

Getty Vocabularies as LOD

PROCESS DISCOVERY AND EVOLUTION

GREGG GARCIA

J PAUL GETTY TRUST

Basics of Linked Data

- Universal Resource Identifier (URI) – “an ASCII string used to identify things on the Semantic Web” (<http://www.w3.org/wiki/URI>)
 - <http://vocab.getty.edu/aat/300198841>
 - <http://vocab.getty.edu/tgn/1000193>
- URIs are linked to each other through triples composed of subject-predicate-object relationships
 - `<http://vocab.getty.edu/aat/300198841> <http://www.w3.org/2008/05/skos-xl#prefLabel> <http://vocab.getty.edu/aat/term/1000198841-en> .`
 - `<http://vocab.getty.edu/aat/300198841> <http://www.w3.org/2004/02/skos/core#prefLabel> "rhyta"@en .`
- Predicates describing the nature of the link are defined in ontologies
 - <http://www.w3.org/2004/02/skos/core#>
 - <http://www.w3.org/ns/prov#>
 - <http://purl.org/dc/elements/1.1/>
- Data is delivered to a requesting agent through a triple serialization using HTTP
RDF/XML, Notation-3 (N3), Turtle, N-Triples, RDFa, and RDF/JSON

Where to start the implementation?

- Using the mapping developed by Marcia Zeng, we wanted to see what the Getty AAT looked like as LOD
- D2RQ provided a simple platform for taking our existing RDBMS tables and serving them as URIs
- Attach property definitions to exiting database fields

AAT Subject Record in D2RQ (1st try)

SUBJECT #300198841

Resource URI: <http://localhost:2020/resource/AAT/Subject/300198841>

[Home](#) | [All Subject](#)

Property	Value
skosxl:altLabel	escanciad
skosxl:altLabel	lai t'an ch
skosxl:altLabel	lai tan jiu
skosxl:altLabel	lái tǎn jiǔ
skosxl:altLabel	rhea
skosxl:altLabel	ritón
skosxl:altLabel	ritons
skosxl:altLabel	rhyton
skosxl:altLabel	rhytons
skosxl:altLabel	rhūtón
skosxl:altLabel	riton
skosxl:altLabel	ritons
skosxl:altLabel	ritón
skosxl:altLabel	ritóns
skosxl:altLabel	ryton
skosxl:altLabel	rytons
skosxl:altLabel	ῥυτόν
skosxl:altLabel	莱坦酒杯
skosxl:altLabel	角杯
skosxl:altLabel	角状杯

gr:facetCode V.TQ

is gr:historicFlagCurrent of <<http://localhost:2020/resource/AAT/Subject/300194567>>

is gr:historicFlagCurrent of <<http://localhost:2020/resource/AAT/Subject/300198333>>

is gr:historicFlagCurrent of <<http://localhost:2020/resource/AAT/Subject/300198865>>

gr:historicFlagCurrent <<http://localhost:2020/resource/AAT/Subject/300265000>>

rdfls:label SUBJECT #300198841

vessels from Ancient Greece, eastern Europe, or the Middle East that have a closed form with two openings, one at the top for filling and one at so that liquid could stream out. They are often in the shape of a horn or an head, and were typically used as a drinking cup or for pouring wine into

skos:related	< http://localhost:2020/resource/AAT/Subject/300043229 >
skos:related	< http://localhost:2020/resource/AAT/Subject/300197140 >
skos:related	< http://localhost:2020/resource/AAT/Subject/300197148 >
dct:source	< http://localhost:2020/resource/AAT/Source/2000030301 >
dct:source	< http://localhost:2020/resource/AAT/Source/2000051089 >
dct:source	< http://localhost:2020/resource/AAT/Source/2000052378 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/DescriptiveNote/120596 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/DescriptiveNote/34904 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/DescriptiveNote/77124 >

skosxl:prefLabel	rhyta
gr:recordType	Concept
is skos:related of	< http://localhost:2020/resource/AAT/Subject/300043229 >
is skos:related of	< http://localhost:2020/resource/AAT/Subject/300197140 >
is skos:related of	< http://localhost:2020/resource/AAT/Subject/300197148 >
skos:related	< http://localhost:2020/resource/AAT/Subject/300043229 >
skos:related	< http://localhost:2020/resource/AAT/Subject/300197140 >
skos:related	< http://localhost:2020/resource/AAT/Subject/300197148 >
skos:related	< http://localhost:2020/resource/AAT/Subject/300197148 >
dct:source	< http://localhost:2020/resource/AAT/Source/2000030301 >
dct:source	< http://localhost:2020/resource/AAT/Source/2000051089 >
dct:source	< http://localhost:2020/resource/AAT/Source/2000052378 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/DescriptiveNote/120596 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/DescriptiveNote/34904 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/DescriptiveNote/77124 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/DescriptiveNote/83378 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/Term/1000198841/70051 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/Term/1000198841/70411 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/Term/1000198841/70641 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/Term/1000272716/70051 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/Term/1000272717/70051 >
is gr:subjectId of	< http://localhost:2020/resource/AAT/Term/1000272718/70051 >

The server is configured to display only a limited number of values (limit per property bridge: 50).

