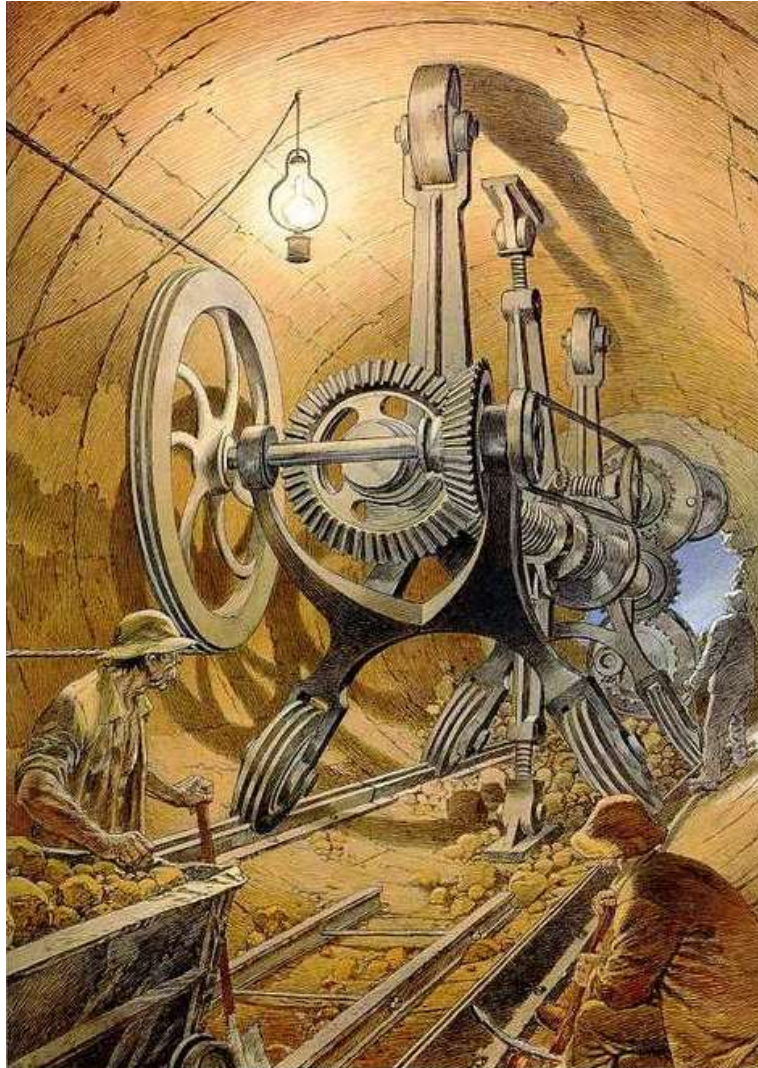


Part 6: Querying RDF Graphs



Ancient Greek Pottery: Kraters

Define the Ontology and the Terminology of Kraters in:

- CmapTools
- Protégé
- Tedi

Query the Ontoterminology of Kraters in SPARQL

Ancient Greek Pottery: Kraters

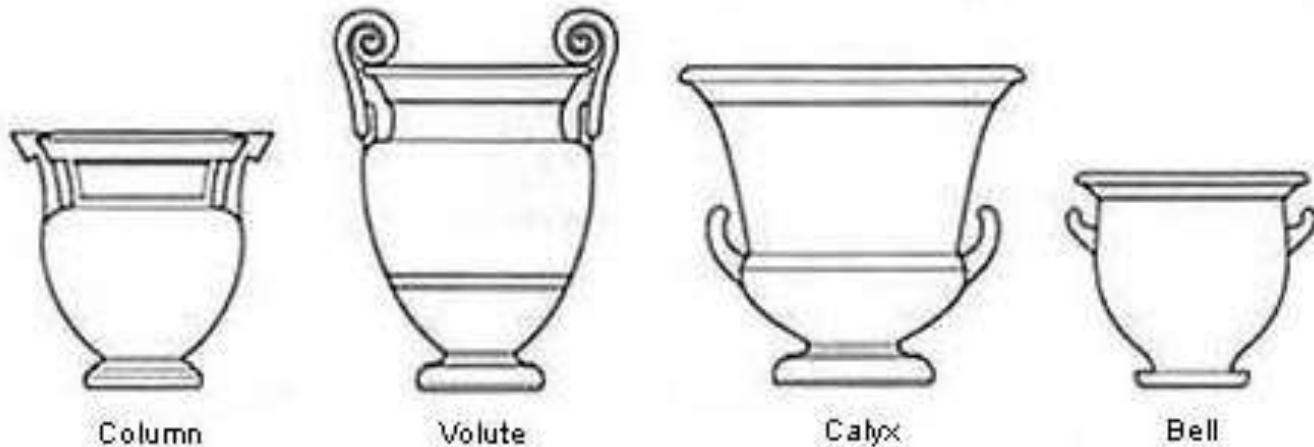


Ancient Greek Pottery: Kraters

CLASSICAL ART RESEARCH CENTRE



<http://www.beazley.ox.ac.uk/tools/pottery/shapes/kraters.htm>



The term 'krater' suggests a mixing-vessel (compare Greek *kerannumi* - to mix), and we know that the wine served at the symposium was mixed with water. On vases decorated with symposium-scenes, a large open container with a foot is often depicted, and the name *krater* is appropriate. Examples can be traced back to the large Geometric examples that were used as grave-markers, and this funerary connection continues to be important. Excavations of burial-sites have shown that they could be used in Greek settlements overseas as containers of ashes, and South Italian, especially Apulian, volute-kraters often carry explicit funerary iconography. In the Athenian repertoire, there are four main types identified today: column-, volute-, calyx- and bell-. The *psykter* is a short-lived shape, used to cool the liquid. It is discussed here because it is often shown being used in *kraters*.

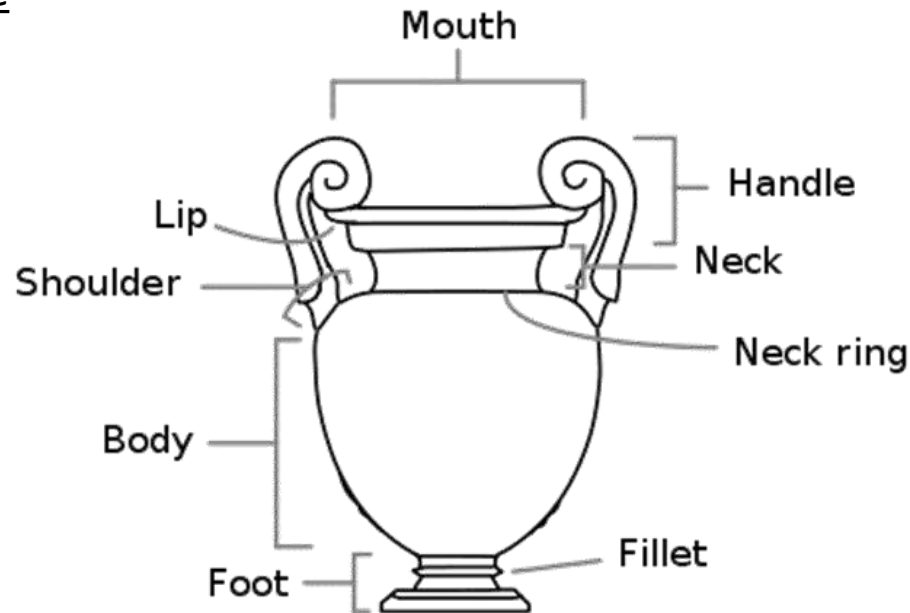
Method

Axes of Analysis

Function

- for storing and transport
- for drinking
- for ritual
- for mixing wine with water
- for ritual

Shape



Method



Common characteristics

- open mouth
- with foot
- with handles

Method

1) Identification of the differences between objects



2) Axes of Analysis :

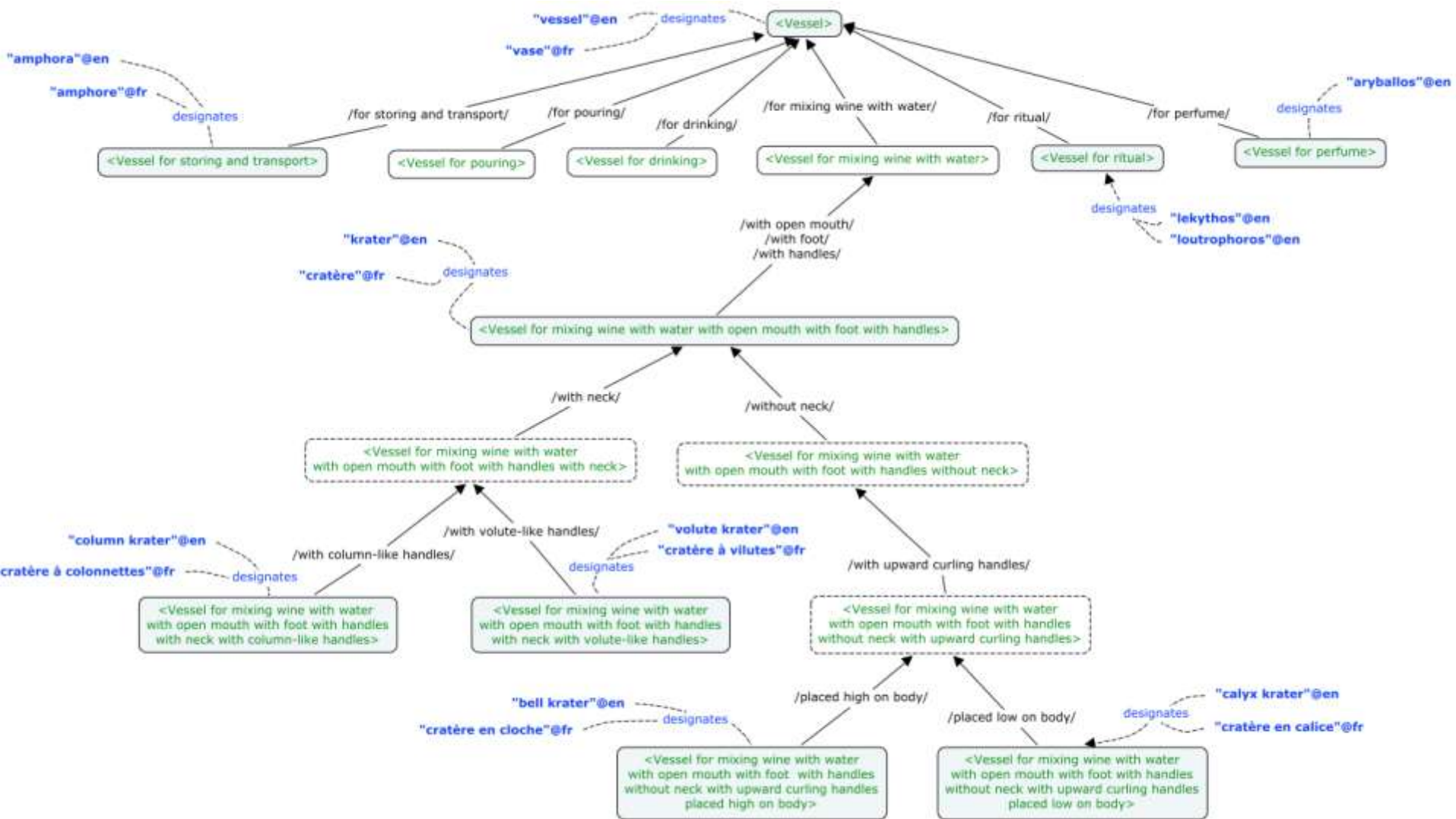
Sets of essential characteristics,
exclusive between them

