

# **DOMAIN DRIVEN DESIGN**

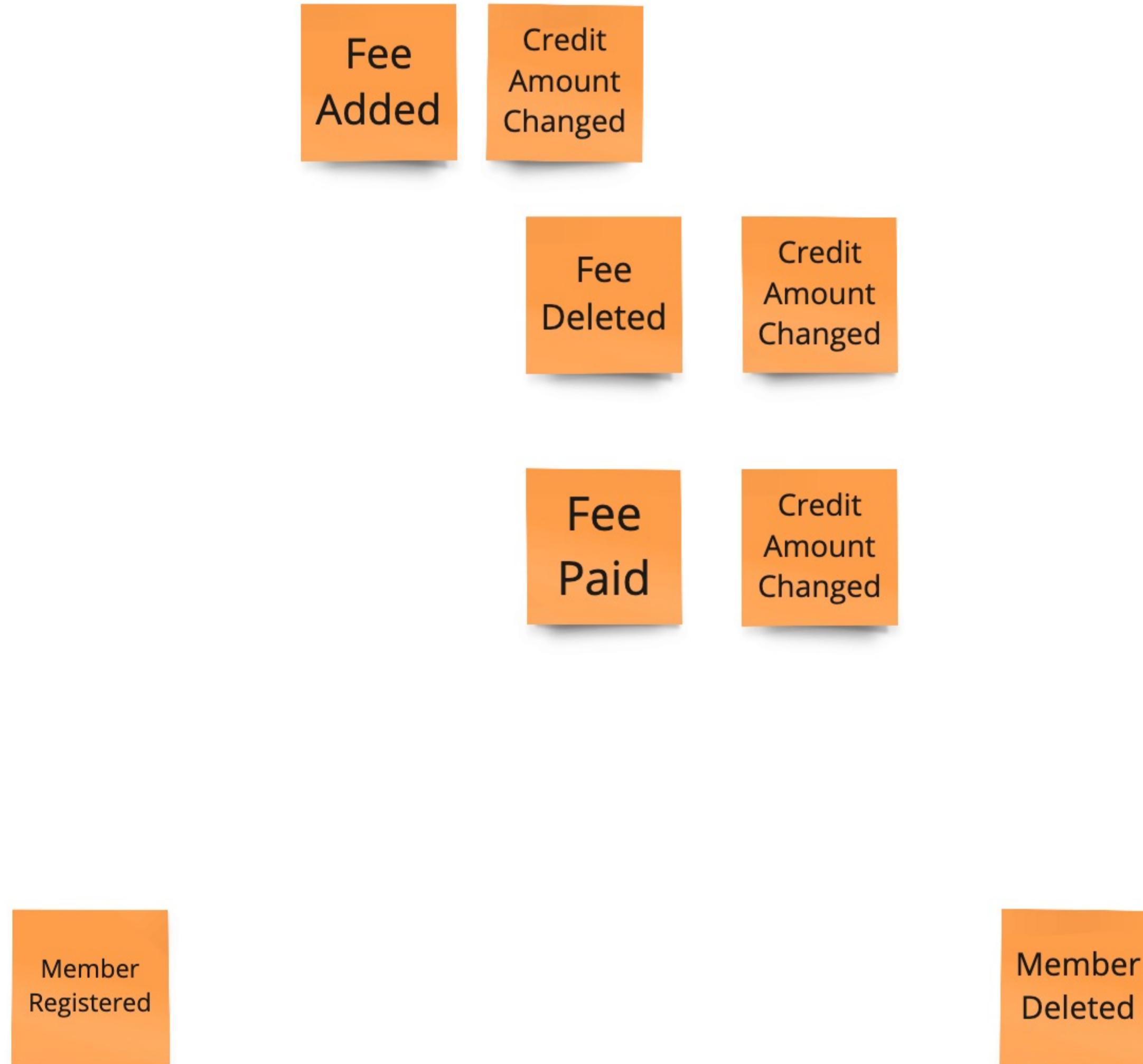
 **NO FRILLS** 

**(CONDENSED)**

# **EVENTSTORMING**

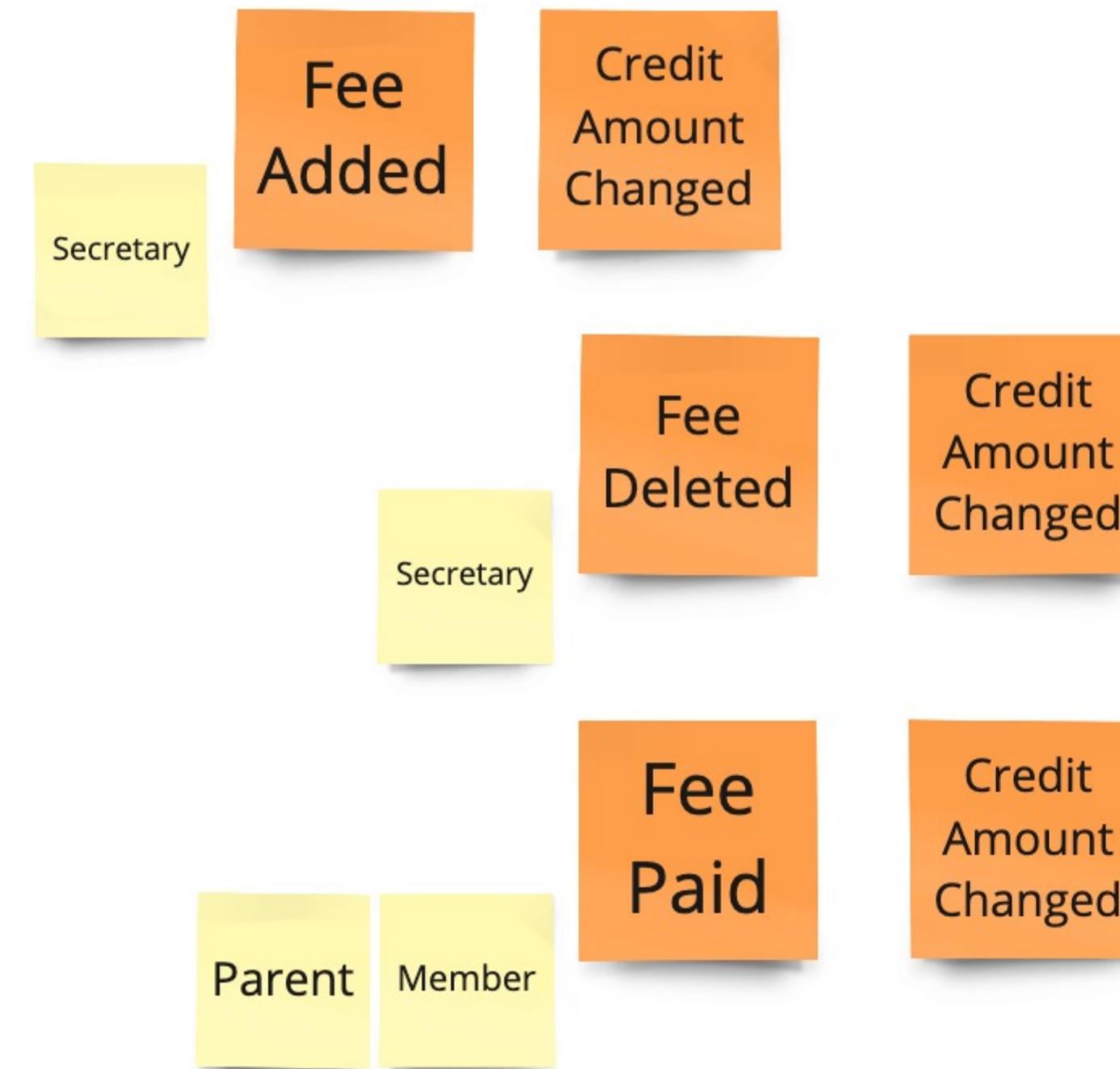


# **EVENTSTORMING - BIG PICTURE**



# **PEOPLE**

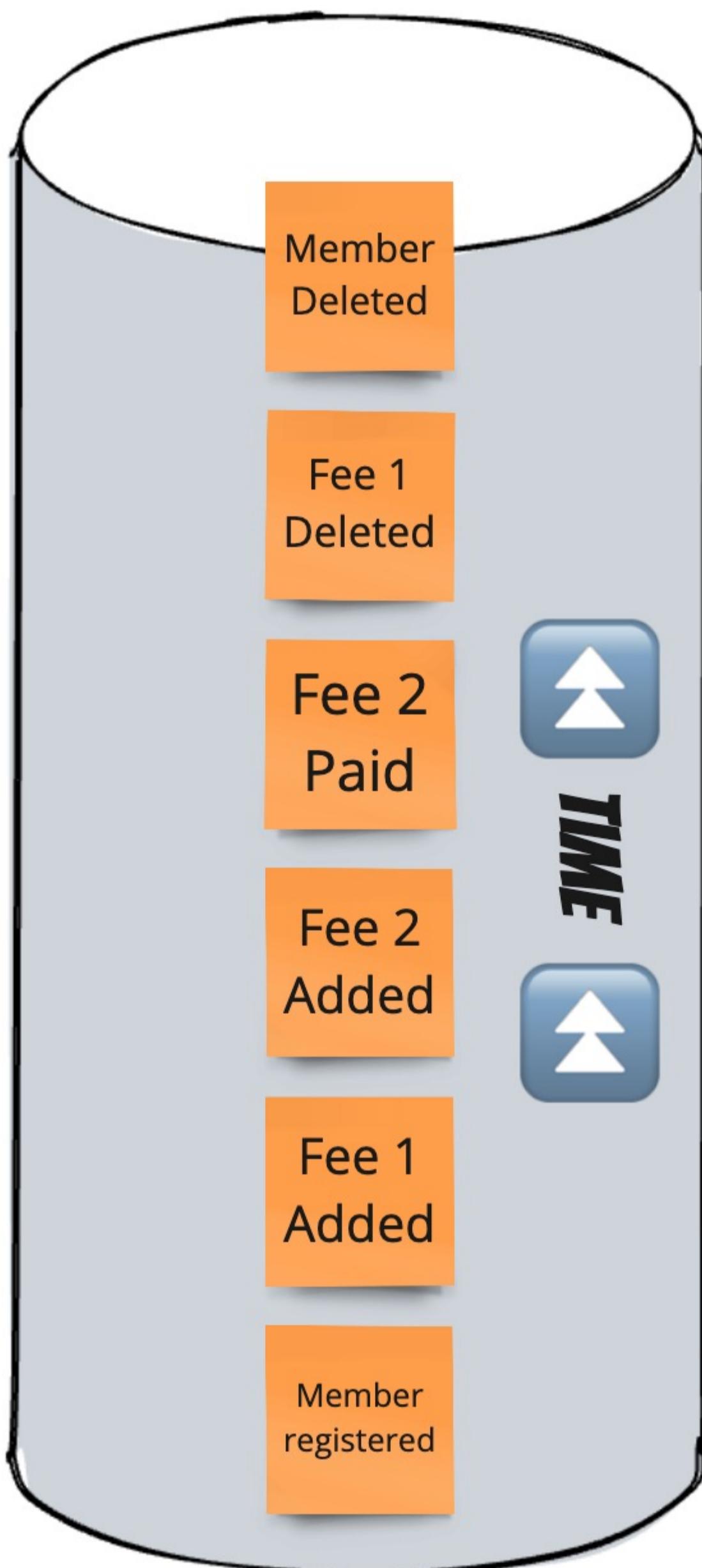
## **ACCOUNTING**



## **REGISTRATION**



# EVENT SOURCING



## READ MODEL 1 (PROJECTION)

id	amount	paid	member	deleted
fee 1	+46€	false	Max Buzz	false
fee 2	+50€	true	Max Buzz	false
fee 1	+75€	true	Max Buzz	false

