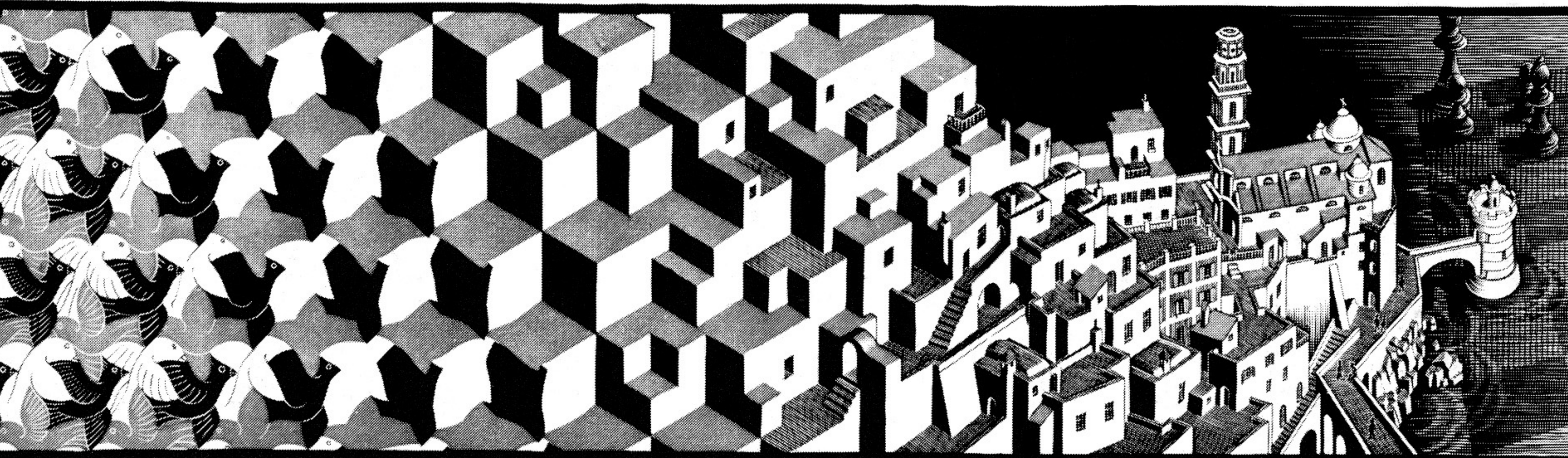


From legacy data to event data

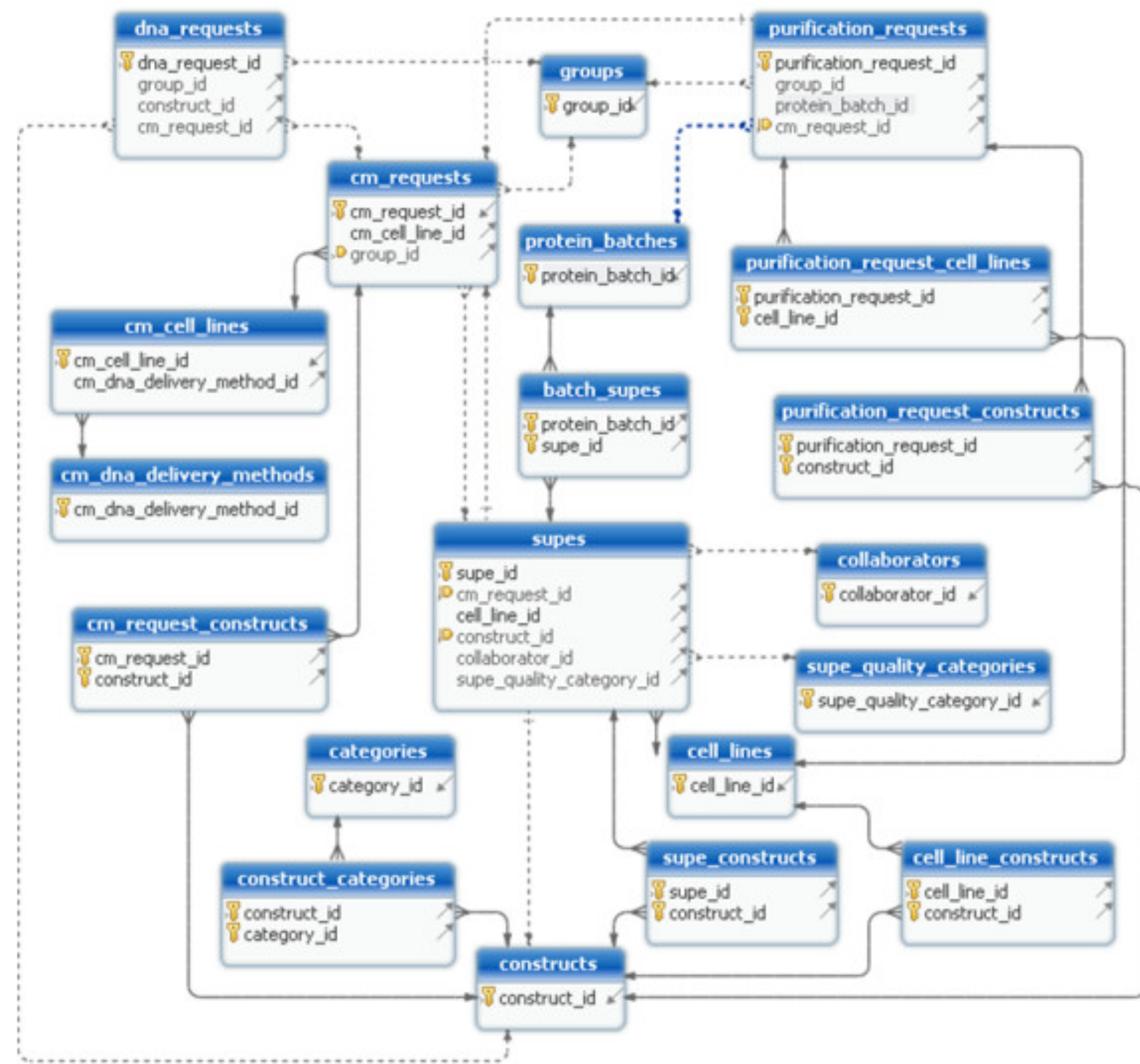


Marco Montali
Free University of Bozen-Bolzano, Italy



unibz

The (well-known) issue



(legacy) relational data



process mining

The (well-known) issue

time-consuming,



80%

20%

The (well-known) issue

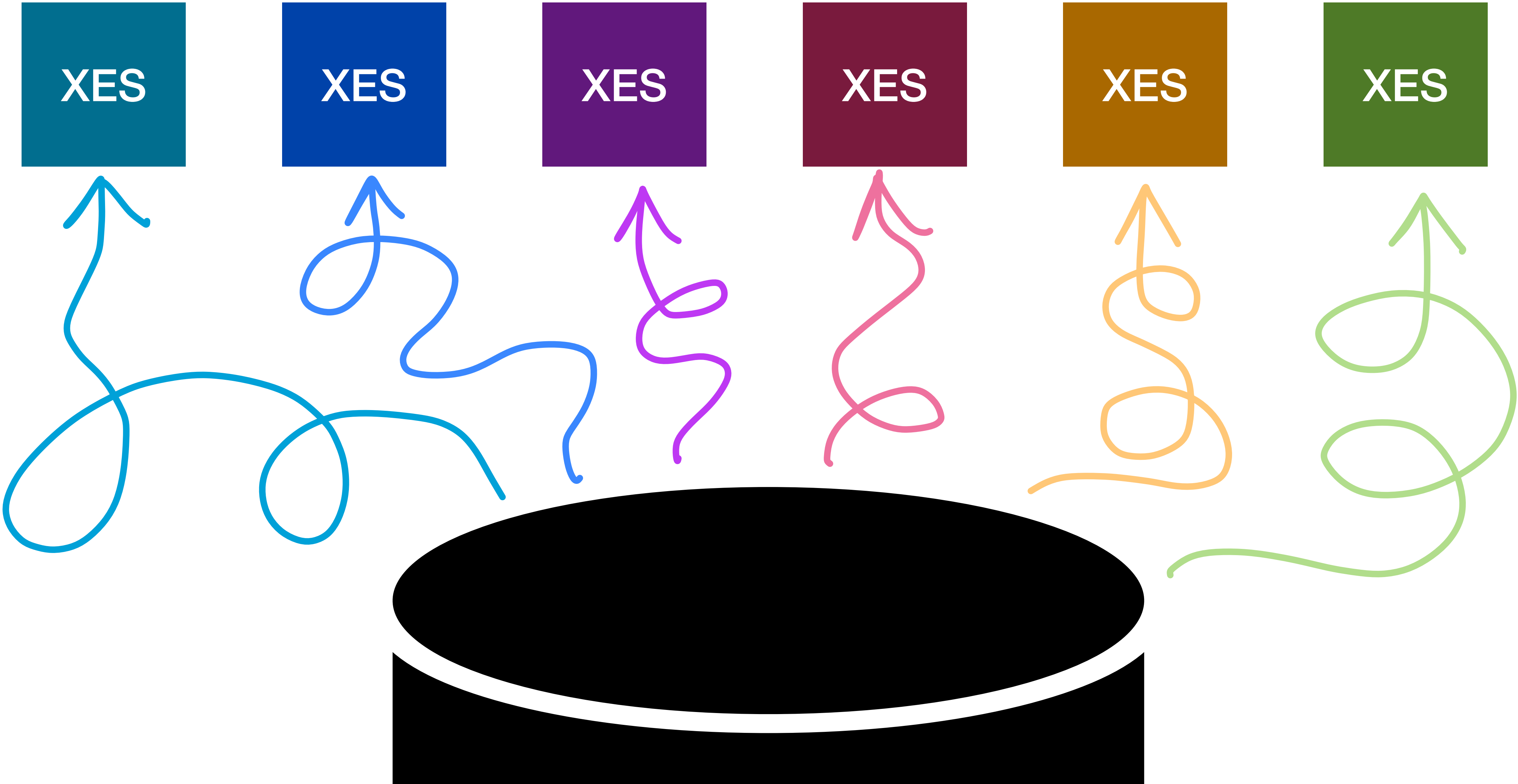
time-consuming,
manual, ad-hoc, error-prone, undocumented