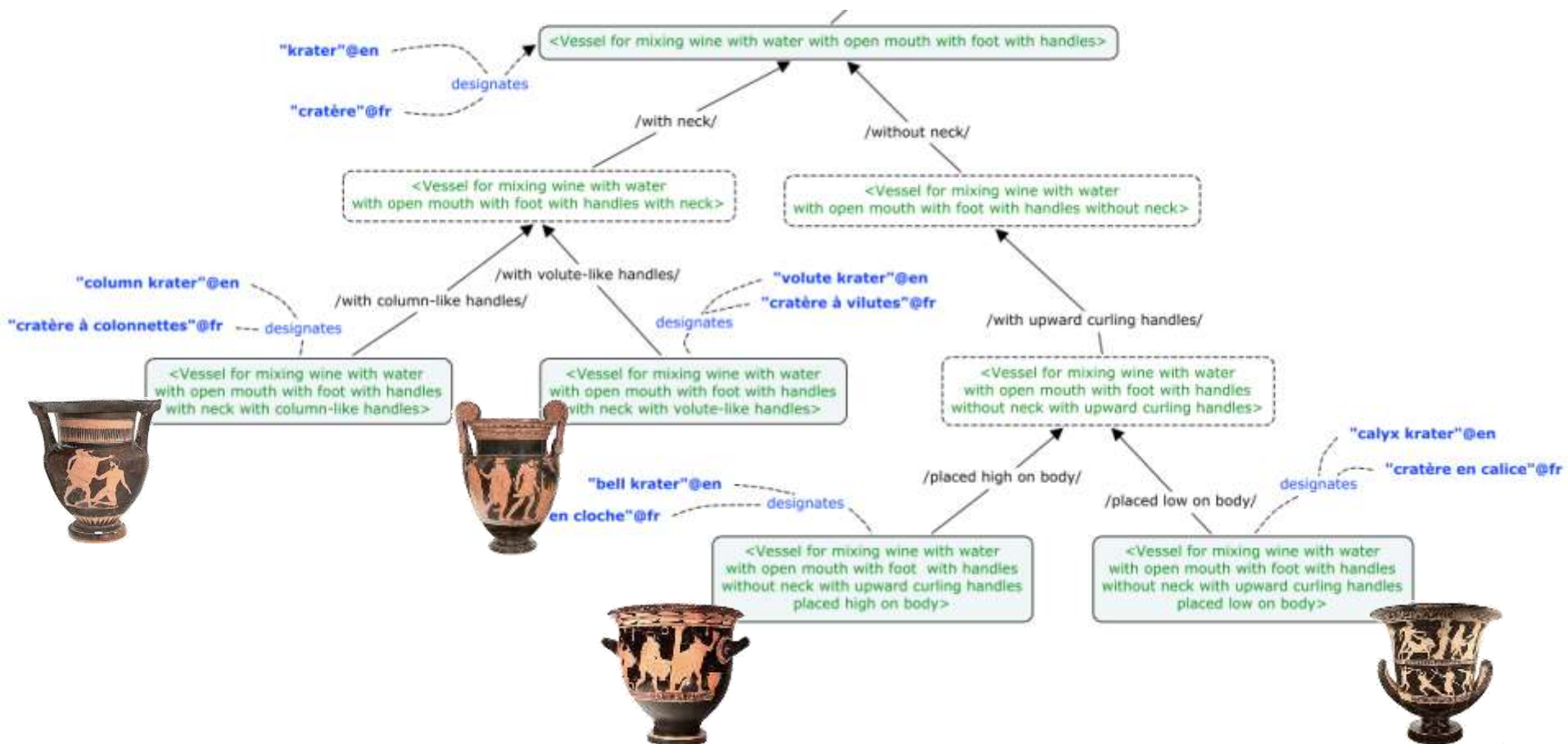


Handles = { /with column handles/ , /with volute handles/ , /with upward curling handles/ }

Neck = { /with neck/ , /without neck/ }

CmapTools





The screenshot displays the Protégé ontology editor interface. The main window title is "Ontoterminology_of_kraters (http://www.condillac.org/ontoterminologies/2017/Ontoterminology_of_kraters)". The breadcrumb path is "Vessel > Vessel_for_mixing_wine_with_water > Vessel_for_mixing_wine_with_water_with_neck_with_column-like_handles". The active ontology is "Ontoterminology_of_kraters".

The left pane shows the "Class hierarchy" for "Vessel_for_mixing_wine_with_water". The hierarchy is as follows:

- owl:Thing
 - for_mixing_wine_with_water
 - for_storing
 - upward_curling_handles_placed_high_on_the_body
 - upward_curling_handles_placed_low_on_the_body
 - Vessel
 - Vessel_for_mixing_wine_with_water**
 - Vessel_for_mixing_wine_with_water_with_neck
 - Vessel_for_mixing_wine_with_water_with_neck
 - Vessel_for_mixing_wine_with_water_without_neck
 - Vessel_for_mixing_wine_with_water_without_neck
 - with_column-like_handles
 - with_neck
 - with_upward_curling_handles
 - with_volute-like_handles
 - without_neck

The right pane shows the "Annotations" for the selected class "Vessel_for_mixing_wine_with_water_with_neck_with_column-like_handles". The annotations are:

- skos:prefLabel [language: fr] cratère à colonnettes
- skos:prefLabel [language: en] column krater
- skos:prefLabel [language: gr] κρατήρας κιονωτός
- skos:definition [language: en] Krater with neck and with column-like handles.

Below the annotations, the "Description" section shows the class name. The "Equivalent To" section is empty. The "SubClass Of" section lists:

- Vessel_for_mixing_wine_with_water
- with_column-like_handles
- with_neck

The "General class axioms" section is empty. The "SubClass Of (Anonymous Ancestor)" section lists:

- origin some xsd:string
- material some xsd:string
- diameter some xsd:string
- date some xsd:string

The status bar at the bottom indicates "No Reasoner set. Select a reasoner from the Reasoner menu" and "Show Inferences" is checked.



Concept Editor

[web help](#)

Terminology

Ontoterminology of kraters



axis of analysis editor

attribute editor

relation editor

user

author

institution

Hierarchical Concept List

[update cpt list](#)

- <Vessel>
 - <Vessel for mixing wine with water>
 - <Vessel for mixing wine with water wit
 - <Vessel for mixing wine with water wit
 - <Vessel for mixing wine with water wit
 - <Vessel for mixing wine with water wit

[new](#) [delete](#) [rename](#) [fast](#) edit cpt

Concept List Nbr of Cpts: 6 Nbr of Objs: 1

- <Vessel for mixing wine with water with neck wil
- <Vessel for mixing wine with water with neck wi
- <Vessel for mixing wine with water without neck
- <Vessel for mixing wine with water without neck
- <Vessel for mixing wine with water>
- <Vessel>

Concept

[links-illustration](#)

International concept name

[object list editor](#)

Generic Concepts (isa)

- inferred ---
- declared ---
- <Vessel for mixing wine with water>

[add](#) [delete](#)

inherited and own differences

- inherited differences ---
- /for mixing wine with water/
- own differences ---
- /with neck/
- /with column-like handles/

[add](#) [delete](#)

inherited and own attributes

- inherited attributes ---
- date
- diameter
- height
- material
- origin

[add](#) [delete](#)

has-part (concepts)

- inherited parts ---
- own parts ---

[add](#) [delete](#)

Relations

- causal
- dependentOf
- equivalentTo
- hasFunction
- madeOf
- relatedTo
- sequential

linked to (concepts)

-

[add](#) [delete](#)

Concept definition in natural language -> generate pattern

Comment

[update cpt txt content](#)

Language

- en column krater
- fr
- ar
- cn
- de
- es
- gr
- it
- nt

[add](#) [delete](#) [edit](#)

Status

[change](#)

[update term text content](#)

Term definition

Source



Term Editor

Term List

Number of Terms: 5

- bell krater
- calyx krater
- column krater
- krater
- volute krater

Terminology

Ontoterminology of kraters



Language: **en**

Last update: 12 mai 2019

user

author

institution

Term

Term definition -> generate pattern definition

Krater without neck, with upward curling handles placed high on the body.

