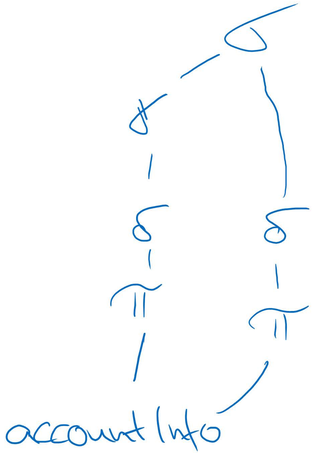


$A := \delta(\pi_{SSN, bank}(accountInfo))$

$B := \gamma_{SSN, count(bank) \Rightarrow Anzahl}(A)$

$C := \delta(\pi_{bank}(accountInfo))$

$D := \sigma_{Anzahl = count(C)}(B)$

A

SSN	bank
~~123~~	BoA
~~467~~	BoA
~~123~~	Chase
~~896~~	Chase
~~123~~	USB
~~467~~	USB

B

SSN	Anzahl
123	3
467	2
896	1

C

bank
BoA
Chase
USB

	SSN		SSN	AccNo	bank
	123		123	1111	*BoA*
	467		467	1222	*BoA*
person =	467	*accountInfo* =	123	333	*Chase*
	896		896	444	*Chase*
	563		123	555	*USB*
			467	666	*USB*

$A(bank) := \pi_{bank}(accountInfo)$

$B(bank) := \delta(A)$

$C(bank, SSN) := B \times person$

$D(bank, SSN) := \pi_{bank, SSN}(accountInfo)$

$E(bank, SSN) := C - D$

$F(SSN) := \pi_{SSN}(E)$

$G(SSN) := \delta(F)$

$Result := person - G$

B

bank
BoA
Chase
USB

C

SSN	bank
123	BoA
123	Chase
123	USB
467	BoA
467	Chase
467	USB
896	BoA
896	Chase
896	USB
563	BoA
563	Chase
563	USB

D

SSN	bank
123	BoA
467	BoA
123	Chase
896	Chase
123	USB
467	USB

E

SSN	bank
467	Chase
896	BoA
896	USB
563	BoA
563	Chase
563	USB

F

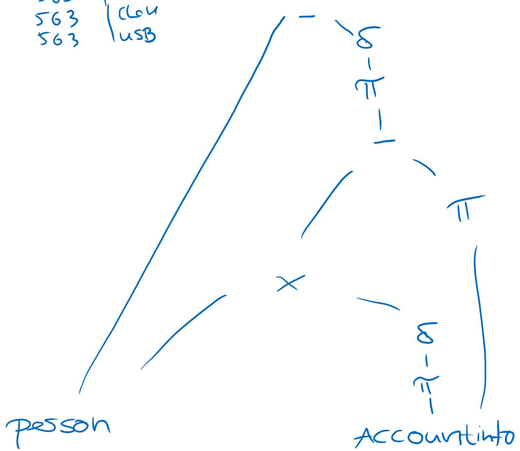
SSN
467
896
896
563
563
563

G

SSN
467
896
563

Result

SSN
123



Party(login, sg, getr)

① Wieviele Personen wollen welches getr.

$$\gamma_{getr,\ COUNT(login)}(Party)$$

→ Anzahl

② pro sg wieviel P welches getr..?

$$\gamma_{sg,\ getr,\ COUNT(login)}(Party)$$

→ Anzahl

Test

↓

WW 2	Name	DB-Note
0	Iwes	⊥
0	Luca	1,3
0	Timo	1,7
1	Steffen	2,3

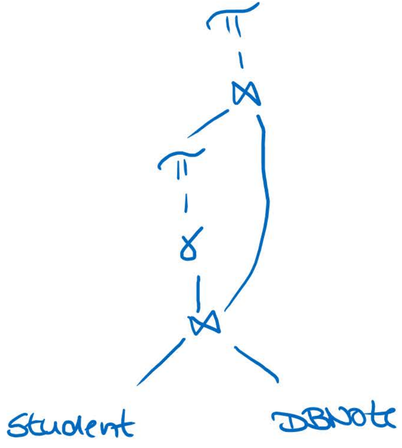
$\sigma_{DB\text{-}Note < 2}(Test)$

$\sigma_{DB\text{-}Note > 2 \text{ AND } Name != 'Iwes'}(Test)$

3. Student(Name, DB-Note) auch wenn sie keine haben

WW
1/2
1
1
0

Student ⟕ DBNote



RA – LAST TIME

Student(M-Nr: int, Name: string, SG: string)

DBNote(M-Nr: int, Note: real)

1. Name d. Studenten m. d. besten Note

$\pi_{Name}((\sigma_{Note = min(DBNote.Note)}(DBNote) \bowtie Student))$

2. bestes pro SG (Name)

A(M-Nr, Name, SG, Note) := Student ⋈ DBNote

B(SG, min(Note)) := $\gamma_{SG, min(Note)}(A)$

C(SG, Note) := $\pi_{SG, min(Note) \to Note}(B)$

D(M-Nr, Name, SG, Note) := C ⋈ A

E(Name) := $\pi_{Name}(D)$

Result := E

vollst. lineare Notation

1. pro Zeile 1 Operator
2. pro Zeile neue Relation mit Zuweisung-Op :=
3. Ergebnisrelation = Result
4. Attribute werden i.d. neuen Rel. angezeigt