

Kartography CIC

# Creating and using CIDOC CRM data

## Workshop

<https://www.dropbox.com/scl/fo/1q0aryk3zt278m3is2aev/h?rlkey=3mornetip56cp3co2d24lbd0d&dl=0>

<https://docs.google.com/presentation/d/1yEPRMX3pybcPsAnymUcuPierur1Za2jeioqw1PZCgdU/edit?usp=sharing>

**58 CIDOC CRM SIG MEETING 19-22**

**MARCH 2024 (BNF)**

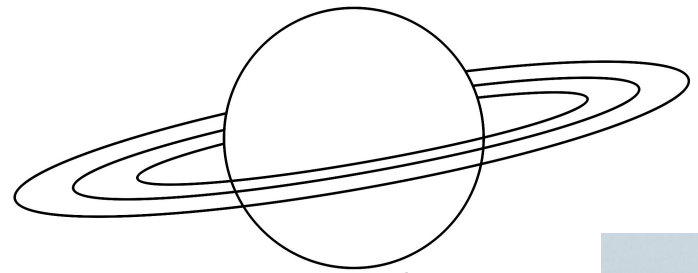
**Monday 18th March**

Dominic Oldman - Kartography CIC

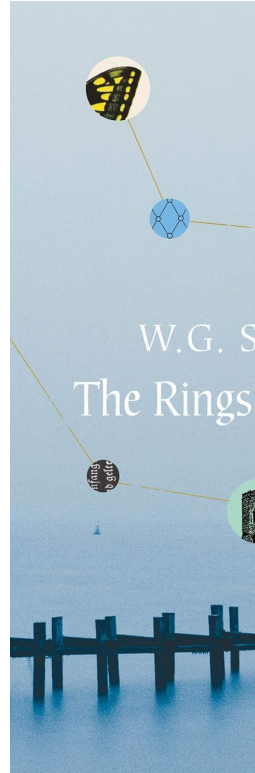
<http://www.kartography.org>

# Kartography CIC and Me

- Non-profit - Social Enterprise
- **Public Charter** - Diversity and Equality in Data
- Transferred to Kartography From British Museum - 10 year research project funded by Andrew Mellon Foundation. Over £4 million
- Designed according to a Processual framework. It doesnt just use the CIDOC CRM it adhears to the structure and logic - a Semantic Knowledge Graph.
- Knowledge Graphs - Google, Neural Networks, AI, Knowledge Representation
- 28 years - Deputy Head of Information Systems / Head of Development
- History PhD student at University of Oxford



Kartography CIC



# Content

- Mindset and Architectures
- Legacy Data and External Sources
- Examples

# amulet

## Object Type

[amulet](#)

## Museum number

AF1904.1015.27

## Description

[Grisgrisi](#) (with suspension loop), amulet made of leather.

## Cultures/periods

[Islamic](#)

## Production date

1901-1904 (or soon before) (or soon before)

## Production place

Made in: [Nigeria](#) (north)  
Africa: sub-Saharan Africa: Nigeria

## Findspot

Found/Acquired: [Nigeria](#) (north)  
Africa: sub-Saharan Africa: Nigeria

## Materials

[leather](#)

## Dimensions

Height: Height: 4 centimetres  
Width: Width: 3.80 centimetres  
Depth: Depth: 1.90 centimetres

## Curator's comments

Register addition "Muslim".

## Location

Not on display

## Acquisition name

Donated by: [Charles Lindsay Temple](#)



# Quick Summary - CIDOC CRM

## Entities and Properties

Two main strands - Temporal (e.g. EVENTS) / Persistent Items (THINGS)

These provide a reference.

