Alma Mater Studiorum - University Of Bologna, Italy
DISI - *Department of Computer Science and Engineering*
DASPLab - *Digital and Semantic Publishing Laboratory*

A Linked Open Data customisable visualisation web tool

GIG
generating interfaces for RDF graphs

SEMANTIC WEB AND LINKED OPEN DATA OUTLINE

- **Semantic Web**: traditional Web of documents enhanced with semantic information
- **Model**: semantic data are represented as a set of structured RDF (Resource Description Framework) statements = RDF graph
- **Storing**: datasets are stored in SPARQL endpoint
- **Query**: dataset can be consulted by SPARQL queries (SPARQL protocol and RDF query language) over HTTP
- **Interconnection**: large semantic dataset are interconnected to each other by typed links freely accessible from the Web = Linked Open Data (LOD)

MOTIVATION

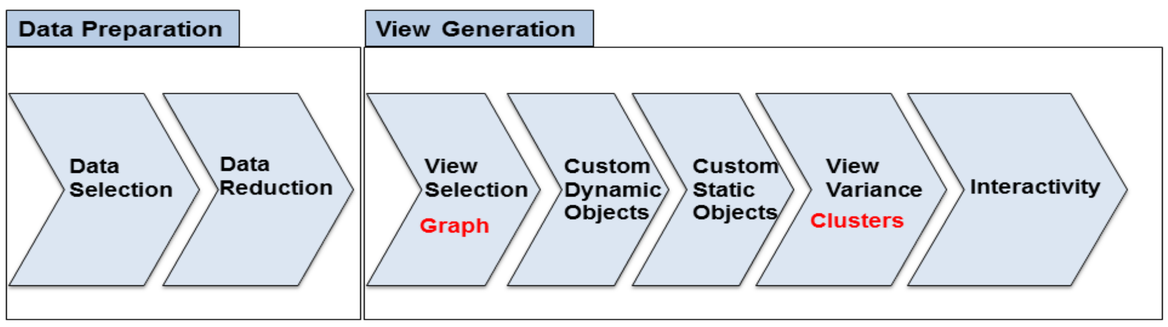
- Browsing **large LOD datasets** in a simple way is a major challenge
- LOD **InfoVis** are usually designed as task-specific solutions (not reusable in other contexts)
- Most of existing visualization tools are intended for Semantic Web **expert**..
- ..and give the user a limited control over **output rendering**

OBJECTIVES

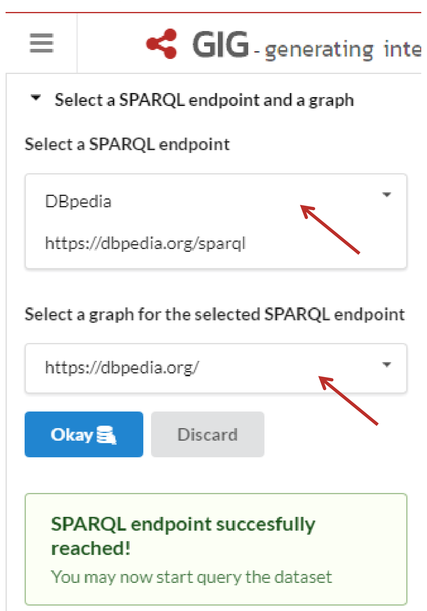
- Displaying semantic dataset content in a **clear and comprehensible way**
- Letting users to make **customizable visualizations of LODs**
- Facilitating the access to semantic-enriched information for **non-expert** users
- Hiding **the complexity** of the underlying ontological model