## READ MODEL 2 (PROJECTION)

- Max Buzz paid 50€ on 20/04/2024
- Max Buzz paid 75€ on 21/05/2024

**WRITE MODEL**

# **EVENT SOURCING: PRO**

- **STATE IS PERSISTED WITH APPENDED ONLY EVENTS**
- **NO PREDEFINED MODEL**
- **HISTORICAL DATA (TIME MACHINE FEATURE)**
- **FULL AUDIT LOG**
- **CQRS (COMMAND QUERY RESPONSIBILITY SEGREGATION) BY DESIGN**

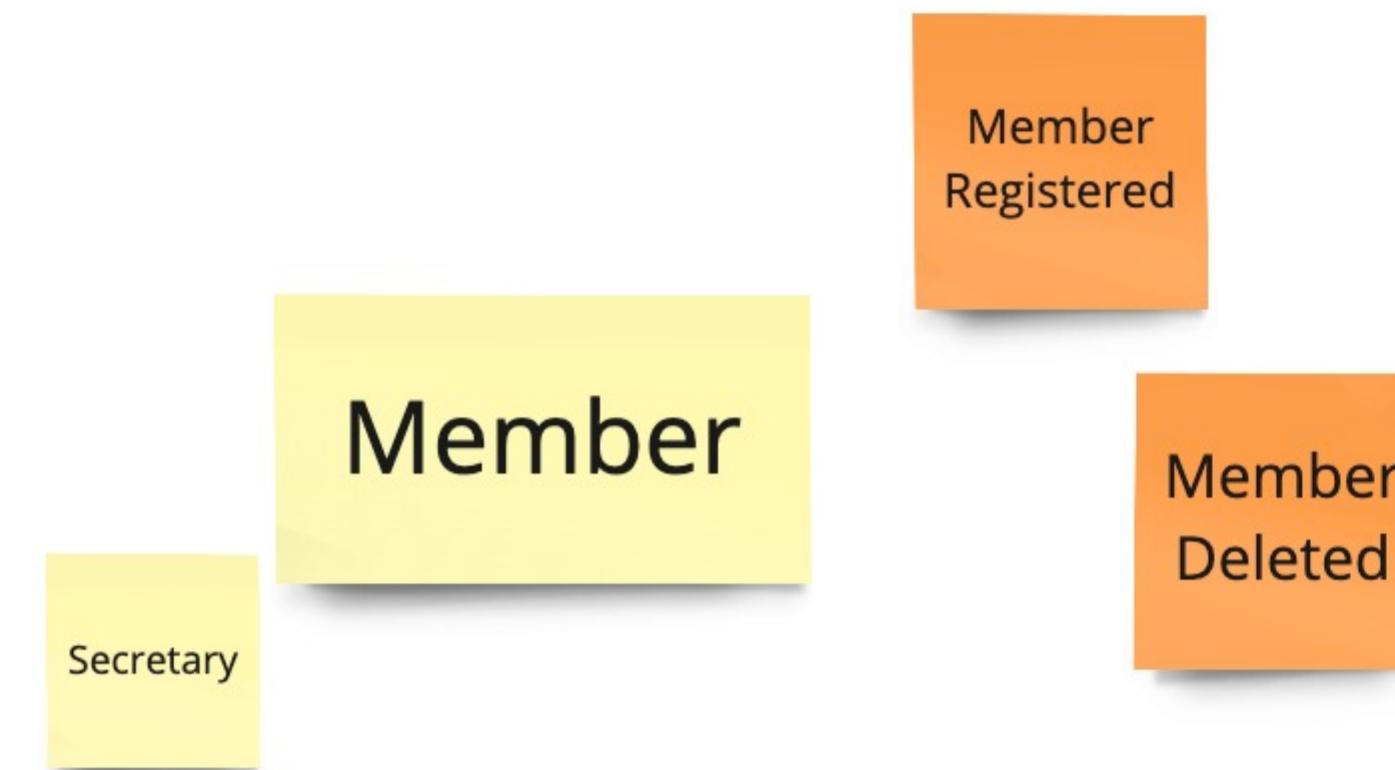
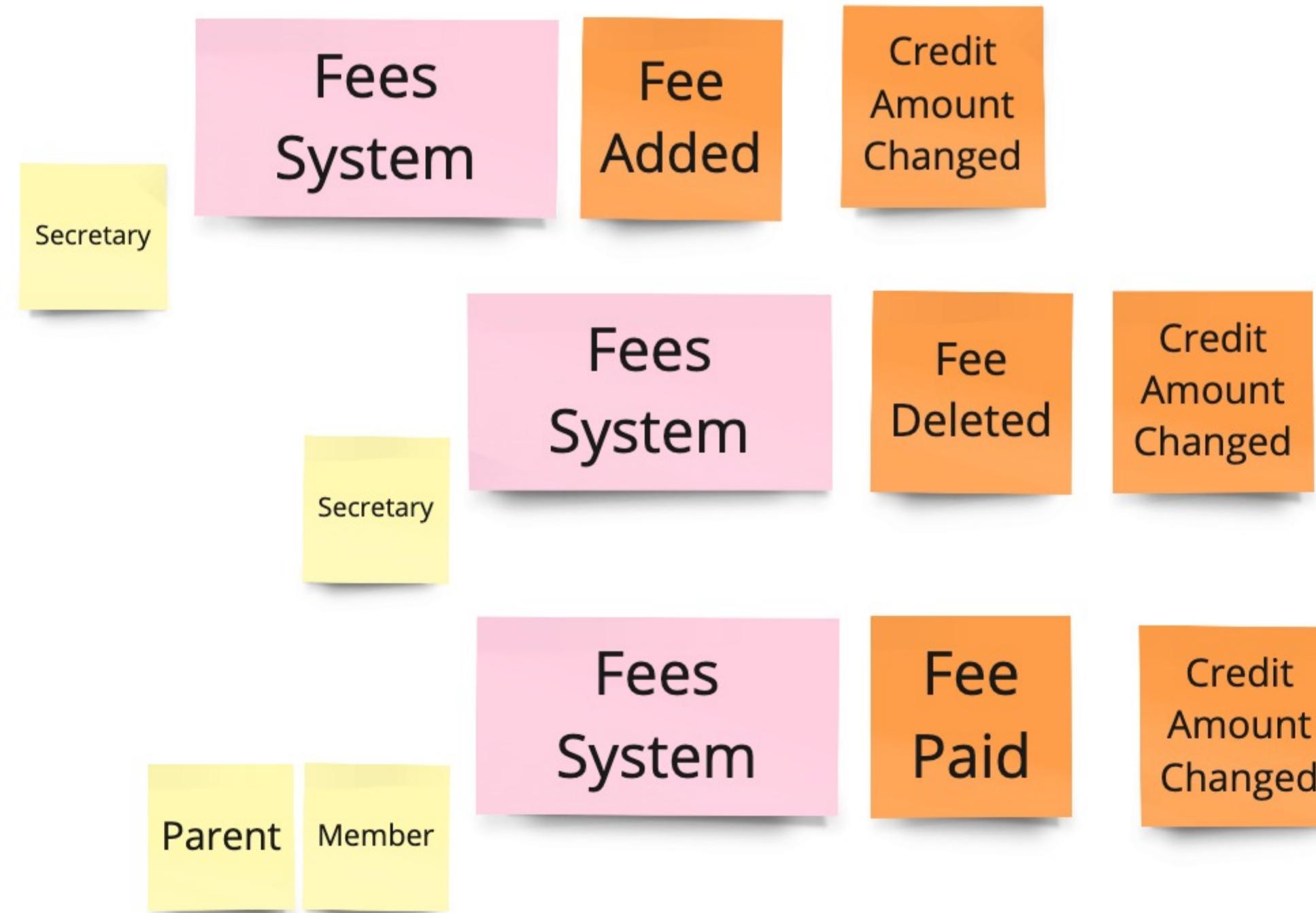
# **EVENT SOURCING: *CONS***