Status

PoS

Gender

Source

Contexts

Notes

1
"The latest of the four krater-types, it first occurs in the early fifth century, and is not found decorated in black-figure. It is named for its bell-like shape, perhaps originating in wood. It has small horizontal

Orthographic variations

Inflected forms

T. Equivalent terms

[fr: cratère en cloche](#)
[gr: κρατήρας κωδωνόσχημος](#)

T. Hypernyms

T. Hyponyms

T. Synonyms

T. Linked terms

Denoted Concept List

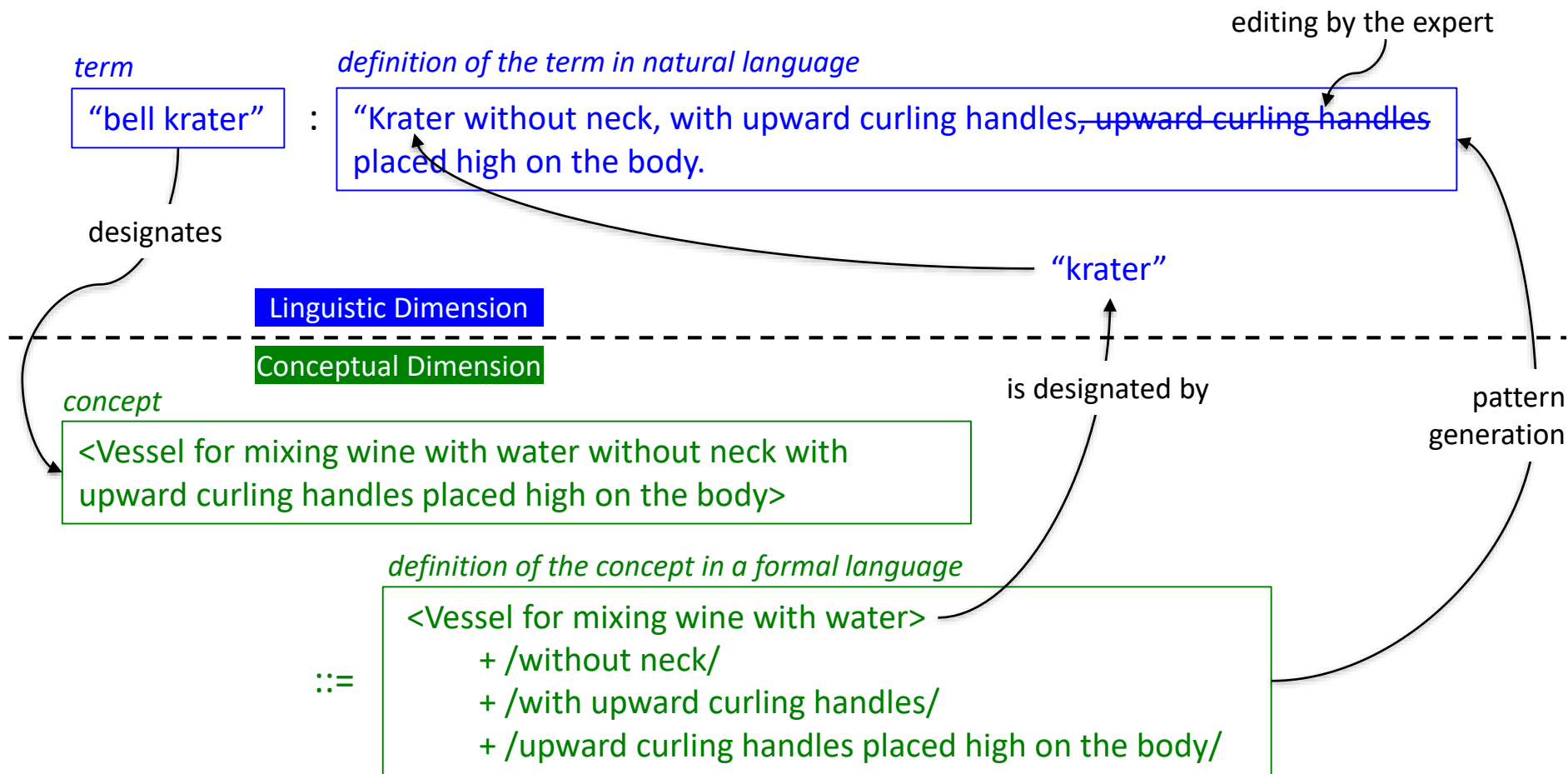
inherited and own differences

--- inherited differences ---
/for mixing wine with water/
--- own differences -----
/without neck/
/with upward curling handles/
/upward curling handles placed high

Concept definition in Natural Language

without neck, with upward curling handles, handles placed high on the body.

Comment



Formal definition in Description Logic

SubClass Of +

- upward_curling_handles_placed_high_on_the_body
- Vessel_for_mixing_wine_with_water
- with_upward_curling_handles
- without_neck

Tedi Onto-Dictionary on "Ontoterminology of kraters" (en)

Date: 29 avril 2019 - Time: 06:51:42 - Version: 1.1 - www.ontoterminology.com/tedi

search:

bell krater
calyx krater
column krater
krater
volute krater

krater

Definition: Large open container with a foot used in ancient Greece for mixing wine with water.

Status: preferred

Context(s):

1) *Hom. Il. 23.741 Πηλείδης δ' αἴψ' ἄλλα τίθει ταχυτήτος ἄεθλα ἀργύρεον κρητήρα τετυγμένον: ἔξ δ' ἄρα μέτρα χάνδανεν, αὐτὰρ κάλλι ἐνίκα πᾶσαν ἐπ' αἴαν πολλόν, ἐπεὶ Σιδόνες πολυδαίδαλοι εὖ ἤσκησαν, Φοίνικες δ' ἄγον ἄνδρες ἐπ' ἡεροειδέα πόντον, 745 στήσαν δ' ἐν λιμένεσσι, Θόαντι δὲ δῶρον ἔδωκαν* Accessible online: <http://www.perseus.tufts.edu/hopper/text?doc=Perseus:abo:tlg,0012,001:23:741&lang=original>

Note(s):

1) *LSJ (Perseus): mixing vessel, esp. bowl, in which wine was mixed with water. Accessible online: <http://www.perseus.tufts.edu/hopper/text?doc=Perseus%3Atext%3A1999.04.0057%3Aentry%3Dkrath%2F>*

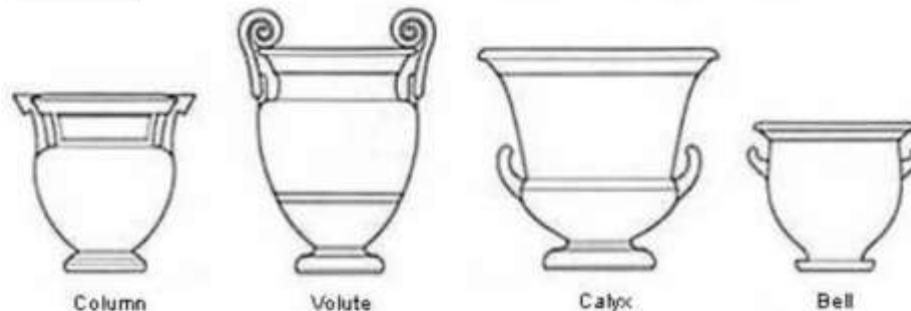
Equivalent(s):

- fr: cratère
- gr: κρατήρας

Concept: <Vessel for mixing wine with water>

Web reference: [Beazley Collection - Classical Art Research Centre - University of Oxford](#)

Illustration: Kraters



Exports

- HTML
- OWL
- JSON
- (SKOS)

The Ontoterminology Process

RDF Export

1



```
<?xml version="1.0" encoding="utf-8"?>
<!-- Ontoterminology of kraters -->
<!-- Author: Maria -->
<!-- Creation date of ontoterminology: April 28, 2019 -->
<!-- Export date: August 23, 2019 time: 4:21:56 PM -->
<!-- Generated by Tedi version: 2.0 - http://christophe-roche.fr/tedi -->

<rdf:RDF xmlns="http://www.ontologia.fr/OTB/Ontoterminologyofkraters#"
  xml:base="http://www.ontologia.fr/OTB/Ontoterminologyofkraters"
  xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#"
  xmlns:owl="http://www.w3.org/2002/07/owl#"
  xmlns:skos="http://www.w3.org/2004/02/skos/core#"
  xmlns:foaf="http://xmlns.com/foaf/0.1/"
  xmlns:dc="http://purl.org/dc/elements/1.1/"
  xmlns:xm1="http://www.w3.org/XML/1998/namespace"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema#"
  xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
  xmlns:vs="http://www.w3.org/2003/06/sw-vocab-status/ns#"
  xmlns:vann="http://purl.org/vocab/vann/"
  >
  <owl:Ontology rdf:about="http://www.ontologia.fr/OTB/Ontoterminologyofkraters">
    <dc:title>Ontoterminology of kraters</dc:title>
    <dc:description></dc:description>
    <dc:issued rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2019-4-28</dc:issued>
    <dc:modified rdf:datatype="http://www.w3.org/2001/XMLSchema#date">2019-7-10</dc:modified>
    <dc:creator>Maria Papadopoulou</dc:creator>
    <dc:publisher>Condillac</dc:publisher>
  </owl:Ontology>

  <!-- Object Properties: -->

  <owl:ObjectProperty rdf:about="#hasPart">
    <owl:inverseOf rdf:resource="#partOf"/>
    <rdfs:domain rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
    <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  </owl:ObjectProperty>

  <owl:ObjectProperty rdf:about="#partOf">
    <rdfs:domain rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
    <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  </owl:ObjectProperty>

  <owl:ObjectProperty rdf:about="#relatedTo">
    <rdfs:domain rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
    <rdfs:range rdf:resource="http://www.w3.org/2002/07/owl#Thing"/>
  </owl:ObjectProperty>
</rdf:RDF>
```

