
DDD & ReBAC:
Revolutionizing Access Management with a Business-Centric Approach

Is access management a bounded context?

AGICAP

Pauline Jamin
Staff engineer @Agicap
Grenoble 🏔️
Sweet tooth

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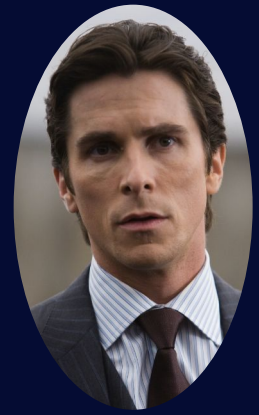
The members

A user has **access** to an **entity** if he/she/they is/are a **member** of the entity

User *Bruce has access to* ***entity*** *WayneCorp because he is a* ***member***



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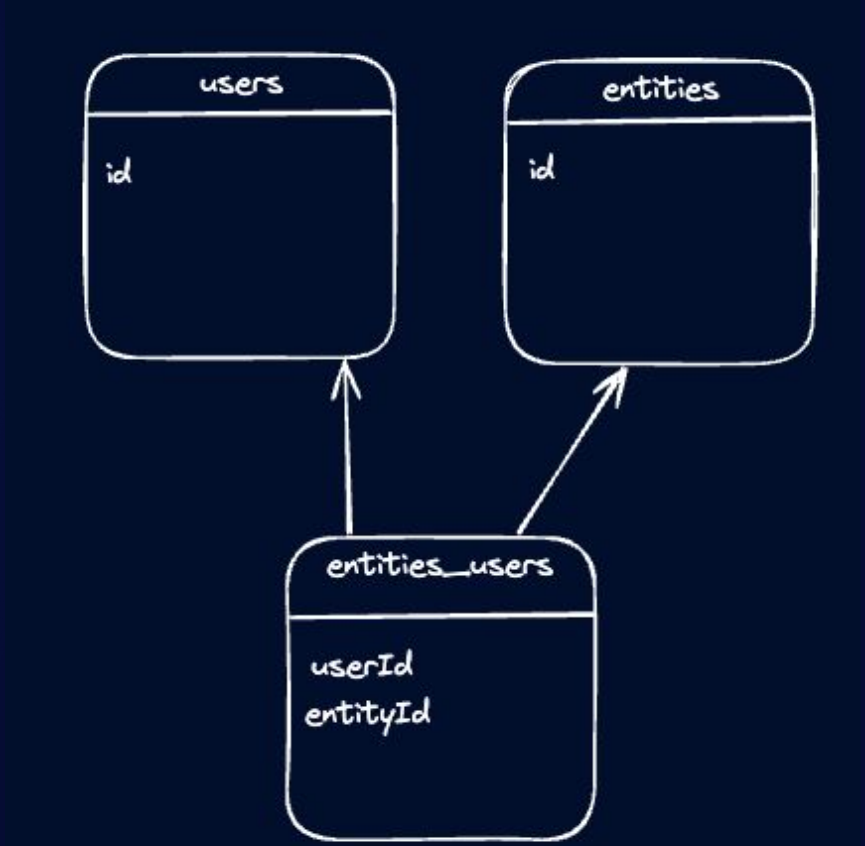
The members



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The Agicap's staff

A **staff** can access users' entities if there is no **subscription**

Staff *Gordon has access to* ***entity*** *WayneCorp because it has* ***no subscription***

