Relational Algebra Calculus

Deepak Yadav

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How to use Relation Algebra Calculator

1. select ($)

```
syntax: $(table)(conditions)
conditions support <, >, =, &, !, |, +, -, * operators only
<= is not supported but same is possible using <, &, =
similarly >= using >, &, =
and != using !, =
```

2. project (#)

```
syntax: #(table)(column1, column2, column3, ....)
```

3. union (U)

```
syntax: U(first_table)(second_table)
```

4. difference (D)

```
syntax: D(first_table)(second_table)
```

5. rename (R)

```
syntax: R(old_table)(new_table_name[, new_column1_name, ...])
```

6. cartesian product (C)

```
syntax: C(first_table)(second_table)
```

Calculator also support nested queries

project inside select

```
$(#(table)(column1, column2, column3, ....))(conditions)
```

select inside project

```
#($(table)(conditions))(column1, column2, column3, ....)
```

nesting can be complex

```
C(R(U(#(table1)(column1, column2, column3, ....))($(table3)(conditions)))
 (new_table_name[, new_column1_name, ...]))
 (R(D($(table2)(conditions)))(#(table4)(column1, column2, column3, ....)))
 (new_table_name[, new_column1_name, ...]))
```

Steps to run calculator

```
1. open the terminal
2. change the directory to Project-2
3. g++ -std=c++11 nested_query.cpp -o output.out
4. ./output.out
```