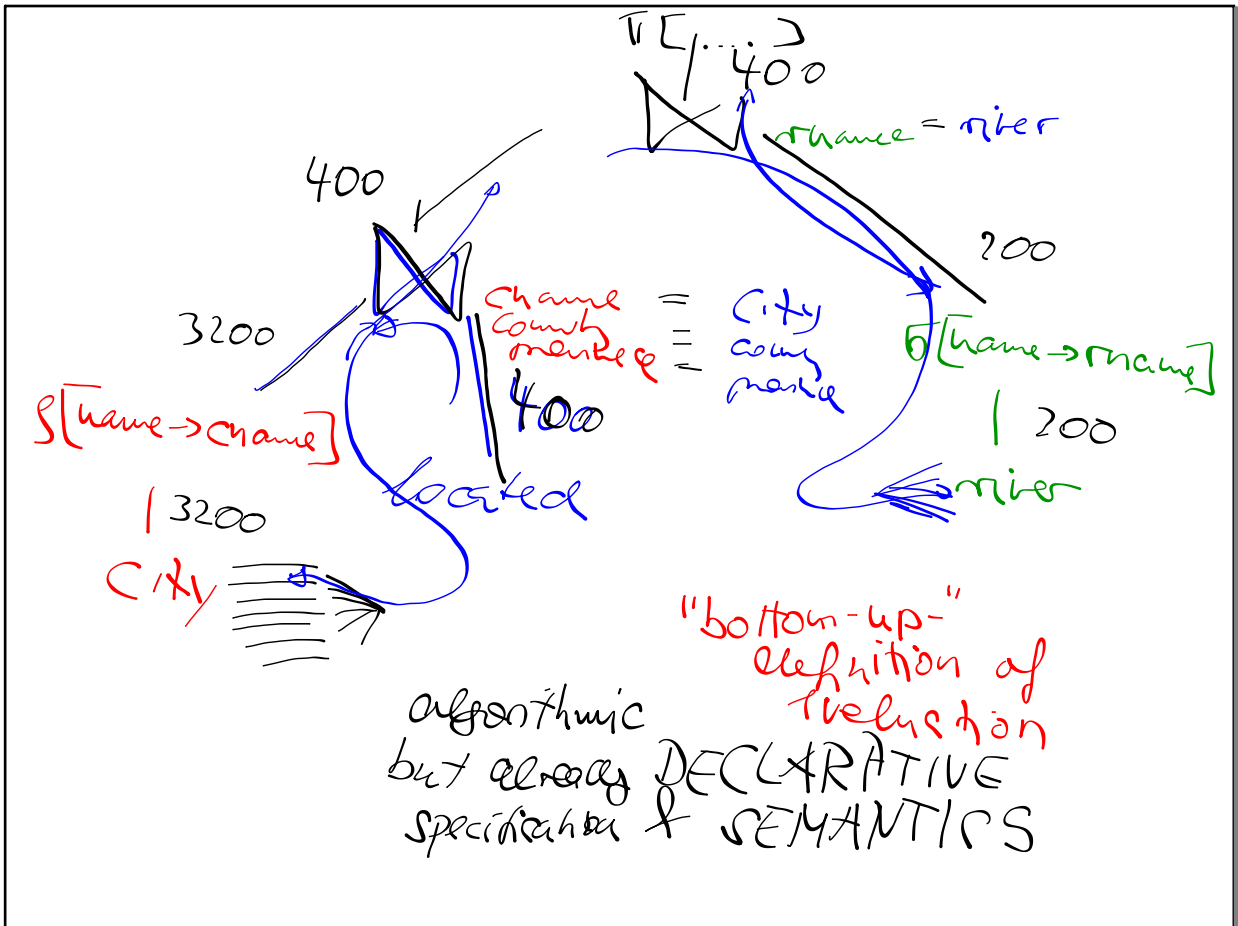


Okt 30-10:07



Okt 30-10:37

answer(CN, RN) :-

$\exists c, r: c \text{ isa city}$
 $\wedge \text{name}(c, CN)$
 $\wedge r \text{ isa river}$
 $\wedge \text{name}(r, RN)$
 $\wedge \text{locatedAt}(c, r)$

for instance CN/'Baal' RN/'Plein'

Conjunctive Query $\hat{=}$ Join $\hat{=}$ FROM (SQL)

DECLARATIVE
 not algorithmical

\Rightarrow logic
 \Rightarrow extension to reasoning

Okt 30-10:43

All cities (name, population) such that ~~MANUS~~ the city is ^(NOT) located at some river.

$\Pi[\text{name}, \text{pop}]$

3200
 440
 440
 1100

name = city
 count = count
 practice = practice

located

city

Okt 30-10:49

answer(CN) :-

$\exists c : c \text{ isa City}$

$\wedge \text{name}(c, CN)$

$\neg(\exists r : \text{located}(c, r))$

Corresponds to select in lookup in located
 corresponds to EXISTS in VFL .

Okt 30-10:56

All cities that are stored in the database

that are not known to be located

expect that the located relationship is complete
 located at some river that is stored in the DB

also called "Closed World Assumption" \Rightarrow *honestly!* applicable to databases
 web?

Okt 30-11:00

Negation in Web Context

John isa Person. (Open Linked Data)
 John hasChild Alice.
 John hasChild Bob.
 Tom isa Person. (Sem Web)
 Alice a Person; age 5. (Ex. tom hasChild)

?P isa Person $\wedge \neg \exists c: ?P \text{ hasChild } c.$

?P/Tom ~~?P~~ CWA not applicable

Okt 30-11:10

Sketch: terns.

alice
 john
 berlin
 father //
 livesIn / 2

⇒ father(alice)
 father(berlin)

predicate

alice john
 father //
 livesIn / 2

0-ary function symbol
 0-ary fun symbol
 1-ary function symbol
 binary predicate

tern
 tern

$\text{livesIn}(alice, berlin)$ is a atomic formula

Okt 30-11:32