- ***ASYNC PROJECTION***
- ***EVENTUAL CONSISTENCY***
- ***ASYNC FRONTEND***
- ***EVENTS ORDER***
- ***EVENTS VERSIONING***
- ***EVENTS IDEMPOTENCE***
- ***DOMAIN EVENTS ARE NOT INTEGRATION EVENTS***
- ***ALWAYS INCREASING EVENTS STORAGE***

# REGISTRATION

# ACCOUNTING

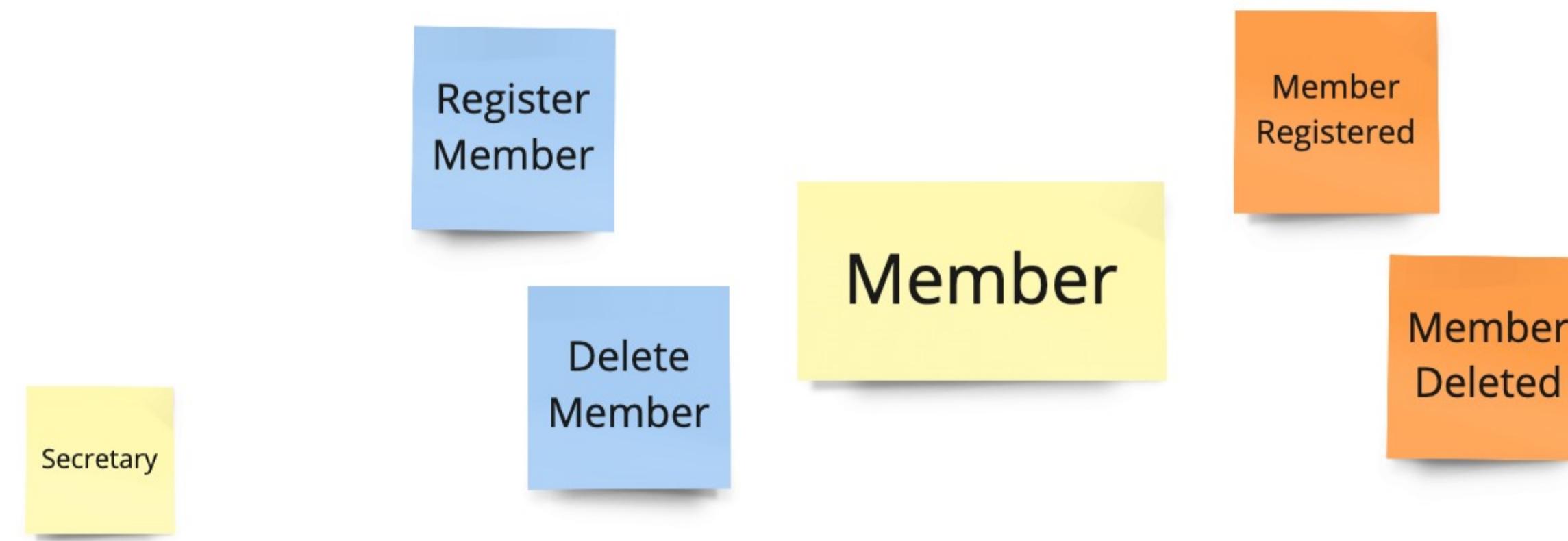
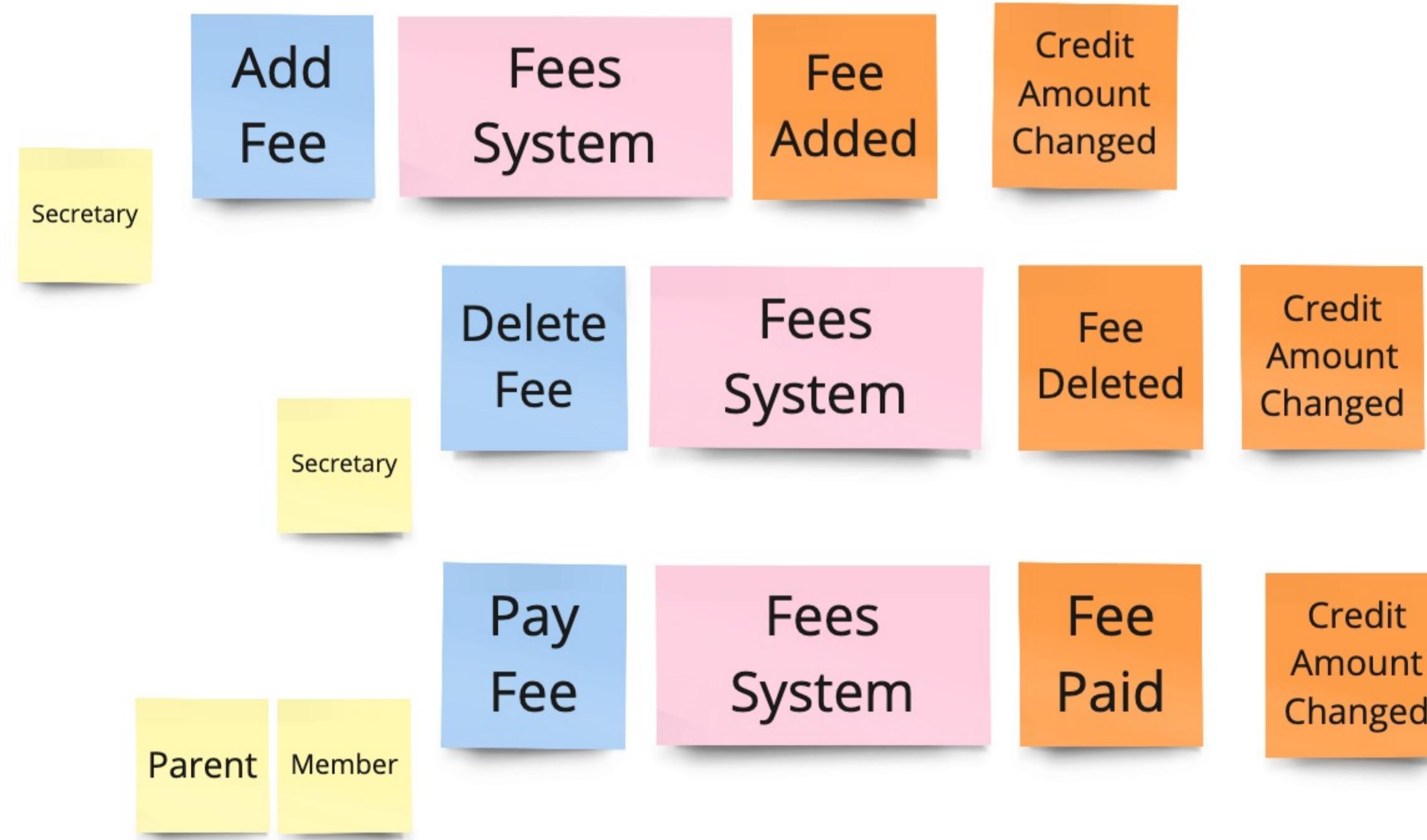
# AGGREGATE



