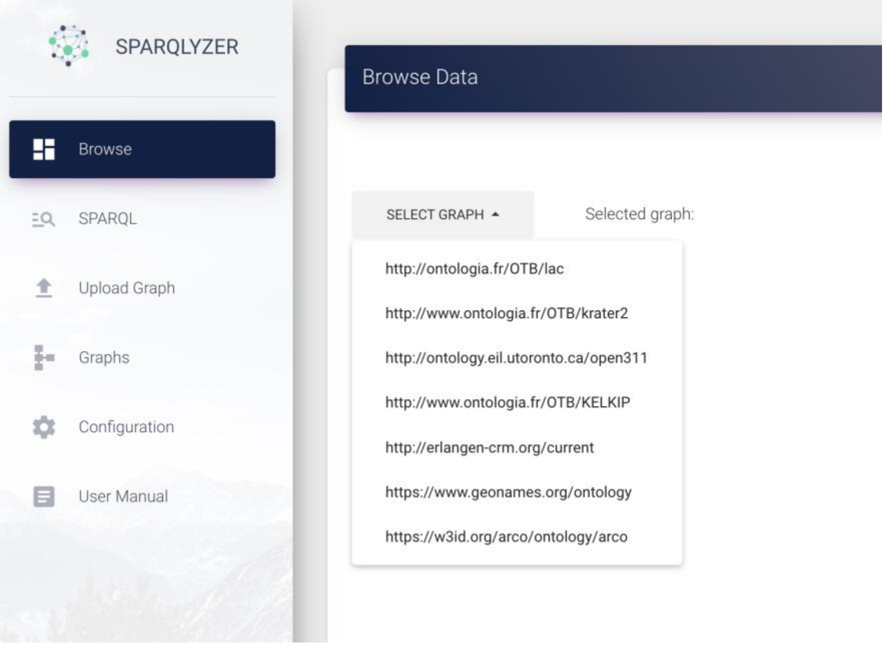
seeAlso: 2. The son of Leucolophides, an Athenian, was one of the commanders with Alcibiades in the expedition against Andros, B. C. 407. (Xen. Hell. 1.4.21.) He was again appointed one of the Athenian generals after the battle of Arginusae, B. C. 406, and continued in office till the battle of Aegospotami, B. C. 405, where he was one of the commanders, and was taken prisoner. He was the only one of the Athenian prisoners who was not put to death, because he had opposed the decrec for cutting off the right hands of the Lacedaemonians who might be taken in the battle. He was accused by many of treachery in this battle, and was afterwards impeached by Conon. (Xen. Hell. 1.7.1, 2.1.30-32; Paus. 4.17.2, x.. § 5; Dem. de fals. leg. p. 401.; Lys. c. Alc. pp. 143, 21.) Aristophanes speaks of Adeimantus in the "Frogs" (1513), which was acted in the year of the battle, as one whose death was wished for; and he also calls him, apparently out of jest, the son of Leucolophus, that is, "White Crest." In the " Protagoras" of Plato, Adeimantus is also spoken of as present on that occasion (p. 315c.). William Smith. A Dictionary of Greek and Roman biography and mythology. London. John Murray: printed by Spottiswoode and Co., New-Street Square and Parliament Street. In the article on Soranus, we find: "at this present time (1848)" and this date seems to reflect the dates of works cited. 1873 - probably the printing date. https://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.04.0104:entry=adeimantus-bio-2&highlightauth=-407#match1

seeAlso: https://en.wikipedia.org/wiki/Adeimantus_(son_of_Leucolophides)

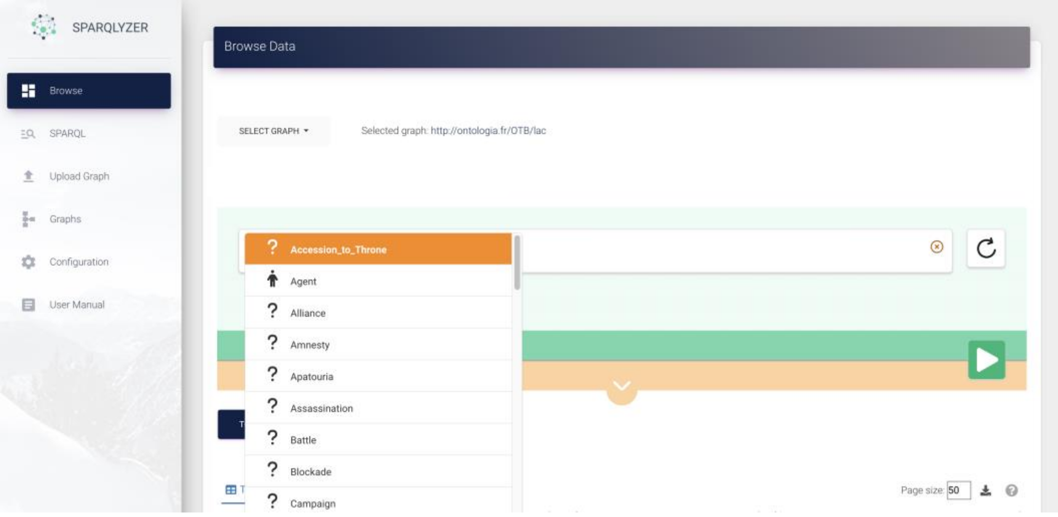
sonOf: http://ontologia.fr/OTB/lac#agt-Leucolophides

Browse Data

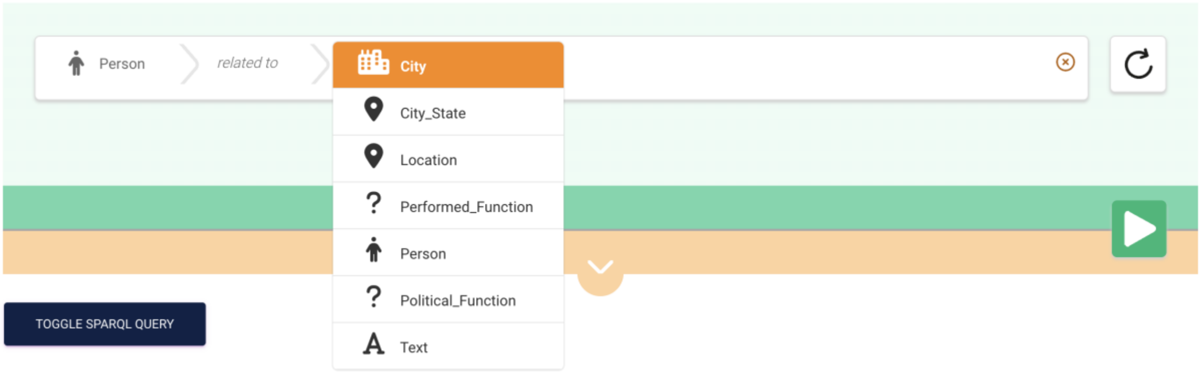
On the first screen the tool asks from the users to select a graph from a drop-down menu:


SPARQLYZER
Browse
SPARQL
Upload Graph
Graphs
Configuration
User Manual
Browse Data
SELECT GRAPH ▴
Selected graph:
http://ontologia.fr/OTB/lac
http://www.ontologia.fr/OTB/krater2
http://ontology.eil.utoronto.ca/open311
http://www.ontologia.fr/OTB/KELKIP
http://erlangen-crm.org/current
https://www.geonames.org/ontology
https://w3id.org/arco/ontology/arco