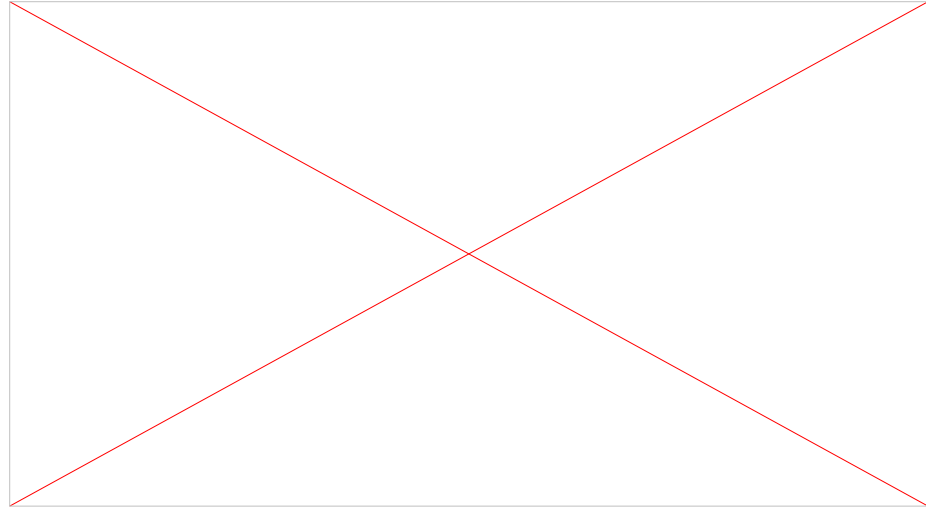
We all use different language the same things - Computers can't make sense of semantics, therefore the only way of having an understanding is to use empirical references that we all understand. Of course these are also approximations. Even empirical science is not static.

The actual mindset when creating a system should be PROCESS.

Things are actually PROCESSES, and relations are also PROCESSES.

Computing is always reductive - we abstract.

CIDOC CRM reference



# Problem

- Humanities - Study of Human Society
- Key to this is understanding Change and Transformation - The CIDOC CRM allows this to a certain extent in a richer form of data.
- However, all disciplines are fundamentally interconnected to history - change and transformation.
- We are still trying to process this - science is constantly changing, has uncertainties and has competing methods and perspectives.



# Some Philosophy

# Philosophy of External Relations

- The dominant system of knowledge in the Western world have been governed by the Philosophy of External Relations,

“which reigns in both the common sense and learned discourse of our time, holds that there are both ‘things’ ... and relations, but that they are logically independent of each other.”

- Kant - The thing in itself
- Descartes - The Mechanical World
- Adam Smith - The division of Labour





# History, Data Processing and Classical Categorization

DECEMBER 3 1971 TLS: 1527

THINKING BY NUMBERS-12

## Historians in white coats

BY RICHARD COBB

THAT VERY entertaining and sharp Parisian, Jacques Prévert, has a poem that goes:—

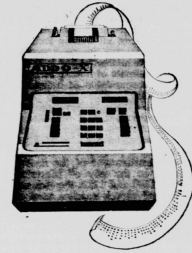
Louis I  
Louis II  
Louis III  
Louis IV  
Louis V  
Louis VI  
Louis VII  
Louis VIII  
Louis IX  
Louis X  
Louis XI  
Louis XII  
Louis XIII  
Louis XIV  
Louis XV  
Louis XVI  
Louis XVII  
Louis XVIII  
Qu'est-ce que c'est donc que ces gens qui  
ne savent pas compter jusqu'à vingt ?

do we not have, both in old and modern French currency: *un denier-louis*, which suggests that they could at least divide, a negative process perhaps, and one more difficult than that of multiplication?

One of the favourite sayings—and indeed he meant it almost as a revealed truth—of my old Master, Georges Lefebvre, was: "Pour faire de l'Histoire, il faut savoir compter." And it must be admitted that he practised what he preached. There are some 300 pages of tables, as an annex to his immense thesis on *Les Paysans du Nord*, all of them drawn up without any mechanical assistance whatsoever.

Georges Lefebvre, although often given to rather schematic analyses on the subject of class structures and of group conflicts within a given pre-

due allowance for quantification in such propitious fields as population studies, morbidity rates, fertility, and so on. But he was far too wise a man, far too experienced, too much aware of the unaccountability of human behaviour and of the accident factor, both in individual and collective conduct, ever to think of quantifying the human act. When he referred to "ces hordes révolutionnaires". Dangerous Mondays, especially in respect of rural riot, he was not attempting to set down any sort of General Law on popular tumult. He was merely aware, on the basis of evidence taken from a very wide area and over a period of several decades, that Mondays following Sundays, villagers often took collective action on a Monday that they had decided on the previous day. This is not a statistical conclusion based on the im-



tures and employing a hierarchy of subordinates even more extensive and much more de-central than the teeming below-stairs population of an affluent mid-Victorian home; their machinery is expensive, the expense has to be justified, and one way of doing this is by the sheer size of the armies of white-coated assistants employed in their clinical Historical Laboratories—more recently, a group of American historians have been subjecting 500 Cahiers de Doléances to a programme of computerization on the basis of fifteen selected questions. I cannot guess what wonder will emerge from this vast and expensive *enquête*, but those that have been revealed so far appear to me to have been rather self-evident.