Metadata

<<http://localhost:2020/data/AAT/Subject/300198841>>

dc:date 2014-08-07T22:18:56.13Z

prv:containedBy <<http://localhost:2020/dataset>>

void:inDataset <<http://localhost:2020/dataset>>

rdftype prv:DataItem

rdftype foaf:Document

ID: 300198841

rhyta (drinking vessels, <vessels for serving and consuming food>, ... Furni Name))

Note: Refers to vessels from Ancient Greece, eastern Europe, or the Middle East with two openings, one at the top for filling and one at the base so that liquid could stream out of a horn or an animal's head, and were typically used as a drinking cup or another vessel. Drinking was done by holding the rhyton above the drinker's head with liquid in the mouth.

Terms:

- rhyta (preferred,C,U,I,C,English-P,D,U, (Greek (transliterated)-P,D,U,PN) (Spanish,AD,U,SN)
rhyton (C,U,English,AD,U,SN) (Greek (transliterated),AD,U,SN) (Spanish,AD,U,SN)
rhythons (C,U,English,UF,U,N) (French-P,D,U,PN) (Spanish-P,D,U,PN)
rhea (vessels) (C,U,English,UF,U,N)
rheons (C,U,English,UF,U,N)
rheon (C,U,English,UF,U,N)
rhutón (C,U,Ancient Greek,UF,U,U)
rhútón (C,U,Ancient Greek (transliterated),UF,U,U)
rytons (C,U,Dutch-P,D,U,U)
ryton (C,U,Dutch,AD,U,U)
ritons (C,U,French,UF,U,N)
riton (C,U,French,UF,U,N)
ritóns (C,U,Spanish,UF,U,N)
ritón (C,U,Spanish,UF,U,SN)
escanciadora (C,U,Spanish,UF,U,SN)

HTML



Facet/Hierarchy Code: V.TQ

Hierarchical Position:

- Objects Facet
... Furnishings and Equipment (Hierarchy Name) (G)
... Containers (Hierarchy Name) (G)
... containers (receptacles) (G)
... <containers by function or context> (G)
... <culinary containers> (G)
... <containers for serving and consuming food> (G)
... <vessels for serving and consuming food> (G)
... drinking vessels (G)
... rhyta (G)

Additional Parents:

- Objects Facet
... Furnishings and Equipment (Hierarchy Name) (G)
... Containers (Hierarchy Name) (G)
... containers (receptacles) (G)
... <containers by function or context> (G)
... ceremonial containers (G)
... ceremonial vessels (G)
... rhyta (G)

- Objects Facet
... Furnishings and Equipment (Hierarchy Name) (G)
... Containers (Hierarchy Name) (G)
... containers (receptacles) (G)
... <containers by form> (G)
... vessels (containers) (G)
... vases (G)
... plastic vases (ancient vessels) (G)
... rhyta (G)

Additional Notes:

Dutch Vaten uit de Griekse oudheid in de vorm van een dierenkop, werf of om wijn in een ander vat te gieten.
Spanish Refiérase a vasijas de la Antigua Grecia, Europa del Este, o del son cerradas pero con dos aberturas, una en el extremo superior para poder para que el líquido pudiera salir. A menudo tienen la forma de un cuerno o t lo común usadas como copas para beber o para vaciar vino en otras vasijas

Related concepts:

- distinguished from ... drinking horns (drinking vessels, <vessels for serving and consuming Equipment (Hierarchy Name)) [300043229]
distinguished from ... stirrup cups (drinking vessels, <vessels for serving and consuming Equipment (Hierarchy Name)) [300197140]
distinguished from ... sturzbechers (beakers (drinking vessels), drinking vessels, ... Furni Name)) [300197148]

```
<?xml version="1.0" encoding="utf-8" ?>
- <Vocabulary xmlns:xsi="http://www.w3.org/2001/XMLSchema-inst
xsi:noNamespaceSchemaLocation="http://vocabsservices.getty.edu
- <Subject Subject_ID="300198841">
- <Parent_Relationships>
- <Preferred_Parent>
<Parent_Subject_ID>300194567</Parent_Subject_ID>
<Relationship_Type>Parent/Child</Relationship_Type>
<Historic_Flag>Current</Historic_Flag>
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[300198938], containers
containers [300197577],
(receptades) [30019719
and Equipment (Hierarch
300000000 [300000000]
<Hier_Rel_Type>Genus/Species-BTG</Hier_Rel_Type>
</Preferred_Parent>
- <Non-Preferred_Parent>
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<Relationship_Type>Parent/Child</Relationship_Type>
<Historic_Flag>Current</Historic_Flag>
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vessels (containers) [300193015], containers by form [30
(receptades) [300197197], Containers (Hierarchy Name) [300264551], Objects Fa
300000000 [300000000] </Parent_String>
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</Non-Preferred_Parent>
- <Non-Preferred_Parent>
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containers by function or context [300197200], containers
[300197197], Containers (Hierarchy Name) [300045611], Objects Facet
[300000000] </Parent_String>
<Hier_Rel_Type>Genus/Species-BTG</Hier_Rel_Type>
</Non-Preferred_Parent>
</Parent_Relationships>
- <Descriptive_Notes>
- <Descriptive_Note>
<Note_Text>Refers to vessels from Ancient Greece, eastern
that typically have a closed form with two openings, one at
at the base so that liquid could stream out. They are often i
an animal's head, and were typically used as a drinking cup o
another vessel. Drinking was done by holding the rhyton al
and catching the stream of liquid in the mouth.</Note_Text:
<Note_Language>English</Note_Language>
+ <Note_Contributors>
+ <Note_Sources>
</Descriptive_Note>
- <Descriptive_Note>
<Note_Text>Vaten uit de Griekse oudheid in de vorm van een
gebruikt als drinkgerei of om wijn in een ander vat te giete
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+ <Note_Contributors>
+ <Note_Sources>
</Descriptive_Note>
- <Descriptive_Note>
<Note_Text>Refiérase a vasijas de la Antigua Grecia, Europa
Oriente, que típicamente son cerradas pero con dos abertu
superior para poder llenarlas, y otra en la base para que el
menudo tienen la forma de un cuerno o una cabeza de anir
usadas como copas para beber o para vaciar vino en otras
<Note_Language>Spanish</Note_Language>
+ <Note_Contributors>
+ <Note_Sources>
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- <Terms>
- <Preferred_Term>
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<Display_Name>N/A</Display_Name>
<Historic_Flag>Current</Historic_Flag>
<Vernacular>Undetermined</Vernacular>
<Term_ID>1000198841</Term_ID>
- <Term_Languages>
- <Term_Language>
<Language>English</Language>
<Preferred>Preferred</Preferred>
<Qualifier />
```

XML

SUBJECT #300198841

Table with columns for labels (skosxl:altLabel, skosxl:prefLabel, gvp:recordType, etc.) and values (escanciadora, rhea, rhyton, etc.). Includes a table for 'rdf:type' with values like 'Concept' and 'V.TQ'.