2



3

Protégé





Computer readable form



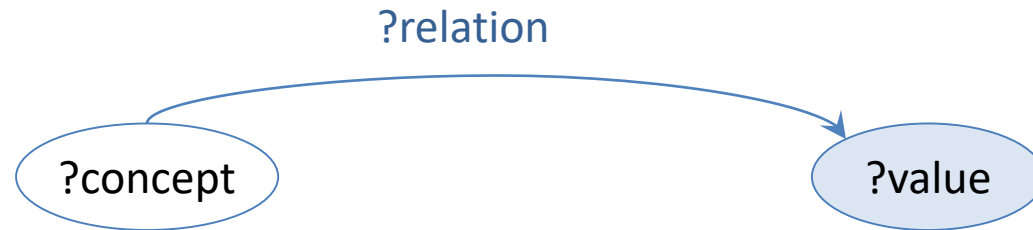
OWL Export

```
<owl:Class rdf:about="#Vessel_for_mixing_wine_with_water_with_neck_with_column-like_handles">
  <skos:prefLabel xml:lang="en">column krater</skos:prefLabel>
  <skos:definition xml:lang="en">Krater with neck and with column-like handles.</skos:definition>
  <skos:note xml:lang="en">"Named for its column-like handles, the column-krater is first known
  from Corinthian examples dated to the late seventh century. It is regularly produced by Athenian
  potters from the first half of the sixth-century until the third quarter of the fifth. It seems
  from graffiti on Athenian red-figure examples that the vessel was referred to as Korinthios or
  Korinthiourges." Classical Art Research Centre, University of Oxford. Accessible online:
  https://www.beazley.ox.ac.uk/tools/pottery/shapes/column.htm</skos:note>
  <skos:prefLabel xml:lang="fr">cratère à colonnettes</skos:prefLabel>
  <skos:prefLabel xml:lang="gr">κρατήρας κιονωτός</skos:prefLabel>
  <rdfs:subClassOf rdf:resource="#Vessel_for_mixing_wine_with_water_with_neck"/>
  <rdfs:subClassOf rdf:resource="#with_column-like_handles"/>
  <rdfs:subClassOf>
    <owl:Restriction>
      <owl:onProperty rdf:resource="hasPart"/>
      <owl:someValuesFrom rdf:resource="#Column-like_handle"/>
    </owl:Restriction>
  </rdfs:subClassOf>
</owl:Class>
```


SPARQL Query

Display the list of all relationships

<http://ontologia.fr/OTB/Krater.owl>



SPARQL Query

Display the list of all relationships

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX otb: <http://www.ontologia.fr/OTB#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
SELECT DISTINCT ?relation
WHERE {
    ?concept ?relation ?value
}
LIMIT 100
```

<https://data.bnf.fr/current/sparql.html>

<http://ontologia.fr/OTB/Kraters.owl>

Editeur SPARQL de data.bnf.fr

Graphe par défaut (IRI)

<http://ontologia.fr/OTB/Kraters.owl>

Requête

```
1 PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
2 PREFIX owl: <http://www.w3.org/2002/07/owl#>
3 PREFIX otb: <http://www.ontologia.fr/OTB#>
4 PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
5 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
6 SELECT DISTINCT ?relation
7 WHERE {
8     ?concept ?relation ?value
9 }
10 LIMIT 100
```

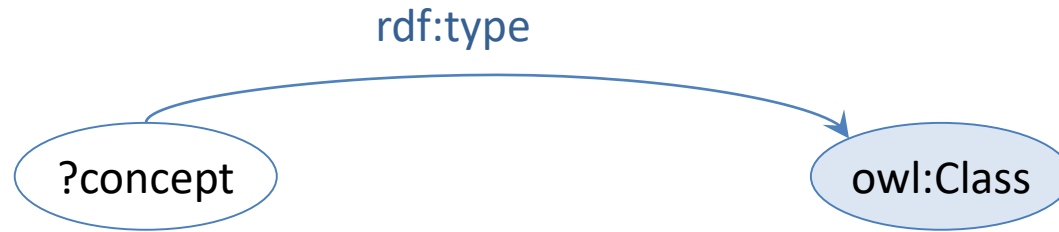
Sponging:

Retrieve all missing remote RDF data that might be useful

| relation |
|---|
| http://www.w3.org/1999/02/22-rdf-syntax-ns#type |
| http://www.w3.org/2002/07/owl#inverseOf |
| http://www.w3.org/2000/01/rdf-schema#domain |
| http://www.w3.org/2000/01/rdf-schema#range |
| http://www.w3.org/2002/07/owl#onProperty |
| http://www.w3.org/2002/07/owl#someValuesFrom |
| http://www.w3.org/2000/01/rdf-schema#seeAlso |
| http://www.w3.org/2002/07/owl#sameAs |
| http://www.w3.org/2000/01/rdf-schema#subClassOf |
| http://www.w3.org/2004/02/skos/core#note |
| http://xmlns.com/foaf/0.1/depiction |
| http://www.w3.org/2004/02/skos/core#prefLabel |
| http://www.w3.org/2004/02/skos/core#exactMatch |
| http://www.w3.org/2004/02/skos/core#related |
| http://www.w3.org/2000/01/rdf-schema#type |
| http://purl.org/dc/elements/1.1/creator |
| http://purl.org/dc/elements/1.1/description |
| http://purl.org/dc/elements/1.1/issued |
| http://purl.org/dc/elements/1.1/modified |
| http://purl.org/dc/elements/1.1/publisher |
| http://purl.org/dc/elements/1.1/title |
| http://www.w3.org/2004/02/skos/core#example |
| http://www.w3.org/2004/02/skos/core#broadMatch |
| http://www.w3.org/2004/02/skos/core#definition |

SPARQL Query

Display the list of all concepts



SPARQL Query

Display the list of all concepts

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX otb: <http://www.ontologia.fr/OTB#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
SELECT DISTINCT ?concept
WHERE {
    ?concept rdf:type owl:Class
}
LIMIT 100
```

<https://data.bnf.fr/current/sparql.html>

<http://ontologia.fr/OTB/Kraters.owl>

Sponging:

Retrieve all missing remote RDF data that might be useful

...

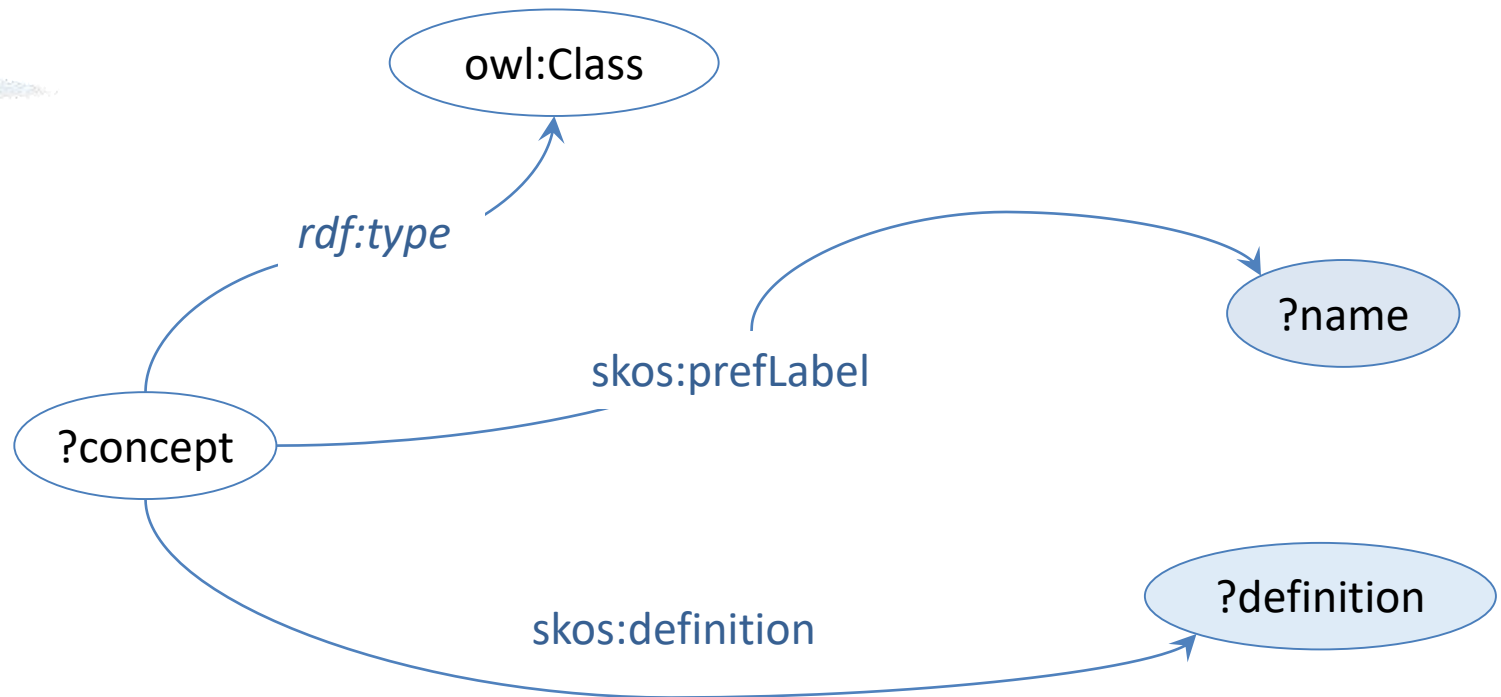
| |
|---|
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Part_volute-like_handle |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Person |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Place |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel_for_mixing_wine_with_water |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel_for_mixing_wine_with_water_with_neck |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel_for_mixing_wine_with_water_with_neck_with_colu |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel_for_mixing_wine_with_water_with_neck_with_volu |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel_for_mixing_wine_with_water_without_neck |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel_for_mixing_wine_with_water_without_neck_with_upward_curling_handles |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#Vessel_for_mixing_wine_with_water_without_neck_with_upward_curling_handles |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#column-like_handle |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#for_drinking |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#for_mixing_wine_with_water |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#for_perfume |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#for_pouring |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#for_ritual |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#for_storing_and_transport |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#material |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#upward_curling_handle |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#upward_curling_handles_placed_high_on_the_body |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#upward_curling_handles_placed_low_on_the_body |
| http://www.ontologia.fr/OTB/Ontoterminologyofkraters#volute-like_handle |

...