Of course, what is wrong is not so much the mechanistic process, but the arbitrary selection of the questions. History will always give you the answers which you wish to obtain, if you manhandle the subject sufficiently severely. If you put to the Three Estates, "Are you in favour of the retention of Privilege?" it is not entirely surprising that the hoped-for answer from the Second Estate comes out as 98 per cent in favour.

And the other fourteen questions selected are equally crude and equally inviting of simple, predictable answers. Yet our quantifying school will not be put off by such objections, for is not this Total History, the equation of History with the Social Sciences?

I am reminded of the sort of questionnaire that is sometimes submitted to those "seeking residents' views to the United States": "Would you, or would you not, assassinate the President of the United States?" There can only be one of two answers. A friend of mine who, when the question was put to him by an

conduct of individuals ever to make too great a demand on his own preference for various forms of neopositivism. He would no doubt have liked men to respond predictably to predictable pressures; but he also knew that, in most cases, they simply would not oblige. And, in 1945, he severely took to task a group of Soviet historians who sought to identify eighteenth-century French agrarian structures with those of nineteenth-century Russia, accusing them of confusing history with propaganda. In short, Lefebvre was an honest historian, as well as a wise one; he also wrote with great clarity, if with a certain dryness. He was, however, a very old man when he died, eleven years ago, and he would now be considered, especially by some of the younger members of the *école*, as old-fashioned. For

“a-historical, engineering, problem-solving approach by means of mechanical models and devices”

Eric Hobsbawm

# Philosophy of Internal Relations

*“that what others take to be a ‘thing’ that may or may not undergo change and may or may not have relations with other things is itself both a ‘process’ and a ‘relation’ (though some of these may take time and special efforts or instruments to uncover). What was a thing for the philosophy of external relations becomes a relation evolving over time (or a process in constant interaction with other processes).”*

Ollman



- Alfred Whitehead - The Philosophy of Processes
- Cybernetics,
- General Systems Theory
- Complexity Theory
- Chaos Theory etc

# The World in Motion

Process

Reality



Reality

Interdependency

Systems

Patterns

# Research / Practice (Knowledge from Doing)

TNA Collection care Search Resources New Feedback Settings Account

New Tab Knowledge maps Teerlink's Wallet

SAVE KNOWLEDGE MAP CLEAR ALL PNG SVG

EXT 11/140 OBJECT PIECE

What is a piece?

Details Images and annotations Type, format Materials Items (part of the piece) Features

Measurements Condition and related activities Projects

TNA catalogue reference number\* EXT 11/140

Catalogue level\* PIECE

Object - documents

Object description

Items extracted from HCA 32/1047 and HCA 32/1048 being papers taken from the Prussian ship Henriette (master Gottlieb Jager) on capture in 1803.

Number 1446 (from HCA 32/1048): a red leather wallet, stamped 'Jan Bekker Teerlink te Vlissingen', with papers annotated by the captors or the court 'Trifles which were found in the super-cargo's pocket book' and 'Patterns of silk and thread (included in no 1446)'

Jan Bekker Teerlink was the Dutch supercargo on the Prussian ship Henriette returning from China by way of Batavia and the Cape of Good Hope to Emden with a cargo of tea. The Henriette was captured by HMS Lapwing off the Dutch coast on 31 May 1803, and all the documents on the ship were seized and passed on to the High Court of Admiralty.