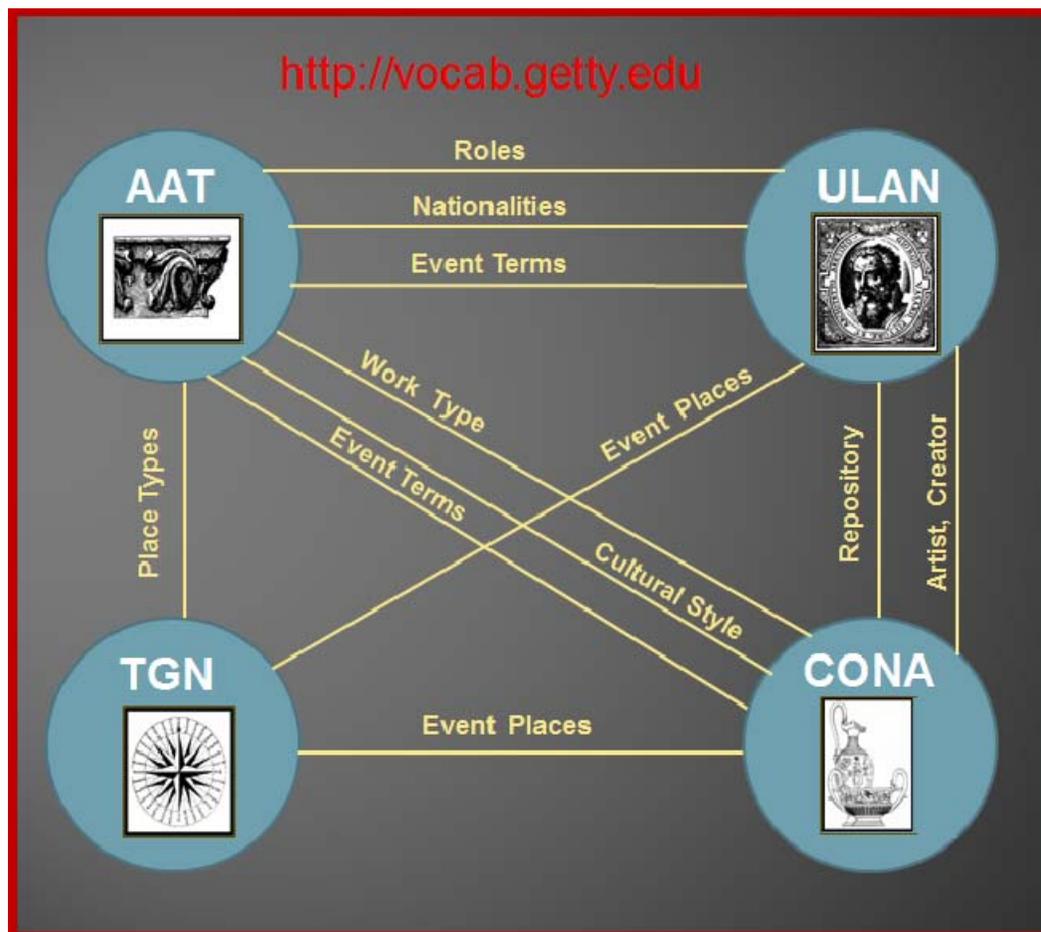
RDF

Issues Discovered Through Prototype Development

- How to represent lookup lists, associative relationships, N-ary relations, revision history
- Tool limitations – no functionality for getting language attributes from a database column
- Use RDBMS or triple store?
- Environment limitations – RDF uses much more space on filesystems
- Need for a semantic/ontology expert to help connect data to established standards
- What to do with lookup lists

Opportunities for Connecting Data

- Language list made into its own hierarchy in AAT
- Languages coordinated with IANA Subtag Registry
- TGN place types connected to AAT subjects
- ULAN roles connected to AAT subjects
- ULAN nationalities connected to AAT subjects
- ULAN events connected to AAT subjects
- ULAN places connected to TGN subjects



Triple Store vs. RDBMS

Triple Stores (OWLIM, 4store, Virtuoso)

- Built for storage and retrieval of triples
- Queried using SPARQL
- Import/export using RDF and SPARQL Update

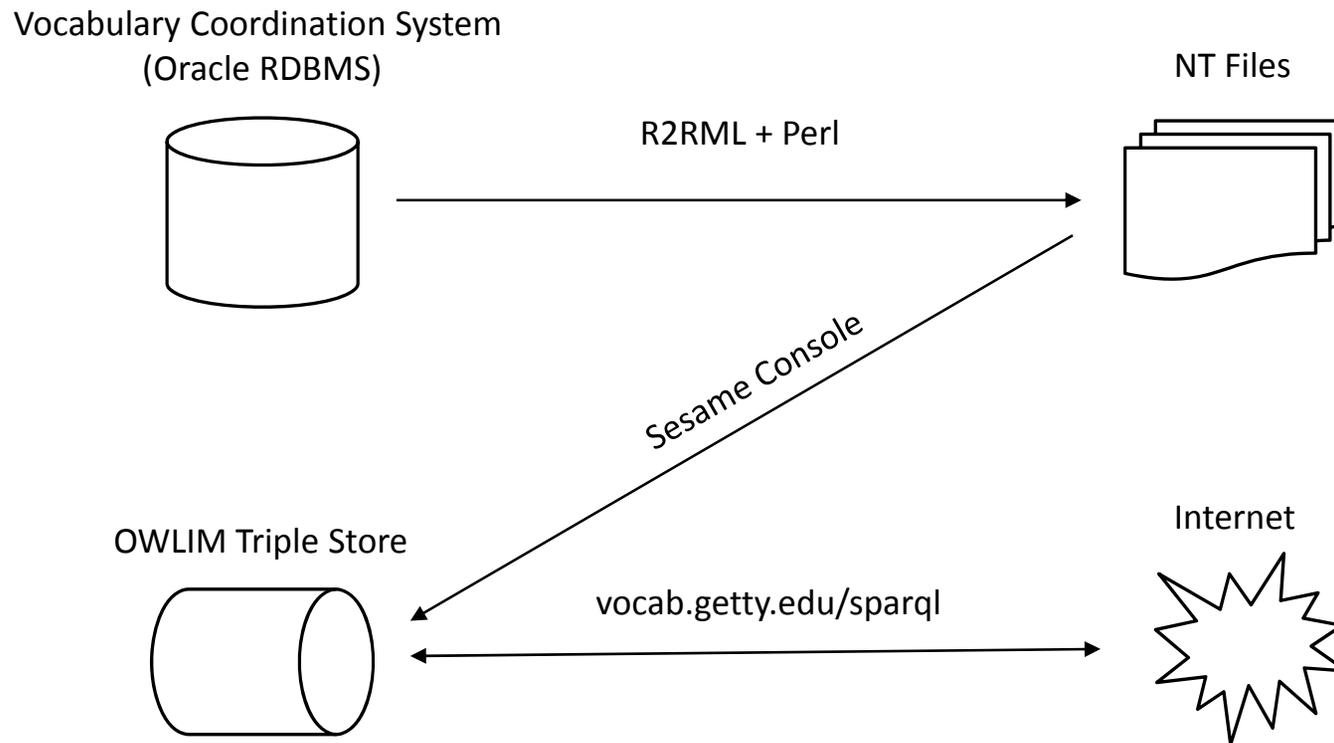
Relational Database Management Systems (Oracle, SQL Server, MySQL)

- Data is organized into flat, two-dimensional tables containing fields
- Queried using SQL
- Import/export using DML statements along with whatever formats are supported by RDBMS such as comma-delimited files and XML