# REGISTRATION

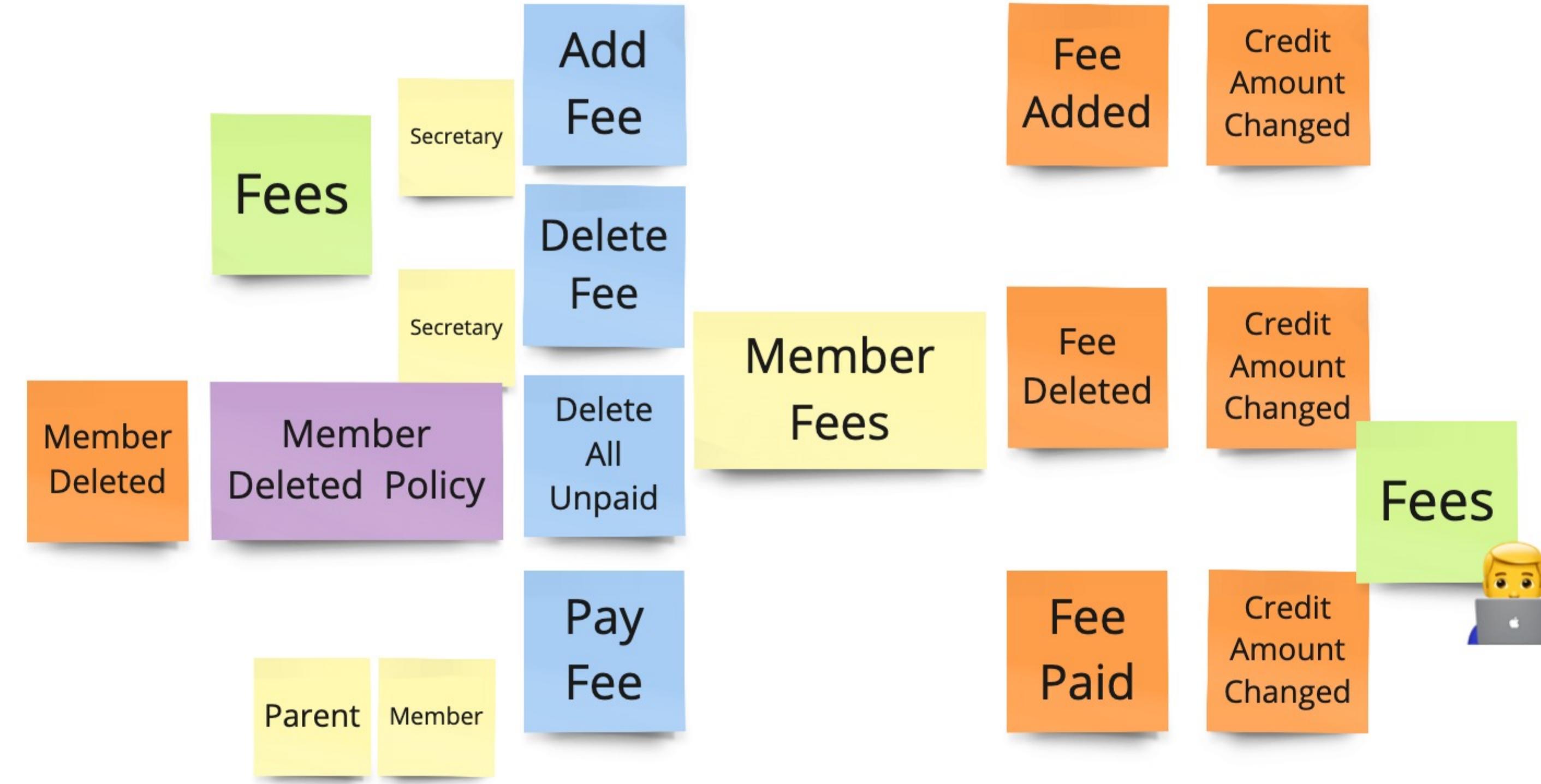
# ACCOUNTING

# COMMANDS

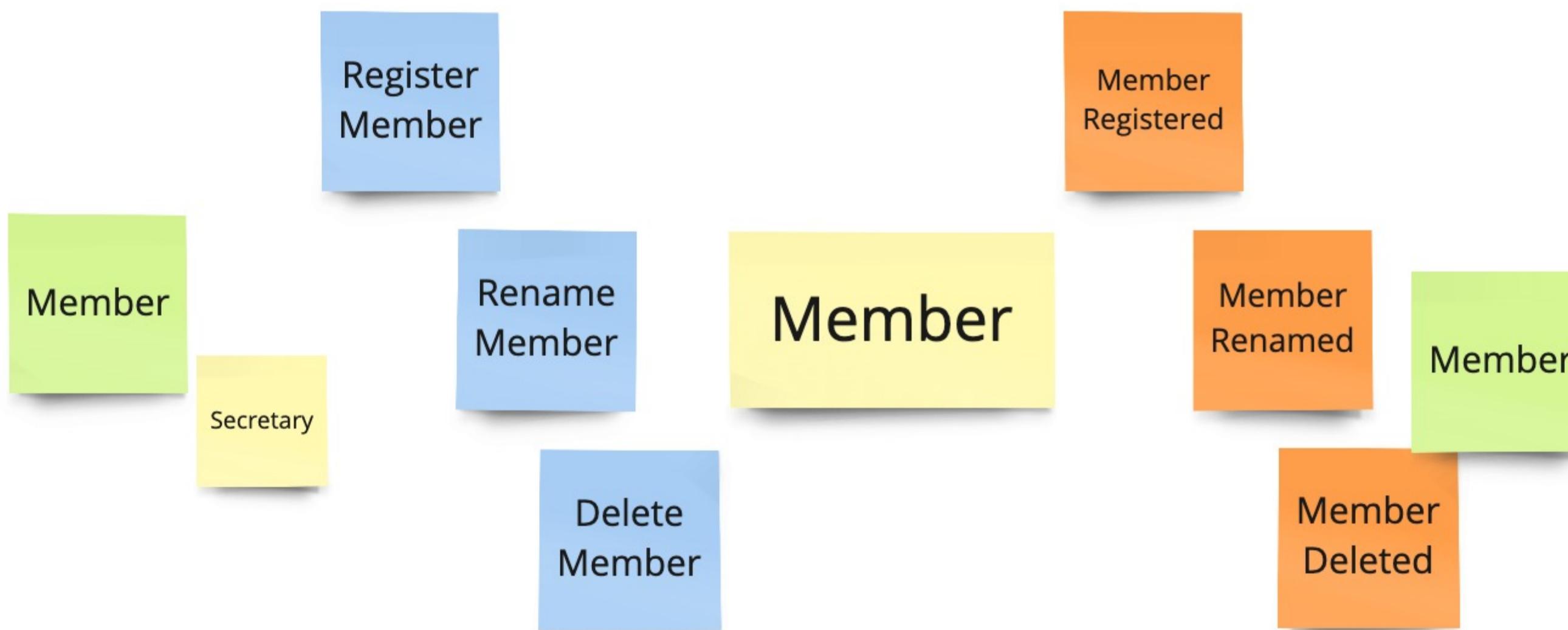


# ACCOUNTING

# FEES READ MODEL



# REGISTRATION



# **READ MODELS**

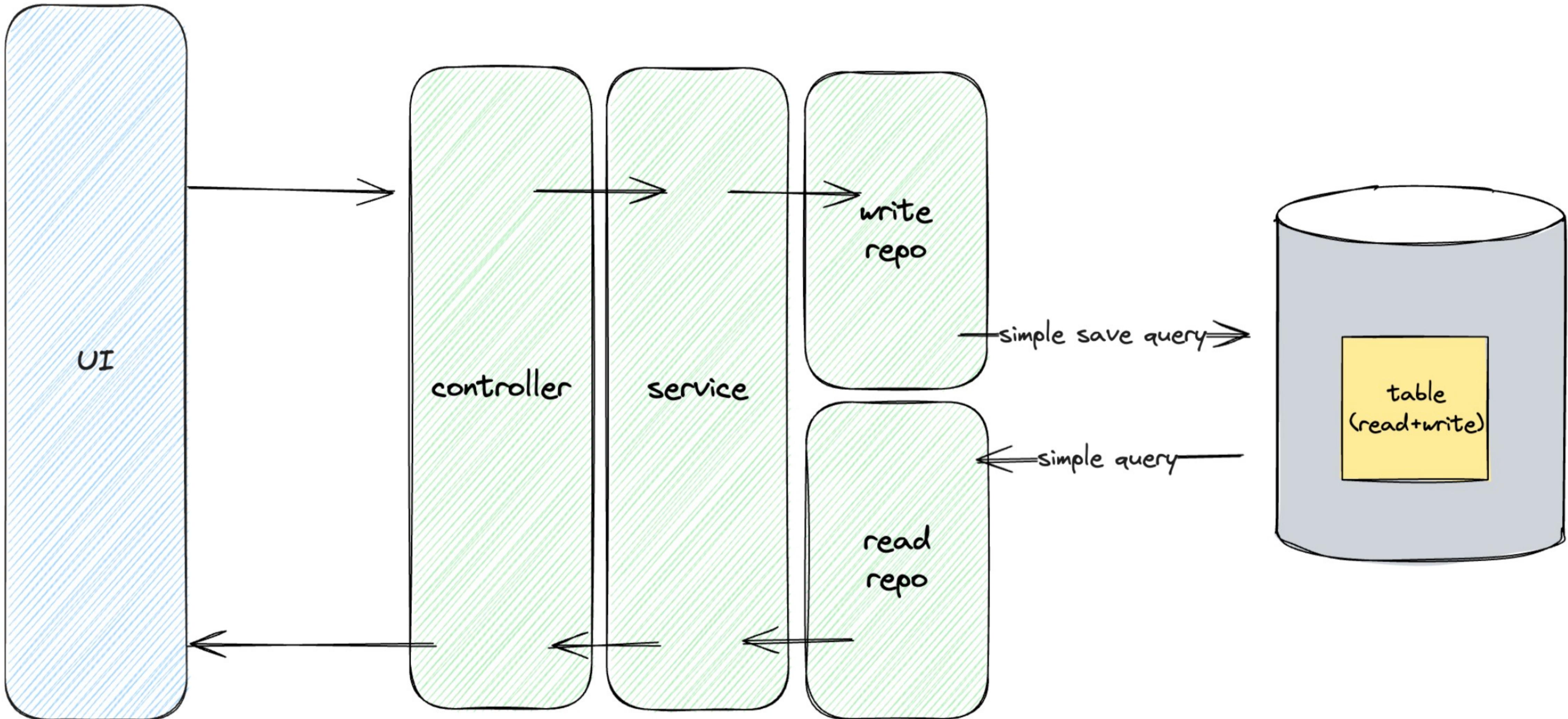


