

Relational Algebra Calculator Instructions

In this assignment, you are going to use an online relational algebra calculator (<http://138.232.66.66/ra/calc.htm>) that allows you to enter a relational algebra query expression or a SQL query and see the result. We have preloaded sample data. All you need to do is to type your relational algebra expressions and check the results. Here's how to use the site.

1. Open a Web browser and visit <http://138.232.66.66/ra/calc.htm>.

The screenshot shows the 'load a Dataset' section of the Relational Algebra Calculator. On the left, there is a dropdown menu set to 'UIBK - R, S, T' and a list of datasets under the 'Miscellaneous' category: 'Kemper Datenbanksysteme', 'UIBK - KursDB', 'UIBK - R, S, T', 'Database Systems The Complete Book - Exercise 2.4.1', 'Database Systems The Complete Book - Exercise 2.4.3', and 'Wikipedia - Relational algebra (en)'. Below this, under 'University of Innsbruck', are 'PS Datenbanksysteme WS2014/15, Blatt 4' and 'UIBK - PS Database Systems - Exercise Sheet 5 (Pizza)'. On the right, there is a section 'Load dataset stored in a gist' with a text input field for 'gist ID' and a 'load' button. Below that is a section 'Create your own Dataset' with a description and two buttons: 'create new Dataset' and 'modify current Dataset'.

2. Click the “UIBK - R,S,T” button. In the “gist ID” box, type **66b0a4c2c38bfc644511a15226810684** and click the “Load” button. All the data are loaded on the browser side, which means you will have to reload every time you refresh or reopen this page.

This screenshot shows the same interface as the previous one, but with the gist ID '66b0a4c2c38bfc644511a15226810684' entered into the 'gist ID' input field. The 'load' button is still present. The rest of the interface, including the dataset list and the 'Create your own Dataset' section, remains the same.

3. You should see the “Success” message. Now the TopicalBirds.com relations have loaded into your browser. You can execute a relational algebra expression by typing one in the right pane.

Success: gist loaded successfully

TopicalBirds.com

Relational Algebra

SQL

About

cno number
btag string
id number

Ad

aid number
caption string
picture string
wtag string

Bird

π σ ρ \leftarrow τ γ \wedge \vee \neg $=$ \neq \geq \leq

1 your query goes here ...

keyboard shortcuts:

execute statement:

execute selection:

autocomplete:

4. In the following example, we use the projection (π) operator, the “ptag” field, and the relation “Peacock”. After typing this relational algebra expression, click “> Execute query” and you will see the result along with a tree representation of the query.

TopicalBirds.com

Relational Algebra

SQL

About

cno number
btag string
id number

Ad

aid number
caption string
picture string
wtag string

Bird

btag string
gender string
first_name string
last_name string
birthdate date
income string

BirdListen

tag string
btag string

Chirp

btag string
cno number
date date
location_latitude number
location_longitude number
parrots_btag string

π σ ρ \leftarrow τ γ \wedge \vee \neg $=$ \neq \geq \leq \cap

1 π ptag (Peacock)

▶ execute query

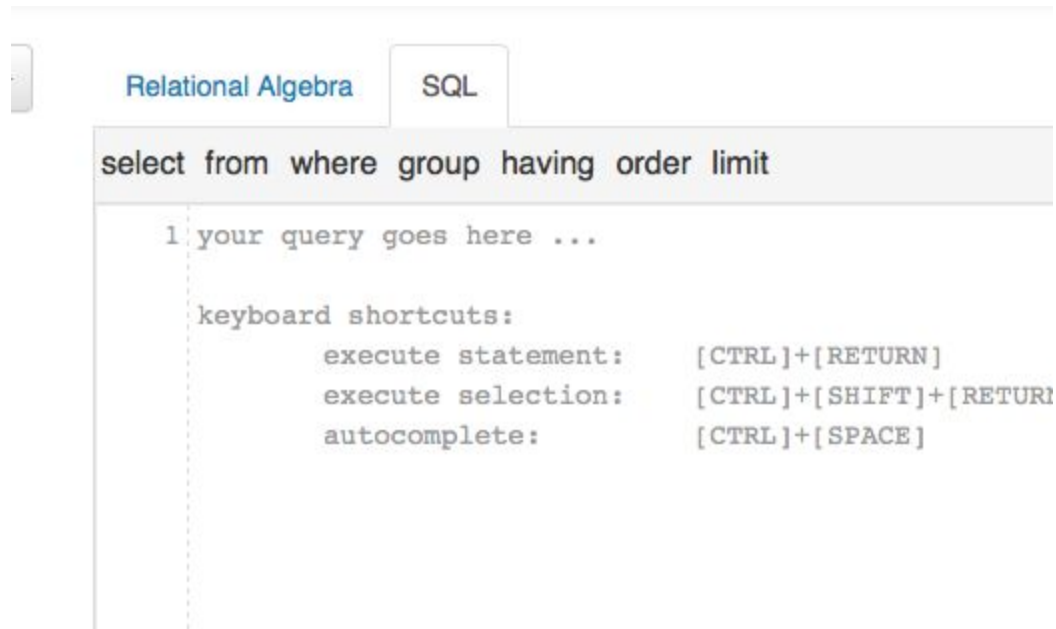
π ptag

Peacock

π ptag (Peacock)

Peacock.ptag
HillaryClinton
realDonaldTrump

5. 5. If you would like to try SQL as well, you can click the 'SQL' tab to change to SQL query mode.



6. For more details on syntax, click the "Help" button or visit <http://138.232.66.66/ra/help.htm>.