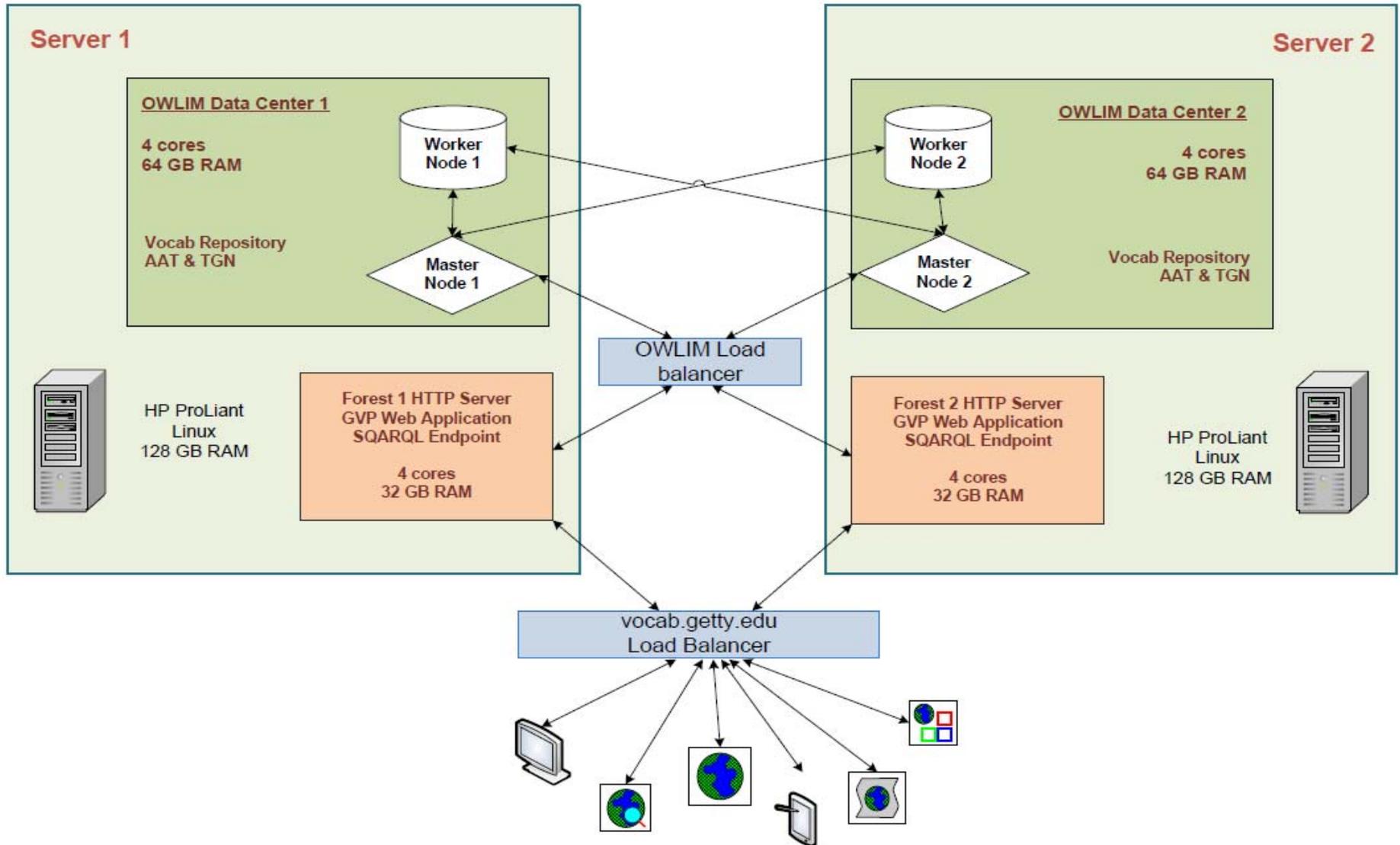
Tools for Transforming RDBMS Data into RDF Triples

- R2RML standard developed by the W3C for mapping RDBMS tables to RDF triples
- Use perl RDF-RDB2RDF module for implementing R2RML scripts
- Custom scripts for creating staged download files in N3, NT, RDF and JSON serializations
- Use OWLIM triple store and customized Forest application for HTTP server to handle user requests

Triple Extract Process



Architecture Diagram AAT & TGN




Getty Vocabularies: LOD
SPARQL

The Getty Vocabularies

Welcome to the SPARQL endpoint vocab.getty.edu

The Getty Vocabularies: The AAT, TGN, ULAN, and CONA contain structured terminology for art and other material culture, archival materials, visual surrogates, and bibliographic materials. Compliant with international standards, they provide authoritative information for catalogers and researchers, and can be used to enhance access to databases and Web sites. The Getty Vocabularies are produced by the Getty Vocabulary Program (GVP) and grow through contributions.

NOW Available:



The Art & Architecture Thesaurus (AAT) ®
Catherine wheel or rose window? AAT is a structured vocabulary, including terms, descriptions, and other information for generic concepts related to art and architecture.



The Getty Thesaurus of Geographic Names (TGN) ®
London or Londinium? TGN is a structured vocabulary, including terms, descriptions, and other information for geographic names.