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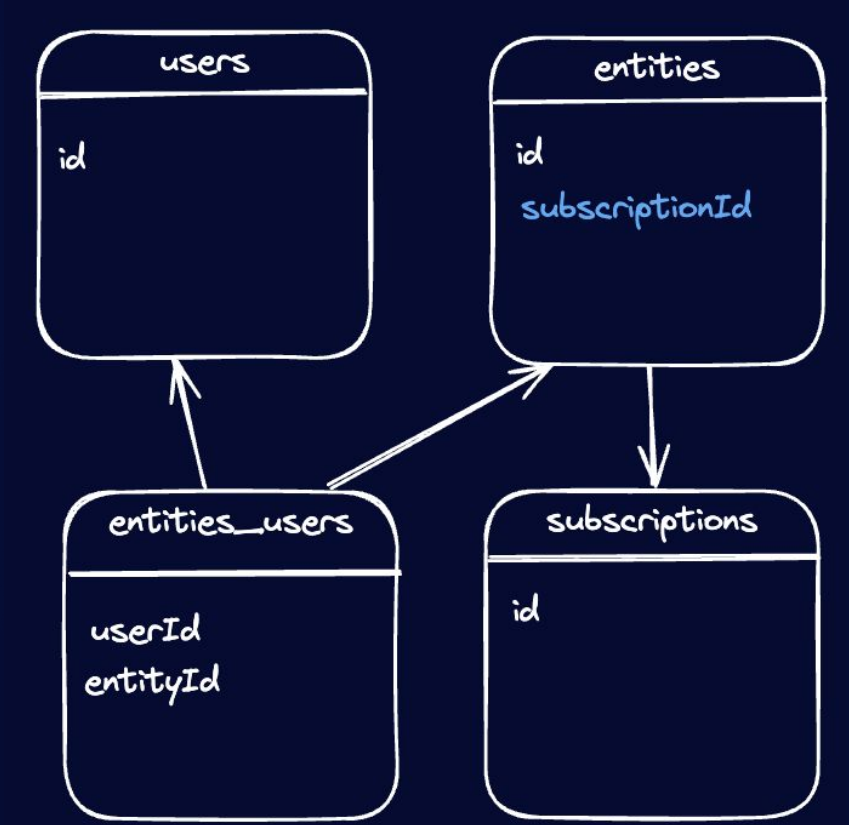
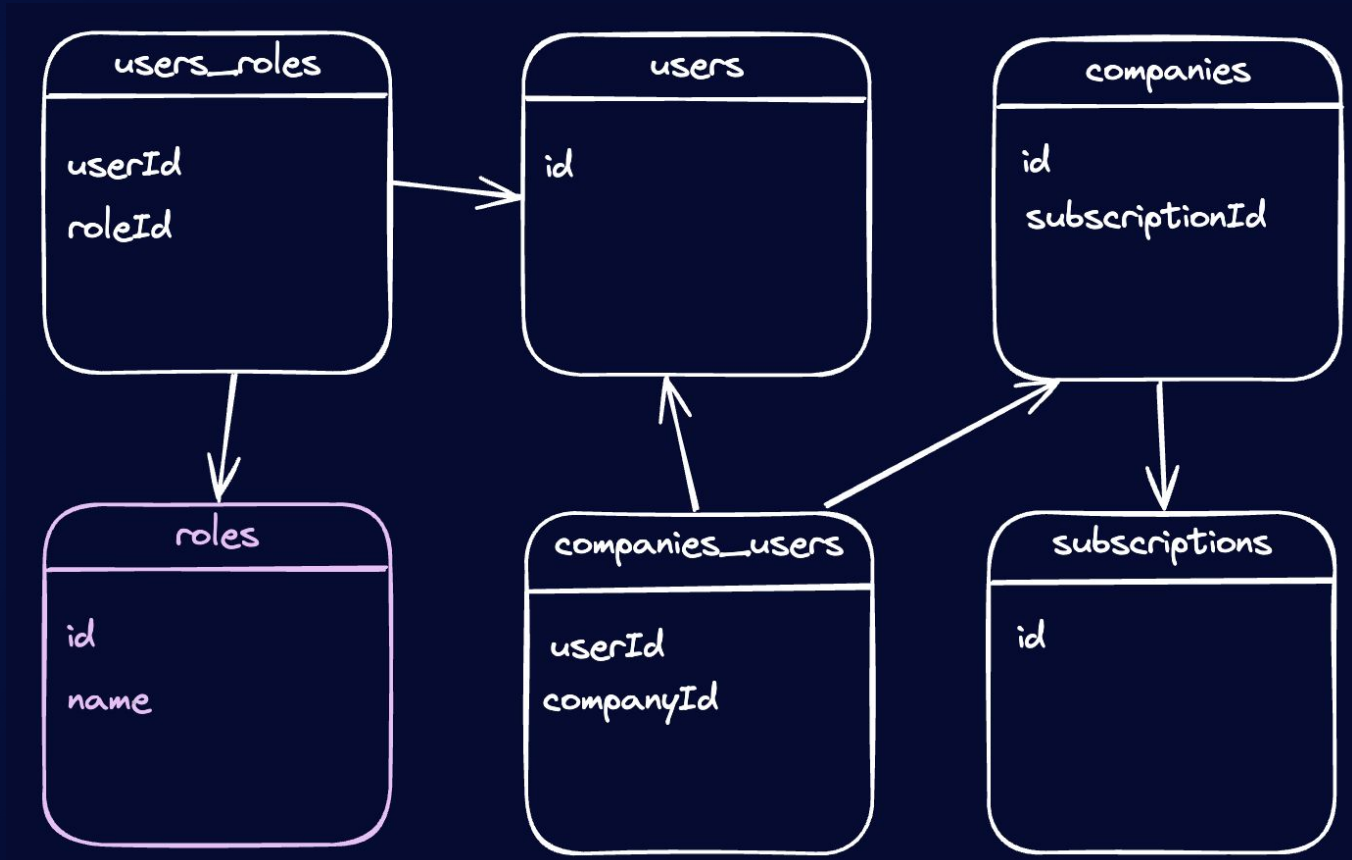
The Agicap's staff



The Agicap's staff



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By the way

A staff can access users' entities if there is a subscription but was given access by the **administrator** of the entity

Staff *Gordon has access to* ***entity*** *WayneCorp because he was given* ***an access*** *by WayneCorp* ***administrator****: Lucius*

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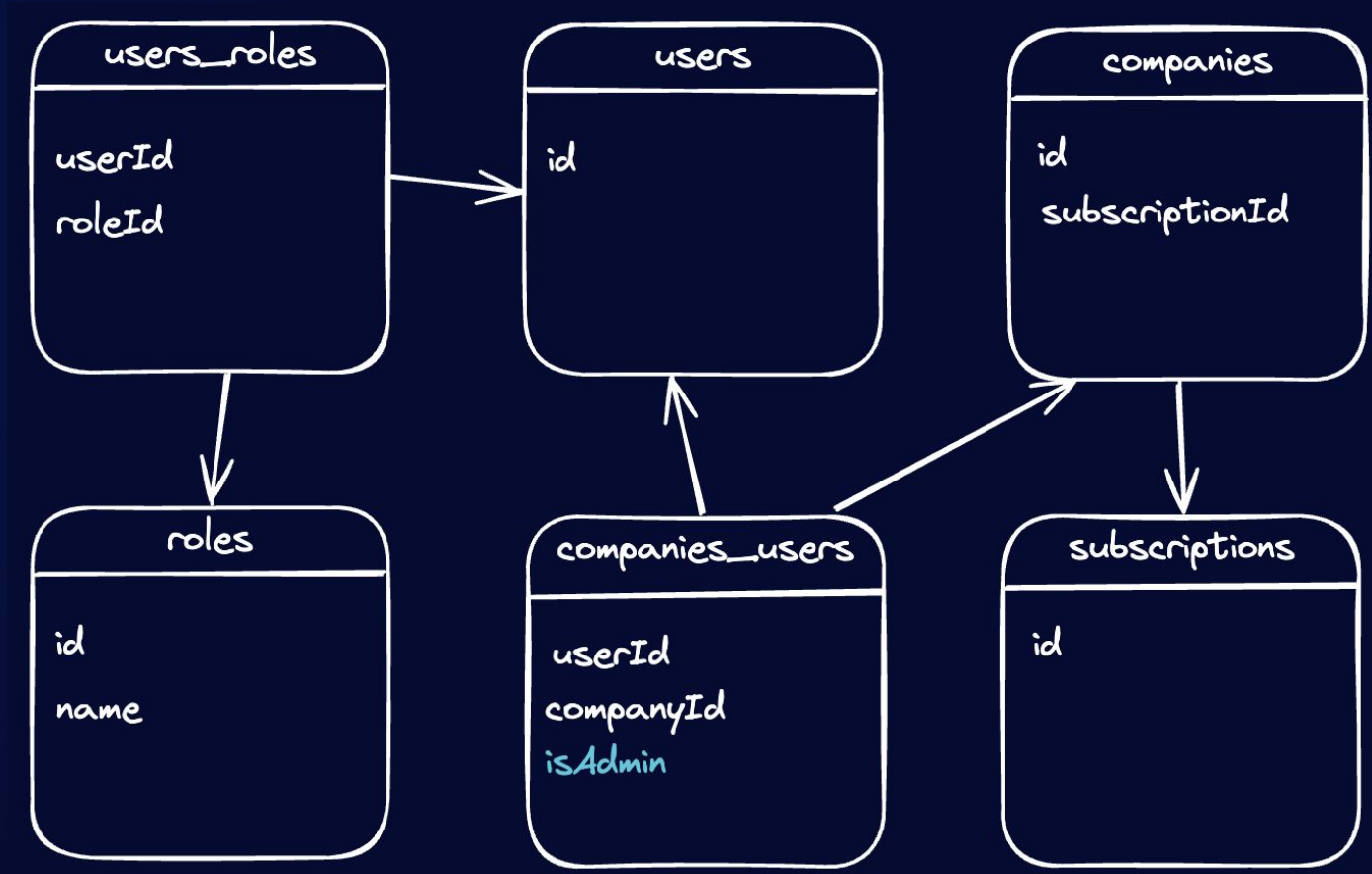
The administrator