The contents of the wallet include samples of Chinese silk and chintz fabric and 41 neatly folded paper pockets of 32 different species of seeds. A few seeds from each species were sent to the Millennium Seed Bank in 2009: of these, three of the species germinated successfully, a shrub called *Liparia villosa*, a stunning pincushion-like flower called

Reset Delete Debug Save object

# Some History

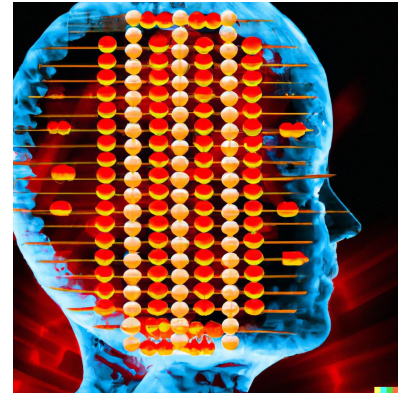


# Mellon Foundation

“The Mellon Foundation is pleased to announce the launch of the Mellon Foundation Open Access Program, which will support the publication of research articles in the fields of history, literature, and the arts. The program will provide a set of features, well-suited to the open-ended nature of scholarly research, that will be made available to researchers at participating institutions. The program will be a cost-effective way to preserve the scholarly uniqueness of each project, while also providing a platform for more institutions to think about common problems and drive the whole field further intellectually.”

# The Legacy of the Database

- Databases Mindset
  - No formal semantics (limits reuse and complexity)
  - No complex interconnections
  - Designed for predetermined models.
  - Based on classic categorization. No fuzziness.
  - The more variables (fields) the more issues with the quality of the data
  - Doesn't account for change and transformation



# Digital Humanities (2011)

## Surfdom

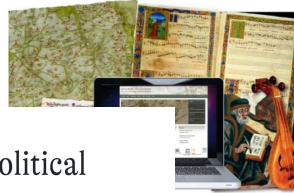
The internet has revolutionised humanities research. But has the development of ever-more sophisticated online resources freed up scholars to explore new ideas, or made them slaves to the digital machine? Matthew Reisz reports

December 8, 2011

Matthew Reisz

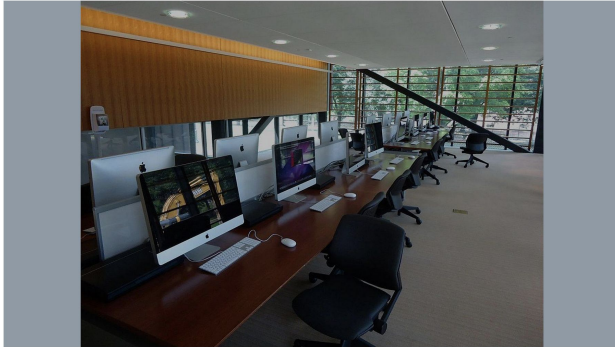
Twitter: @MatthewReiszTHE

Credit: Getty/Alamy/Art Archive



## Neoliberal Tools (and Archives): A Political History of Digital Humanities

By Daniel Allington, Sarah Brouillette, David Golumbia • May 1, 2016



Advocates position Digital Humanities as a corrective to the "traditional" and outmoded approaches to literary study that supposedly plague English departments. Like much of the

“we are "still in an era of confusion in the digital environment around the sort of business models we apply to questions of impact, depth of data and so on. We may not yet have the tools to understand how we make those decisions about the depth of data.”” Riesz quoting Andrew Prescott

“The problem to which Liu draws attention is a theme that has recurred throughout this article: purported technical expertise trumps all other forms of knowledge, including critique of the uses to which such expertise is put...Liu’s repeatedly published complaints of the absence of “cultural criticism” from Digital Humanities might have had some effect if that absence was coincidental, but it is not.” Allington, Brouillette, Golumbia quoting Alan Lui

- Computers help with more complex questions?
- What links computing to the Humanities is modelling.
- Bit if the modelling isn't being done by the subject experts?



# Architectural Questions

I create a system which has a model of data.

- A user has more structured information that isn't covered by the model?
  - Use a text field
  - Use a field not really designed for that data.
  - Use another application, separating the data
- A user wants to arrange the data into a more useful pattern than that provided by the system to record a conclusion?
  - Use another system - like a notebook

**IT Principles** - the model must be stable otherwise it creates support costs - Total Cost of Ownership

**Humanities Issues** - Cost of knowledge loss and fragmentation



# New CIDOC CRM Definition of 'Documentation'

There is a proposed change being discussed at the moment.