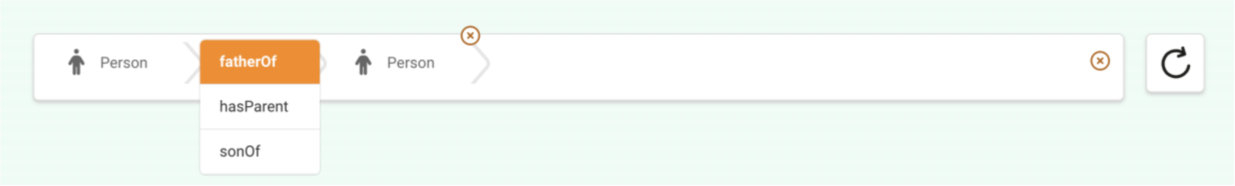
This drop-down list contains all the graphs that have already been uploaded to the triple store. Upon user's selection the tool dynamically creates all the classes and properties of the selected graph and sets the graphical query builder (sparnatural):



Initially, all the classes of the ontology are available. By selecting a class (e.g. Person):

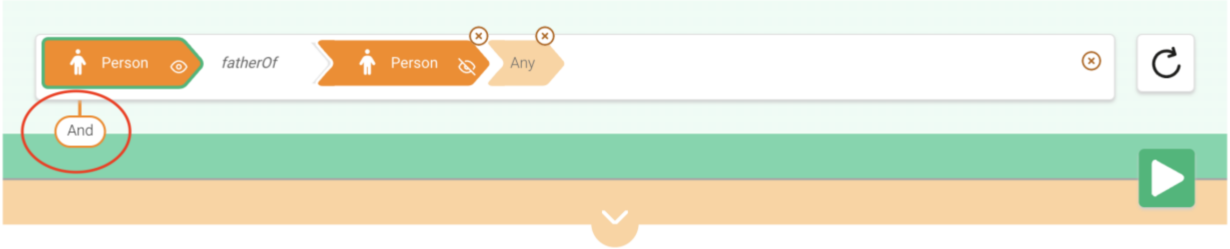


All the available domains are displayed. By selecting a domain:

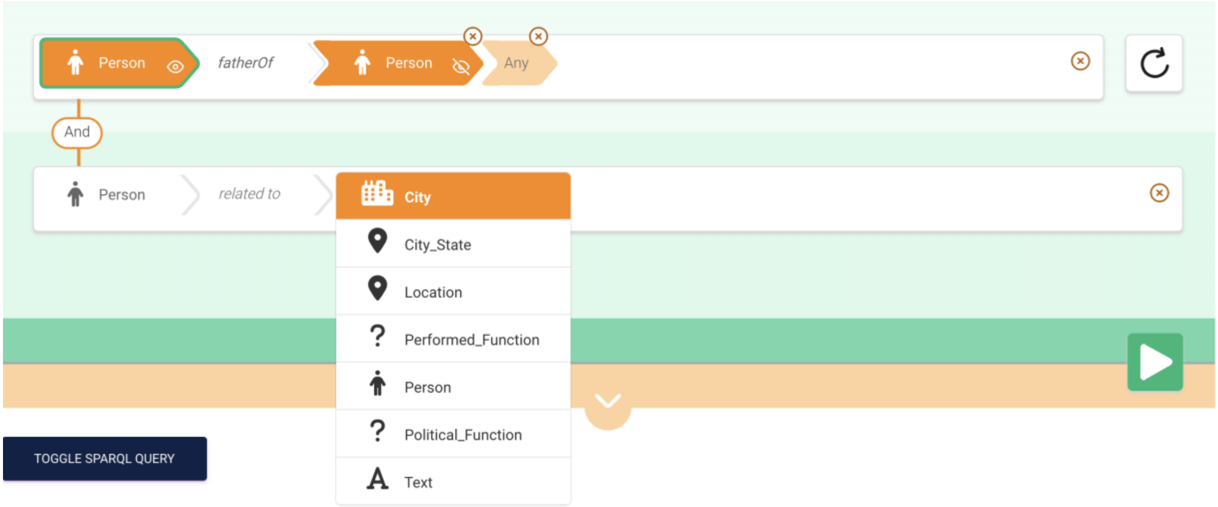


All available properties are displayed and users can choose what they want.

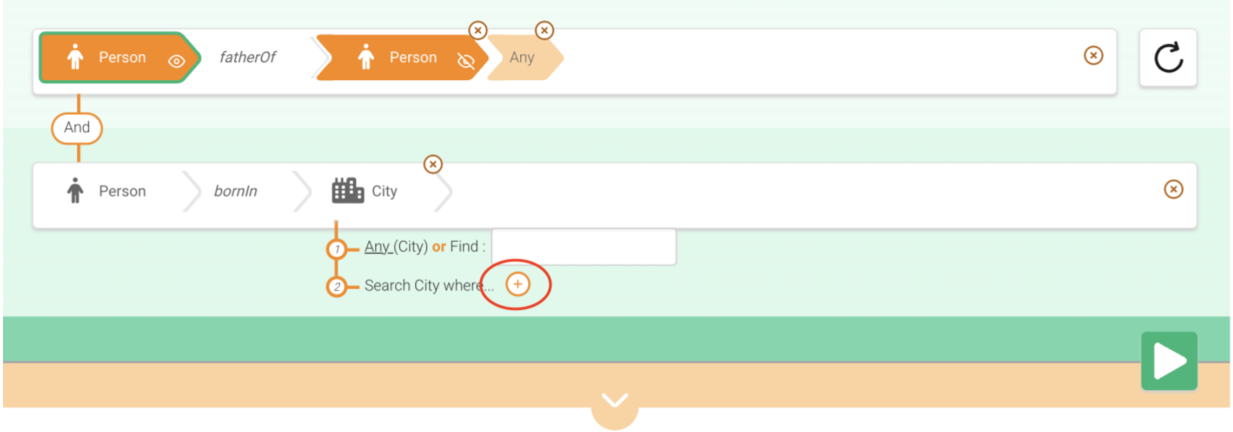
It is possible to add another class by clicking on this button:



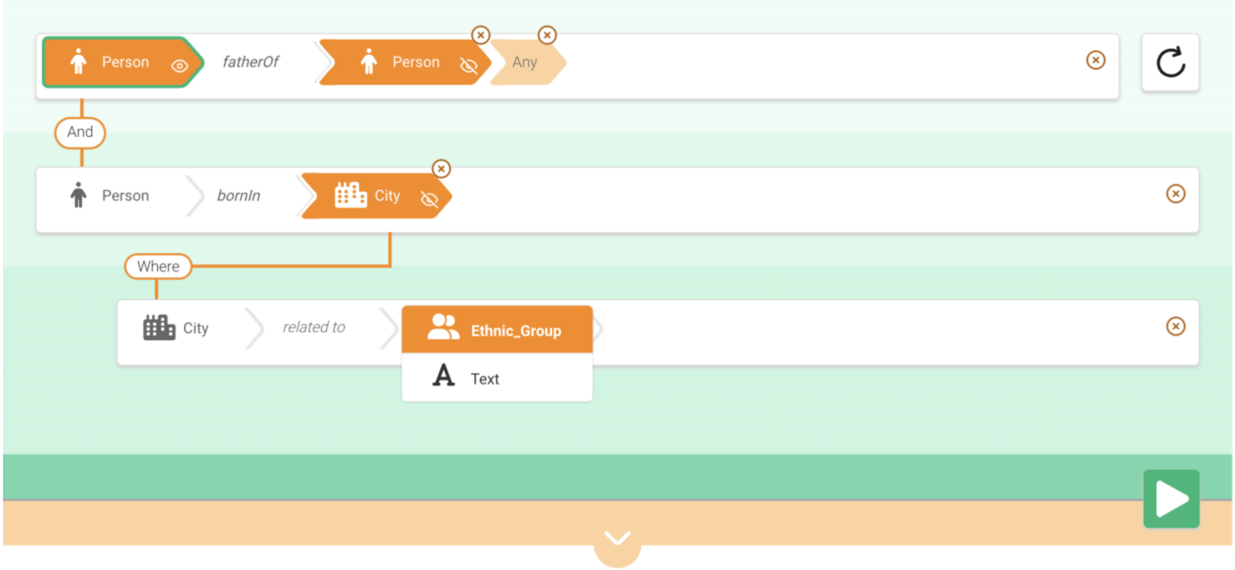
And another class appears in the query builder:



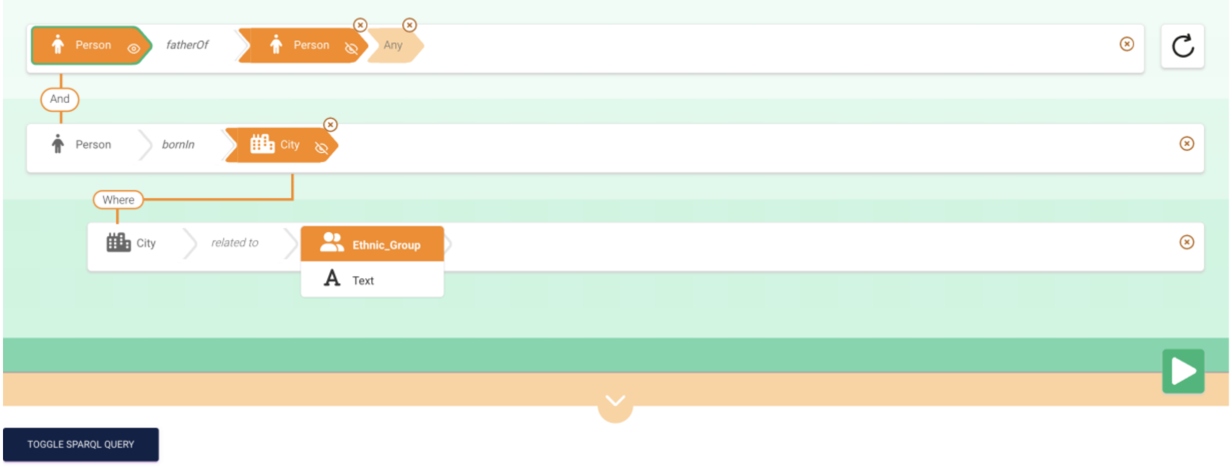
It is also possible to add more domains of the query by clicking this button:

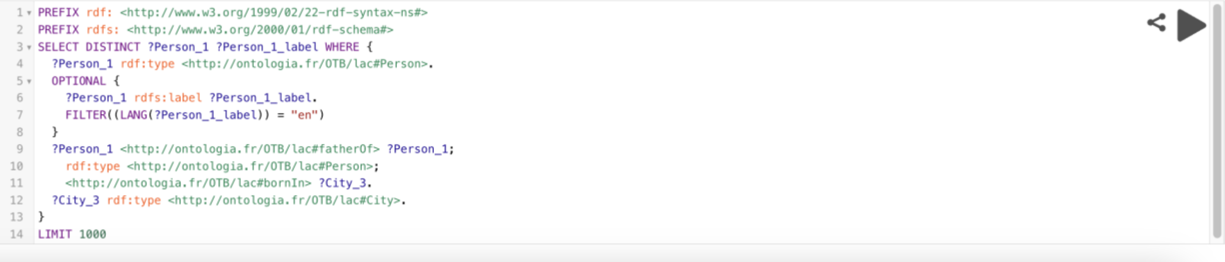


And the query may be more complex:



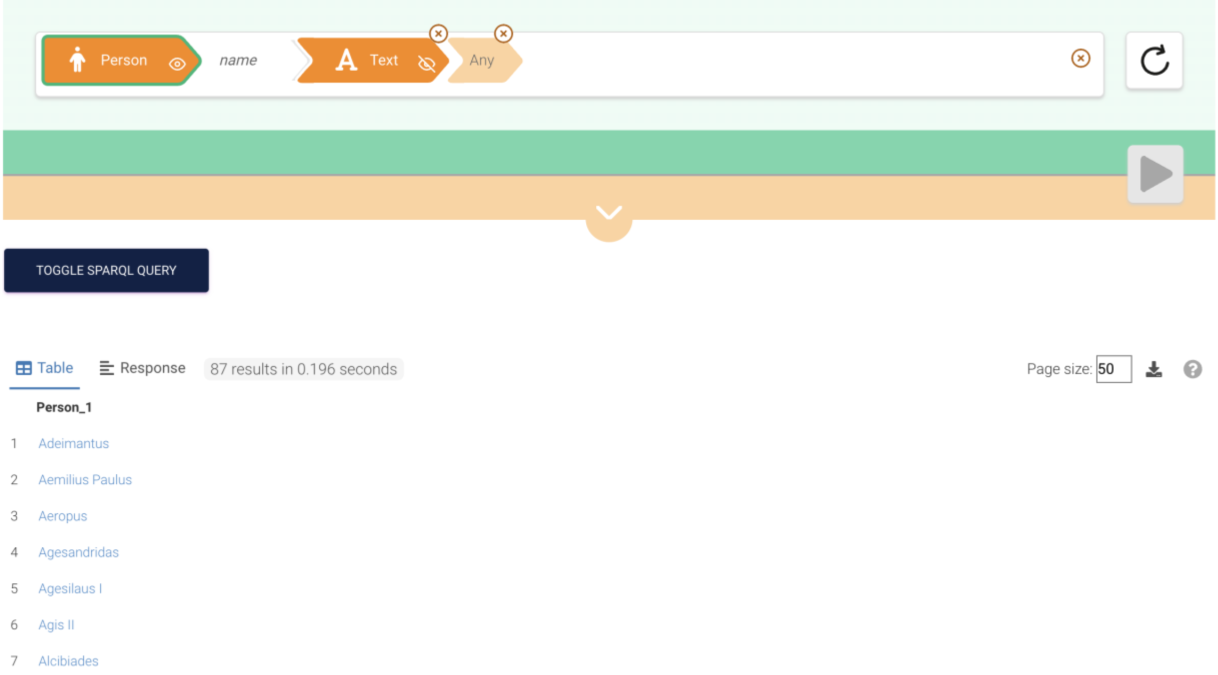
By clicking on the Toggle SPARQL QUERY the constructed query is visible to the user:





```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
SELECT DISTINCT ?Person_1 ?Person_1_label WHERE {
  ?Person_1 rdf:type <http://ontologia.fr/OTB/lac#Person>.
  OPTIONAL {
    ?Person_1 rdfs:label ?Person_1_label.
    FILTER((LANG(?Person_1_label)) = "en")
  }
  ?Person_1 <http://ontologia.fr/OTB/lac#fatherOf> ?Person_1;
    rdf:type <http://ontologia.fr/OTB/lac#Person>;
    <http://ontologia.fr/OTB/lac#bornIn> ?City_3.
  ?City_3 rdf:type <http://ontologia.fr/OTB/lac#City>.
}
LIMIT 1000
```

By clicking the ▶ the query executes and the results appears on the table :