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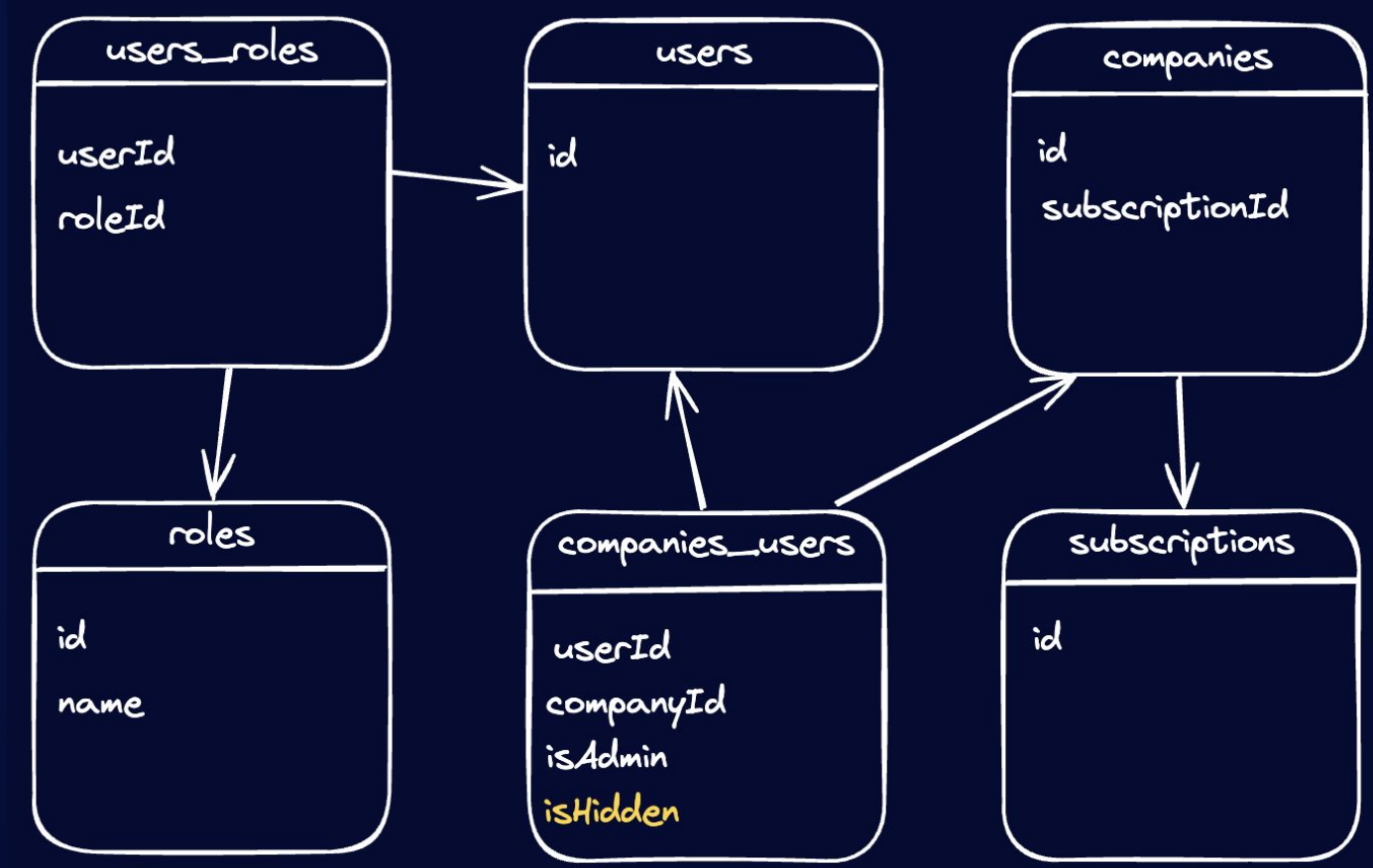
IsHidden



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Entity access

Can user Batman access entity WayneCorp?

- Is user Batman a member not **hidden** of the entity WayneCorp?
- Does user Batman have **role** staff and the entity has no subscription (i.e in demo mode)?
- Does user Batma have **role** staff and is an **hidden** member of WayneCorp entity?