Ontology Update Note: There are changes to the ontology.

Documentation and Downloads:

- **GVP Semantic Representation:** [HTML](#) (for [HTML](#) and [RDF/XML](#) formats) and [Turtle](#) (for [Turtle](#) format). Sections [GVP URLs and Prefixes](#) and [Semantic Types](#) are included. Comprehensive [Sample Queries](#) are included.
- **GVP ontology:** [HTML](#), [RDF/XML](#), [Turtle](#)
- **Datasets:** (N-Triples Zip, see doc section [Exporting Data](#))
 - AAT: [full.zip](#) (all statements), [explicit.zip](#) (explicit statements)
 - TGN: [full.zip](#) (all statements), [explicit.zip](#) (explicit statements)
- **VOID:** [void.ttl](#) (see doc section [Descriptive Information](#))
- **AAT Relationship Types:** [Crosswalk by Concept](#)
- **General information about the [Linked Data](#) approach**

Openness:

The data is released under [Open Data Commons Attribution License](#). Adherence to ODC Attribution instructions for the correct assertion of attribution is encouraged. The preferred form of attribution for AAT is:

"This [title or report or article or dataset] contains information from Art & Architecture Thesaurus (AAT)®, respectively Thesaurus of Geographic Names (TGN)® which is made available under the ODC Attribution License."

Special Case: In circumstances where providing the full attribution statement above is not technically feasible, the use of canonical AAT/TGN URIs is adequate to satisfy Section 4.3 of the ODC Attribution License.

Future Publications

	The Union List of Artist Names (ULAN) ® <i>Titian or Tiziano Vecellio?</i> ULAN is a structured vocabulary, including names, biographies, and other information about artists and architects.	January 2015
	The Cultural Objects Name Authority (CONA) ® <i>Mona Lisa or La Gioconda?</i> CONA, a new vocabulary now accepting contributions, includes titles, attributions, and other information for art and architecture.	July 2015

Additional Links:

- [The Getty Vocabularies](#)
- [The Getty Research Institute](#)
- [The Getty \(Main\)](#)

Documentation and Downloads:

- **GVP Semantic Representation:** [HTML](#) (for linking), [PDF](#) (for printing, [former location](#)).
Sections [GVP URLs and Prefixes](#) and [Semantic Resolution](#) describe the used URIs and provide examples.
All prefixes that we use are in [prefixes.ttl](#).
Comprehensive [Sample Queries](#) are included.
- **GVP ontology:** [HTML](#), [RDF/XML](#), [Turtle](#)
- **Datasets:** (NTriples Zip, see doc section [Export Files](#) before using!):
 - AAT: [full.zip](#) (all statements), [explicit.zip](#) (only explicit statements)
 - TGN: [full.zip](#) (all statements), [explicit.zip](#) (only explicit statements)
- **VOID:** [void.ttl](#) (see doc section [Descriptive Information](#))
- **AAT Relationship Types:** [Crosswalk by Concept](#), [Full Matrix by Codes](#)
- **General information about the [Linked Open Data](#) projects**

rhyta

Source: <http://vocab.getty.edu/aat/300198841>

Subject (100 of 424)
Predicate
Object
All
Website
Hierarchy
Download in: JSON
RDF
N3/Turtle
N-Triples
Inference
Explicit and implicit

Statements in which the resource exists as a subject.

Predicate	Object
rdf:type	gvp:Concept , gvp:Subject , skos:Concept
rdfs:label	Rhyta@de, Rhyton@en, escanciadora@es, lai t'an chiu pei@zh-latn-wadegile, lai tan jiu bei@zh-latn-pinyin-x-notone, lái tǎn jiǔ bēi@zh-latn-pinyin-x-hanyu, rhea (vessels)@en, rheon@en, rheons@en, rhyta@es, rhyta@el-latn, rhyta@en, rhyton@es, rhyton@en, rhyton@el-latn, rhytons@es, rhytons@en, rhytons@fr, rhŭtón@grc-latn, riton@fr, ritons@fr, ritón@es, ritóns@es, ryton@nl, rytons@nl, ρυτόν@grc, 莱坦酒杯@zh-hant, 角杯@zh-hant, 角狀杯@zh-hant
rdfs:seeAlso	http://www.getty.edu/vow/AATFullDisplay?find=&logic=AND&note=&subjectid=300198841
dcterms:contributor	aat_contrib:10000000 , aat_contrib:10000088 , aat_contrib:10000131 , aat_contrib:10000205 , aat_contrib:10000250
skos:scopeNote	aat_scopeNote:119579 , aat_scopeNote:119580 , aat_scopeNote:34904 , aat_scopeNote:77124 , aat_scopeNote:83378
skos:inScheme	aat
skos:prefLabel	Rhyta@de, lai t'an chiu pei@zh-latn-wadegile, lai tan jiu bei@zh-latn-pinyin-x-notone, lái tǎn jiǔ bēi@zh-latn-pinyin-x-hanyu, rhyta@el-latn, rhyta@en, rhytons@es, rhytons@fr, rytons@nl, 莱坦酒杯@zh-hant
skos:altLabel	Rhyton@en, escanciadora@es, lái tǎn jiǔ bēi@zh-latn-pinyin-x-hanyu, rhea (vessels)@en, rheon@en, rheons@en, rhyta@es, rhyton@es, rhyton@en, rhyton@el-latn, rhytons@en, rhŭtón@grc-latn, riton@fr, ritons@fr, ritón@es, ritóns@es, ryton@nl, ρυτόν@grc, 角杯@zh-hant, 角狀杯@zh-hant
skos:note	aat_scopeNote:34904 , aat_scopeNote:77124 , aat_scopeNote:83378 , aat_scopeNote:119579 , aat_scopeNote:119580 , aat_rev:5000057716 , aat_rev:5001147623 , aat_rev:5001147624 , aat_rev:5001147625 , aat_rev:5001147626 , aat_rev:5001147627 , aat_rev:5001147628 , aat_rev:5001147629 , aat_rev:5001504912 , aat_rev:5001504913 , aat_rev:5001692934 , aat_rev:5001693073 , aat_rev:5001693074 , aat_rev:5001708327 , aat_rev:5001708329