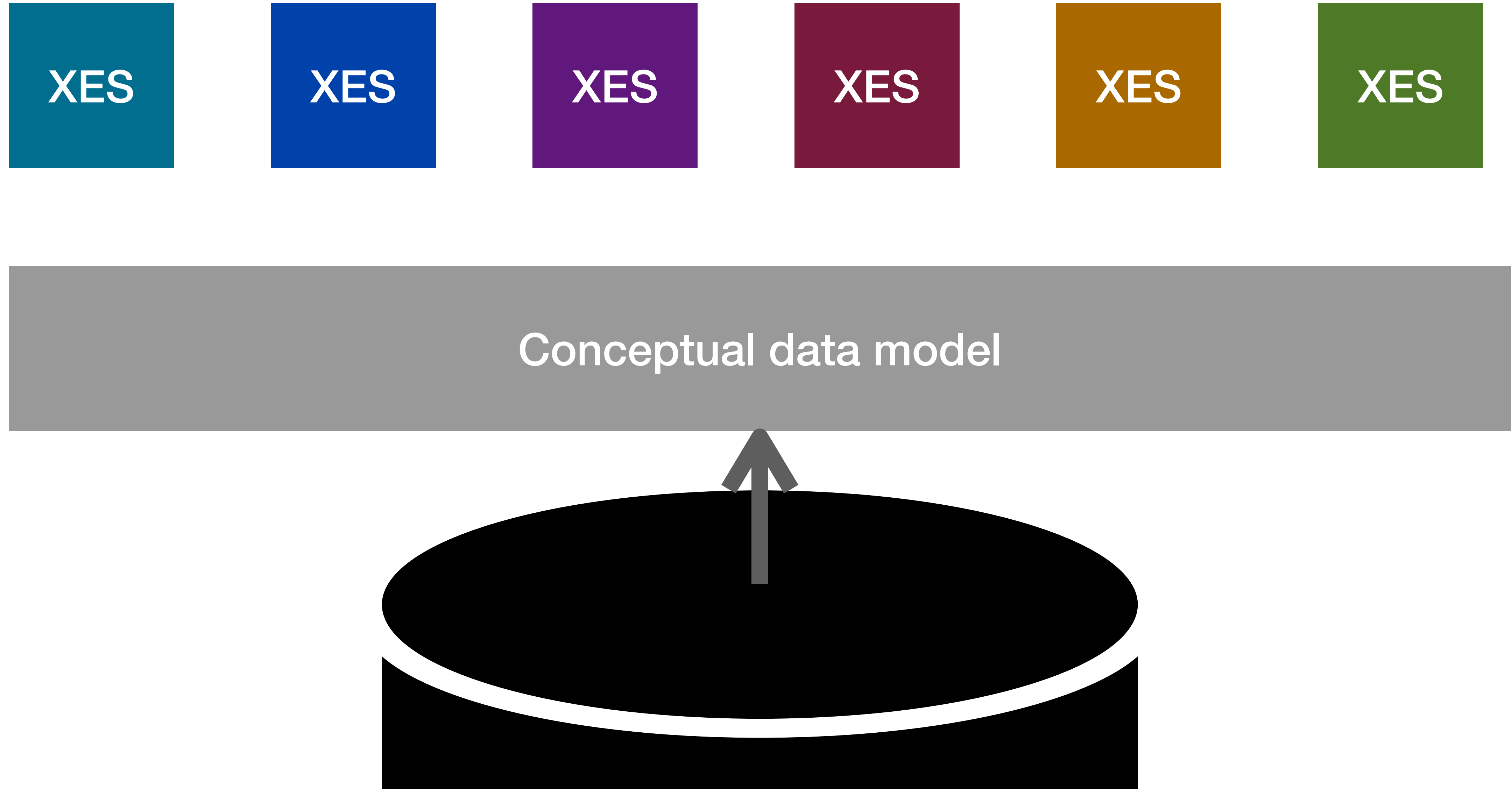
80%

20%

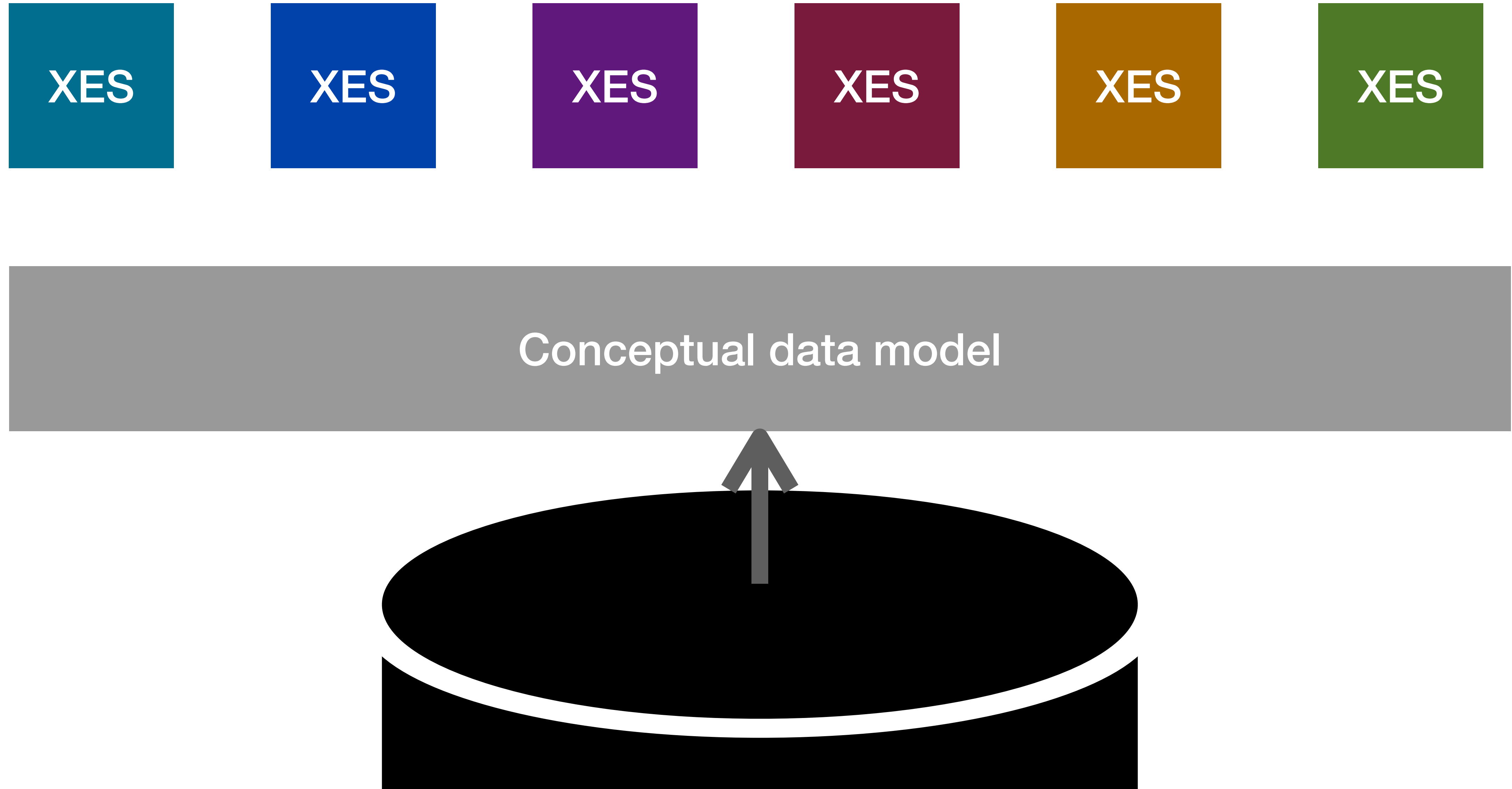
Multiplication effect



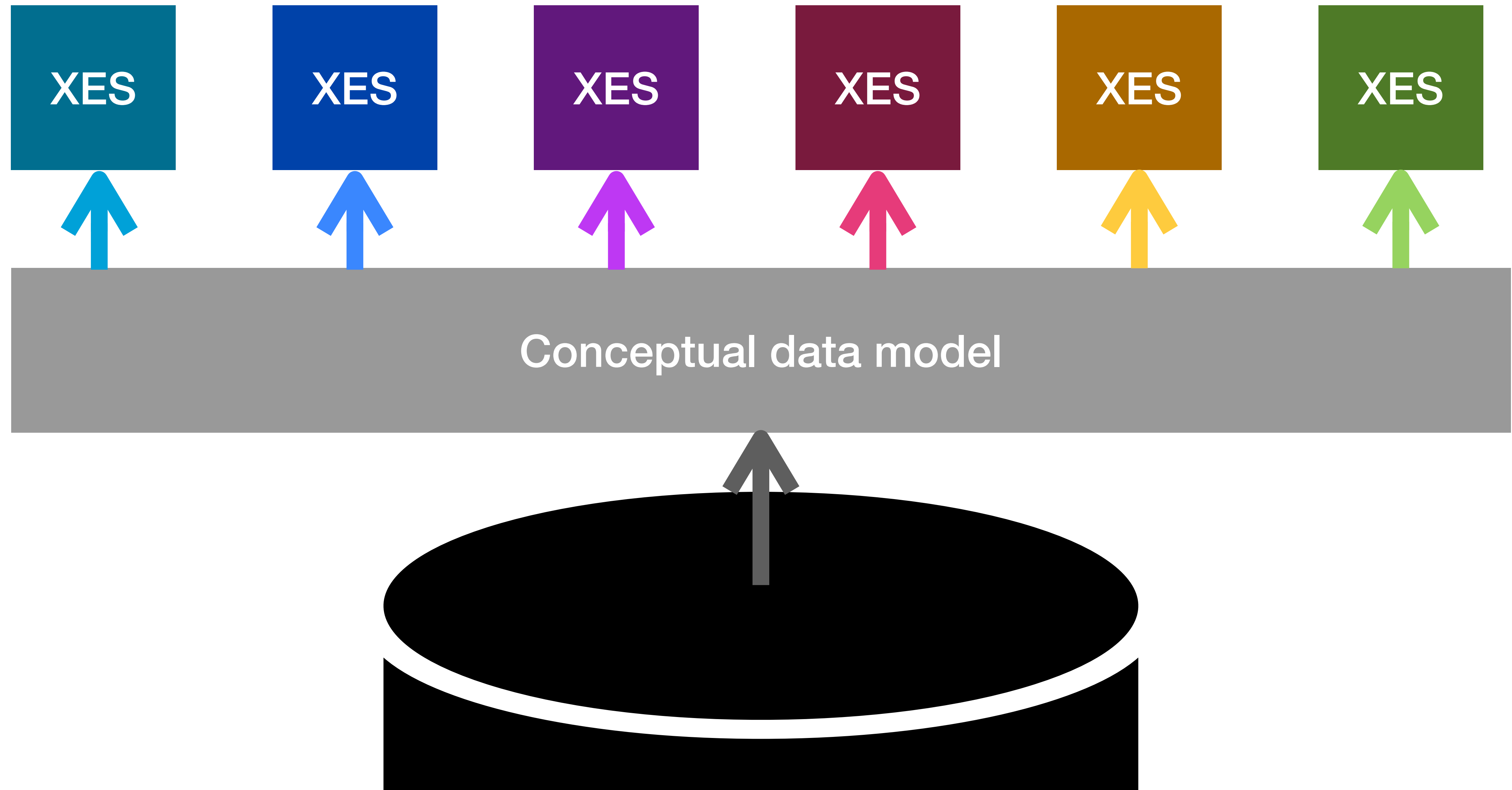
Our approach: 1 - describe your domain



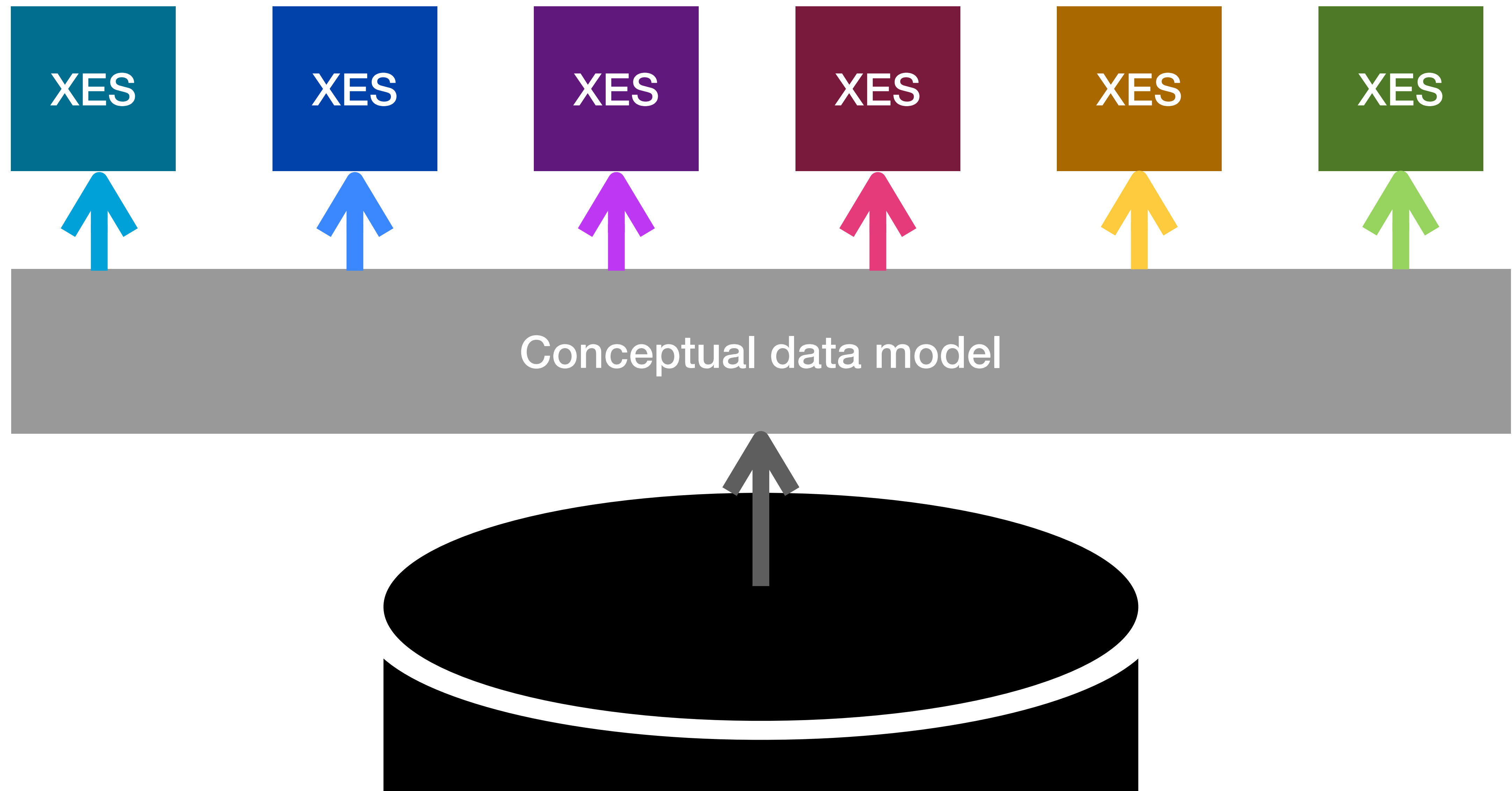