The use case

Admins or staff can see payments

BUT

Only admins can approve payments

Only Lucius can approve payments

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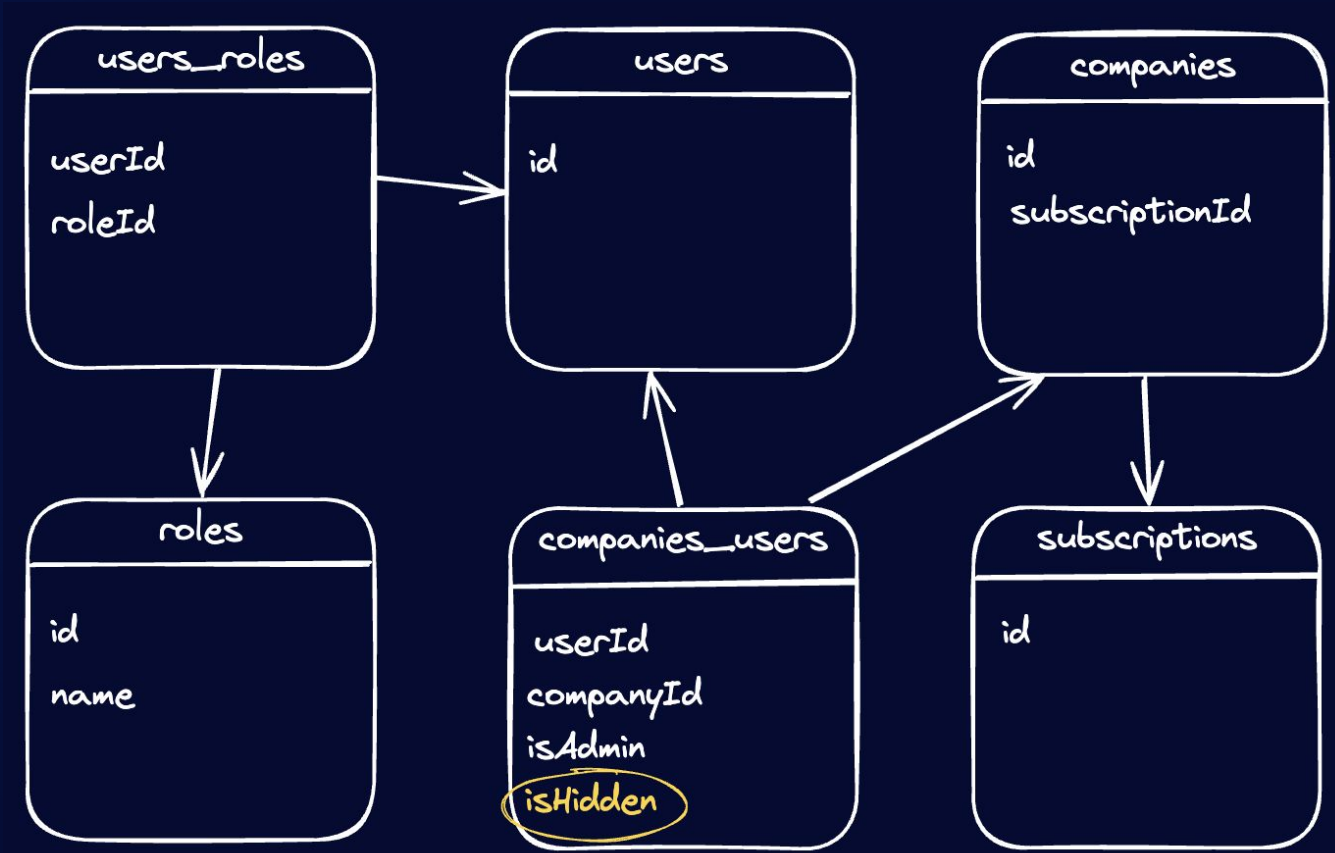
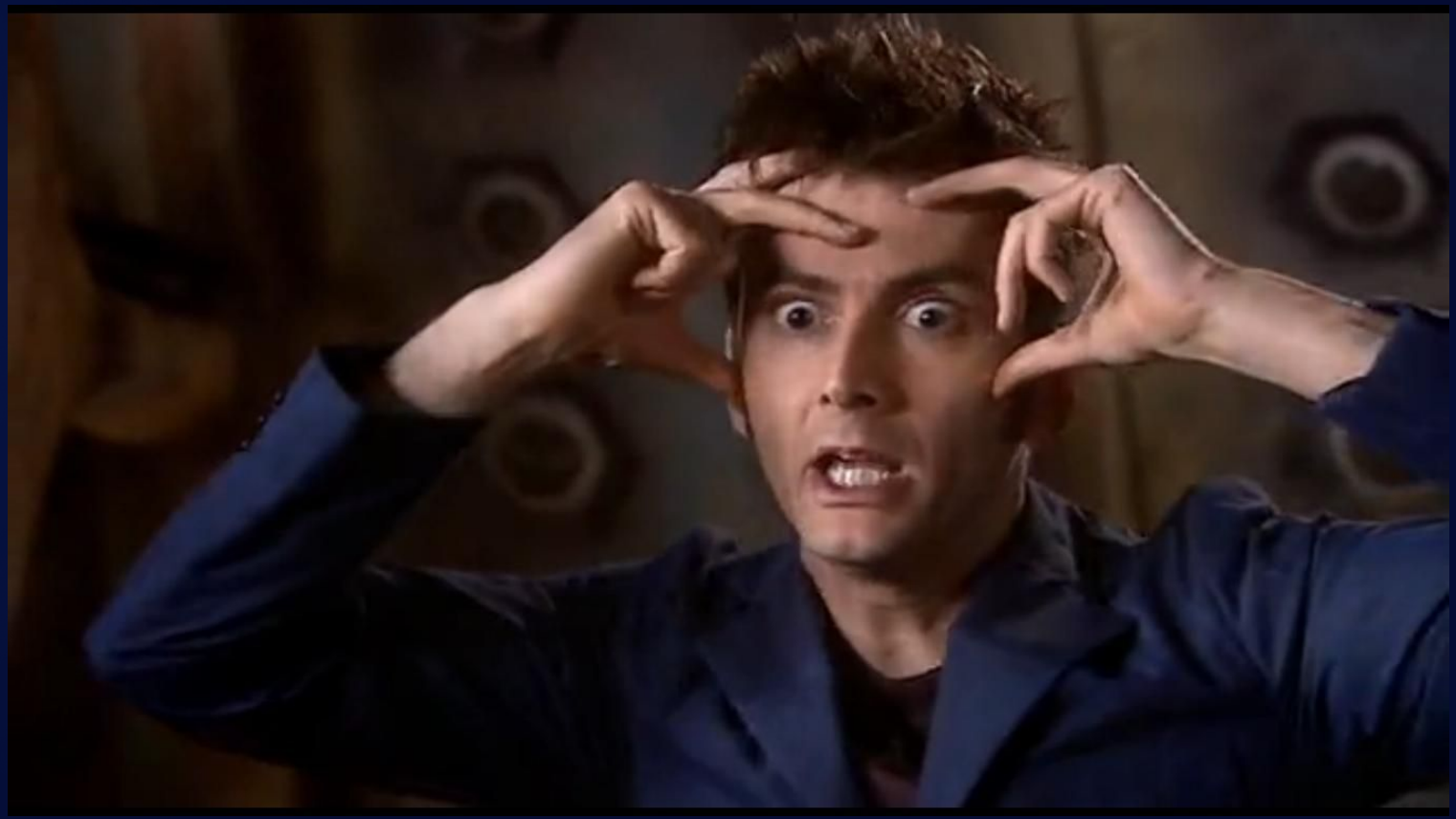
Model the world with booleans?