Ontoterminology of Ancient Greek Pottery

Display the list of the **terms** (names) in English with their **definition**

<http://ontologia.fr/OTB/Krater.owl>



Ontoterminology of Ancient Greek Pottery

<https://data.bnf.fr/current/sparql.html>

Editeur SPARQL de data.bnf.fr

Graphe par défaut (IRI)

<http://ontologia.fr/OTB/Krater.owl>

Requête

| | |
|---|--|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |

Sponging:

Retrieve all missing remote RDF data that might be useful

<http://ontologia.fr/OTB/Krater.owl>

<https://data.bnf.fr/current/sparql.html>

```
PREFIX rdf: <http://www.w3.org/
PREFIX owl: <http://www.w3.org/
PREFIX otb: <http://www.ontolog
PREFIX rdfs: <http://www.w3.org/
PREFIX skos: <http://www.w3.org/
SELECT ?name ?definition
WHERE {
  ?concept rdf:type owl:Class.
  ?concept skos:prefLabel ?na
  ?concept skos:definition ?de
  FILTER (lang(?name) = 'en')
}
ORDER BY ?name
LIMIT 100
```

Editeur SPARQL de data.bnf.fr

Graphe par défaut (IRI)

<http://ontologia.fr/OTB/Krater.owl>

Requête

```
1 PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
2 PREFIX owl: <http://www.w3.org/2002/07/owl#>
3 PREFIX otb: <http://www.ontologia.fr/OTB#>
4 PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
5 PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
6 SELECT ?name ?definition
7 WHERE {
8   ?concept rdf:type owl:Class.
9   ?concept skos:prefLabel ?name.
10  ?concept skos:definition ?definition.
11  FILTER (lang(?name) = 'en')
12 }
13 ORDER BY ?name
14 LIMIT 100
15
```

Sponging:

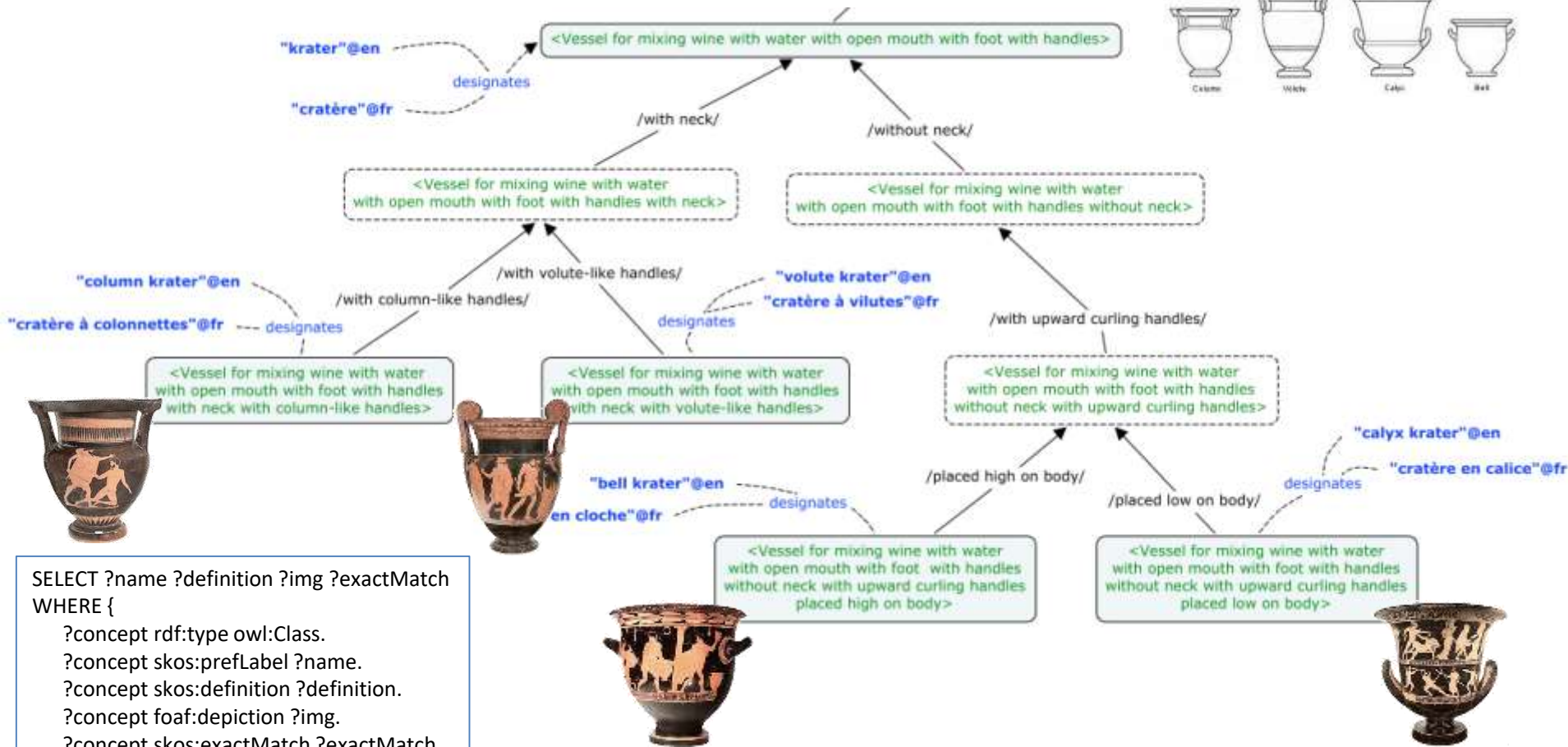
Retrieve all missing remote RDF data that might be useful

Ontoterminology of Ancient Greek Pottery



| name | definition |
|--------------------|---|
| "bell krater"@en | "Krater without neck, with upward curling handles placed high on the body."@en |
| "calyx krater"@en | "Krater without neck, with upward curling handles placed low on the body."@en |
| "column krater"@en | "Krater with neck and with column-like handles."@en |
| "krater"@en | "Large open container with a foot, used in ancient Greece for mixing wine with water."@en |
| "volute krater"@en | "Krater with neck and with volute-like handles."@en |

Ontology of Kraters



```
SELECT ?name ?definition ?img ?exactMatch
WHERE {
  ?concept rdf:type owl:Class.
  ?concept skos:prefLabel ?name.
  ?concept skos:definition ?definition.
  ?concept foaf:depiction ?img.
  ?concept skos:exactMatch ?exactMatch.
  FILTER (lang(?name) = 'en')
}
```

| name | definition | img | exactMatch |
|--------------------|--|---|---|
| "calyx krater" @en | "Krater without neck, with upward curling handles placed low on the body." @en | http://ontologia.fr/Images/GreekVase/Beazley-Calyx-Krater.png | http://kerameikos.org/id/calyx_krater |
| "calyx krater" @en | "Krater without neck, with upward curling handles placed low on the body." @en | http://ontologia.fr/Images/GreekVase/Beazley-Calyx-Krater.png | http://www.wikidata.org/entity/Q15407662 |
| "calyx krater" @en | "Krater without neck, with upward curling handles placed low on the body." @en | http://ontologia.fr/Images/GreekVase/Beazley-Calyx-Krater.png | http://vocab.getty.edu/aat/300198858 |
| "calyx krater" @en | "Krater without neck, with upward curling handles placed low on the body." @en | http://ontologia.fr/Images/GreekVase/Beazley-Calyx-Krater.png | http://collection.britishmuseum.org/id/thesauri/x5742 |
| "krater" @en | "Vase pour mélanger le vin avec de l'eau." @fr | http://ontologia.fr/Images/GreekVase/Beazley-Krater.png | http://collection.britishmuseum.org/id/thesauri/x7580 |

Terminology of Kraters

```

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX otb: <http://www.ontologia.fr/OTB#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
SELECT DISTINCT ?name ?note
WHERE {
    ?x skos:prefLabel ?name.
    ?x skos:note ?note.
    FILTER (lang(?name)='en').
    FILTER (lang(?note)='en')
}
ORDER BY ?name
LIMIT 100

```

<https://data.bnf.fr/current/sparql.html>

<http://ontologia.fr/OTB/Kraters.owl>

| name | note |
|--------------------|---|
| "bell krater"@en | ""The latest of the four krater-types, it first occurs in the early fifth century, and is not found decorated in black-figure. It is named for its bell-like shape, perhaps originating in wood. It has small horizontal upturned handles just over halfway up the body. Some do not have a foot, and earlier examples may have lugs for handles. Over the course of the fifth and fourth centuries, the shape becomes slimmer." Classical Art Research Centre, University of Oxford. Accessible online: @en |
| "calyx krater"@en | ""The calyx-krater is one of the largest Attic vases, and is reminiscent of a bell-shaped flower. It is named for its convex lower body that has the configuration of the calyx of a flower, while the flaring upper body is suggestive of the bell-shaped corolla. It has large, robust, upturned handles situated opposite one another on the cul. The calyx-krater appears in Attic black-figure after the middle of the 6th c. BCE and is a popular shape until the end of red-figure." @en |
| "calyx krater"@en | ""The handles of the calyx-krater are placed low down on the body, at what is termed the cul. Their upward curling form lends the shape an appearance reminiscent of the calyx of a flower, hence the name. The earliest known example was possibly made by Exekias in the third quarter of the sixth century. It continues to be produced, mainly in red-figure, becoming more elongated over the course of the fifth and fourth centuries." Classical Art Research Centre, University of Oxford. Accessible online: @en |
| "column krater"@en | ""Named for its column-like handles, the column-krater is first known from Corinthian examples dated to the late seventh century. It is regularly produced by Athenian potters from the first half of the sixth-century until the third quarter of the fifth. It seems from graffiti on Athenian red-figure examples that the vessel was referred to as Korinthios or Korinthiourges." Classical Art Research Centre, University of Oxford. Accessible online: @en |
| "krater"@en | "LSJ (Perseus): mixing vessel, esp. bowl, in which wine was mixed with water. Accessible online: @en |
| "volute krater"@en | ""The volute-krater is named after its handles. The François Vase is a famous and early example, but the typical Athenian form occurs only later in the sixth century, with the handles tightly curled so that they look like the volutes on Ionic columns. The shape is also found in metal. Over the course of the fifth and fourth centuries, examples become slimmer, and Apulian volute-kraters from South Italy are particularly elaborate." Classical Art Research Centre, University of Oxford. Accessible online: @en |