Art & Architecture Thesaurus® Online

Full Record Display

[New Search](#)[Previous Page](#)[Help](#)

Click the  icon to view the hierarchy.

[Semantic View](#) ([JSON](#), [RDF](#), [N3/Turtle](#), [N-Triples](#))

■ [Representative Images](#): [1](#) [2](#) [3](#) [4](#) [5](#) [6](#)

ID: 300198841

Record Type: [concept](#)

 **rhyta** (drinking vessels, <vessels for serving and consuming food>, ... Furnishings and Equipment (Hierarchy Name))

Note: Refers to vessels from Ancient Greece, eastern Europe, or the Middle East that typically have a closed form with two openings, one at the top for filling and one at the base so that liquid could stream out. They are often in the shape of a horn or an animal's head, and were typically used as a drinking cup or for pouring wine into another vessel. Drinking was done by holding the rhyton above the drinker's head and catching the stream of liquid in the mouth.

Terms:

rhyta ([preferred](#),C,U,LC,English-P,D,U,PN)
(Greek (transliterated)-P,D,U,PN)
(Spanish,UF,U,PN)

rhyton (C,U,English,AD,U,SN)
(Greek (transliterated),AD,U,SN)
(Spanish,AD,U,SN)

Rhyton (C,U,English,AD,U,SN)

rhytons (C,U,English,UF,U,N)
(French-P,D,U,PN)
(Spanish-P,D,U,PN)

rhea (vessels) (C,U,English,UF,U,N)

rheons (C,U,English,UF,U,N)

rheon (C,U,English,UF,U,N)

ῥυτόν (C,U,Ancient Greek,UF,U,U)

rhütón (C,U,Ancient Greek (transliterated),UF,U,U)

Full Text Search – Brief Results



Getty Vocabularies: LOD

SPARQL

Any ▾

yute

Search

Brief ▾

Results for "yute" (6 of 6)

Subject	Term	Parents	Scope Note	Type
aat:300375512	Hibiscus cannabinus (species)	Hibiscus (genus), Malvaceae (family), ... Agents Facet	Species of fast growing herbaceous annual plant, with stalks growing to 5.5 m (18 feet) in height. It is probably native to southern Asia, though its exact natural origin is unknown. It is widely d...	Concept
aat:300014244	jute board	fiberboard, fiber products, ... Materials Facet	A strong plyboard containing no jute fiber but made typically from sulfate and wastepaper pulp, used especially for shipping containers.	Concept
aat:300014045	jute (fiber)	plant fiber, natural fiber, ... Materials Facet	Bast fiber derived from either of two East Indian plants (Corchorus olitorius and C. capsularis). The pale brown fibers are soft, lustrous, and coarse, ranging in length from 4 to 10 feet. The brit...	Concept
tgn:2786554	Yutes Run	Allegheny, Pennsylvania, ... World		PhysPlaceConcept
tgn:7475035	Yutengping	Miaoli Xian, Chung-hua Min-kuo, ... World		AdminPlaceConcept
tgn:7415324	Yuteriaica, Río	Oaxaca, México, ... World		PhysPlaceConcept

Full Text Search – Full Results


Getty Vocabularies: LOD
 SPARQL

Results for "yute" (11 of 11)