Sweet madness



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Sweet madness

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The ACL administrator trap

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Is access management a bounded context?

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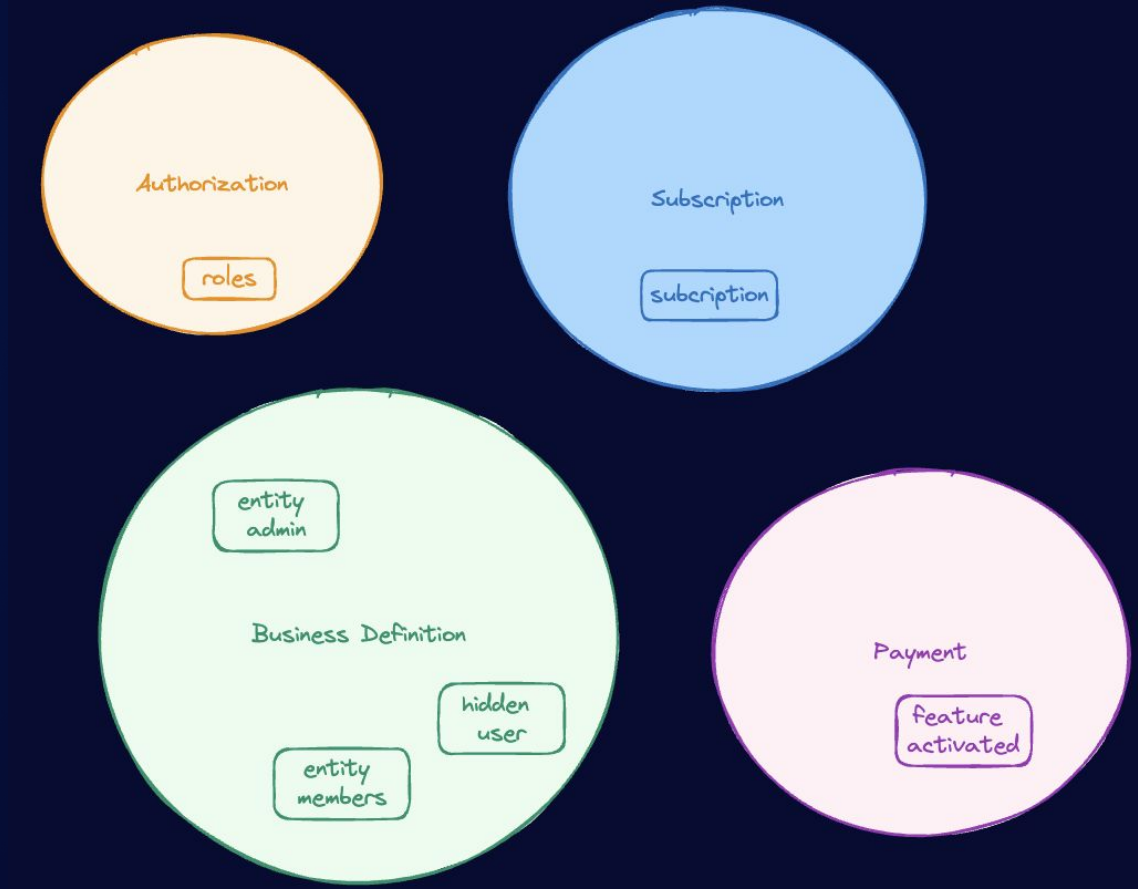
Bounded contexts



Where the authorization logic should be?