**Dynamic** - Evolution of Knowledge

**Diversity** - Moving away from Western Intrinsic universalism

**Context** - Providing wider context to aid interpretation

**Participation** - encouraging contributions from wider communities.



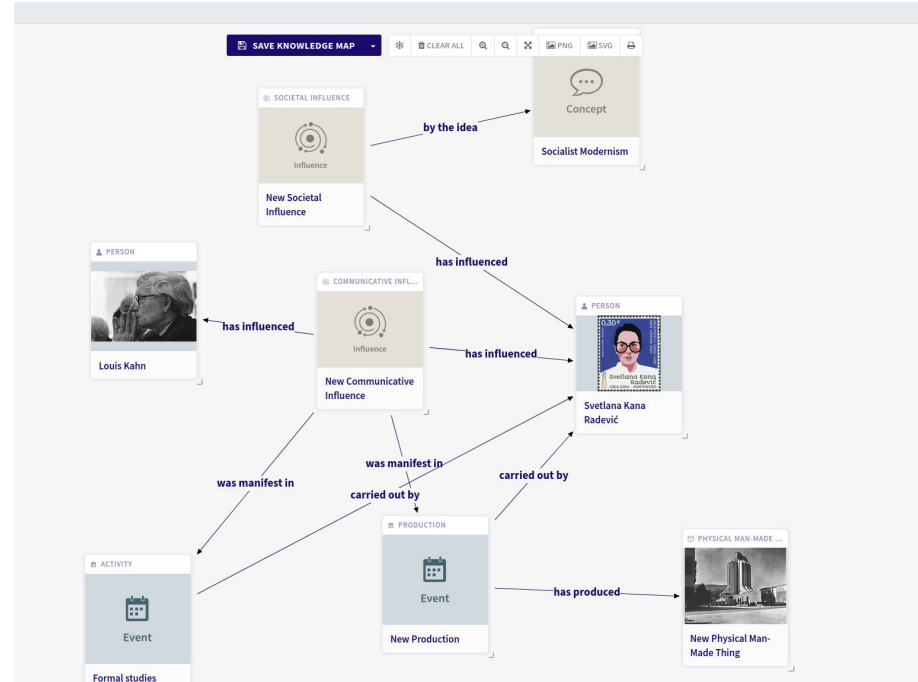
# Enabling The New Definition

- Predetermined Modeling

Versus Dynamic Modeling

- Homogenous

Versus heterogeneous



# Method 1 - Other Resources

# Interconnection

```
{  
?people wdt:P31 wd:Q5 .  
?people wdt:P106 ?occupation .  
?people wdt:P21 ?gender.
```

optional

```
{  
?people wdt:P27 ?nationality .  
?people wdt:P569 ?birthdate .  
?people wdt:P19 ?placeofbirth .  
?people wdt:P570 ?deathdate .  
?people wdt:P20 ?placeofdeath .  
}
```

CONSTRUCT

```
{  
?people rdf:type crm:P21_Person .  
?people rdfs:label ?peopleLabel .  
?people rso:PX_gender ?gender .  
?gender a crm:E55_Type .  
?gender skos:prefLabel ?genderLabel .  
?people rso:PX_nationality_of ?nationality .  
?nationality rdfs:label ?nationalityLabel .  
?nationality rdf:type crm:E74_Group .  
?people rso:PX_profession ?occupation .  
?occupation rdfs:label ?occupationLabel .  
?occupation rdf:type crm:E74_Group .  
?people crm:P98i_was_born ?birth .  
?birth a crm:E67_Birth .  
?birth crm:P4_has_time-span ?birthdate .  
?birth crm:P7_took_place_at ?placeofbirth .  
?people crm:P100i_died_in ?death .  
?death a crm:E69_Death .  
?death crm:P4_has_time-span ?deathdate .  
?death crm:P7_took_place_at ?placeofdeath .
```