Our approach: 2 - map DB to data model

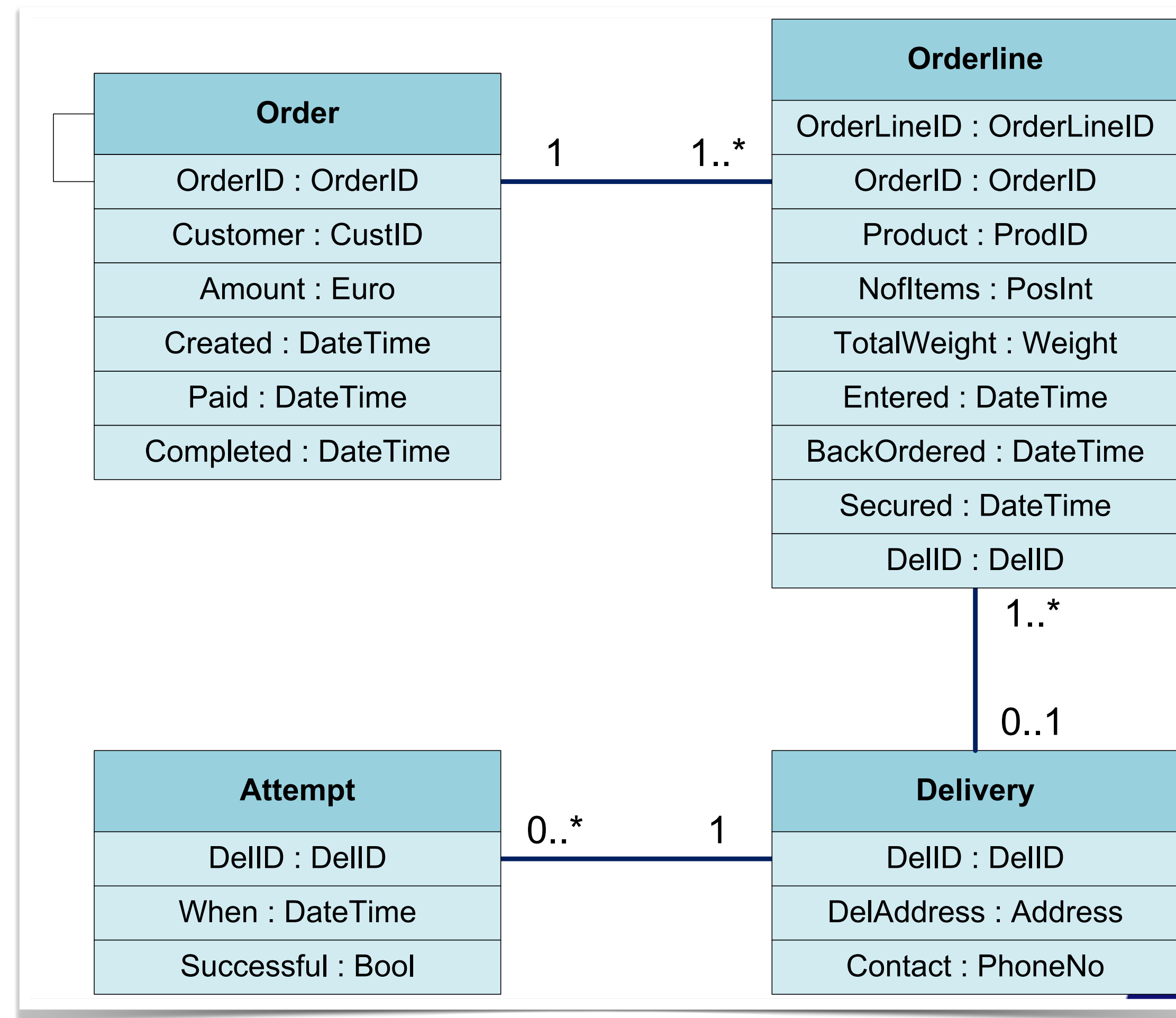


Our approach: 3 - annotate data model

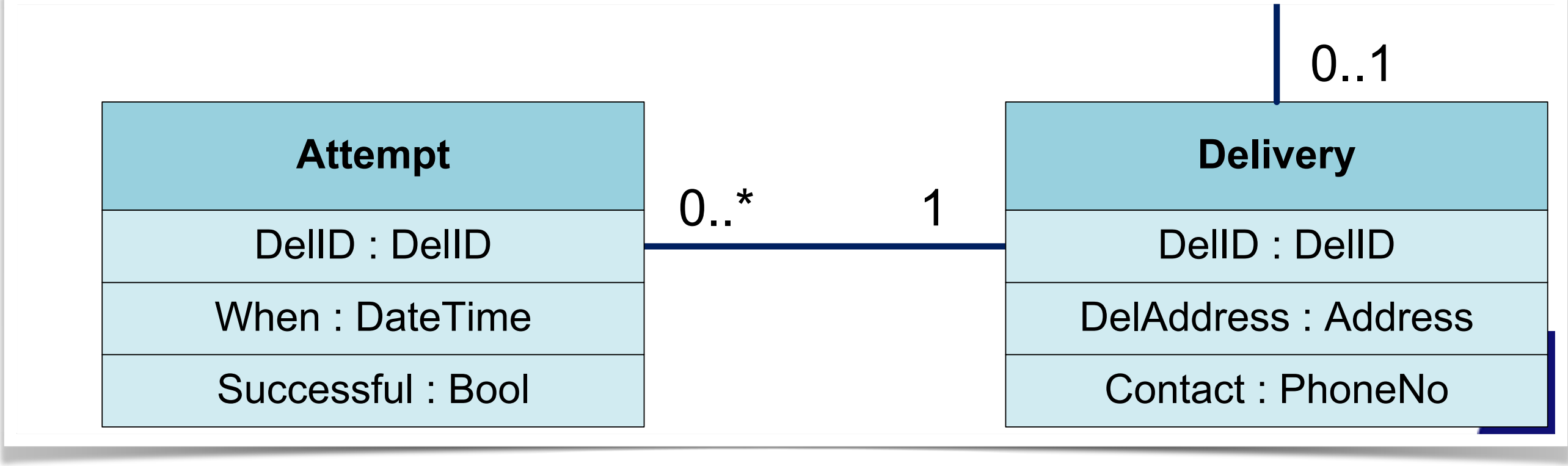


XES logs can be **materialised** or kept “**virtual**”!