Business data & access management data

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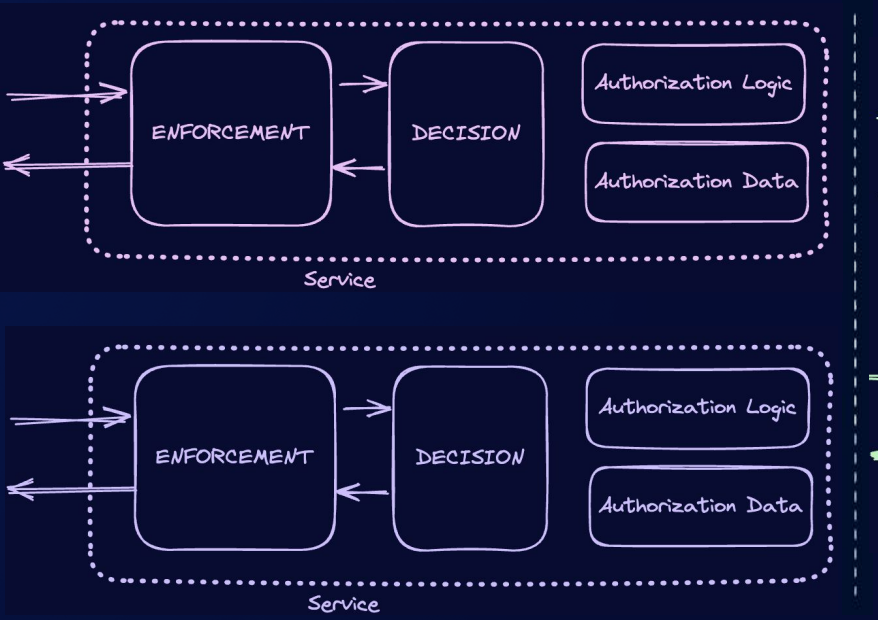
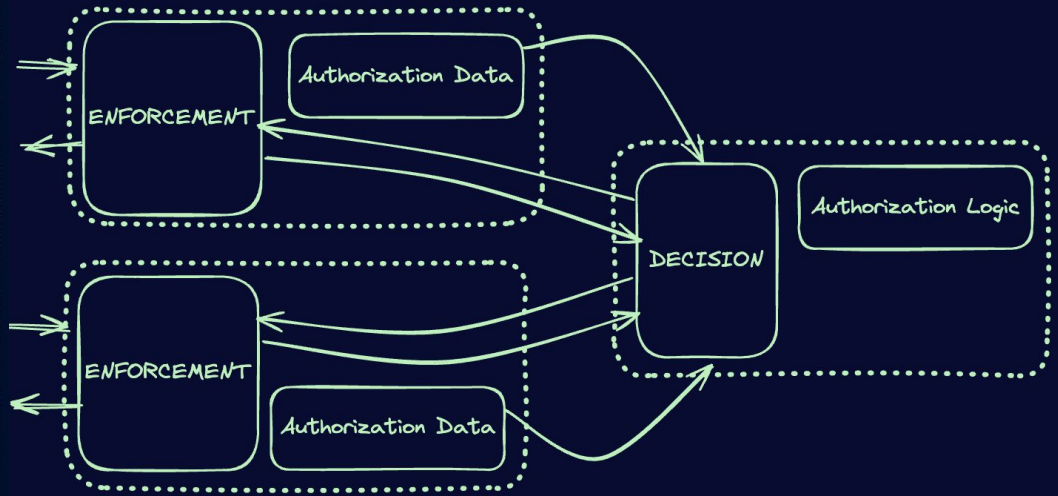
Decentralized vs Centralized





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Centralized service

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GOOGLE ZANZIBAR

Relationship-Based Access Control - ReBAC

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Relationship-Based Access Control - ReBAC

Access Control Requirements for Web 2.0 Security and Privacy

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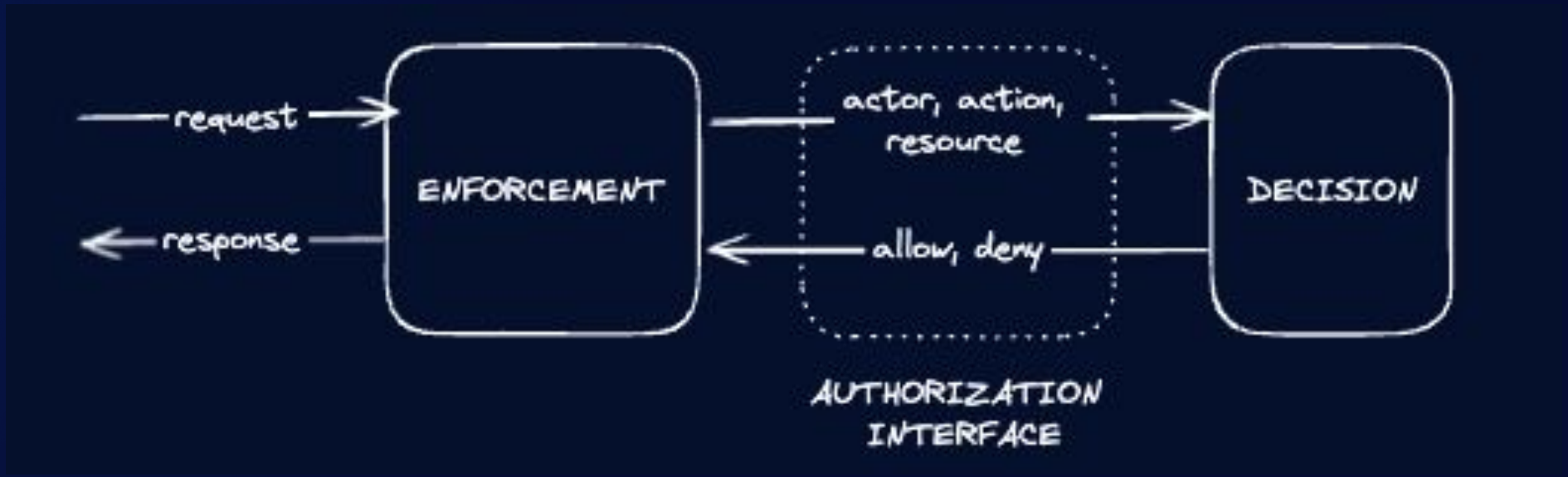
Zanzibar syntax

```
<tuple> ::= <object>'#'<relation>'@'<user>
<object> ::= <namespace>':'<object_id>
<user> ::= <namespace>':'<user_id> | <userset>
<userset> ::= <object>'#'<relation>
```

entity:WayneCorp#member@user:Bruce
team:engineers#member@user:Lucius
entity:WayneCorp#admin@team:engineers#member

Authorization Interface



Is user:x related to object:y with relation z?

Who?

What?

To what?

Example: is user:Lucius related to entity:WayneCorp with relation administrator?