**COMPLEXITY**

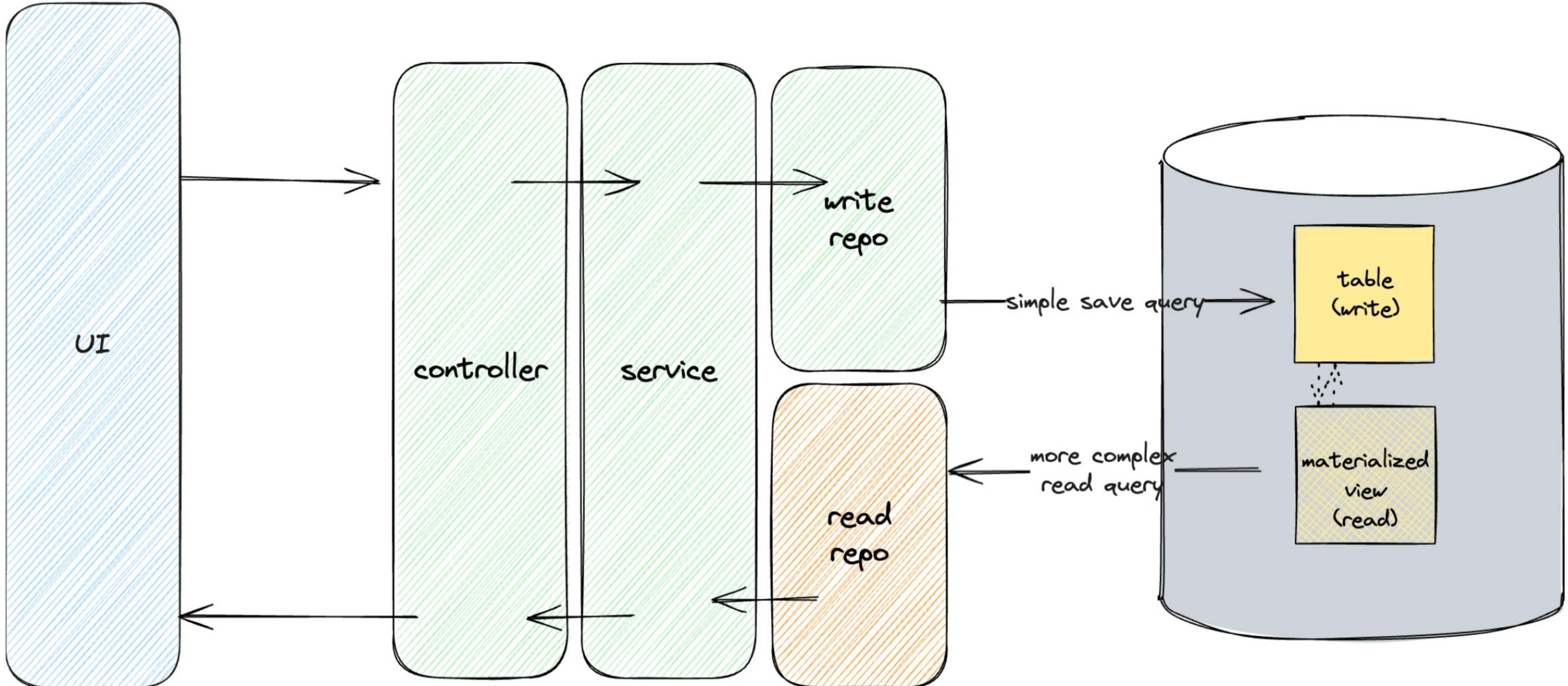


- **SAME WRITE MODEL TABLE, DIFFERENT REPO**
- **MATERIALIZED VIEW**
- **UPDATED IN THE SAME TRANSACTION AS THE WRITE MODEL**
- **UPDATED ASYNCHRONOUSLY**