pictures extracted from Wil van der Aalst, slides on “Chapter 4: Getting the Data”

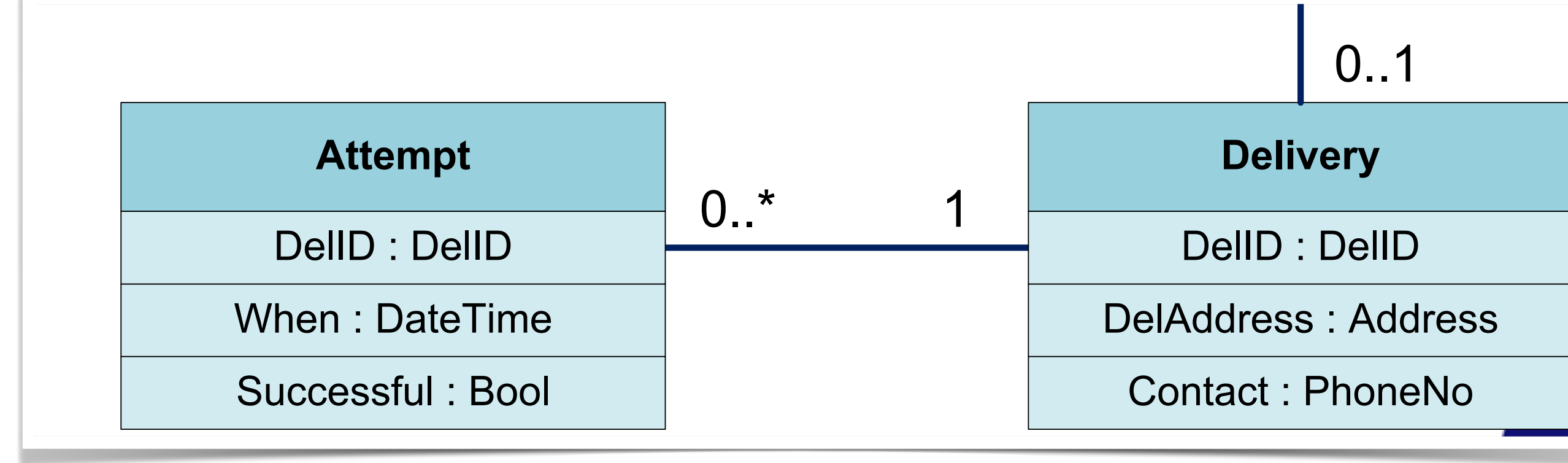


Deliveries

ID	Order	T1	T2	T3
1	O1	01/10/2021	02/10/2021	NULL
2	O2	02/10/2021	NULL	NULL
3	O3	02/10/2021	NULL	NULL

Order

ID	Owner	CurStatus
O1	P1	C
O2	P1	A
O3	P2	A
O4	P3	X



Declarative rules mapping SQL queries to concepts/relations (with object creation)

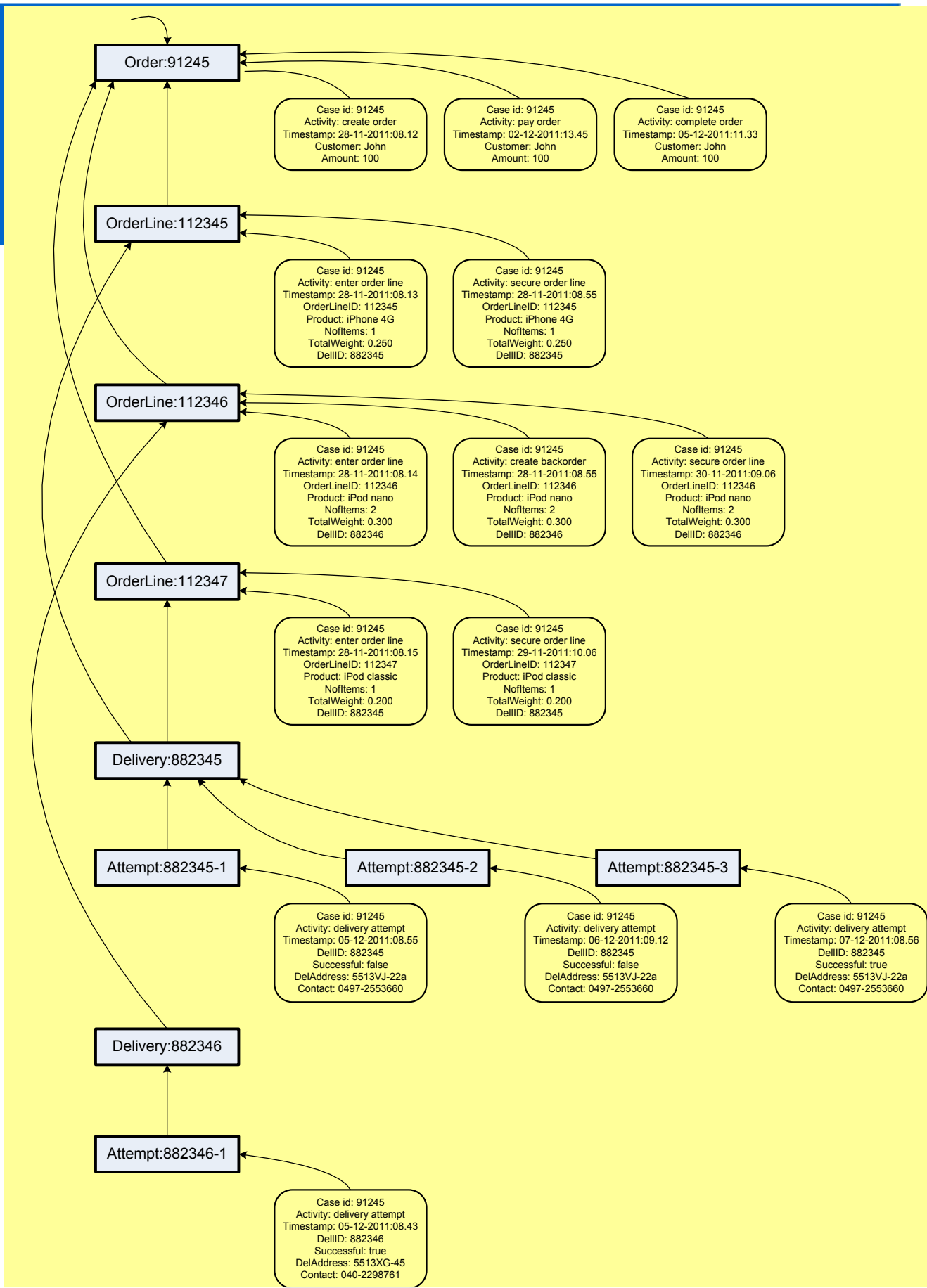
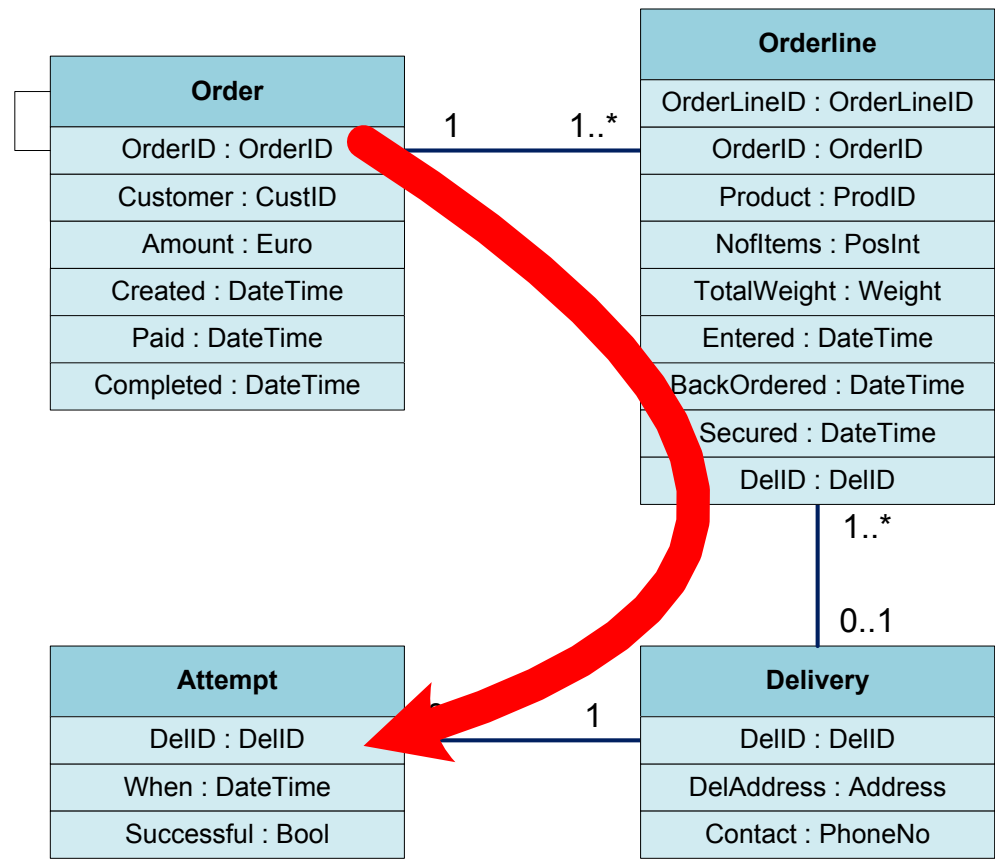
Deliveries