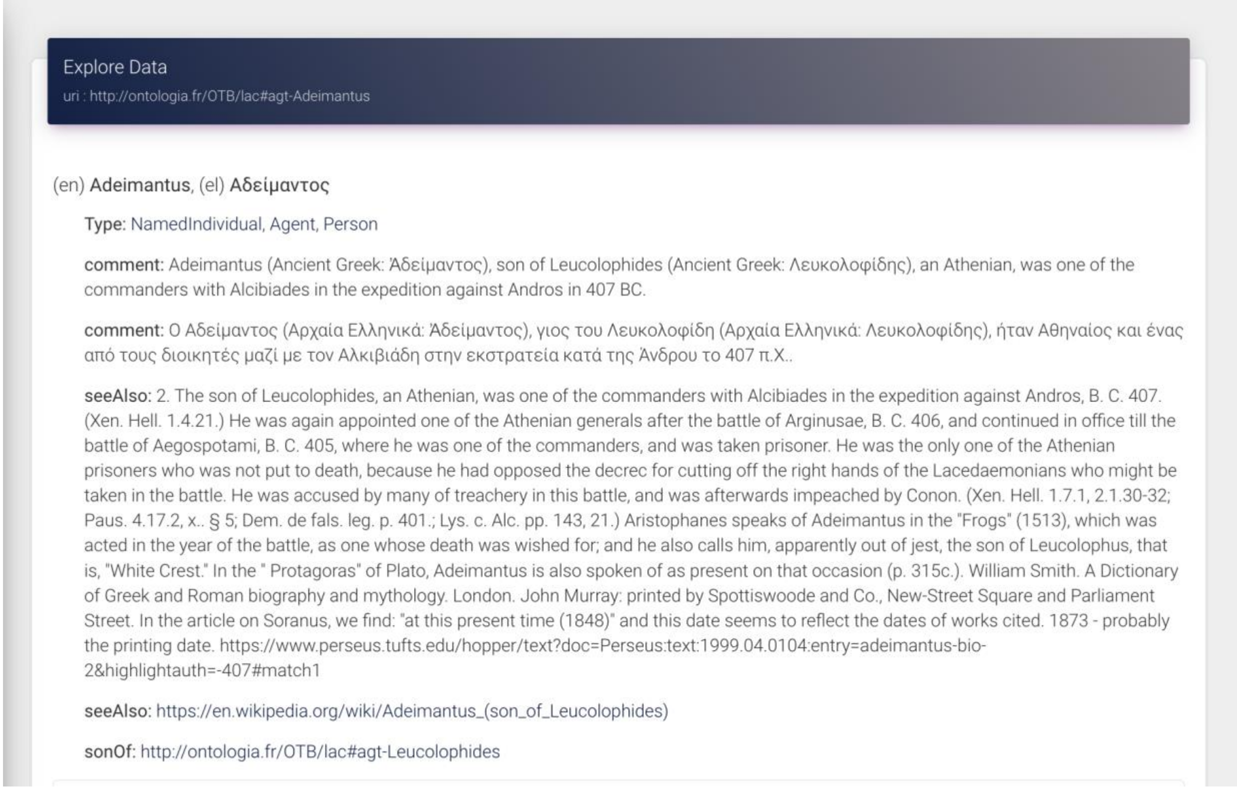


	Person_1
1	Adeimantus
2	Aemilius Paulus
3	Aeropus
4	Agesandridas
5	Agesilaus I
6	Agis II
7	Alcibiades

Every result is clickable and when clicked a new tab opens with the explore data details.

Explore Data

When the Explore Data page opens, it visualizes the selected result by its URI, showing its label, type and all properties with their domains:



Explore Data

uri : http://ontologia.fr/OTB/lac#agt-Adeimantus

(en) **Adeimantus**, (el) **Αδείμαντος**

Type: NamedIndividual, Agent, Person

comment: Adeimantus (Ancient Greek: Ἀδείμαντος), son of Leucolophides (Ancient Greek: Λευκολοφίδης), an Athenian, was one of the commanders with Alcibiades in the expedition against Andros in 407 BC.

comment: Ο Αδείμαντος (Αρχαία Ελληνικά: Ἀδείμαντος), γιος του Λευκολοφίδη (Αρχαία Ελληνικά: Λευκολοφίδης), ήταν Αθηναίος και ένας από τους διοικητές μαζί με τον Αλκιβιάδη στην εκστρατεία κατά της Ἀνδρου το 407 π.Χ..

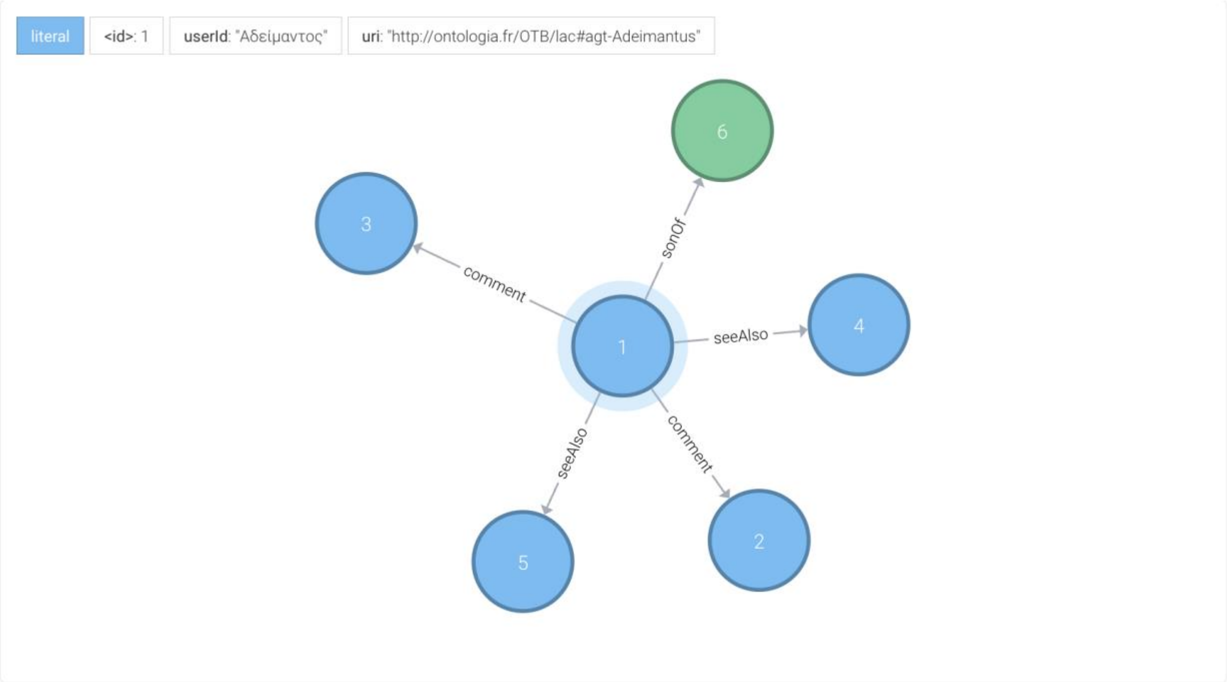
seeAlso: 2. The son of Leucolophides, an Athenian, was one of the commanders with Alcibiades in the expedition against Andros, B. C. 407. (Xen. Hell. 1.4.21.) He was again appointed one of the Athenian generals after the battle of Arginusae, B. C. 406, and continued in office till the battle of Aegospotami, B. C. 405, where he was one of the commanders, and was taken prisoner. He was the only one of the Athenian prisoners who was not put to death, because he had opposed the decrec for cutting off the right hands of the Lacedaemonians who might be taken in the battle. He was accused by many of treachery in this battle, and was afterwards impeached by Conon. (Xen. Hell. 1.7.1, 2.1.30-32; Paus. 4.17.2, x.. § 5; Dem. de fals. leg. p. 401.; Lys. c. Alc. pp. 143, 21.) Aristophanes speaks of Adeimantus in the "Frogs" (1513), which was acted in the year of the battle, as one whose death was wished for; and he also calls him, apparently out of jest, the son of Leucolophus, that is, "White Crest." In the " Protagoras" of Plato, Adeimantus is also spoken of as present on that occasion (p. 315c.). William Smith. A Dictionary of Greek and Roman biography and mythology. London. John Murray: printed by Spottiswoode and Co., New-Street Square and Parliament Street. In the article on Soranus, we find: "at this present time (1848)" and this date seems to reflect the dates of works cited. 1873 - probably the printing date. https://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.04.0104:entry=adeimantus-bio-2&highlightauth=-407#match1

seeAlso: https://en.wikipedia.org/wiki/Adeimantus_(son_of_Leucolophides)

sonOf: http://ontologia.fr/OTB/lac#agt-Leucolophides

If domain values are links, they are clickable and users can extend the exploration to new tabs.