# Peer to Peer - Decentralised Connection

The screenshot displays the RS workshop interface. At the top, there is a navigation bar with 'RS workshop', a search icon, 'Resources', and 'New'. On the right side of the navigation bar are 'Settings' and 'Account' buttons. Below the navigation bar, the main content area is divided into two sections. The left section is titled 'Query Catalog' and contains a list of recent queries, each with a unique ID and a truncated SPARQL query. The right section is a SPARQL query editor showing a query that defines various prefixes and a CONSTRUCT query. The query defines prefixes for 'rdf', 'rdfs', 'Platform', 'crm', 'rso', 'skos', 'wd', 'wikibase', and 'wdt'. The CONSTRUCT query defines a set of classes and properties for 'Person', 'gender', 'nationality', 'profession', 'occupation', 'birth', and 'death', including their types and labels. The query also includes a SERVICE statement for querying Wikidata and a set of optional queries for specific individuals.

Home / Administration / SPARQL

### Query Catalog

Global Queries Personal Queries Recent Queries

**001526.1153**  
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> PREFIX rdfs: <ht...

**001526.2216**  
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> PREFIX rdfs: <ht...

**001526.3134**  
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> PREFIX rdfs: <ht...

**001526.2211**  
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> PREFIX rdfs: <ht...

**001526.1145**  
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> PREFIX rdfs: <ht...

# Logical Extension

ResearchSpace  
Deir el-Medina

About Deir el-Medina New

Search Resources Bibliography Help Settings Account

New Tab New object +

Adding: new Object






New object

Import Amara west object

Import MET object

**IMPORT OBJECT FROM MET**  
Search and import an object from the MET catalogue. Items imported in the system can then be edited or modified in the object form.

Object Title

Object id	Object image	Object Title	Description	Data source	Actions
547713		Fishing and Fowling, Tomb of Ipuy	Facsimile, Ipuy (TT 217), fishing, fowling	<a href="https://www.metmuseum.org/art/collection/search/547713">https://www.metmuseum.org/art/collection/search/547713</a>	<input type="button" value="Edit"/>
548567		Ipuy and Wife Receive Offerings from Their Children (substantially restored)	Facsimile, restored, Ipuy (TT 217), offering, seated couple	<a href="https://www.metmuseum.org/art/collection/search/548567">https://www.metmuseum.org/art/collection/search/548567</a>	<input type="button" value="Import"/>
548570	No image available	Fishing and Fowling, from the Tomb of Ipuy	fishing and fowling, Facsimile, Ipuy (TT 217)	<a href="https://www.metmuseum.org/art/collection/search/548570">https://www.metmuseum.org/art/collection/search/548570</a>	<input type="button" value="Import"/>
548572		Building a Catafalque, Tomb of Ipuy	Facsimile, Ipuy (TT 217), catafalque	<a href="https://www.metmuseum.org/art/collection/search/548572">https://www.metmuseum.org/art/collection/search/548572</a>	<input type="button" value="Edit"/>
548573		Winemaking, Tomb of Ipuy	Facsimile, Ipuy (TT 217), winemaking	<a href="https://www.metmuseum.org/art/collection/search/548573">https://www.metmuseum.org/art/collection/search/548573</a>	<input type="button" value="Import"/>
557818	No image available	Kitten on Ipuy's Lap, Tomb of Ipuy	Facsimile, Ipuy (TT 217), kitten	<a href="https://www.metmuseum.org/art/collection/search/557818">https://www.metmuseum.org/art/collection/search/557818</a>	<input type="button" value="Import"/>
557821	No image available	Butcher Cleaning Fowl, Tomb of Ipuy	Facsimile, Ipuy (TT 217), butcher, fowl	<a href="https://www.metmuseum.org/art/collection/search/557821">https://www.metmuseum.org/art/collection/search/557821</a>	<input type="button" value="Import"/>
557822		Man Making a Net, Tomb of Ipuy	Facsimile, Ipuy (TT 217), net making	<a href="https://www.metmuseum.org/art/collection/search/557822">https://www.metmuseum.org/art/collection/search/557822</a>	<input type="button" value="Import"/>

Paris\_CIDOC

EXPLORER

- PARIS\_CIDOC
  - 3M
    - Tarql
      - tarql-1.2
        - architect.csv
        - architect.sparql
        - people.ttl
        - search form
        - test.sparql
      - Wikidata
        - architects.html
        - architectwiki.csv
        - architectwiki.html
        - architectwiki.trig
        - architectwiki.ttl
        - architectwikinational5.html
        - architectwikinational5.trig
        - archwikitable.html
        - query.json
        - querylink.txt
        - rso.ttl