ID	Order	T1	T2	T3
1	O1	01/10/2021	02/10/2021	NULL
2	O2	02/10/2021	NULL	NULL
3	O3	02/10/2021	NULL	NULL

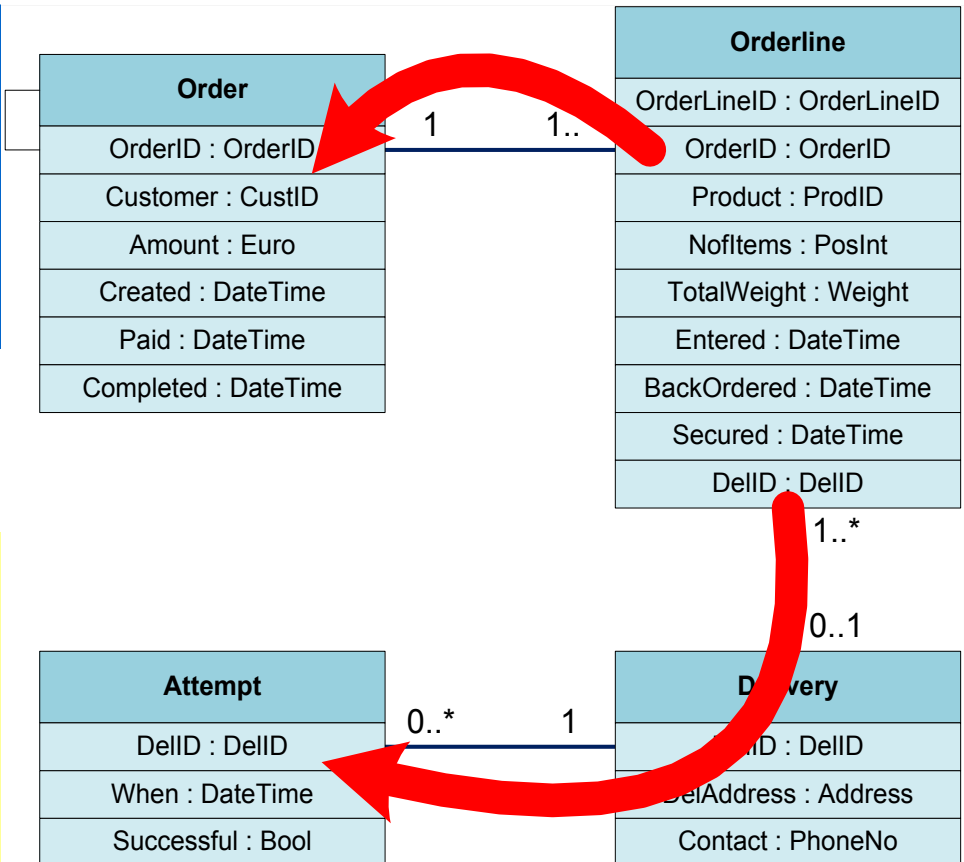
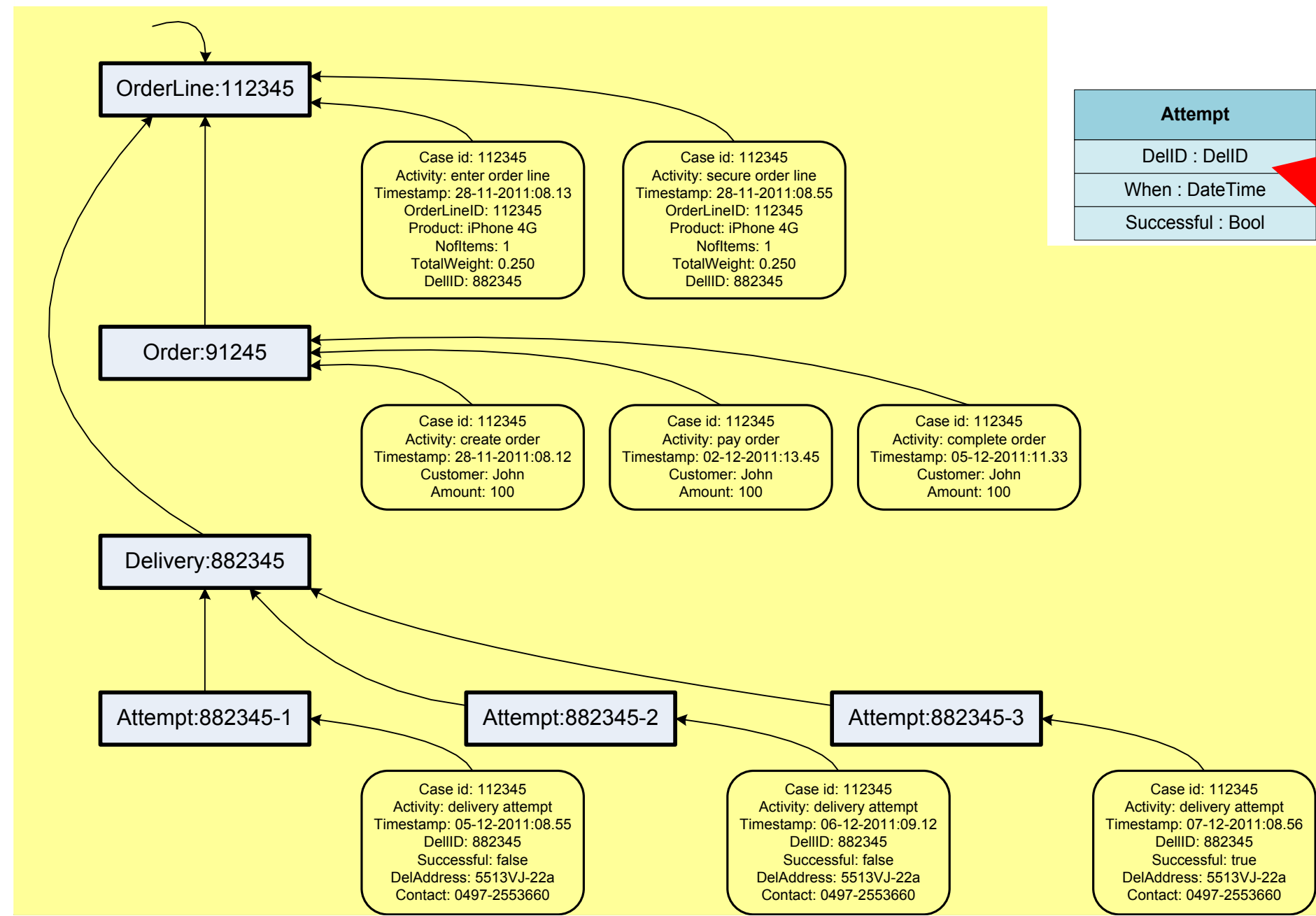
Order

