The End of N+1 is Near

Jens Schauder

Trigger Warning!

This talk contains SQL. Lots.

Proceed at own risk.

But there are Minions!

N + 1

Minions mit ihren Toys

1. Lade Minions
2. Lade für jeden Minion die Toys

```
select * from minion where ...
into minions;

foreach Minion m : minions
    Select * from toy where minion_id = m.id
```

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But you can join!

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Minions

        -> EvilMaster

           -> Antagonist

              -> SuperPower

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Aggregates!

And if they have Hobbies?

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But How?

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Demo Time

Two Problems

The last query was buggy!

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What about a where-clause?

Limit the aggregate root?

Limit the final query?

Lateral!

Lateral ⚡ Full Outer Join

Back to the drawing board

Normal Left Outer Joins on id

Root select can be filtered

More Ideas

Specify Where Clause Only

R2DBC

GraphQL?

Select Trees of Aggregates?

I have ideas for preemptive caching ...

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Thank you

Contact me at jschauder@vmware.com

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"Twitter? Ich kenne kein Twitter!
Ich weiss nicht, wo Twitter liegt!
Niemand weiss wo Twitter liegt!"