SQL : relational Algebra

Set of Tables ⟶ Table "closed language"

- named columns
- names of the appl. domain
(City, population, capital, ...)

Operators

π Table → Table

σ Table → Table

$\bowtie$ Tables → Table

⋮ ~~$\times$~~ ~~$\bowtie$~~ MINUS ÷

SQL: + Group By (Aggregation) NOT EXISTS "antijoin"

Ex. DB γ : Table → Table

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Red. DB

Datalog :

country('D', 'germ', ...)

≙ tables

no named columns, but positions

?- country(C, N, P, ...) ∧ P > 1000000

→ { {C/'D', N/'germ', P/81000000, ...},
{C/'F', N/'France', P/60000000},
~~{C/'M', N/'Malta', P/300000 .. 1},~~
⋮ }

C	N	P
'D'	'germ'	81000000
'F'	'France'	60000000

Result : ≙ tables,
column names are variables

↘ mapping to relational algebra
$\pi, \sigma, \bowtie$, ... antijoin, γ.
implementations : Grouping, ...

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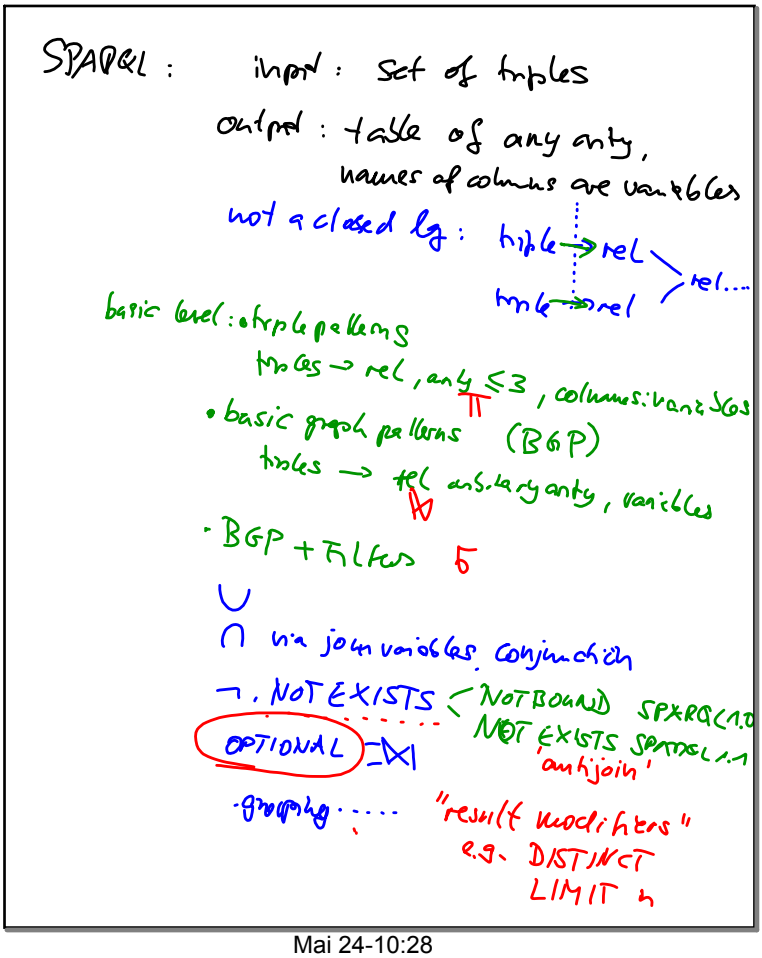

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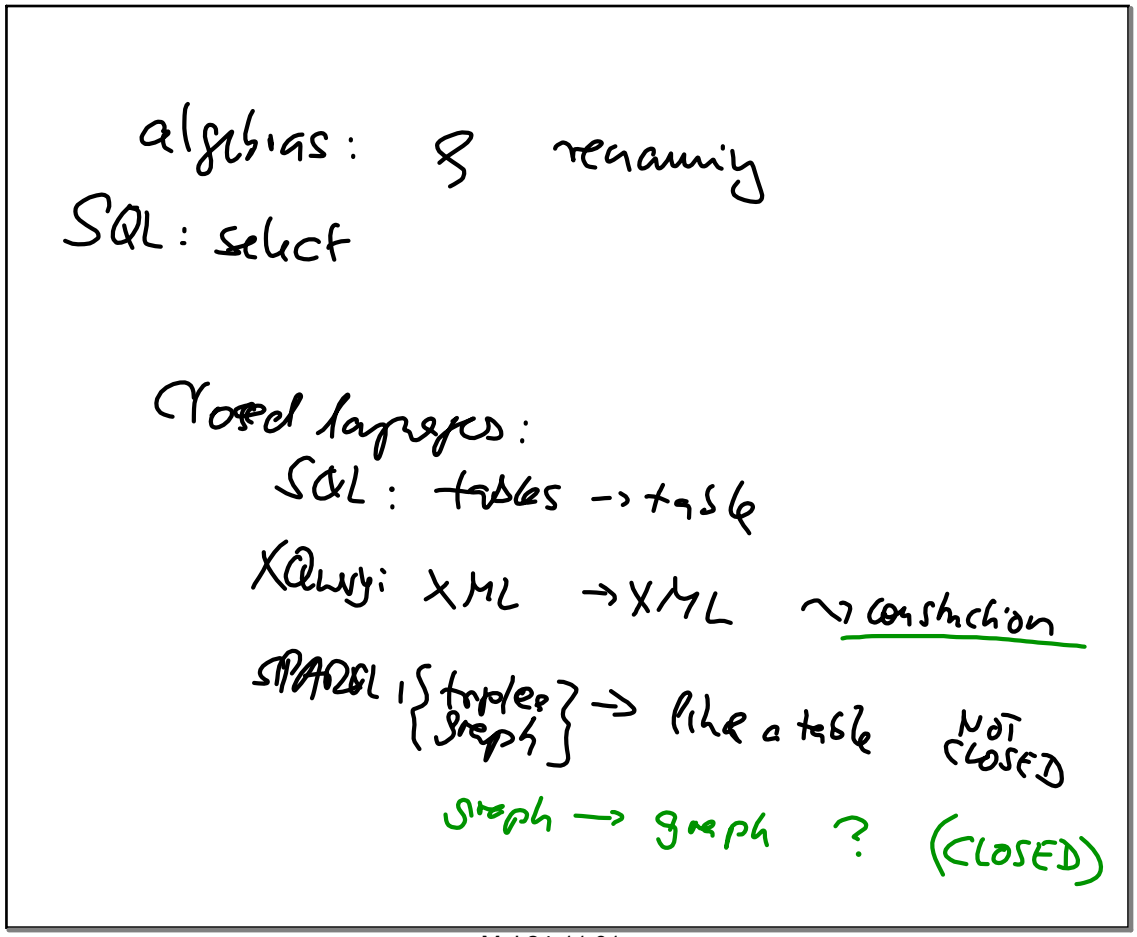

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Triple patterns

S Pred O

S Path O

?X child* ?Y

?X (parent/brother)|(parent/sister/husband) ?Y

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