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Google Zanzibar

Concepts

Centralized authorization system

Highly scalable

Create, save and evaluate permissions

Services

Youtube
Gmail
Google drive
Calendar
Maps
Photos
etc

Data

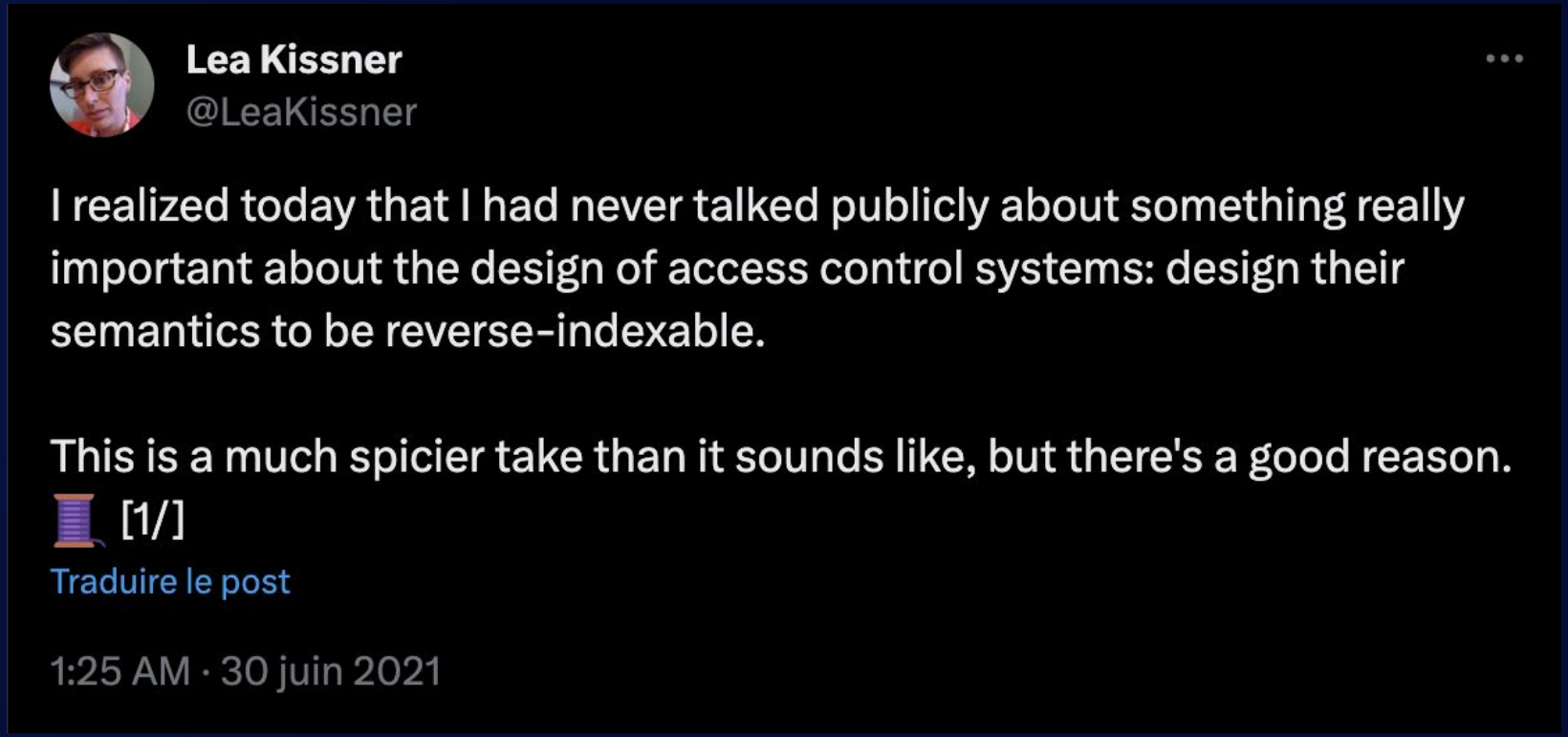
95% <10ms response time

Millions of millions of ACL

+ 99,9999% disponibility

Millions of authorizations evaluated by second

Reverse index



Lea Kissner
@LeaKissner

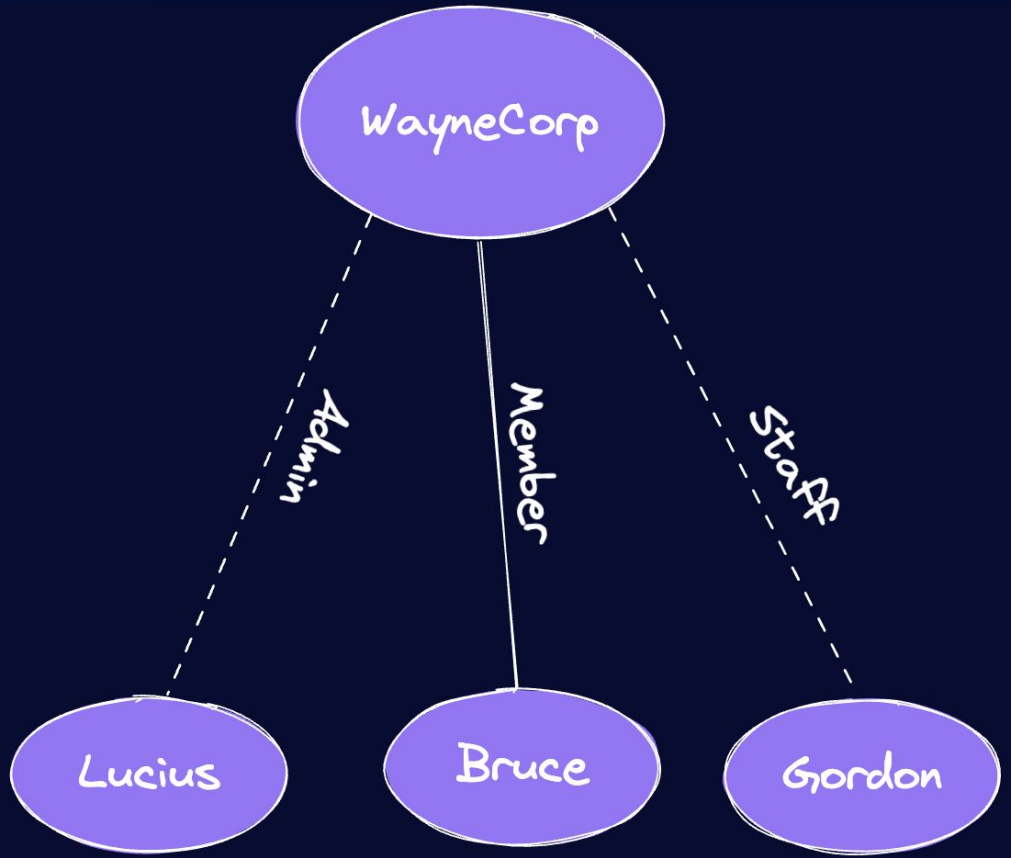
I realized today that I had never talked publicly about something really important about the design of access control systems: design their semantics to be reverse-indexable.