There is another visualization using the neo4jd3 js library.



literal

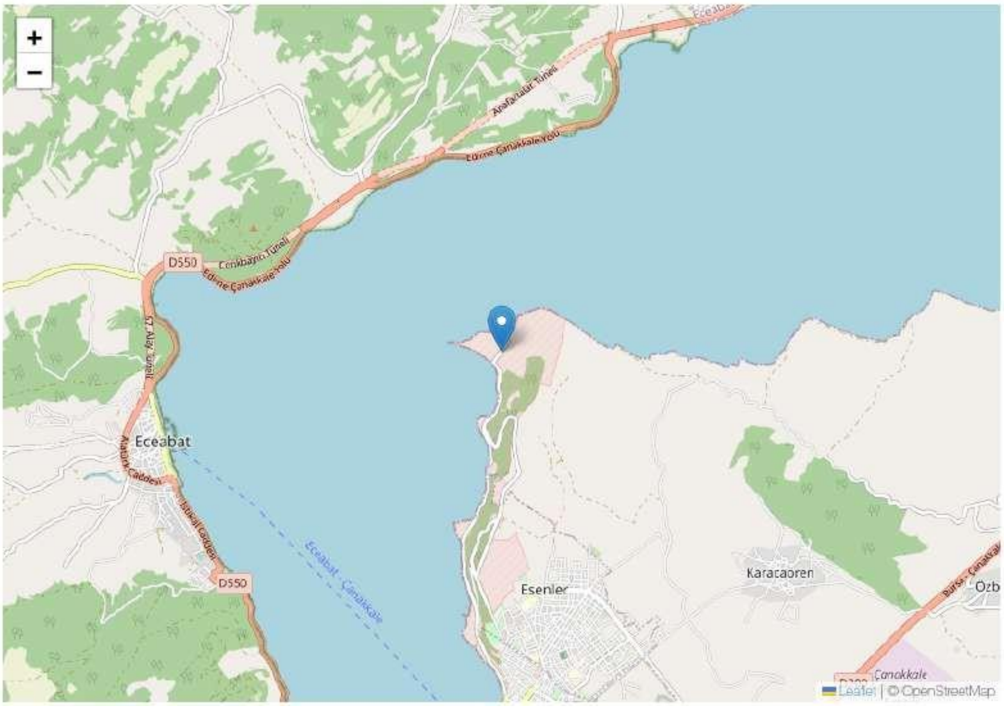
<id>: 1

userId: "Αδείμαντος"

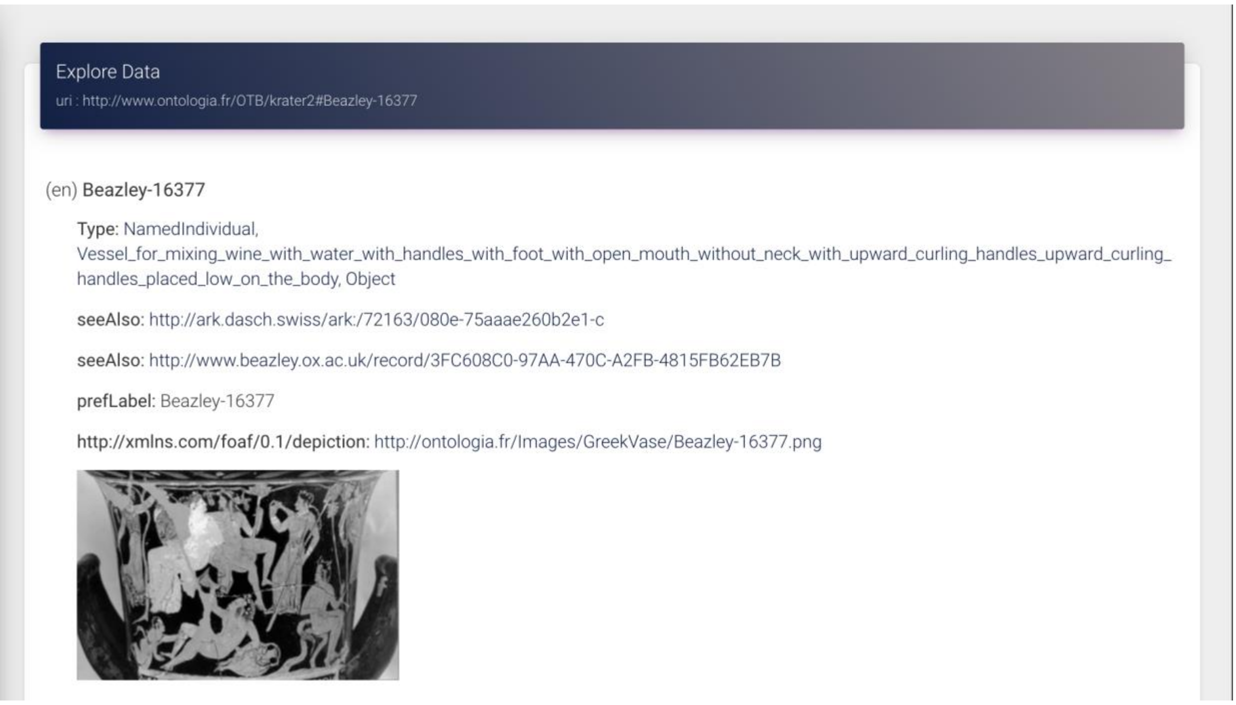
uri: "http://ontologia.fr/OTB/lac#agt-Adeimantus"

(Future work will make this graph dynamically expandable to allow users to explore data graphically).

Where domains contain geographical coordinates, the Explore Data page will display these coordinates as a pin on a leaflet map:



And if the property has a domain with a working image link, the tool is able to display it directly on the page:



Explore Data
uri : http://www.ontologia.fr/OTB/krater2#Beazley-16377

(en) **Beazley-16377**

Type: NamedIndividual, Vessel_for_mixing_wine_with_water_with_handles_with_foot_with_open_mouth_without_neck_with_upward_curling_handles_upward_curling_handles_placed_low_on_the_body, Object