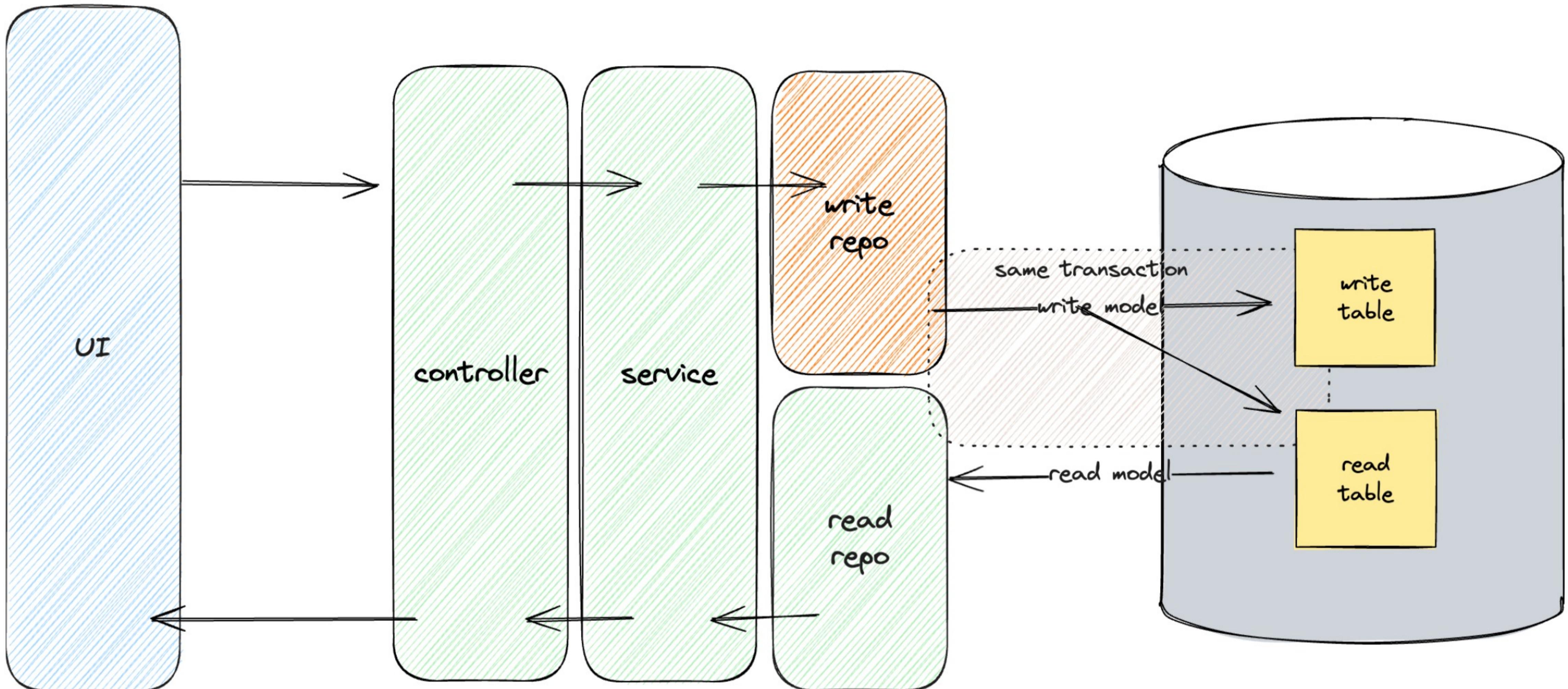
# SAME TABLE DIFFERENT REPO: FILLS LV 0



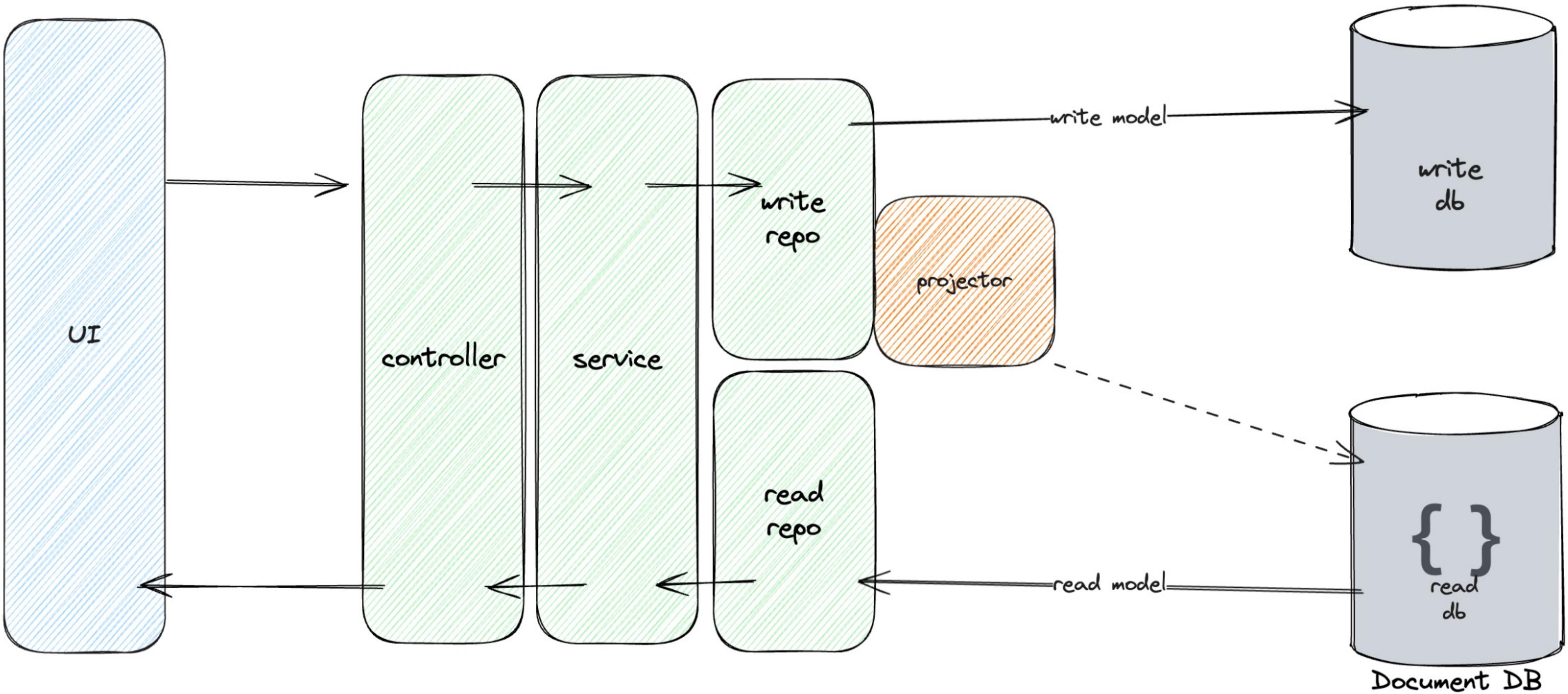
# MATERIALIZED VIEW: FRILLS LV 1



# SAME WM TRANSACTION: FRILLS LV 2



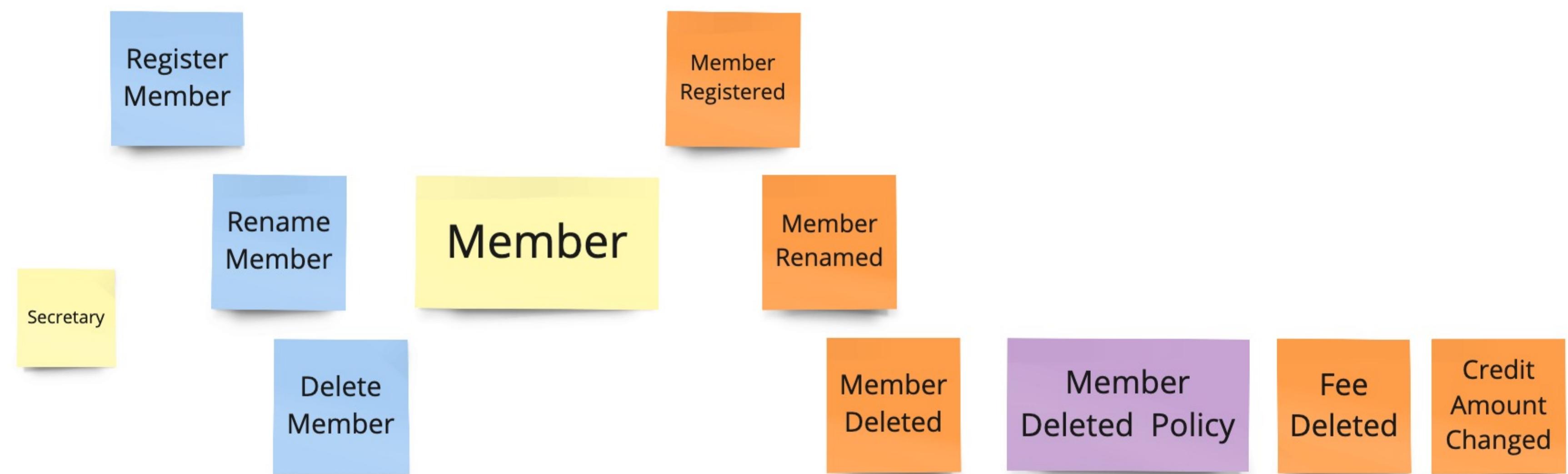
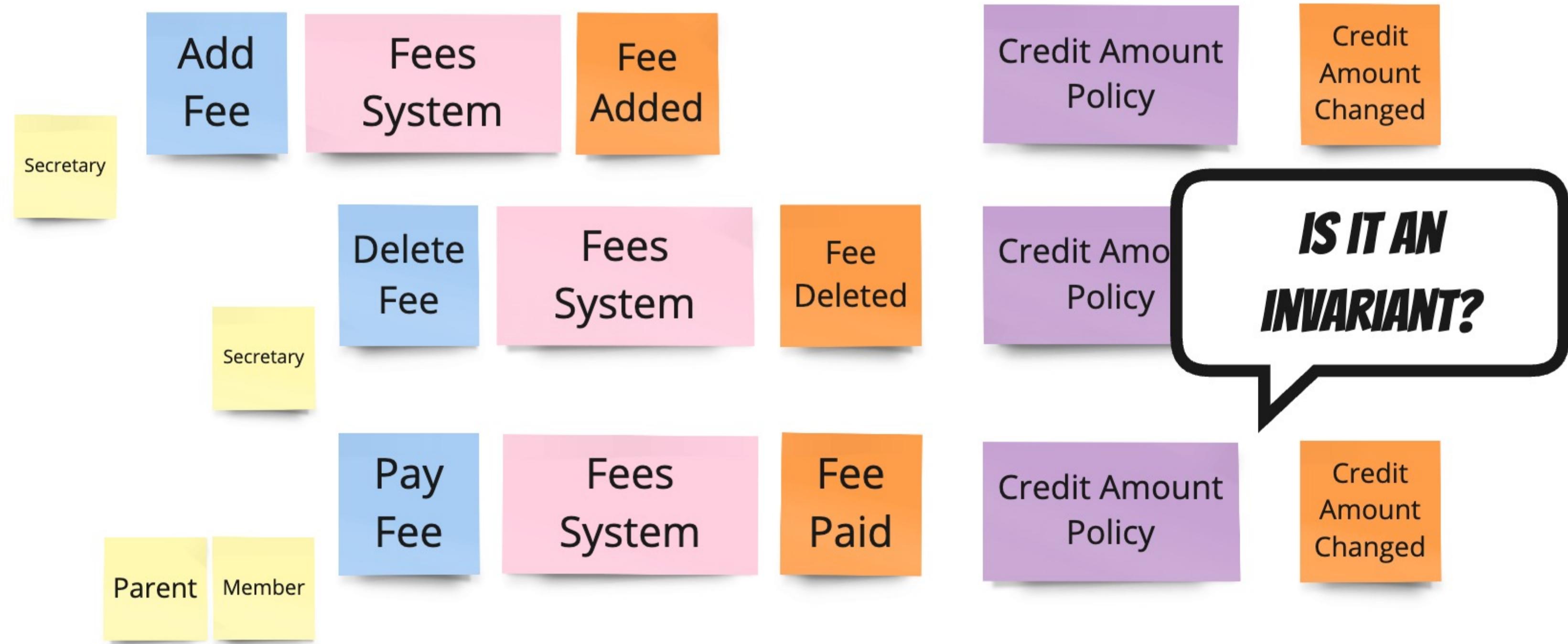
# UPDATED ASYNCHRONOUSLY: FRILLS LV 3