This is a much spicier take than it sounds like, but there's a good reason. 🧵 [1/]

Traduire le post

1:25 AM · 30 juin 2021

Reverse index



OpenFGA

- Open source
- Fine grained
- User friendly API
- Simple and readable model

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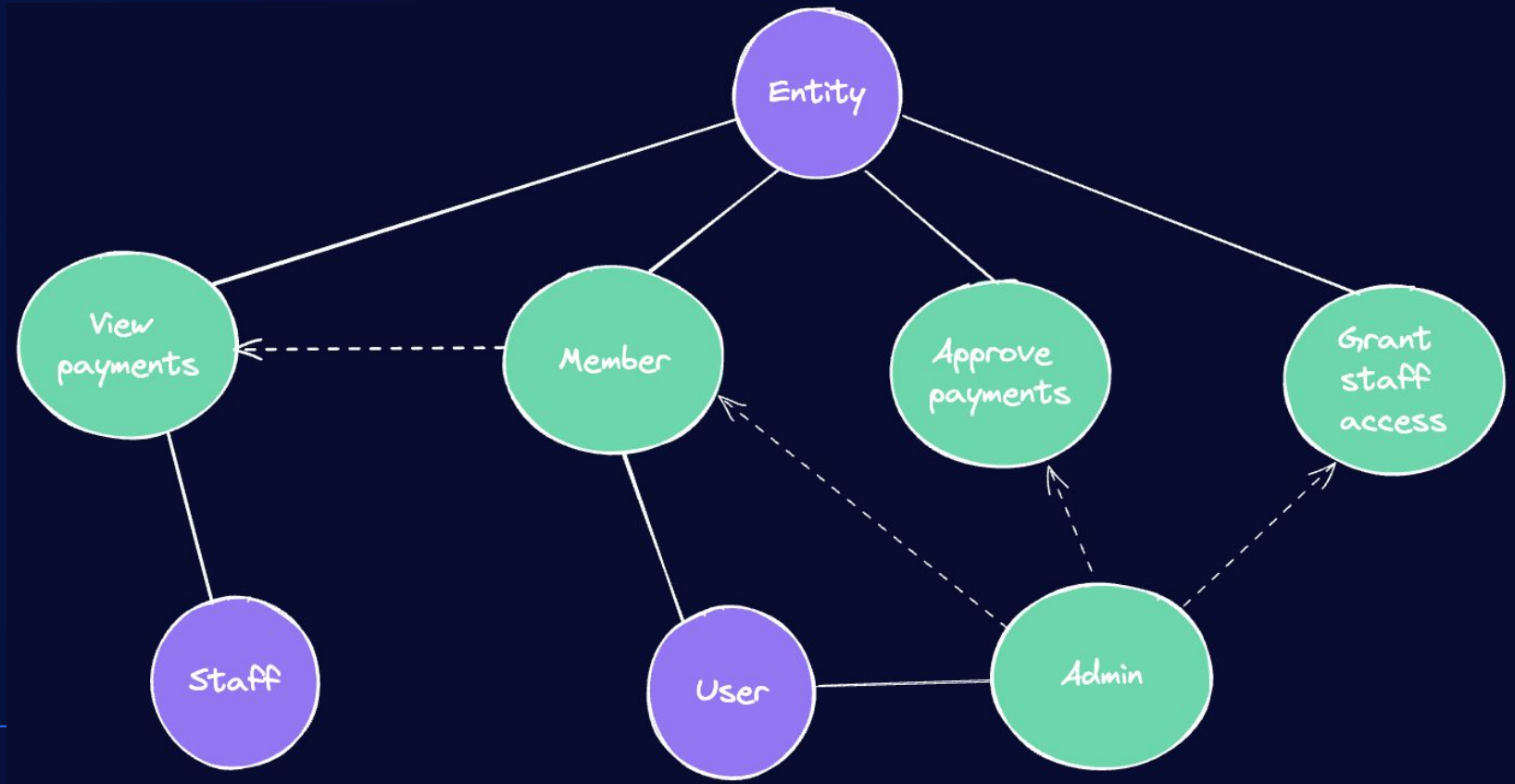
Demo time



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Key takeaways

- Authorization rules are business rules
- Access management is a bounded context on its own
- ReBAC is cool like Ryan: we can use our ubiquitous language

Why “Zanzibar”?

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THANK YOU!

https://github.com/paulinejamin/dddeurope2024

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Ressources

https://zanzibar.academy/#!
https://storage.googleapis.com/pub-tools-public-publication-data/pdf/10683a8987dbf0c6d4edcafb9b4f05cc9de5974a.pdf
https://openfga.dev/
https://authorizationinsoftware.auth0.com/public/49/Authorization-in-Software-f9b69587/7889bb9c
https://www.aserto.com/blog/google-zanzibar-drive-rebac-authorization-model
https://www.osohq.com/post/zanzibar

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