seeAlso: http://ark.dasch.swiss/ark:/72163/080e-75aaae260b2e1-c

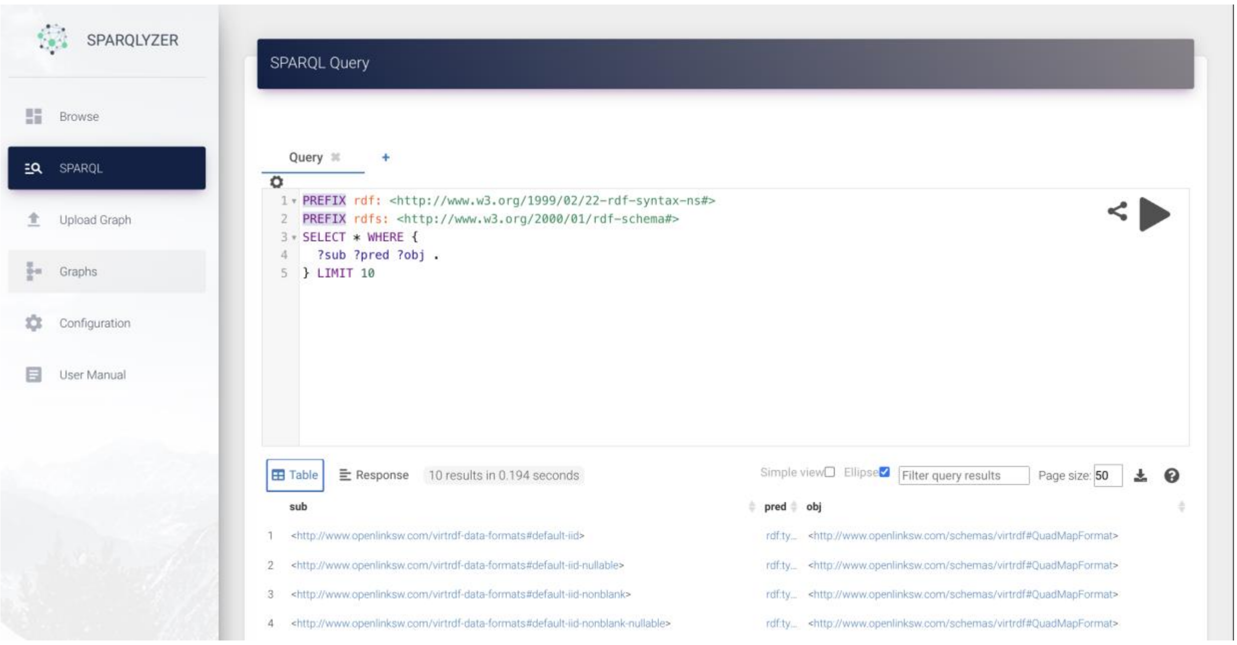
seeAlso: http://www.beazley.ox.ac.uk/record/3FC608C0-97AA-470C-A2FB-4815FB62EB7B

prefLabel: Beazley-16377

http://xmlns.com/foaf/0.1/depiction: http://ontologia.fr/Images/GreekVase/Beazley-16377.png

SPARQL

On SPARQL query tab the tool provides a typical SPARQL endpoint using the yasgui library



```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
SELECT * WHERE {
  ?sub ?pred ?obj .
} LIMIT 10
```

10 results in 0.194 seconds

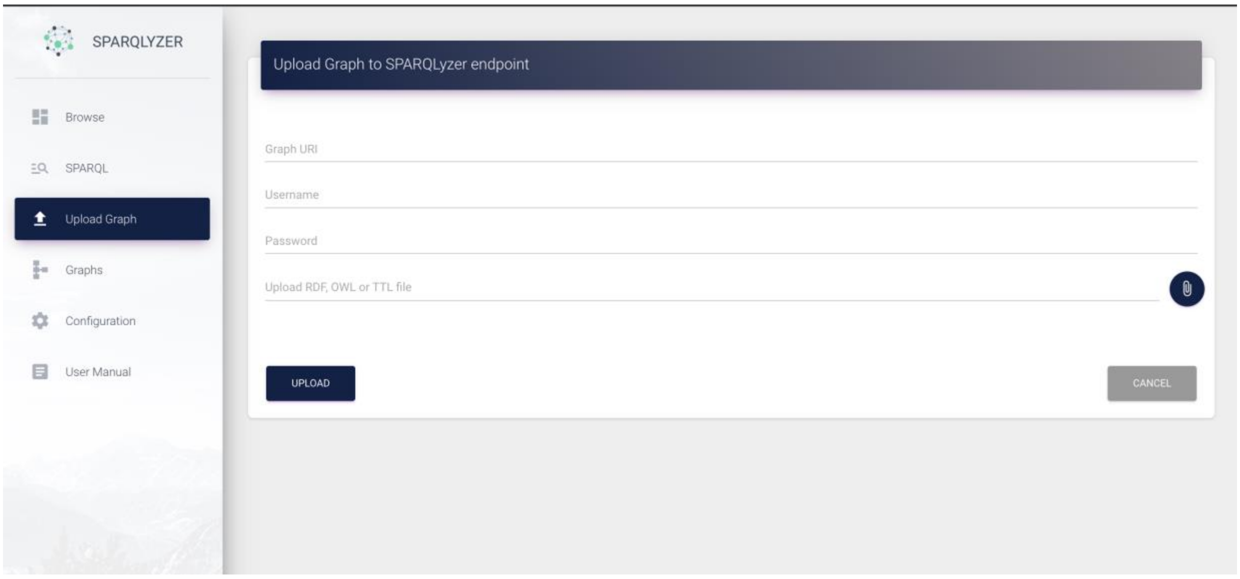
Simple view □ Ellipse ☑ Page size: 50

	sub	pred	obj
1	<http://www.openlinksw.com/virtrdf-data-formats#default-iid>	rdf:ty...	<http://www.openlinksw.com/schemas/virtrdf#QuadMapFormat>
2	<http://www.openlinksw.com/virtrdf-data-formats#default-iid-nullable>	rdf:ty...	<http://www.openlinksw.com/schemas/virtrdf#QuadMapFormat>
3	<http://www.openlinksw.com/virtrdf-data-formats#default-iid-nonblank>	rdf:ty...	<http://www.openlinksw.com/schemas/virtrdf#QuadMapFormat>
4	<http://www.openlinksw.com/virtrdf-data-formats#default-iid-nonblank-nullable>	rdf:ty...	<http://www.openlinksw.com/schemas/virtrdf#QuadMapFormat>

Users can create their own SPARQL queries and execute them in a similar way as described above. As described, all the results are clickable and can be visualized with the explore data features.

Upload Graph

The tool allows graph upload (.rdf, .owl, .ttl files allowed) from local computers on the dedicated repository.



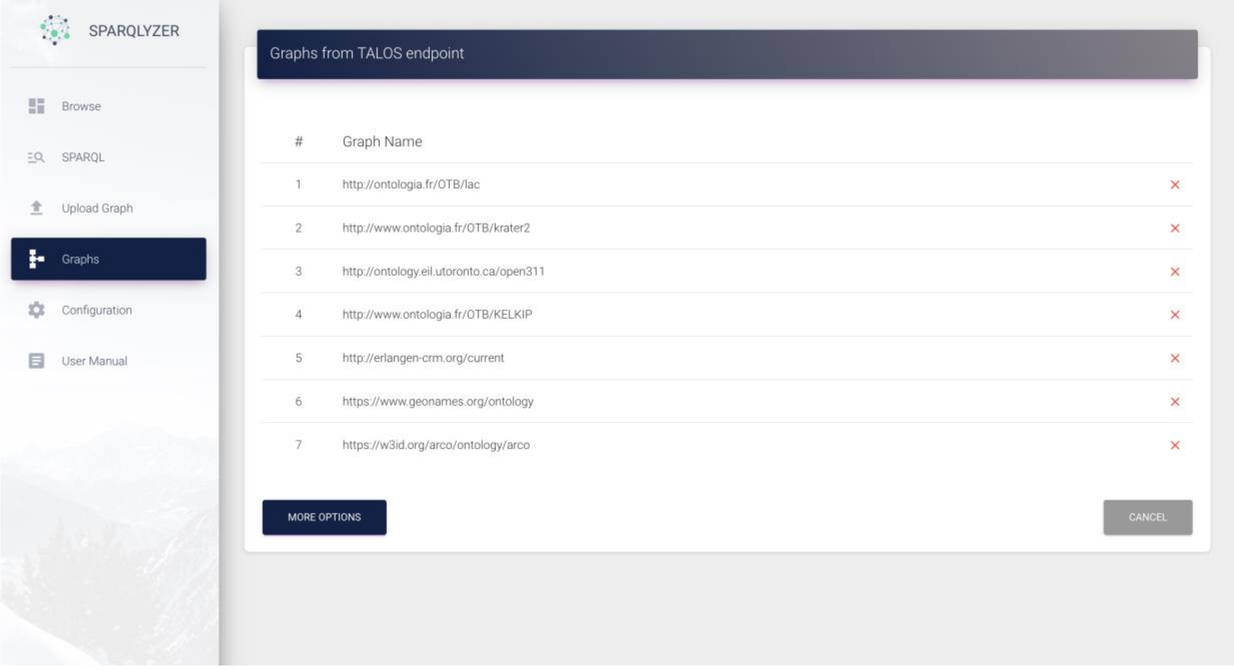
Users must fill all the above inputs properly to upload their graphs:

- Graph URI: the URI of the uploaded ontology **as it appears in the data** (eg. For the LACRIMALit ontology the graph URI should be http://ontologia.fr/OTB/lac).
- Triplestore username and password (credentials will be sent to eligible users)
- Upload the RDF data from your computer by clicking this 📎 button.
- Click on the Upload button.