PROJECT: GIG generating interfaces for RDF graph

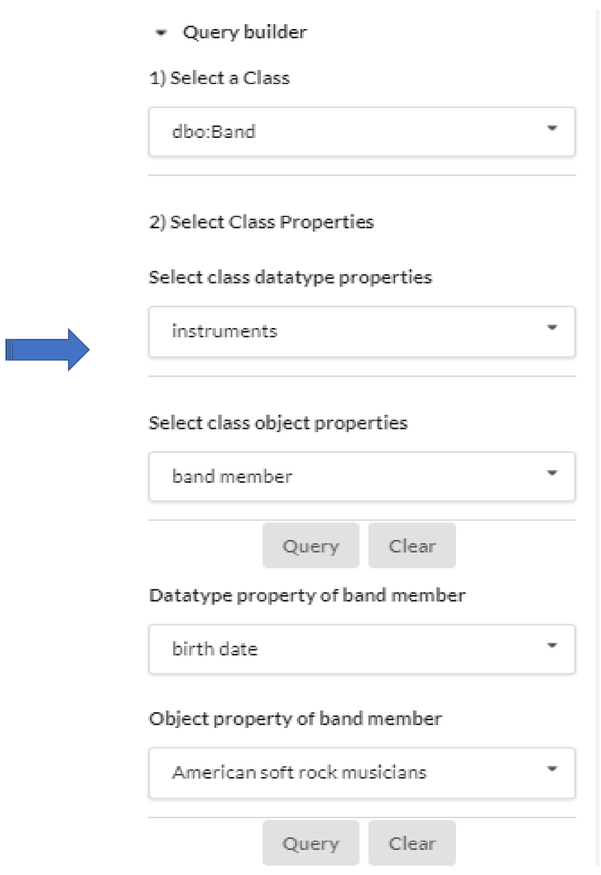
Data visualisation workflow



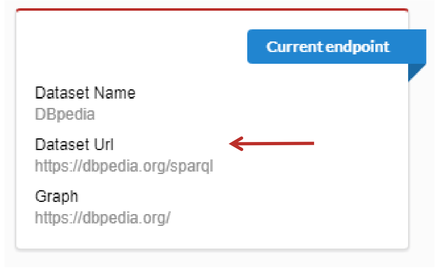
User can select a **data source** - **SPARQL endpoint and graph**- (like DBpedia) from the dropdown menu



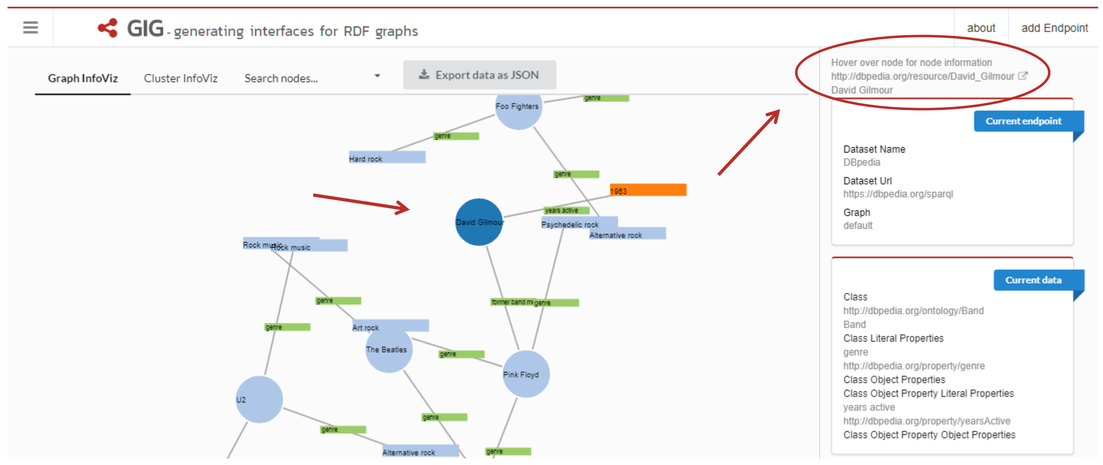
User can explore the selected dataset using a **visual SPARQL query builder**



Current endpoint **name**, **URI** and **graph** are displayed in a box



GRAPH VISUALISATION



User can explore the nodes in details.

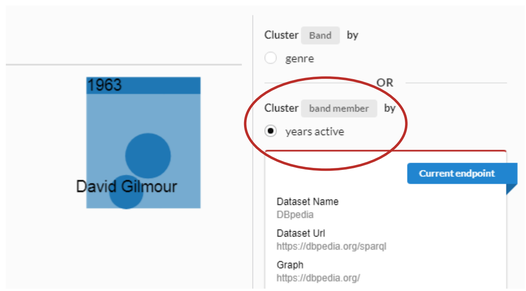
User can choose a **class** of entities (i.e. *Band*) to display and one of its **datatype property** (i.e. *genre*) and one of its **object property** (i.e. *Band Member*) which is another class); and in addition, one **datatype property** (i.e. *years active*) and one **object property** of the object property *Band Member*.

The schema of the current required data is summarized in a designated area.

Data visualisations can be switched between graph and cluster InfoViews.

CLUSTER VISUALISATION

Data can be grouped together in **clusters** by selecting different **properties.**



TECHNICAL DETAILS

- This interactive web-based application is build with **AngularJS** framework, powerful **D3.js** JavaScript library for data visualisation and SemanticUI for graphic interface.
- Demo is online at **http://eelst.cs.unibo.it:8092/** and it is currently being developed.
- For further information, advice and questions don't hesitate to contact me! Stay tuned!

FUTURE WORKS

More **info views** (dendrogram, circle packing, radial node-link tree) are eligible to be realized over RDF data

Other **data processing frameworks** could be included if needed

New **customisation** features, **static** and **dynamic** graphic objects

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Public deployment
Demo online at http://eelst.cs.unibo:8092.