Kraters (cultural objects)



```

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX otb: <http://www.ontologia.fr/OTB#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX skos: <http://www.w3.org/2004/02/skos/core#>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
SELECT ?name ?img
WHERE {
    ?concept rdf:type owl:NamedIndividual.
    ?concept skos:prefLabel ?name.
    ?concept foaf:depiction ?img.
}
ORDER BY ?name
LIMIT 100
    
```

<https://data.bnf.fr/current/sparql.html>

<http://ontologia.fr/OTB/Kraters.owl>

| name | img |
|-------------------------------------|---|
| "Beazley-12595" | http://ontologia.fr/Images/GreekVase/Beazley-12595.png |
| "Beazley-16377" | http://ontologia.fr/Images/GreekVase/Beazley-16377.png |
| "Beazley-214878" | http://ontologia.fr/Images/GreekVase/Beazley-214878.png |
| "Beazley-215332" | http://ontologia.fr/Images/GreekVase/Beazley-215332.png |
| "Beazley-215332" | http://ontologia.fr/Images/GreekVase/Beazley-215332.png |
| "Beazley-215424" | http://ontologia.fr/Images/GreekVase/Beazley-215424.png |
| "Beazley-217511" | http://ontologia.fr/Images/GreekVase/Beazley-217511.png |
| "Beazley-217564" | http://ontologia.fr/Images/GreekVase/Beazley-217564.png |
| "Beazley-217927" | http://ontologia.fr/Images/GreekVase/Beazley-217927.png |
| "Beazley-218043" | http://ontologia.fr/Images/GreekVase/Beazley-218043.png |
| "Beazley-218046" | http://ontologia.fr/Images/GreekVase/Beazley-218046.png |
| "Beazley-218059" | http://ontologia.fr/Images/GreekVase/Beazley-218059.png |
| "Beazley-218065" | http://ontologia.fr/Images/GreekVase/Beazley-218065.png |
| "Beazley-218073" | http://ontologia.fr/Images/GreekVase/Beazley-218073.png |
| "Beazley-218085" | http://ontologia.fr/Images/GreekVase/Beazley-218085.png |
| "Beazley-218101" | http://ontologia.fr/Images/GreekVase/Beazley-218101.png |
| "Beazley-218103" | http://ontologia.fr/Images/GreekVase/Beazley-218103.png |
| "Beazley-218130" | http://ontologia.fr/Images/GreekVase/Beazley-218130.png |
| "Beazley-218131" | http://ontologia.fr/Images/GreekVase/Beazley-218131.png |
| "Beazley-218153" | http://ontologia.fr/Images/GreekVase/Beazley-218153.png |
| "Beazley-218337" | http://ontologia.fr/Images/GreekVase/Beazley-218337.png |
| "Beazley-46072" | http://ontologia.fr/Images/GreekVase/Beazley-46072.png |
| "Beazley-5556" | http://ontologia.fr/Images/GreekVase/Beazley-5556.png |
| "François vase" | https://upload.wikimedia.org/wikipedia/commons/1/15/Museo archeologico di Firenze%2C Vaso Fan %C3%A7ois 2-2008-11-23.JPG |
| "place-35.2198443917,24.9957699715" | https://pleiades.stoa.org/places/589748 |
| "place-38.0281126064,22.8528202479" | https://pleiades.stoa.org/places/570288 |

ΠΡΟΣΩΠΑ

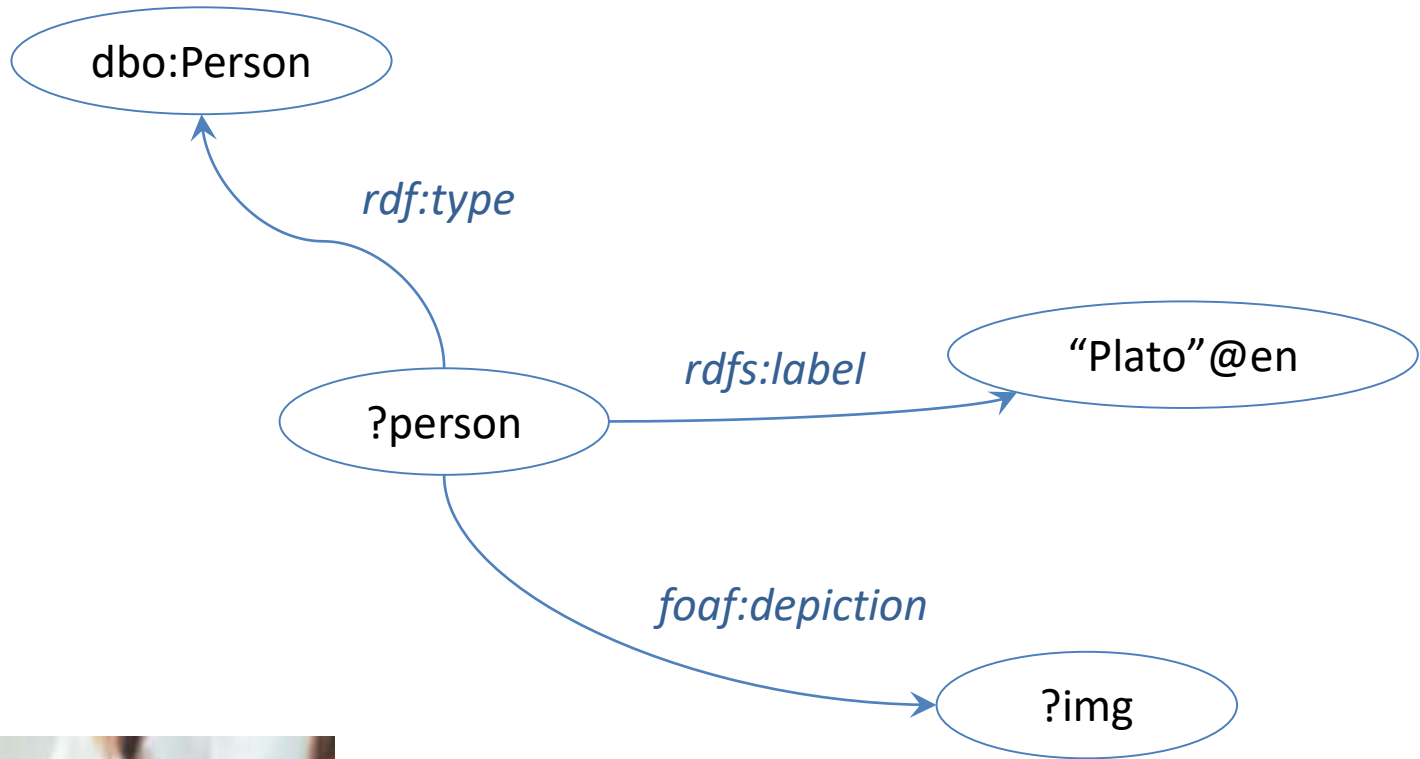


<https://dbpedia.org/sparql>



DBpedia Query

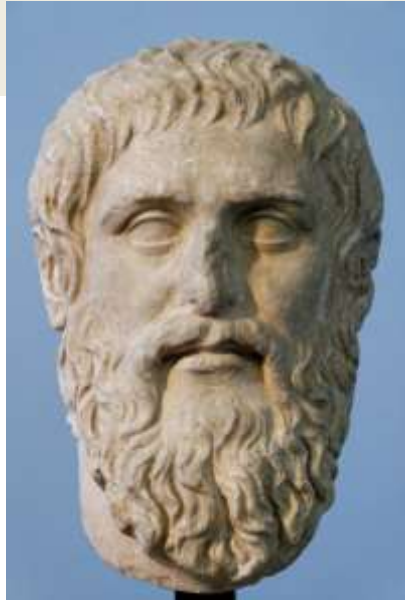
Βρες απεικόνιση του Πλάτωνα



DBpedia Query

https://dbpedia.org

```
SELECT distinct ?img
WHERE {
    ?person rdf:type dbo:Person.
    ?person rdfs:label "Plato"@en.
    ?person foaf:depiction ?img.
}
limit 100
```



Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

http://dbpedia.org

Query Text

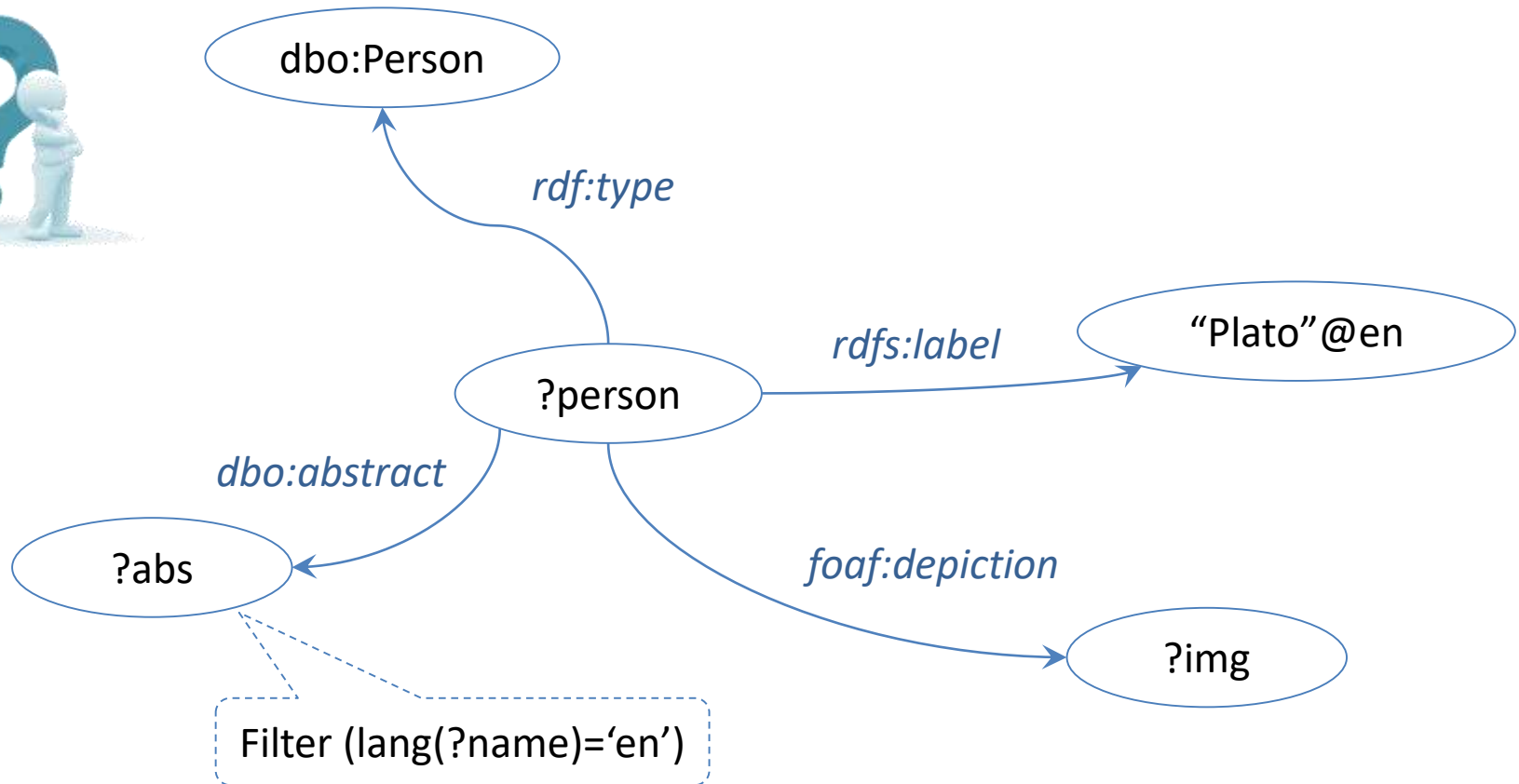
```
SELECT distinct ?img
WHERE {
    ?person rdf:type dbo:Person.
    ?person rdfs:label "Plato"@en.
    ?person foaf:depiction ?img.
}
limit 100
```

img

http://commons.wikimedia.org/wiki/Special:FilePath/Plato_Silanion_Musei_Capitolini_MC1377.jpg



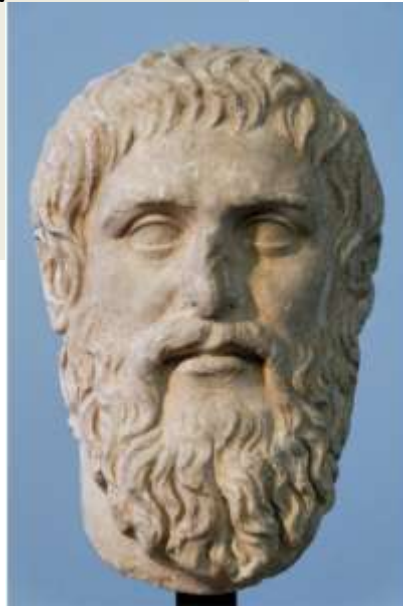
Βρες απεικόνιση και συνοπτικό κείμενο
για τον Πλάτωνα



DBpedia Query

<https://dbpedia.org/sparql>

```
SELECT distinct ?img ?abs
WHERE {
?person rdf:type dbo:Person.
?person rdfs:label "Plato"@en.
?person foaf:depiction ?img.
?person dbo:abstract ?abs.
FILTER (lang(?abs)='fr')
}
limit 100
```



img

http://commons.wikimedia.org/wiki/Special:FilePath/Plato_Silanion_Musei_Capitolini_MC1377.jpg

Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

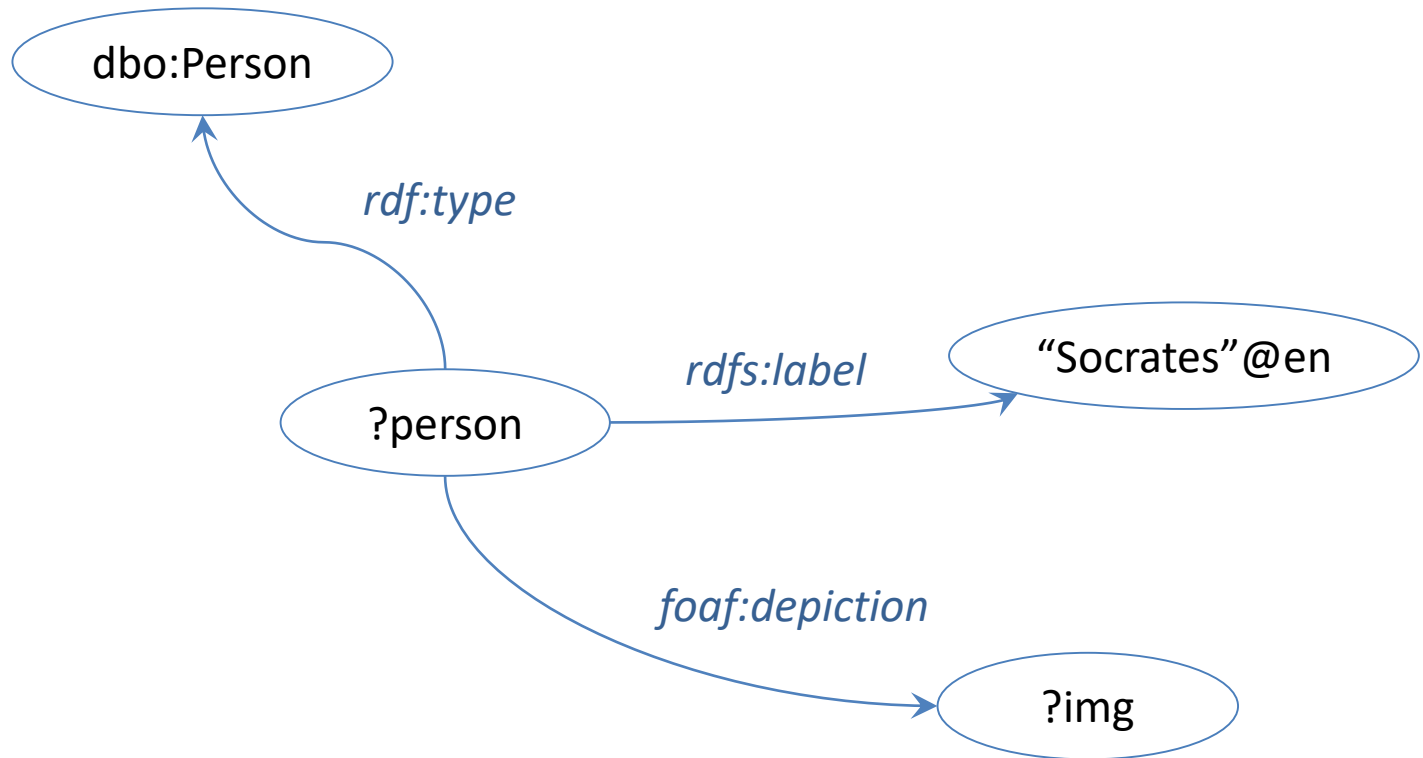
<http://dbpedia.org>

Query Text

```
SELECT distinct ?img ?abs
WHERE {
?person rdf:type dbo:Person.
?person rdfs:label "Plato"@en.
?person foaf:depiction ?img.
?person dbo:abstract ?abs.
FILTER (lang(?abs)='fr')
}
limit 100
```



Βρες απεικόνιση του Σωκράτη



DBpedia Query

<http://dbpedia.org/sparql>

Default Data Set Name (Graph IRI)

<http://dbpedia.org>

```
SELECT distinct ?img
```

```
WHERE {
```

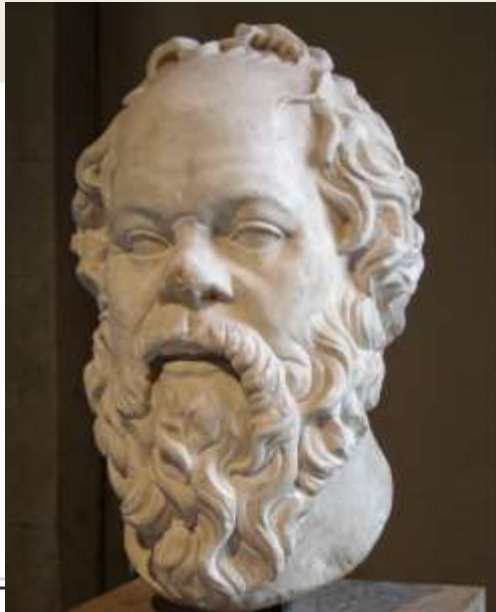
```
    ?person rdf:type foaf:Person.
```

```
    ?person rdfs:label "Socrates"@en.
```

```
    ?person foaf:depiction ?img.
```

```
}
```

```
limit 100
```



img

http://commons.wikimedia.org/wiki/Special:FilePath/Socrates_Louvre.jpg

Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

<http://dbpedia.org>

Query Text

```
SELECT distinct ?img
```

```
WHERE {
```

```
    ?person rdf:type foaf:Person.
```

```
    ?person rdfs:label "Socrates"@en.
```

