Short Notation and Tool Explanation

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In ViziQuer a query is a graph with one node marked as the main one (orange round rectangle). In the simplest situations the query shape is a tree with the main node being its root.	**Language** (select this) → spokenIn **Country** dbr:Colombia
A query creation can be started by a class, by a property and by an individual (from the pane to the right of the diagram, double-click the item). The lists for classes, properties and individuals can be name-filtered. It is recommended to write searched name fragments case sensitive. It might be necessary to write individual's name in full. A pattern for a typical individual name is like *dbr:Margaret_Thatcher*	Classes Properties Individuals Use filter ✔ Only from dbo: ☐ Exclude yago: *Double-click an item to start a query from it* + CareerStation (2.48M) + Agent (1.97M) + TimePeriod (1.92M) + Person (1.74M)
If the schema information cannot be seen to the right of the diagram, and the 'Reload tree' button is shown, press the button.	Finish You are editing the diagram! Classes Properties Individuals Reload tree
When a query creation has been started, ***Add Link*** operation (from the right mouse context menu on a node) allows adding connecting links (and in some cases, the link other end class names). Simple (join) is usually sufficient for the simplest queries. Subqueries and unions are available, as well. Choose the desired link in the dialogue, or search for the name by the name fragment. If similar-named properties appear in both *dbo:* namespace (can be written also without prefix) and *dbp:* namespace, it is generally recommended to try the *dbo:* one first.	Add Field ... ▶ Add Link ... ▶ Simple (join) ... Re-shape Query ▶ Subquery ... Cut Union ... Copy Explain ... Delete Execute query Generate query SPARQL Query part ▶ Single node (class) ▶
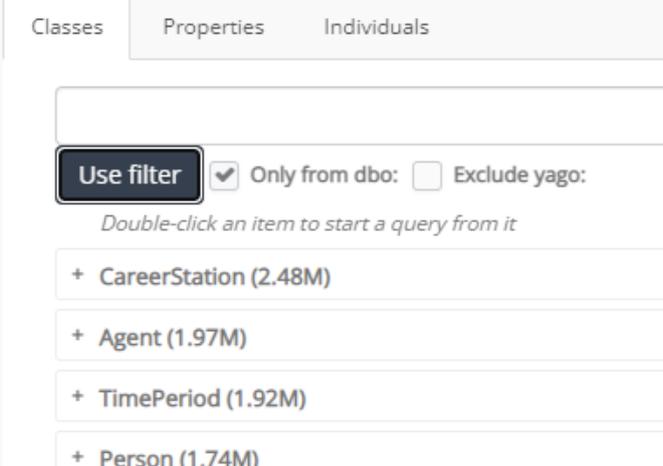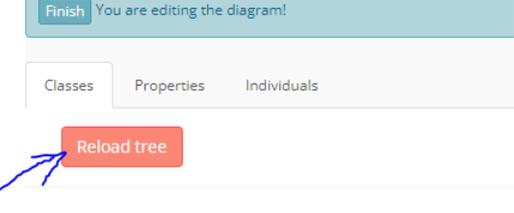
	Add Link ☑ Basic order Search.. ○ foaf:isPrimaryTopicOf => [..] ○ foaf:homepage => [..] ○ location => [..] ○ type => [..] ○ industry => [..] ○ product => [..] ○ keyPerson => [..] ○ foundedBy => [..] ○ foaf:depiction => [..] ○ rdf:type => [..] ○ dbp:wikiPageUsesTemplate => [..] ○ owl:sameAs => [..] ○ dct:subject => [..]
Add Field allows adding data fields to query nodes. Choose *(select this)* as a data field representing the node instance itself. **Aggregate .**. is for aggregate fields (e.g., counting). Filters are possible, as well.	Add Field ... ▶ (select this) Add Link ... ▶ Simple (attribute) ... Re-shape Query ▶ Aggregate ... Cut Filter (Condition) ... Copy Extra ... ▶ Delete Execute query Generate query SPARQL Query part ▶ Single node (class) ▶

Data in all fields can be managed from the **property pane to the right of the diagram** (the node or edge properties appear by clicking on the element).
 	
Class name (URI) and **Instance name (URI)** can be typed in the respective fields in the property names.
 	
Make sure to type the full individual name in the form *dbr:Margaret_Thatcher* .
 	
Names without prefixes in the **Instance** field are considered to be *variables* (used for naming columns in the output and for references from other query parts).
 	
