Relations in a Click, browsing/representing LD/LOD http://log.disit.org

What are the problems addressed by Linked Open Graph and Social Graph

Linked Open Graph (http://log.disit.org , the LOG.DISIT.ORG tool and service) is a unified solution for problems and cases.

Linked Open Data, are complex structures to be understood if you just access to them for their exploitation and reuse.

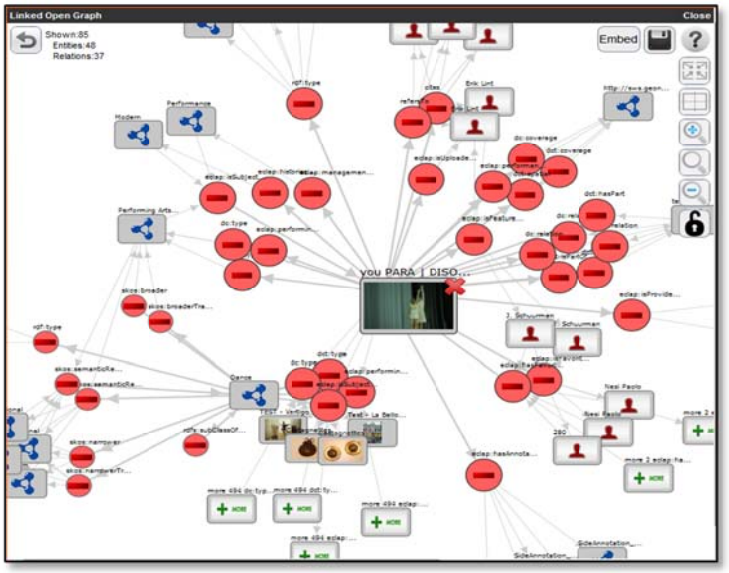
- A tool for browsing LOD selecting relationships among URI elements and their attributes can be a solution for developer for data and knowledge engineers. Therefore, services that allow you to insert URI of LOD to navigate on their structure over multiple RDF stores and LD sources are very useful tools for shortening the development phase.

Portals and services need to cope with relationships among Users, Contents and external sources. Thus the users need to have a clear view about the relations among entities to better understand context at a glance, such as:

- Who has provided a given content: group, user, etc.; How a given content has been used by other users: promoted, played, uploaded, updated, etc.; Which are the geographical locations mentioned by a content, and where is located, may be connected with external geoname, and GPS coordinates; Which are the person names cited into a content: vip names related to dbPedia, users of the portals, other person names cited in many other content; Who has been contact with how, what they have done, etc. The users need to discover and navigate among these relations by selecting those of interest for each specific case.

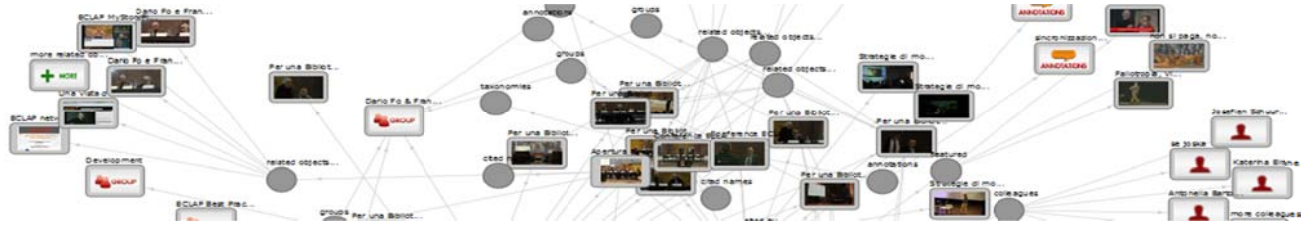
For these cases the LOG.DISIT.ORG provides algorithms and tools to solve the problem dynamically showing the relationships and resolving connections. The Users can play with graph elements moving and zooming, turning on/off connections, searching, filtering and expanding, exploring and playing to see more information, exploiting connection with other RDF Stores, LOD/LD, etc. Social Graph is a simplified Linked Open Graph for social networks, and example of its usage is in www.ECLAP.eu