ID	Owner	CurStatus
O1	P1	C
O2	P1	A
O3	P2	A
O4	P3	X

Order instance



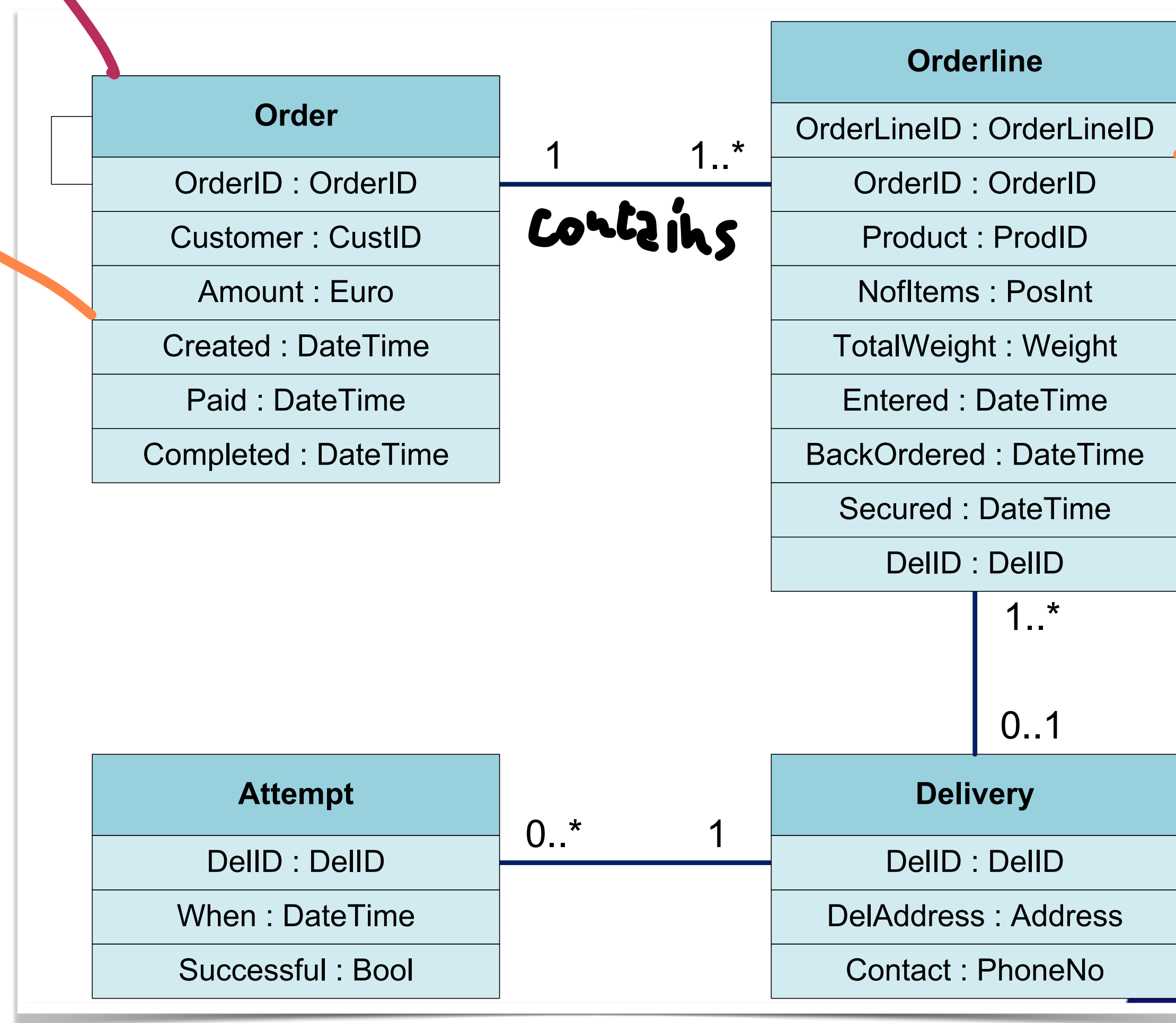
Orderline instance



CASE

EVENT

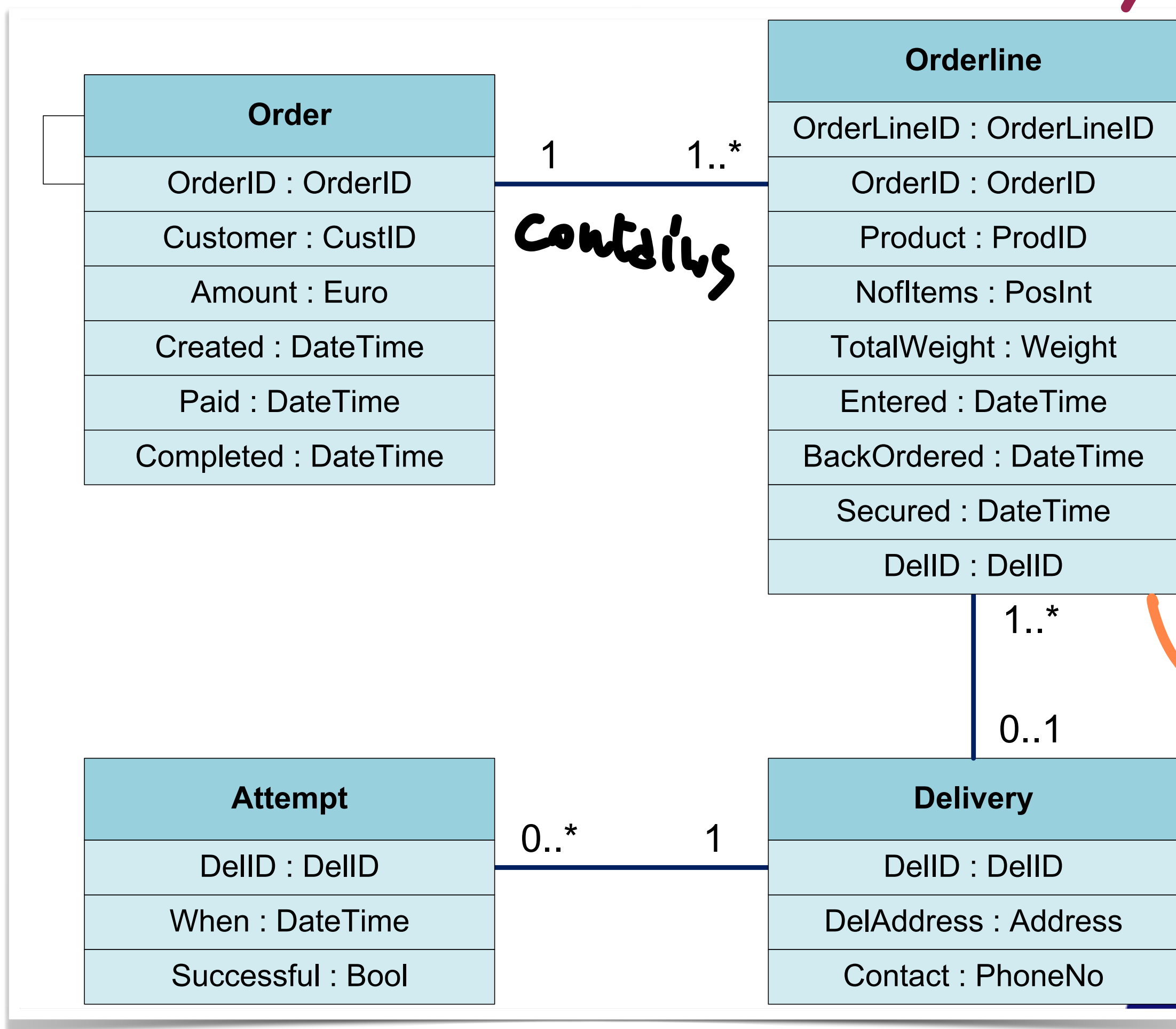
create
t: created
r: Customer
c: this



EVENT

enter
t: entered
r: ?
c: contains

CASE



EVENT

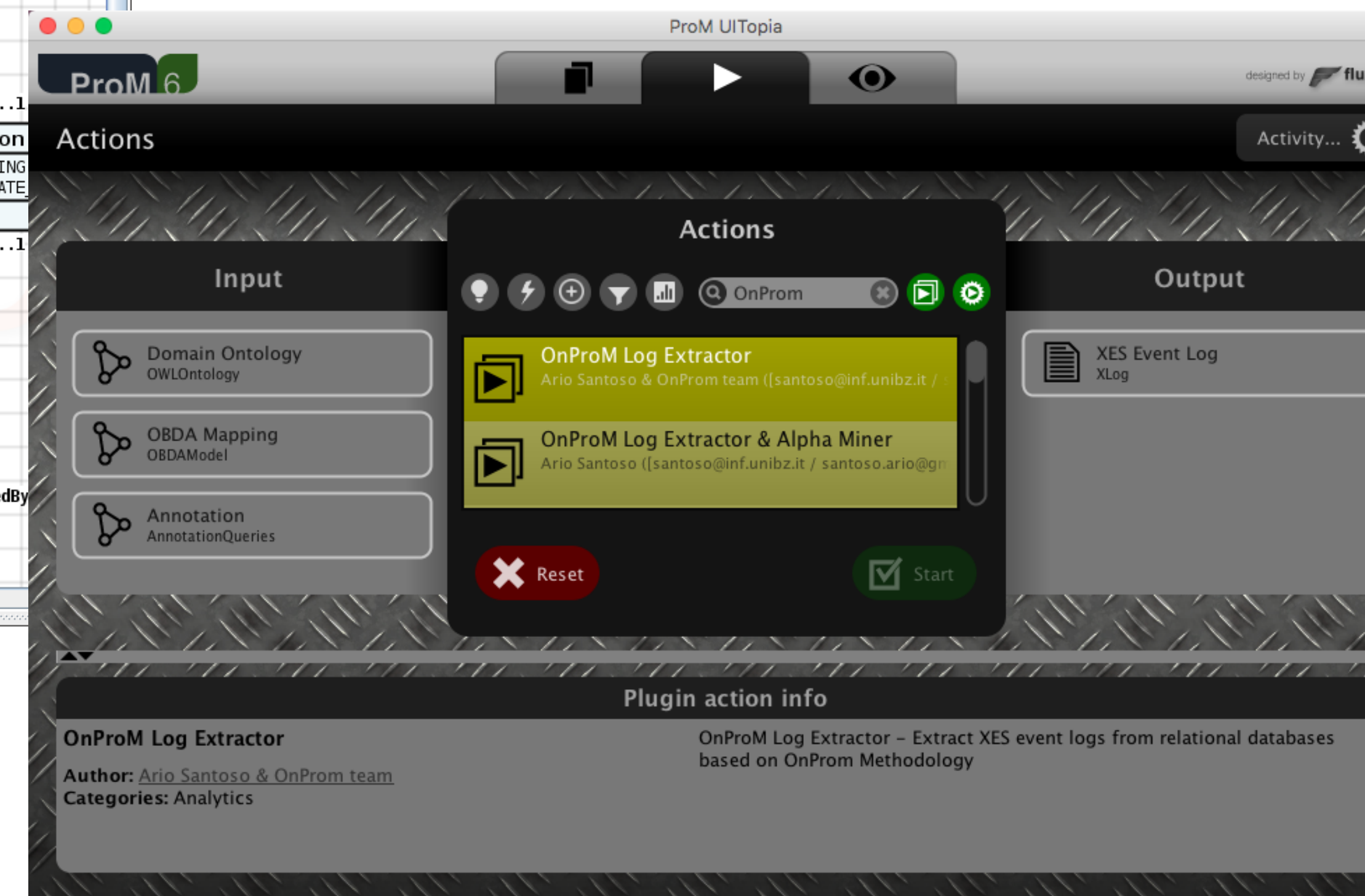
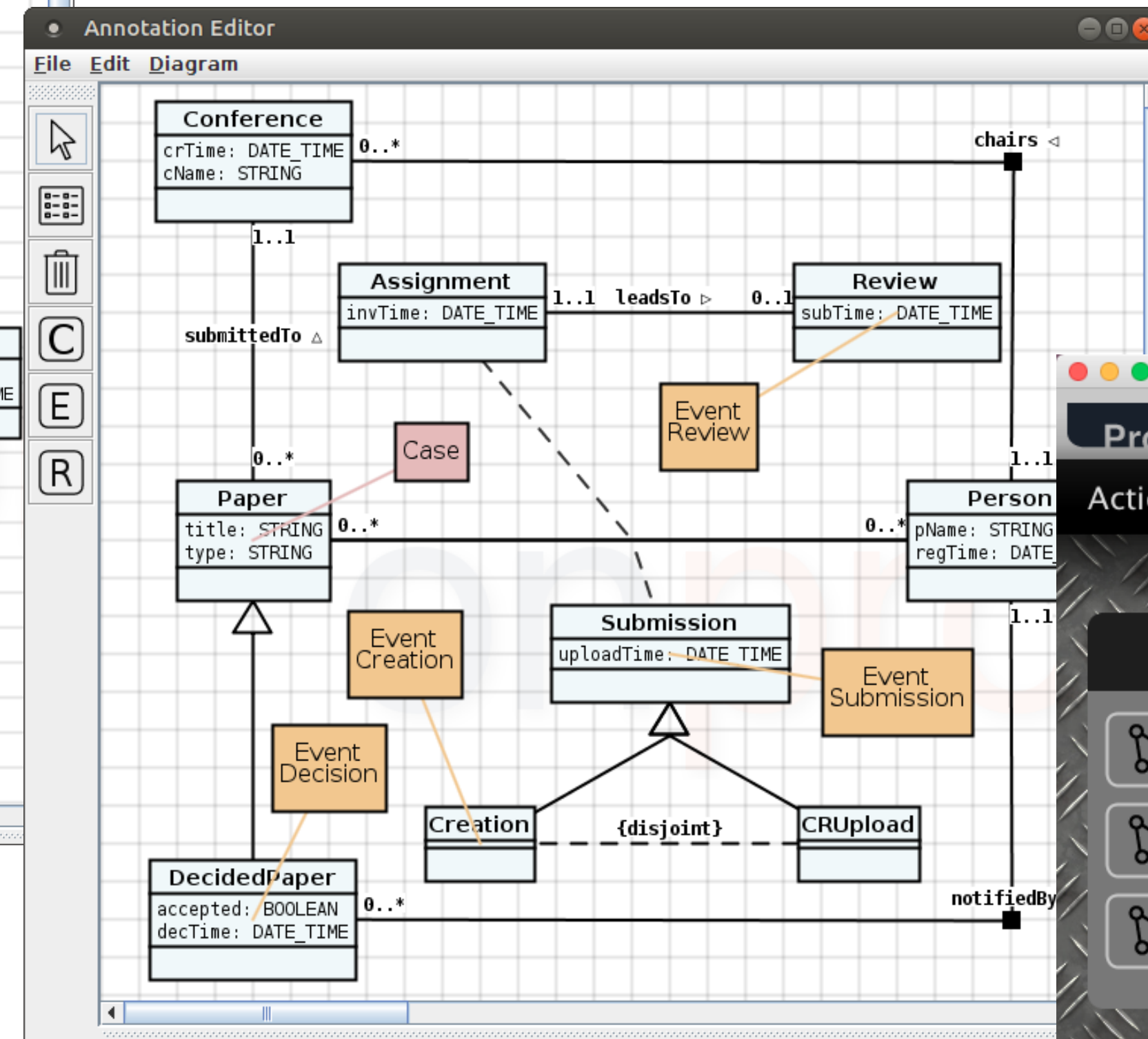
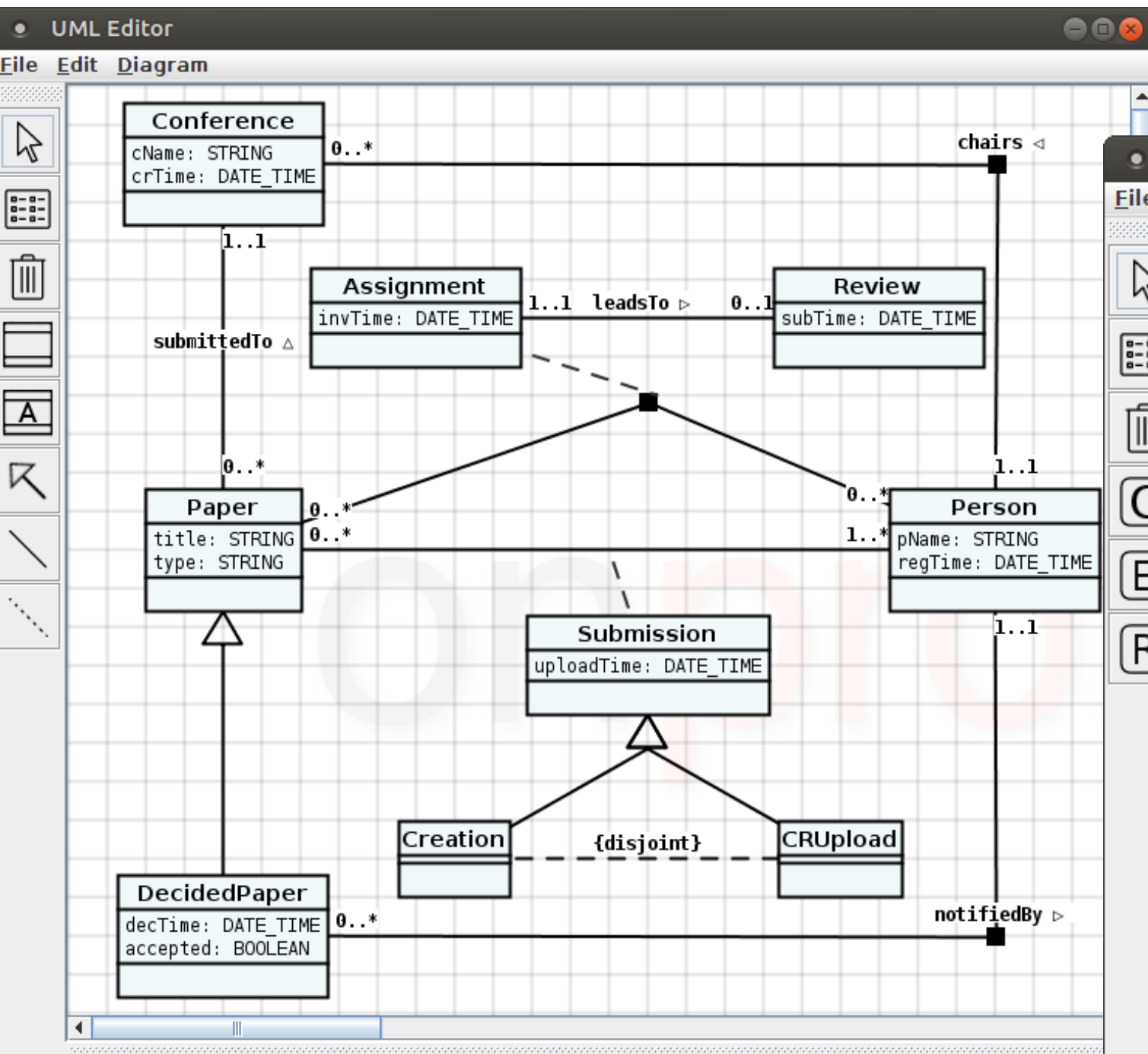
enter
t: entered
r: ?
c: this

