

Relational Algebra Calculator Instructions

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

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

UIBK - R, S, T Relational Algebra SQL Group Editor

R
a number
b string
c string

S
b string
d number

T
b string
d number

1 your query goes here ...

keyboard shortcuts:
execute statement: [CTRL]+[RETURN]
execute selection: [CTRL]+[SHIFT]+[RETURN]
autocomplete: [CTRL]+[SPACE]

execute query download history

Tables from and for the lecture [Databases: Foundations, Data Models and System Concepts - University of Innsbruck](#) chapter 3

2. Click the “UIBK - R,S,T” button. In the “gist ID” box, type [19579938d8717b2ad54ec8d33ab31b76](https://gist.github.com/30565ce67e9a65fb6ed1a2835fde3f1) and click the “Load” button. Note: All of the data turns out to be loaded on the browser side of this system, which means that you will have to reload the data when you refresh or reopen this page (i.e., whenever you start a new session to work on the HW). It loads in an instant, so this should be very livable.

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load a Dataset

Miscellaneous

- 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
- Wikipedia - Relational algebra (en)

University of Innsbruck

- PS Datenbanksysteme WS2014/15, Blatt 4
- UIBK - PS Database Systems - Exercise Sheet 5 (Pizza)

Load dataset stored in a gist

30565ce67e9a65fb6ed1a2835fde3f1 load

Create your own Dataset

You can create your own dataset and share it with others. Learn more about it in the [Maintainer Tutorial](#)

create new Dataset modify current Dataset

Tables from and for the lecture [Databases: Foundations, Data Models and System Concepts - University of Innsbruck](#) chapter 3

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

Success: gist loaded successfully

cs122a-checkedtw...

Relational Algebra SQL

About

- tweet_id string
- ev_id number

Checker

- user_id number
- checker_since string

Evidence

- ev_id number
- url string

EvidenceFrom

- user_id number
- ev_id number

Expertise

- user_id number
- domain string

Hashtag

- tweet_id string
- hashtag string

Phone

- user_id number

keyboard shortcuts:

- execute statement: [CTRL]+[RETURN]
- execute selection: [CTRL]+[SHIFT]+[RETURN]
- autocomplete: [CTRL]+[SPACE]

execute query

download history

Source: gist.github.com
by glengga
last modified one minute ago

4. In the following example, we will use the projection (π) operator to display the “email” field of the relation “User”. After typing this relational algebra expression, click “> Execute query” and you will see the result along with a tree representation of the query. (Note: Hovering an algebra operator at the top of the query UI will show you its syntax, and if you click on “Help” in the upper right corner of the UI it will take you to the online reference manual.)

cs122a-checkedtw...

Relational Algebra SQL

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EvidenceFrom

- user_id number
- ev_id number

Expertise

- user_id number
- domain string

Hashtag

- tweet_id string
- hashtag string

Phone

- user_id number
- kind string
- number string

Tweet

- posting_datetime string
- posting_location_latitude string
- posting_location_longitude string

1 π email User

execute query

π email

User

π email User

User.email
danielgraham@yahoo.com
kat_fisher06@aol.com
ashley57@gmail.com

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

cs122a-checkedtwe... ▾

Relational Algebra SQL Group Editor

About

- tweet_id string
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- checker_since string

Evidence

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- url string

EvidenceFrom

- user_id number
- ev_id number

Expertise

- user_id number
- domain string

Hashtag

- tweet_id string
- hashtag string

Phone

- user_id number
- kind string
- number string

select from where group having order limit

1 your query goes here ...

keyboard shortcuts:

- execute statement: [CTRL]+[RETURN]
- execute selection: [CTRL]+[SHIFT]+[RETURN]
- autocomplete: [CTRL]+[SPACE]

▶ execute query

download history ▾

Source: gist.github.com
by [glennaga](#)
last modified one minute ago

6. For more details on syntax, click the “**Help**” button or visit <http://138.232.66.66/ra/help.htm>. And FYI, for renaming attributes, RelaX includes support for renaming in projection, so you don’t need to use the much uglier separate renaming operator. (For example, try typing “ π email -> eaddr User”.)