Subject	Term	Parents	Scope Note	Type
aat:300375512	Hibiscus cannabinus (species)	Hibiscus (genus), Malvaceae (family), ... Agents Facet	Species of fast growing herbaceous annual plant, with stalks growing to 5.5 m (18 feet) in height. It is probably native to southern Asia, though its exact natural origin is unknown. It is widely d...	Concept
aat:300014076	burlap	canvas, <textile materials by process or technique>, ... Materials Facet	Coarse canvas made of jute, used mainly for sacks and wrapping.	Concept
aat:300014244	jute board	fiberboard, fiber products, ... Materials Facet	A strong plyboard containing no jute fiber but made typically from sulfate and wastepaper pulp, used especially for shipping containers.	Concept
aat:300253474	buckram	<textile materials by finishing process>, <textile materials by process or technique>, ... Materials Facet	Heavy weave cotton, jute, or linen textile stiffened with glue, size, or starch and used for interlinings in garments, box making, bookbinding, etc.	Concept
aat:300015203	oakum	caulking compound, sealing compound, ... Materials Facet	Loosely twisted hemp or jute fiber impregnated with tar or a tar derivative and used in caulking seams, as of wooden ships, and packing joints, as of pipes.	Concept
aat:300014078	canvas	<textile materials by process or technique>, textile materials, ... Materials Facet	Closely woven textile made in various weights, usually of flax, hemp, jute, or cotton, used especially for sails, tarpaulins, awnings, upholstery, and as a support for oil painting. Also used for a...	Concept
aat:300131081	oilcloth	<textile materials by finishing process>, <textile materials by process or technique>, ... Materials Facet	Textile of woven cotton, jute, or hemp, treated with oil and pigment and used as a waterproof covering.	Concept



SPARQL Query

Query:

```

1 # 5.2.11 Concepts Related by Particular Associative Relation
2 select * {
3   ?c1 gvp:aat2100_distinguished_from ?c2. filter (str(?c1) < str(?c2))
4   ?c1 gvp:prefLabelGVP [xl:literalForm ?l1];
5     skos:scopeNote [rdf:value ?n1; dct:language gvp_lang:en].
6   ?c2 gvp:prefLabelGVP [xl:literalForm ?l2];
7     skos:scopeNote [rdf:value ?n2; dct:language gvp_lang:en]}

```

 Include inferred Expand results over equivalent URIs

Sample queries:

[Append predefined namespaces:](#)

- ⚠** [SPARQL Select template](#), [5.1.1 Top-level Subjects](#), [5.1.2 Descendants of a Given Parent](#), [5.1.3 Subjects by Contributor Id](#), [5.1.4 Subjects by Contributor Abbrev](#), [5.1.5 Preferred Ancestors](#), [5.1.6 Full Text Search Query](#), [5.1.7 Find Person Occupations by broaderExtended](#), [5.1.8 Find Person Occupations by Double FTS](#), [5.1.9 Find Quartz Timepieces by Double FTS](#), [5.1.10 Find Subject by Exact English PrefLabel](#), [5.1.11 Find Subject by Language-Independent PrefLabels](#), [5.1.12 Find Subject by Any Label](#), [5.1.13 Find Terms by Language Tag](#), [5.1.14 Find Ordered Subjects](#), [5.1.15 Find Ordered Hierarchies](#), [5.1.16 Get Subjects in Order](#), [5.1.17 Find Contributors by Vocabulary](#), [5.1.18 Find Sources by Vocabulary](#), [5.2.1 Subject Preferred Label](#), [5.2.2 All Data for Terms of Subject](#), [5.2.3 Preferred and Vernacular Terms](#), [5.2.4 Scientific Names by Language](#), [5.2.5 Scientific Names not in English and Latin](#), [5.2.6 All Data For Subject](#), [5.2.7 Historic Information on Relations](#), [5.2.8 Historic Information of Terms](#), [5.2.9 Preferred Terms for Contributors](#), [5.2.10 Preferred Terms for Sources](#), [5.2.11 Concepts Related by Particular Associative Relation](#), [5.2.12 Languages and ISO Codes](#), [5.2.13 Language URLs](#), [5.3.1 Places by Triple FTS](#), [5.3.2 Places by FTS Type and Parents](#), [5.3.3 Capitals by Type](#), [5.3.4 Capitals by Association](#), [5.3.5 Members of the European Union](#), [5.3.6 Members of the United Nations](#), [5.3.7 Geo Chart with SPARQL](#), [5.3.8 Column Chart with SPARQL](#), [5.3.9 Places by Exact Type and Parent Place](#), [5.3.10 Countries by Type](#),

Some sample queries from our SPARQL page

- Descendants of a Given Parent
- Subjects by Contributor
- Occupations by `gvp:broaderExtended`
- Quartz Timepieces by Double FTS (full text search)
- Subject by Any Label
- Terms by Language Tag
- Scientific Names not in English and Latin
- All Data For Subject
- Historic Information on Relations
- Preferred Terms for Contributor
- Concepts Related by Particular Associative Relation
- Places by FTS Type and Parents
- Countries and Capitals By Associative Relation
- Places by Coordinate Bounding Box
- Overseas Possessions
- Places Within Bounding Box
- Places by Type Within Bounding Box
- Places Nearby Each Other

Statistics

- Use AWStats to compile usage statistics from server logs (<http://www.awstats.org>)

Provides monthly history, daily history by month, days of week history by month, hourly history by month, visitor domains/countries, hosts, visits duration, file types accessed, download counts, counts of pages accessed