EVENT.

• Complete
• t: contains . completed
r: ?
c: this

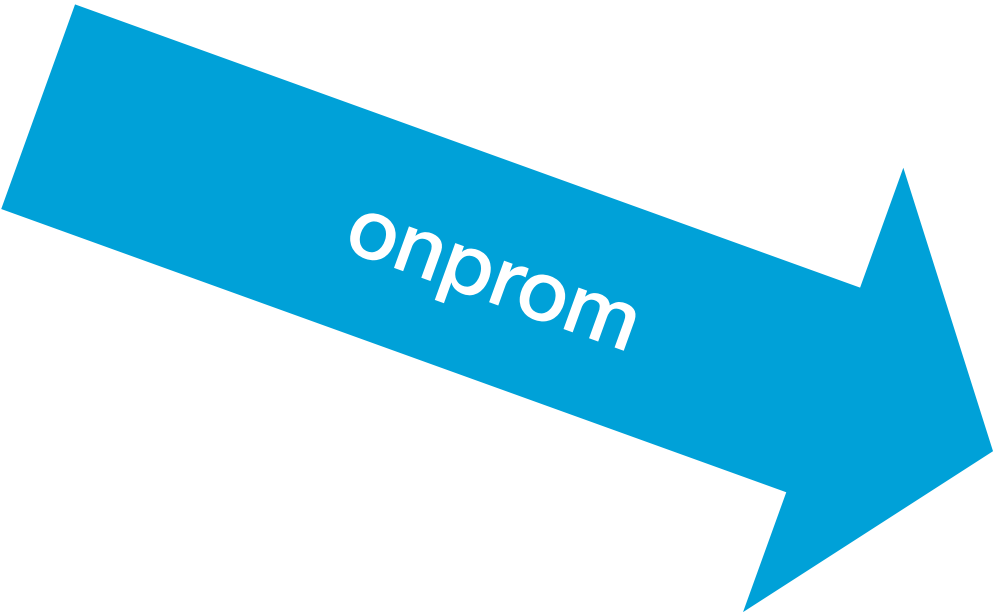
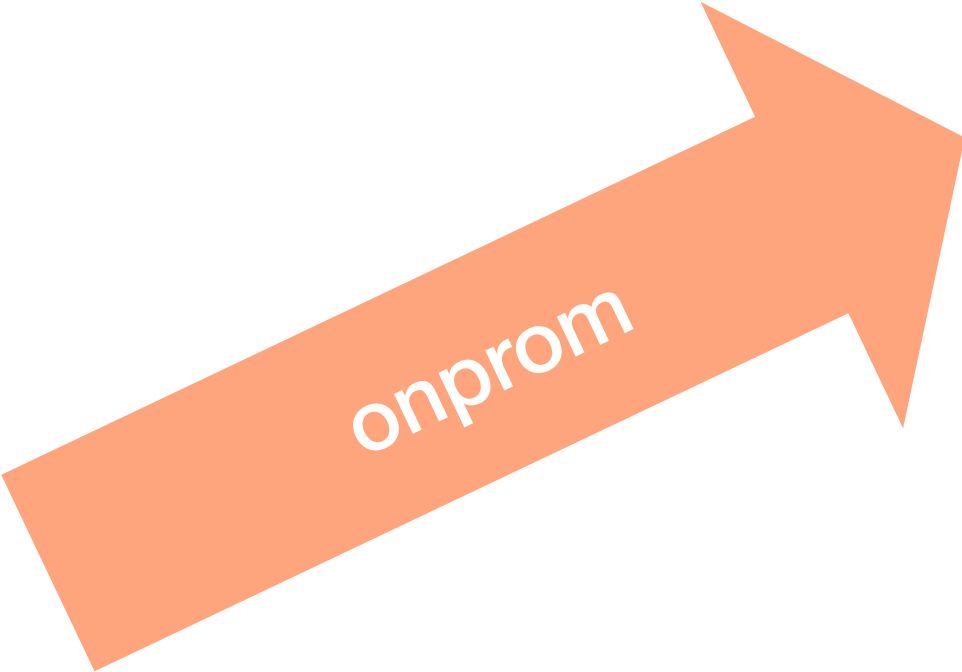
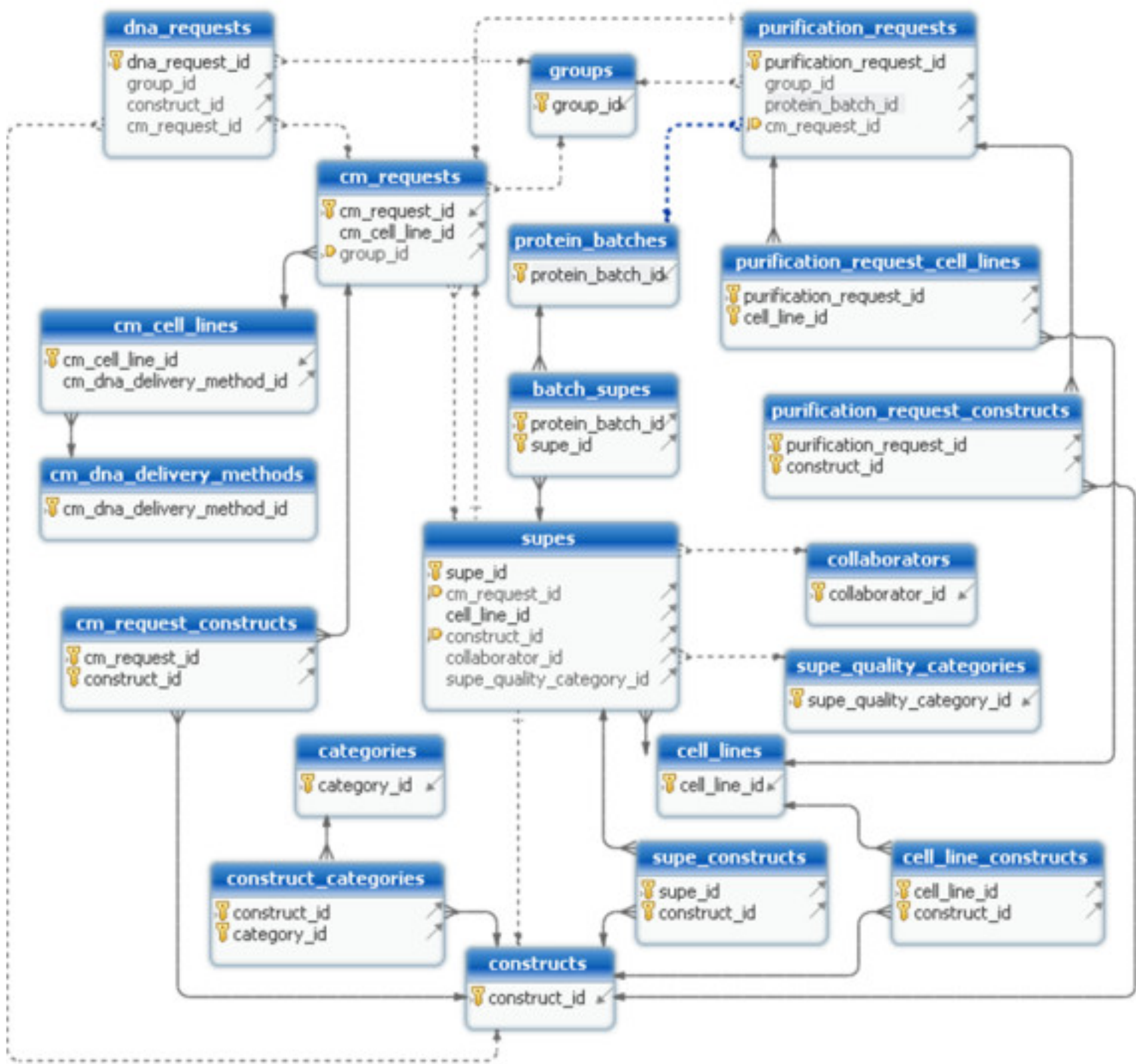
We transformed this vision into a toolchain!