If all the above fields are filled in correctly, the graph will be ready to start querying.

Graphs

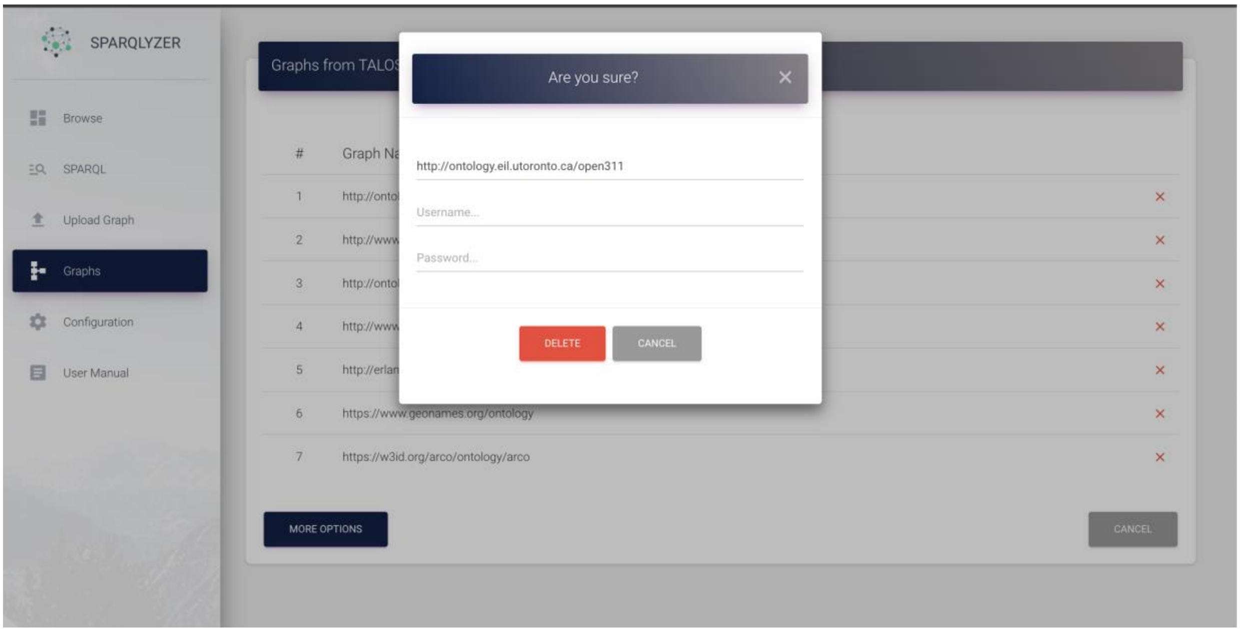
In this tab all the uploaded graphs are displayed as below:



Graphs from TALOS endpoint

#	Graph Name	
1	http://ontologia.fr/OTB/lac	✕
2	http://www.ontologia.fr/OTB/krater2	✕
3	http://ontology.eil.utoronto.ca/open311	✕
4	http://www.ontologia.fr/OTB/KELKIP	✕
5	http://erlangen-crm.org/current	✕
6	https://www.geonames.org/ontology	✕
7	https://w3id.org/arco/ontology/arco	✕

Clicking this ✕ button users are able to delete the selected graphs. When this button is clicked, a modal shows up and asks confirmation of the action requiring the triple store credentials:



Are you sure?

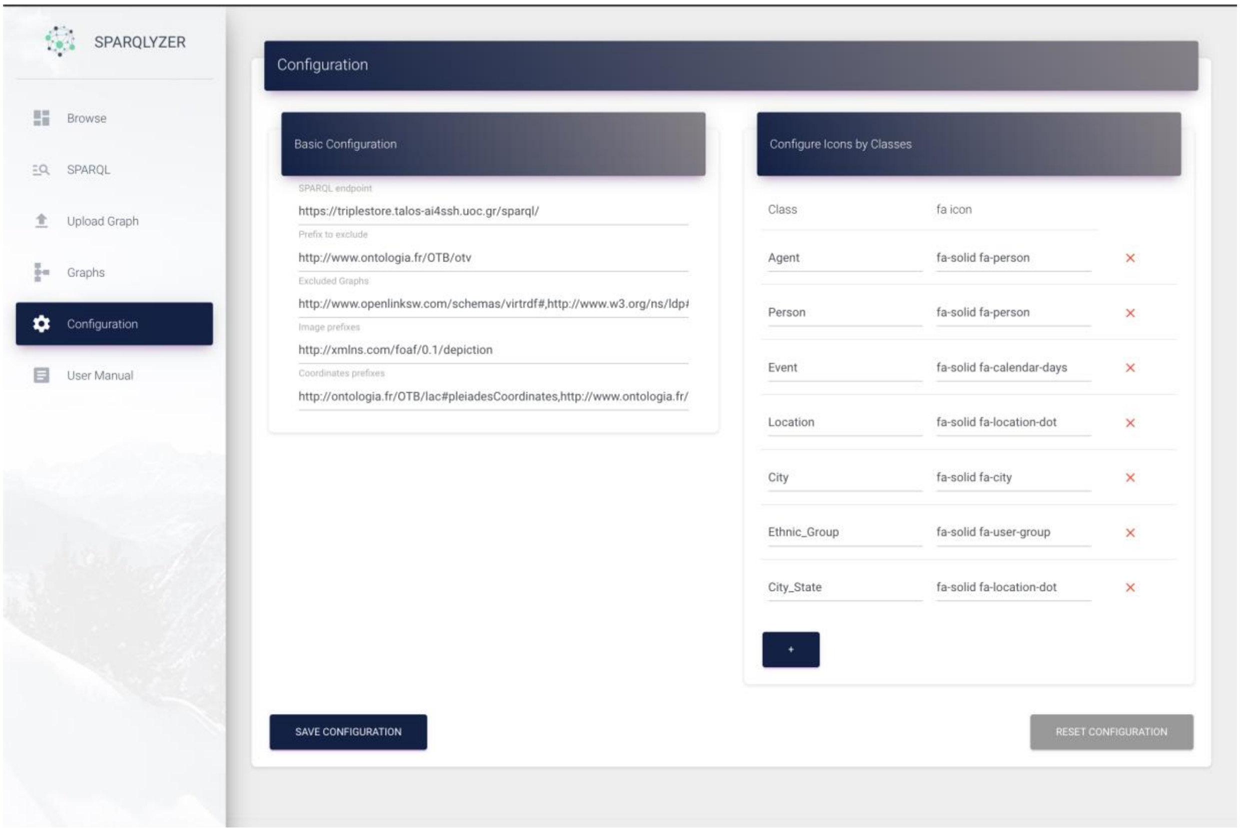
http://ontology.eil.utoronto.ca/open311

Username...

Password...