How LOG.DISIT.ORG works



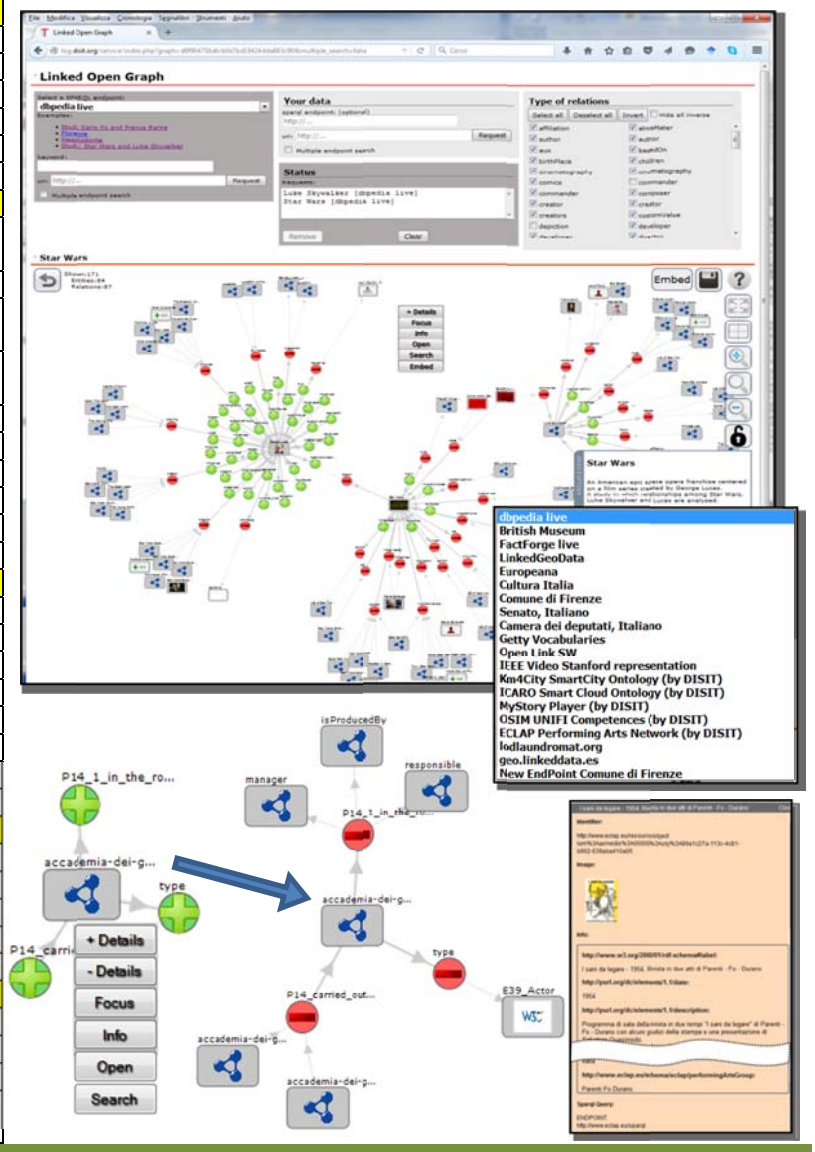
The LOG.DISIT.ORG allows displaying and browsing the structure and relations among the RDF entities. The graph is made of two kinds of nodes, rectangular shaped nodes represent entities (content, terms, users, etc.) while circular shaped nodes represent relations, that can be exploded or not. Directed edges connect an entity node to a relation node and a relation node to an entity node.

Regarding the user interactions the User is able to: **save on cloud** graph configurations to get a link via email to recover the same configuration and share with colleagues; **Embed** the graph produced in web page; **Expand** and **Focus** on an entity, in this latter case the graph is cleared and only the focused node is shown with its relations; **Open**, that is the play of the page or content associated with the node; use the Back button to go back to previous states of the graph (e.g. after a focus); Zoom/Pan the view; Hide/show types of relations to reduce the complexity of the graph. A special node is the **'More'** node that is presented when in a relation are present many nodes (e.g., the content associated with a group). In this case, providing all nodes could be infeasible thus a limited number of nodes is provided and a 'more' node is added to the relation. Clicking on it other nodes are added to the relation in a way similar to classical pagination used to present long lists in HTML.



Linked open graph feature

Access and Query
Access and rendering of LD
Access and rendering URI from SPARQL entry point
Managing Entry Points with different URL in URI.
Multiple SPARQL entry points
Making keyword based query
Inspecting entry point for searching classes
Relationships vs entities
Showing relationships, turning on/off, singularly or globally
Representing relationships (managing complexity)
Discovering inbound/outbound relationships, URI and queries
Discovering /searching single element from 1:N relation , or samples
Expand all relationships
Close all relationships, close single relationship
Closing / hiding the single entity
Counting number of elements
"sameAs" management
Blank nodes rendering
General Manipulation
Undo actions performed, "back"
Save and Load LOD graphs
Share and collaborative LOD graphs
Re-layouting the graph
Focusing on an URI
Zooming the graph
Centering the graph
Panning the graph with mouse/finger
URI Details
URI attributes (showing info or an URI)
Map allocation of URI
URL to resources
Open play resources
Representing entities
Non Functional
Web based tool
Embed in web pages of third party service: ECLAP
Graph Invoked by URL
Connecting and browsing multiple RDF stores in OD cloud



Notes on user advantages

The Linked Open Graph is presently used as Social Graph on the Home page of http://www.ECLAP.EU and in the Sentient Multimedia Network portal. The Social Graph is also used as administrator tool in APRETOscana.org. it is mentioned as a valuable tool by Europeana ThoughtLab page on new ways of searching and browsing (http://pro.europeana.eu/web/guest/thoughtlab/new-ways-of-searching-and-browsing#SocialGraph).

According to the user's interaction analysis of the social graph and of the whole portal, the 5.8% of the unique users interacted with the social graph. The most requested operation has been to **Open** a node (43%, for example to access at a recommendation, to see the content of other users), then to **Expand** a node (29%, mainly a media object 17%) and then to see the **More** related content (18%), the **Focus** operation is at about 10% on the operations requested since the social graph was activated.

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