# REGISTRATION

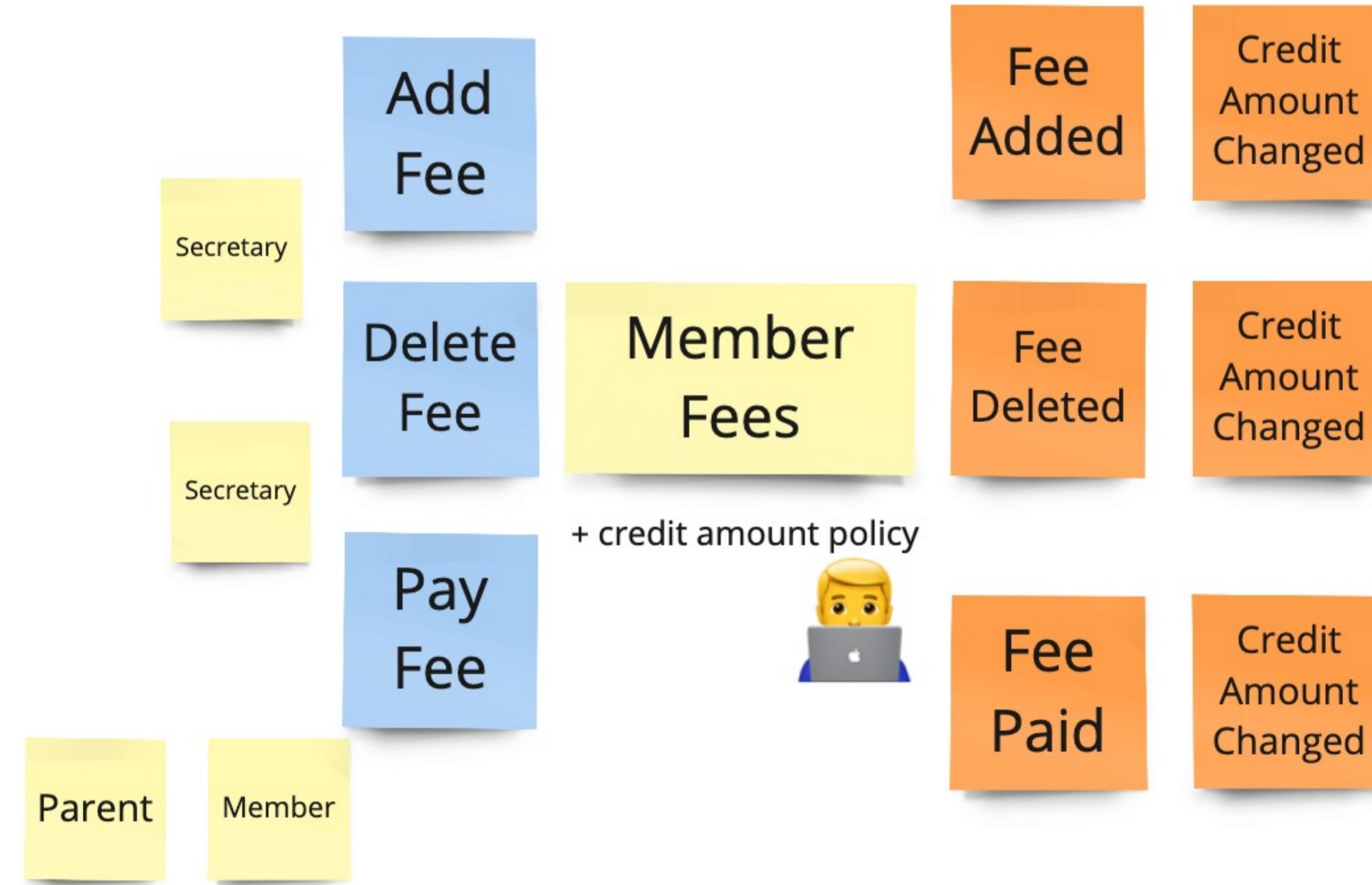
# ACCOUNTING

# POLICY OR INVARIANT?

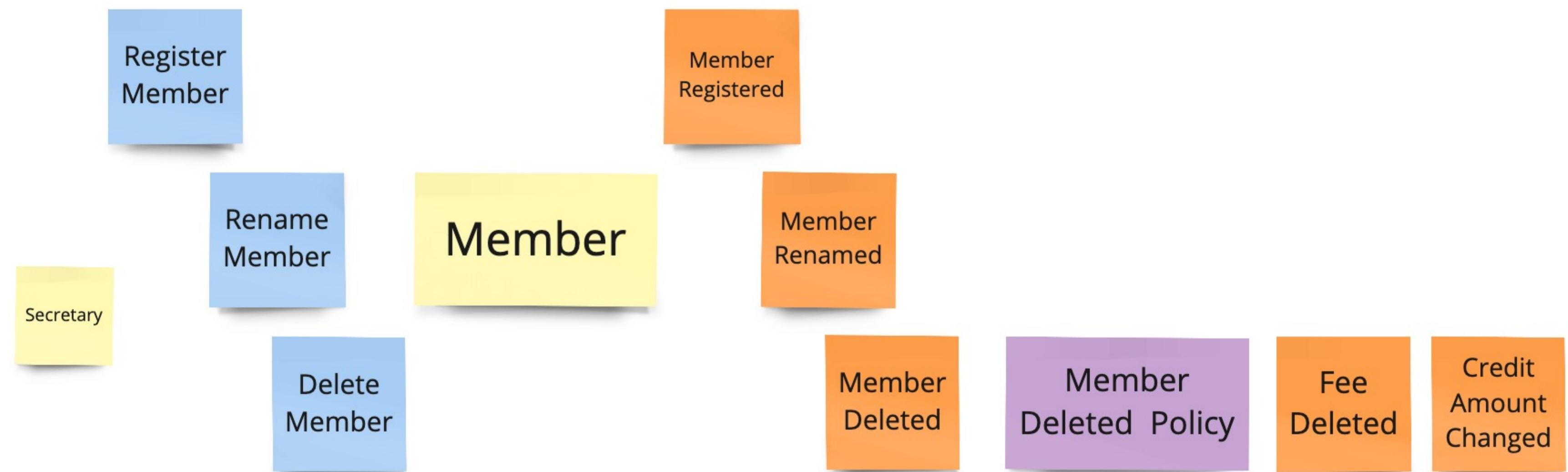


# ACCOUNTING

# MEMBER FEES INVARIANTS