Configuration

By default, the tool has all the necessary configurations predefined to work properly. It allows users to create their own configuration by editing the inputs below:



Configuration

Basic Configuration

SPARQL endpoint
https://triplestore.talos-ai4ssh.uoc.gr/sparql/

Prefix to exclude
http://www.ontologia.fr/OTB/otv

Excluded Graphs
http://www.openlinksw.com/schemas/virtrdf#,http://www.w3.org/ns/ldp#

Image prefixes
http://xmlns.com/foaf/0.1/depiction

Coordinates prefixes
http://ontologia.fr/OTB/lac#pleiadesCoordinates,http://www.ontologia.fr/

Configure Icons by Classes

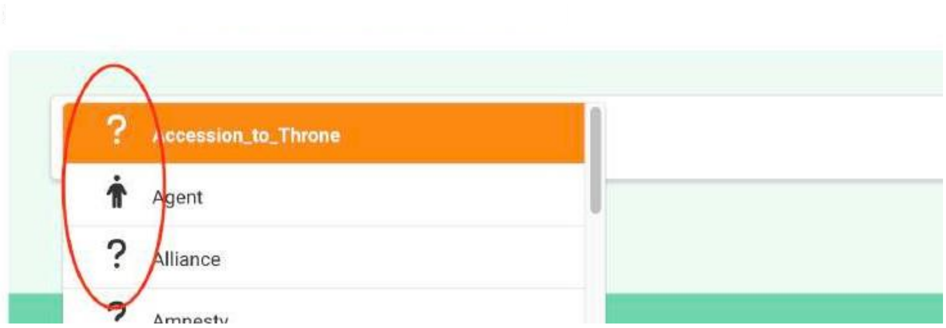
Class	fa icon	
Agent	fa-solid fa-person	×
Person	fa-solid fa-person	×
Event	fa-solid fa-calendar-days	×
Location	fa-solid fa-location-dot	×
City	fa-solid fa-city	×
Ethnic_Group	fa-solid fa-user-group	×
City_State	fa-solid fa-location-dot	×

Basic Configuration:

- SPARQL endpoint : this field must contain the default URL of the endpoint where all actions (uploading data, running queries) will be performed.
- Prefix to exclude: If an ontology has more uris which contain classes except the initial uri, these uris must be filled in this field in order to create all the classes properly.
- Excluded Graphs: This field must contain any default triple store graphs that the user does not want to be visible on the Graphs tab (eg. http://www.openlinksw.com/schemas/virtrdf#,http://www.w3.org/ns/ldp# and other default graphs of each triple store may includes).
- Image Prefixes: This field must contain any image prefixes that may have image urls as a range in order for the image url to be visible as an image on the Explore Data page.
- Coordinates prefixes: This field must contain any urls that may have coordinates or other geographic data as a range in order for the image url to be visible on maps in the Explore Data page.

Configure Icons by Classes:

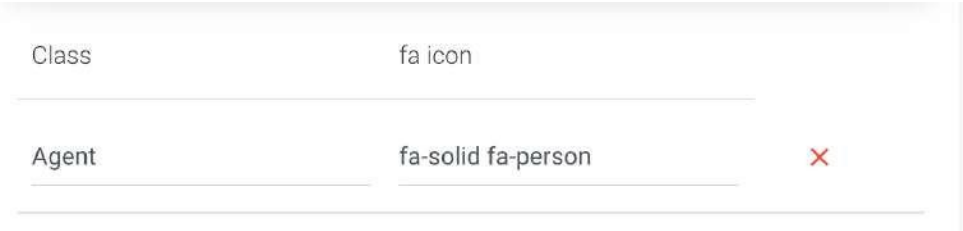
This tab allows the user to define their preferences in order to customize the icons of the classes on the initial sparnatural screen:



?	Accession_to_Throne
🧍	Agent
?	Alliance
?	Amnesty

If a class has been configured with the desired icon, this icon will be displayed on the above screen.

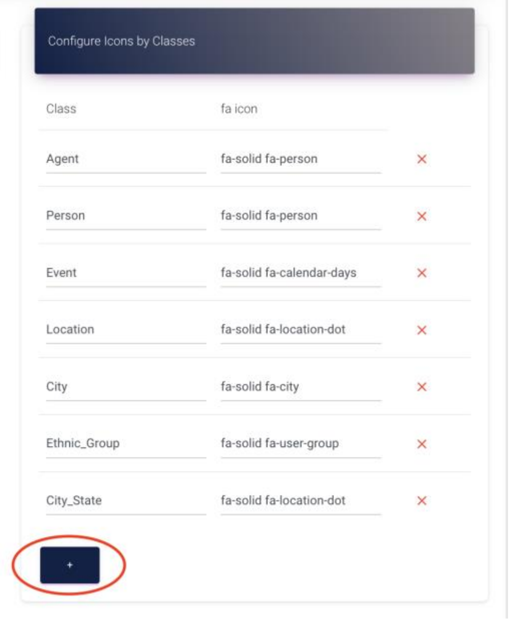
For instance:



Class	fa icon	
Agent	fa-solid fa-person	×

Class Agent has the icon of fa-solid fa-person and this class will be depicted with this 🧍 icon.

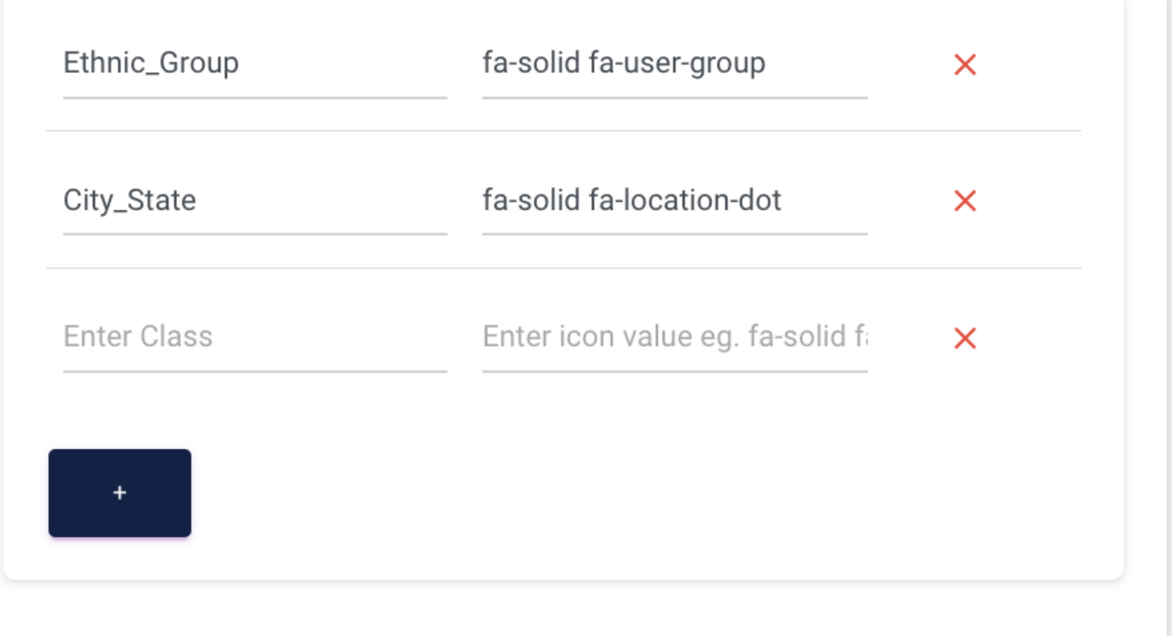
In order to add a new depiction users must click on this button :



Configure Icons by Classes

Class	fa icon	
Agent	fa-solid fa-person	×
Person	fa-solid fa-person	×
Event	fa-solid fa-calendar-days	×
Location	fa-solid fa-location-dot	×
City	fa-solid fa-city	×
Ethnic_Group	fa-solid fa-user-group	×
City_State	fa-solid fa-location-dot	×

And a new row will be created:



Ethnic_Group fa-solid fa-user-group ✕

City_State fa-solid fa-location-dot ✕

Enter Class Enter icon value eg. fa-solid f ✕

There user must enter the class and the desired icon values using the fontawesome icon library.

Contact

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