For class names the short form (name only) can be used, if the namespace is the default one (i.e., *dbo:*).
	Main Plus Extra Style
	
	Aggregates
	
	Class
	  Software
	
	Instance
	
	☐ Group by this
	
	Conditions
	
	Attributes
	  (select this)
	  rdfs:label
	  abstract
	
	☐ Select distinct
	
	OrderBy
	
	GroupBy
	
	Software
	(select this)
	rdfs:label
	abstract

It is possible also to create several independent query nodes and then by a link from the **symbol palette**.	
Just as for data selection, queries can be used for counting and other kinds of data aggregation.	
Counts (and other aggregations) are automatically grouped by any selection fields in any of the nodes (in the example case – *(select this)* in the node for the class '*Country*').	
A similar query can be created also **without class names** (the class names are optional; if they are specified, the query would look only at results that belong to the specified classes).	
Subqueries allow for richer means of counting in the context (e.g., the spoken languages in the context of a country), allowing further filters and processing on the counted values.	
There can be also "**free links**" in the query (labelled by ++), not corresponding to any link in the data. The nodes on both sides of the link are typically connected by a **condition**. In the example the alias *cgb* denotes the birthdate of *Coco Gauff*; the condition in the *TennisPlayer* node asks for tennis players younger than *Coco Gauff*. The mark *{h}* at the *cgb* field specifies this as a helper field – not to be included in the resulting data selection.	
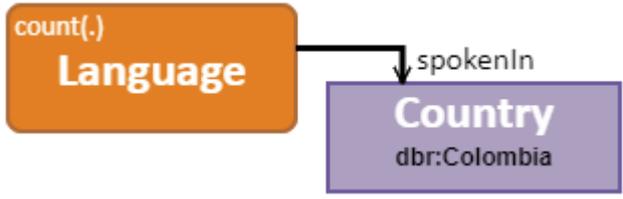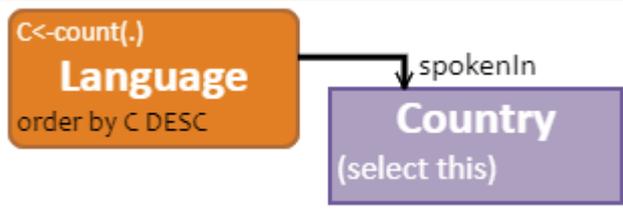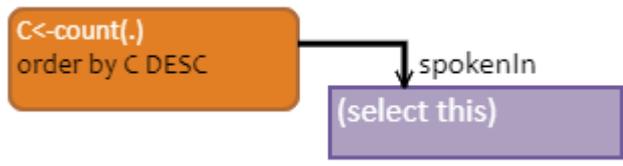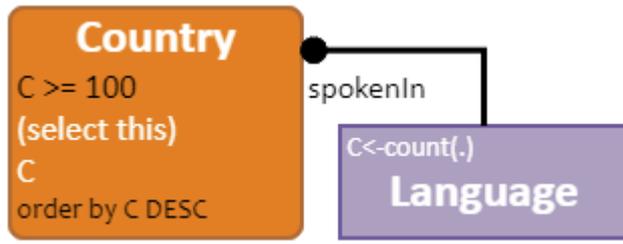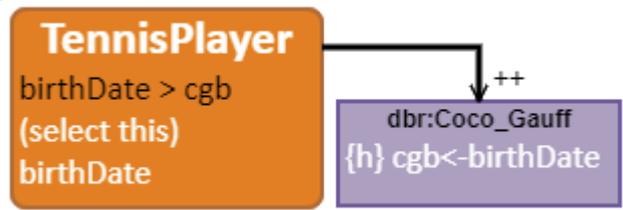
Sample Queries

Try the formulation of the following queries within the DBPedia query environment.

How did you succeed? Which of the queries has been the easiest, and which has been the hardest?

Do you have some suggestions regarding the tool environment improvement? We would welcome your comments at viziquer@lumii.lv, or karlis.cerans@lumii.lv .

The following queries are to be answered within the context of the DBPedia dataset.

1. How many films are there?

2. Find (list) all films starring *Tom Cruise*.

3. Find the 10 youngest tennis players (list the player resource URI and the birth date).

4. Find all soccer players that are born on or after January 1, 2007.
Note: use "yyyy-MM-dd"^^xsd:date as the format for date literals (replace *yyyy*, *MM* and *dd* by the year, the month and the date, respectively, e.g., as in "2007-01-01"^^xsd:date).

5. How many grandchildren did *Thomas Jefferson* have?

6. Find the person with the largest grandchildren count (list the person resource URI and the grandchildren count).

7. Find the three top countries with largest volcano counts in the country (list the country resource URI and the volcano count).

8. List all persons that each have 100 or more films starring them (list the person resource URI and the respective film count).

9. Find all politicians, born on the same date as *Tom Cruise* (list the politician's resource URI and the birth date).