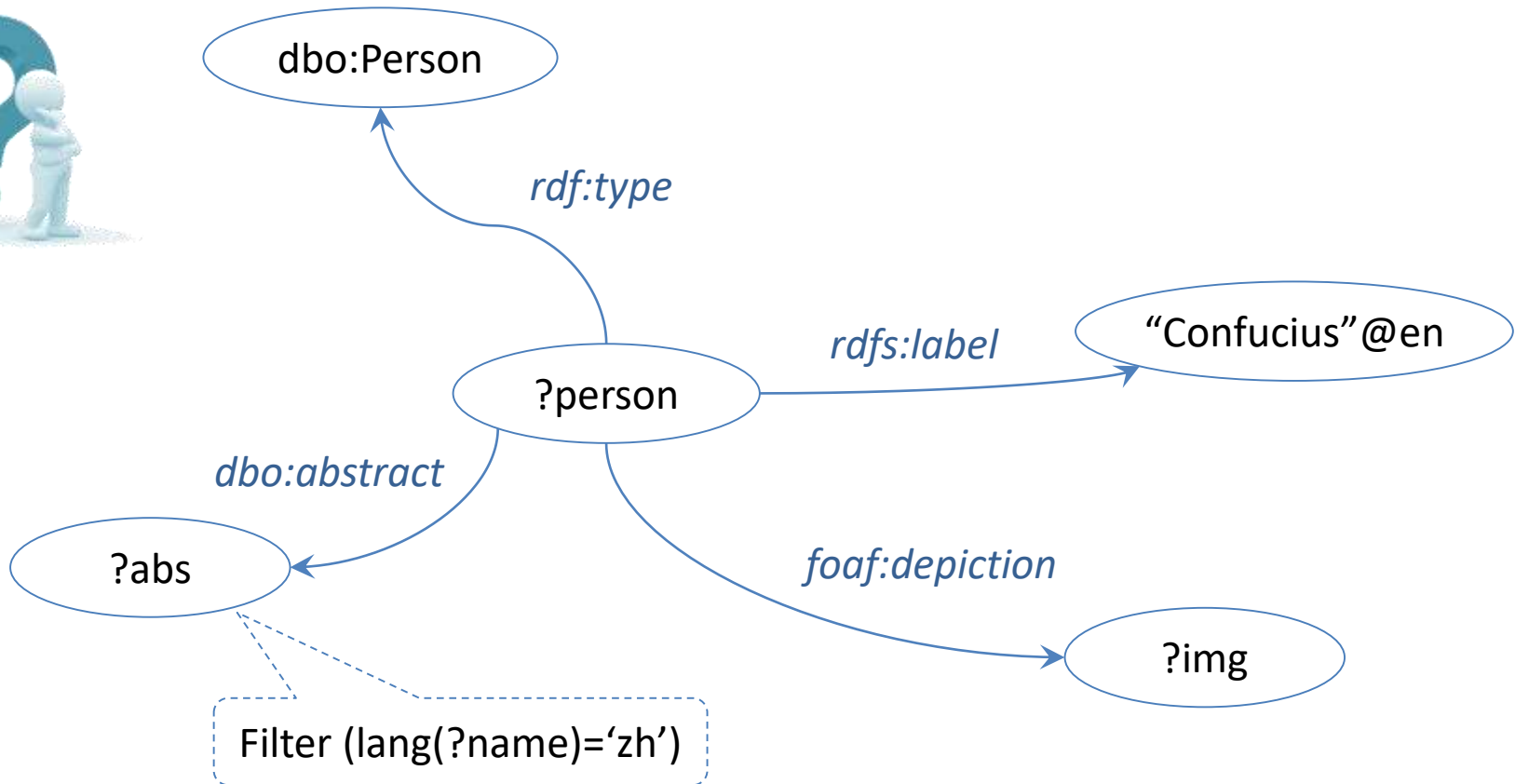
```
    ?person foaf:depiction ?img.
```

```
}
```

```
limit 100
```



Βρες απεικόνιση και συνοπτικό κείμενο
για τον Κομφούκιο



DBpedia Query

<https://dbpedia.org/sparql>

```
SELECT distinct ?img ?abs
WHERE {
?person rdf:type dbo:Person.
?person rdfs:label "Confucius"@en.
?person foaf:depiction ?img.
?person dbo:abstract ?abs.
FILTER (lang(?abs)='zh')
}
limit 100
```

Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

<http://dbpedia.org>

Query Text

```
SELECT distinct ?img ?abs
WHERE {
?person rdf:type dbo:Person.
?person rdfs:label "Confucius"@en.
?person foaf:depiction ?img.
?person dbo:abstract ?abs.
FILTER (lang(?abs)='zh')
}
limit 100
```

img

http://commons.wikimedia.org/wiki/Special:FilePath/Confucius_Tang_Dynasty.jpg

"孔丘（約前551年－約前479年），子姓，孔氏，名丘，字仲尼，後代敬稱孔子或孔夫子。生

Ερώτημα Sparql

Κοραΐς

PREFIX foaf: <http://xmlns.com/foaf/0.1/>

select ?z

where {?x rdf:type foaf:Person.

?x foaf:name ?y.

?x foaf:depiction ?z.

Filter regex(?y, "Adamantios").

Filter regex(?y, "Coray")}

LIMIT 100

| z |
|---|
| https://gallica.bnf.fr/ark:/12148/bpt6k62201188.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k6410222q.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k1053977.thumbnail |
| http://commons.wikimedia.org/wiki/Special:FilePath/Adamantios_Korais.jpg |
| https://gallica.bnf.fr/ark:/12148/bpt6k6361279z.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k9659638z.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k6363078g.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k3045476r.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k9762604h.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k63448535.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k9633241n.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k6363533m.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k3075957z.thumbnail |
| http://commons.wikimedia.org/wiki/Special:FilePath/Adamantios%20Korais.jpg |
| https://gallica.bnf.fr/ark:/12148/bpt6k1049432d.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k6352313k.thumbnail |
| http://commons.wikimedia.org/wiki/Special:FilePath/Adamantios_Korais.jpg?width=300 |
| https://gallica.bnf.fr/ark:/12148/bpt6k6341029t.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k6468533d.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k1511158h.thumbnail |
| https://gallica.bnf.fr/ark:/12148/bpt6k63613050.thumbnail |

Graphe par défaut (IRI)

Requête

```

1 PREFIX foaf: <http://xmlns.com/foaf/0.1/>
2 select ?z
3 where {?x rdf:type foaf:Person.
4         ?x foaf:name ?y.
5         ?x foaf:depiction ?z.
6         Filter regex( ?y, "Adamantios").
7         Filter regex( ?y, "Coray")}
8 LIMIT 100
9

```



ΠΟΛΕΙΣ



<https://dbpedia.org/sparql>



DBpedia Query



```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "London"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

```
SELECT distinct ?img
WHERE {
    ?city rdf:type dbo:Settlement.
    ?city rdfs:label "London"@en.
    ?city foaf:depiction ?img
}
```

Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

http://dbpedia.org

Query Text

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>

SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "London"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

img

http://commons.wikimedia.org/wiki/Special:FilePath/London_Montage_L.jpg

DBpedia Query



```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Thessaloniki"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

```
SELECT distinct ?img
WHERE {
    ?city rdf:type dbo:Settlement.
    ?city rdfs:label "Thessaloniki"@en.
    ?city foaf:depiction ?img
}
```

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Thessaloniki"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

img

http://commons.wikimedia.org/wiki/Special:FilePath/Salonica_White_Tower.jpg



ΛΕΥΚΩΣΙΑ



```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Nicosia"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

```
SELECT distinct ?img
WHERE {
    ?city rdf:type dbo:Settlement.
    ?city rdfs:label "Nicosia"@en.
    ?city foaf:depiction ?img
}
```

Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

<http://dbpedia.org>

Query Text

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>

SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Nicosia"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

img

http://commons.wikimedia.org/wiki/Special:FilePath/Nicosia_Collage.png



CRETE

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Crete"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

```
SELECT distinct ?img
WHERE {
    ?city rdf:type dbo:Settlement.
    ?city rdfs:label "Crete"@en.
    ?city foaf:depiction ?img
}
```

Virtuoso SPARQL Query Editor

Default Data Set Name (Graph IRI)

Query Text

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>

SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Crete"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

img

http://commons.wikimedia.org/wiki/Special:FilePath/Island_of_Crete,_Greece.JPG



ANNECY, SAVOIE

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>
```

```
SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Annecy"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

```
SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Annecy"@en.
    ?capital foaf:depiction ?img
}
```



The screenshot shows a web browser window with the address bar containing `https://dbpedia.org/sparql`. Below the address bar, the page title is "Query Text". The main content area displays the following SPARQL query:

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX dbo: <http://dbpedia.org/ontology/>
PREFIX dbr: <http://dbpedia.org/resource/>
PREFIX foaf: <http://xmlns.com/foaf/0.1/>

SELECT distinct ?img
WHERE {
    ?country dbo:capital ?capital.
    ?capital rdfs:label "Annecy"@en.
    ?capital foaf:depiction ?img
}
limit 10
```

img

http://commons.wikimedia.org/wiki/Special:FilePath/Annecy_vue_du_mont_Veyrier.jpg

THE END