onprom.inf.unibz.it



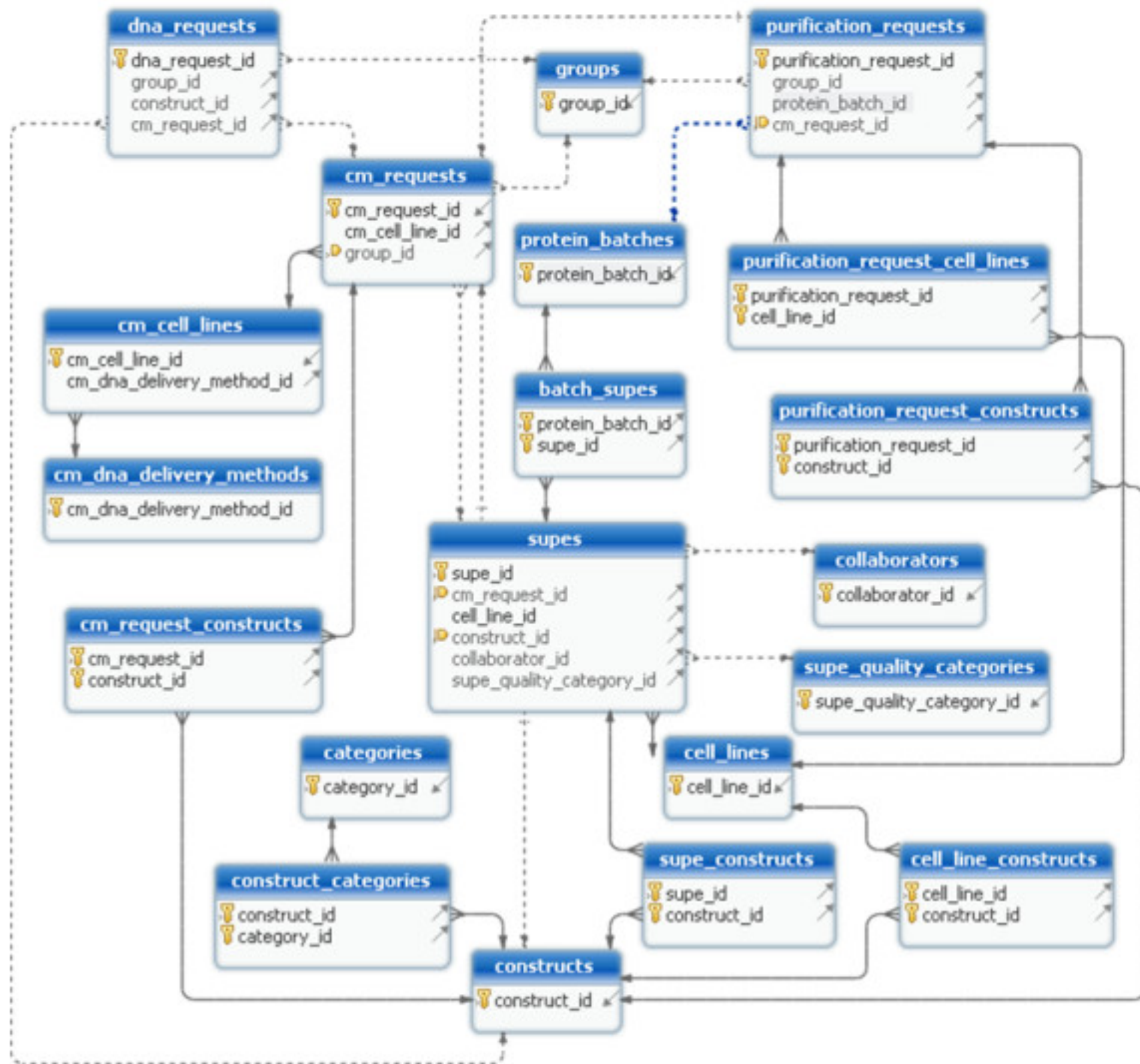
Object-centric logs

From...

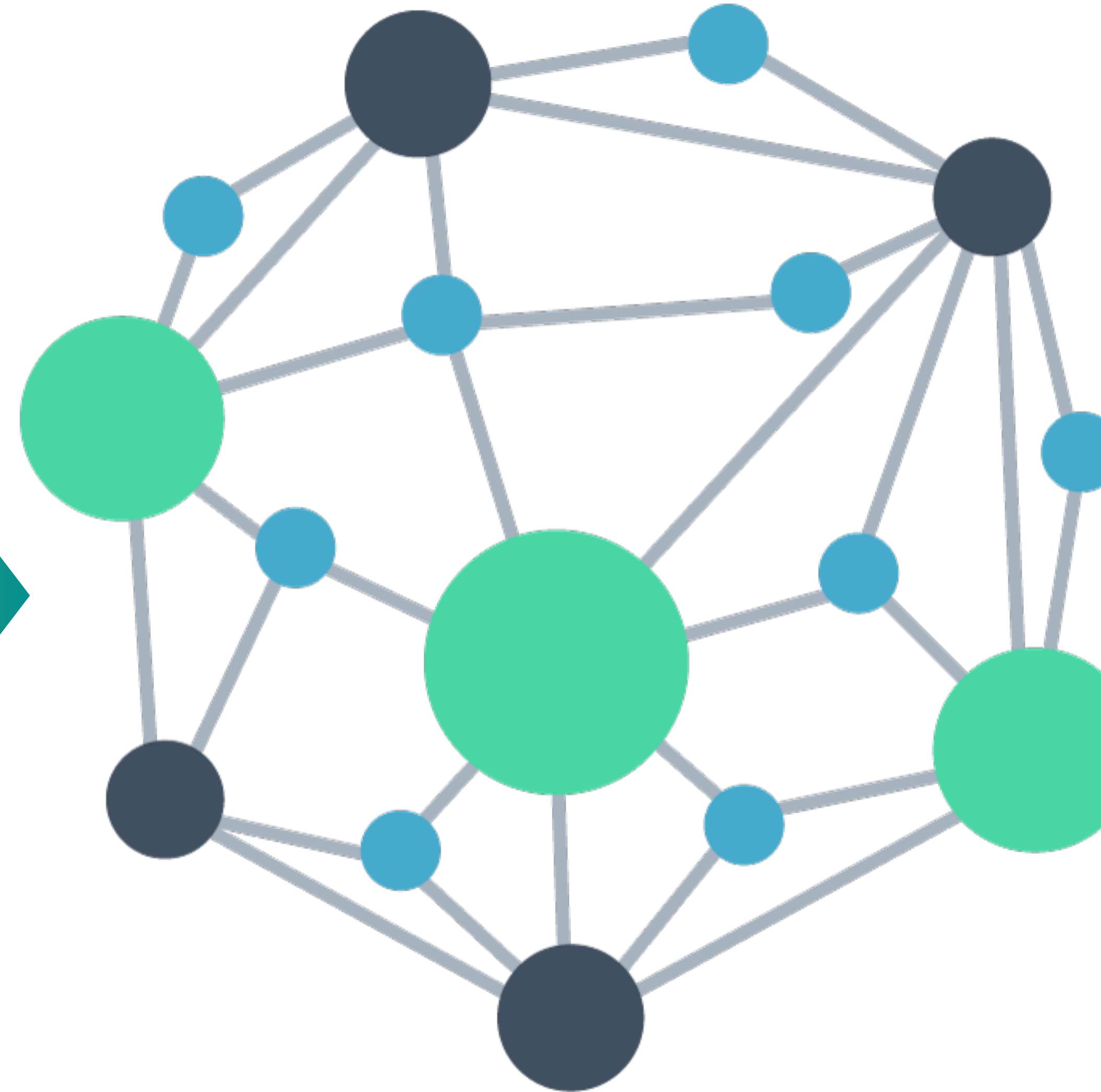


Object-centric logs

...to



onprom



References

- Data preparation pipeline: onprom.inf.unibz.it
- Tutorial paper: OBDA for log extraction in process mining (<https://www.inf.unibz.it/~montali/papers/calvanese-et al-RW2017-onprom.pdf>)
- Open-source OBDA engine developed at unibz: <https://ontop-vkg.org/>
- Our spin-off on virtual knowledge graphs: <https://ontopic.ai/en/>