CSV edit architect.csv | architect.sparql | querylink.txt | rso.ttl | Extension: Rainbow CSV

Wikidata > rso.ttl

```
1 @prefix rsp: <http://www.researchspace.org/resource/> .
2 @prefix rs: <http://www.researchspace.org/ontology/> .
3 @prefix User: <http://www.researchspace.org/resource/user/> .
4 @prefix Help: <http://help.researchspace.org/resource/> .
5 @prefix Platform: <http://www.researchspace.org/resource/system/> .
6 @prefix owl: <http://www.w3.org/2002/07/owl#> .
7 @prefix xsd: <http://www.w3.org/2001/XMLSchema#> .
8 @prefix skos: <http://www.w3.org/2004/02/skos/core#> .
9 @prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
10 @prefix crmdig: <http://www.ics.forth.gr/isl/CRMdig/> .
11 @prefix rshelp: <http://researchspace.org/help/> .
12 @prefix crmsci: <http://www.cidoc-crm.org/cidoc-crm/CRMsoci/> .
13 @prefix crmgeo: <http://www.ics.forth.gr/isl/CRMgeo/> .
14 @prefix sp: <http://spinrdf.org/sp#> .
15 @prefix prov: <http://www.w3.org/ns/prov#> .
16 @prefix crminfluence: <http://www.cidoc-crm.org/cidoc-crm/influence/> .
17 @prefix crm: <http://www.cidoc-crm.org/cidoc-crm/> .
18 @prefix crminf: <http://www.ics.forth.gr/isl/CRMinf/> .
19 @prefix Admin: <http://www.researchspace.org/resource/admin/> .
20 @prefix bds: <http://www.bigdata.com/rdf/search#> .
21 @prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
22 @prefix crmba: <http://www.cidoc-crm.org/cidoc-crm/CRMba/> .
23 @prefix ontodia: <http://ontodia.org/schema/v1#> .
24 @prefix crmarchaeo: <http://www.cidoc-crm.org/cidoc-crm/CRMarchaeo/> .
25 @prefix forms: <http://www.researchspace.org/resource/system/forms/> .
26 @prefix frbroo: <http://iflstandards.info/ns/ir/frbr/frbroo/> .
27
28
```

PROBLEMS 2 | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

```
admin@admins-iMac Tarql % ./tarql-1.2/bin/tarql architect.sparql > people.ttl
admin@admins-iMac Tarql % []
```

Ln 1, Col 1 Spaces: 2 UTF-8 LF Plain Text



Search all...

- dominickKM 1
- Lagos Ornaments 2
- Demo Items 6

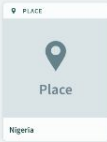


Object Af1949,46.155



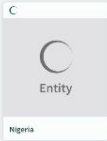
Entity

[[{"638,620,356,226,124,64,7,792}]]



Place

Nigeria

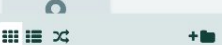


Entity

Nigeria



Place

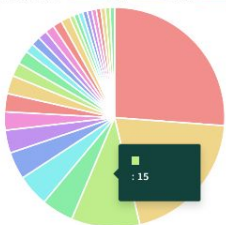


SAVE GEOGRAPHICAL MAP

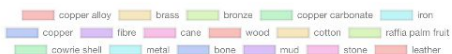


Place: Africa  
Explore 26 related entities

LNBI Material Type Distribution



Histogram of LNBI Object Type Distribution



Editing Object: Object Af1949,46.155

Copy IRI

Has Label \*

Object Af1949,46.155

Object is Part Of Series/Collection

LOWER NIGER BRONZES

Object Has Type

FIGURE

Object is Made Of

BRONZE

Object Has Description

Head figure; lost-wax cast in copper alloy; made in the form of bearded human head wearing a cap decorated with spiral motifs and a tall tubular projection from the crown. Three small raised depictions of ram's head pendants are present on the sides and back of the head.

Add object has description

Photo Has Digital Image



Referred By Publication,Diagrams,Clippings, Etc.



Reset Delete Debug Save