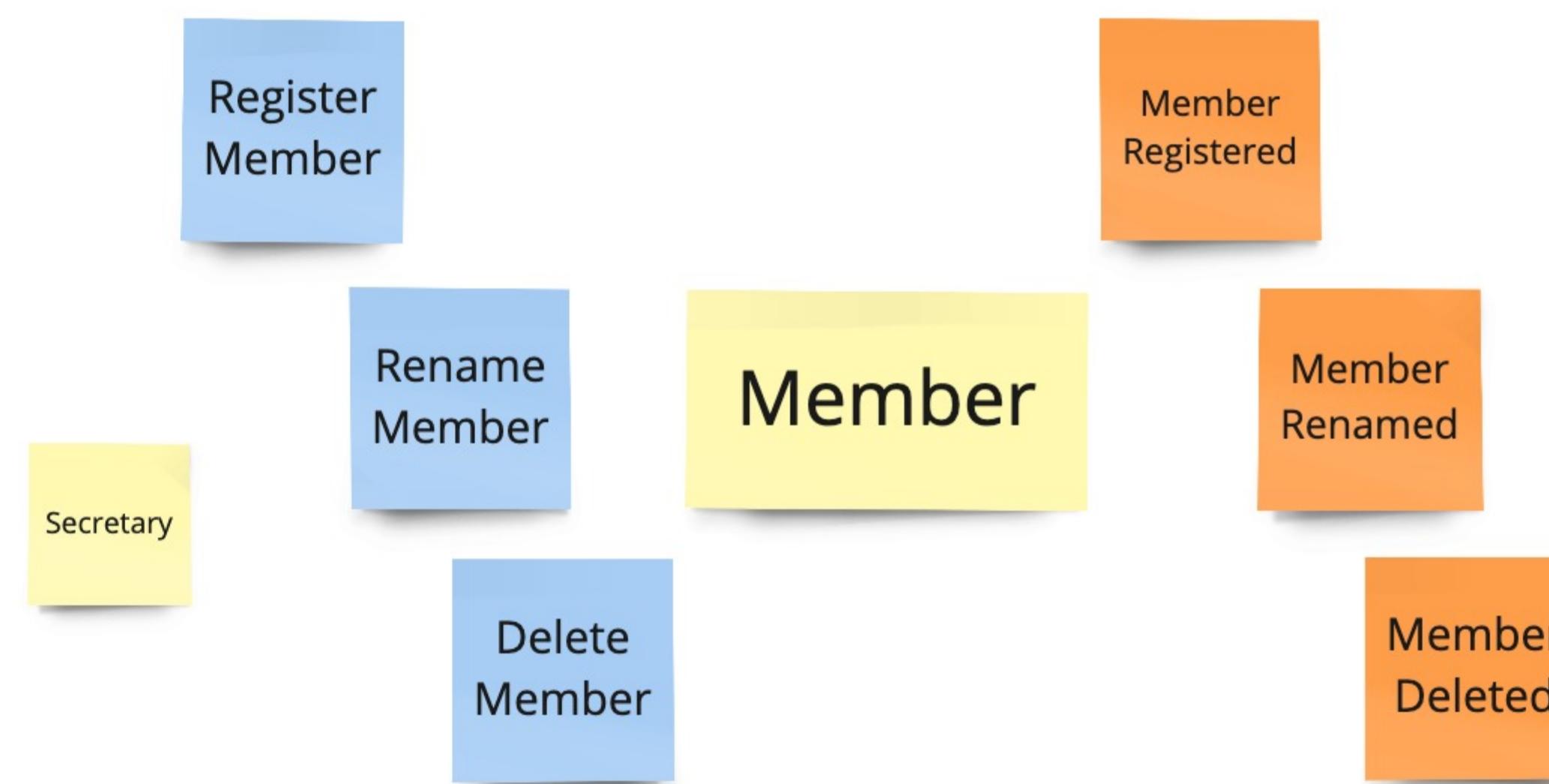
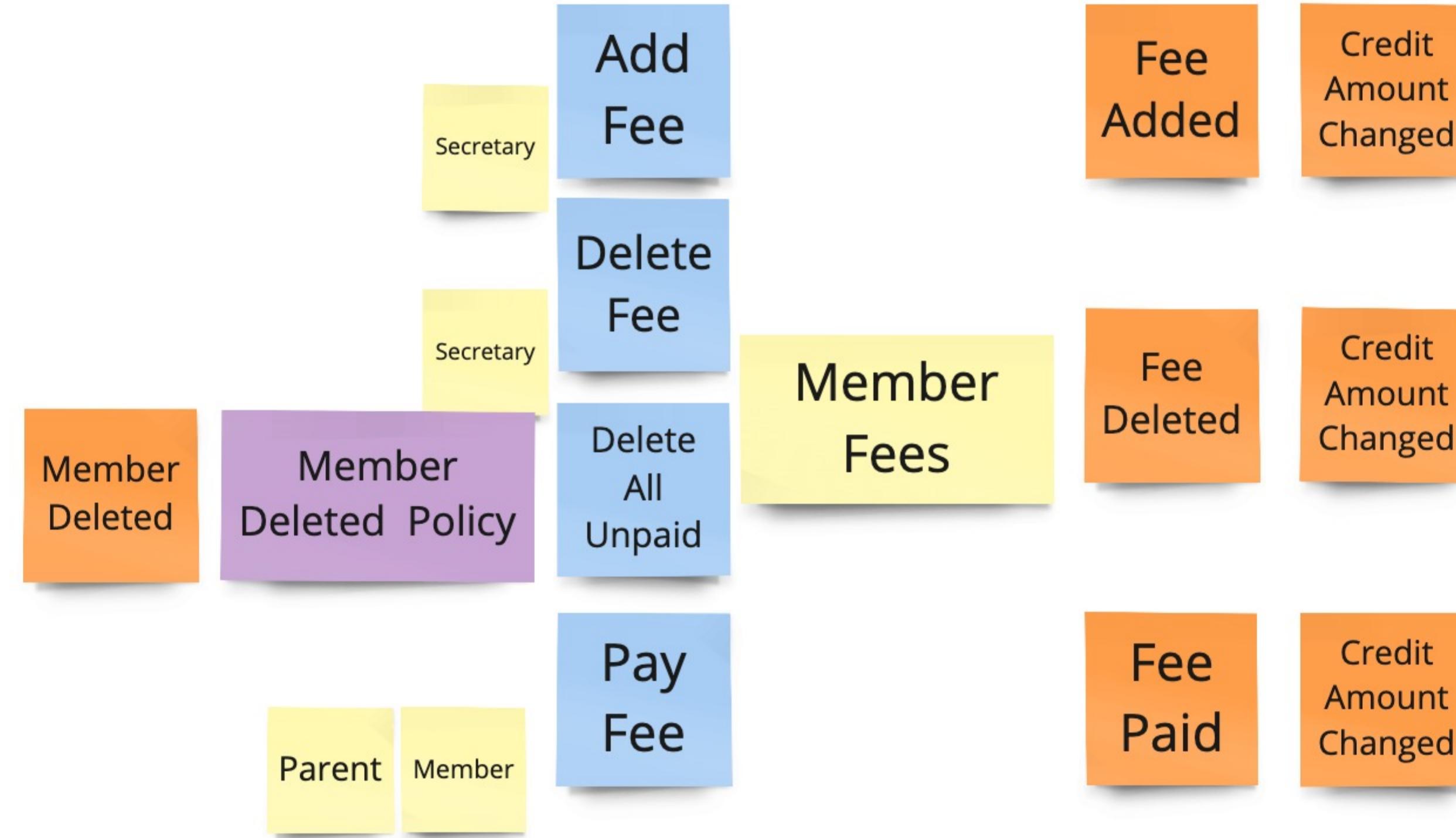
# REGISTRATION



# REGISTRATION

# ACCOUNTING

# POLICY EVENT HANDLER



# **BOUNDED CONTEXT COMMUNICATION**

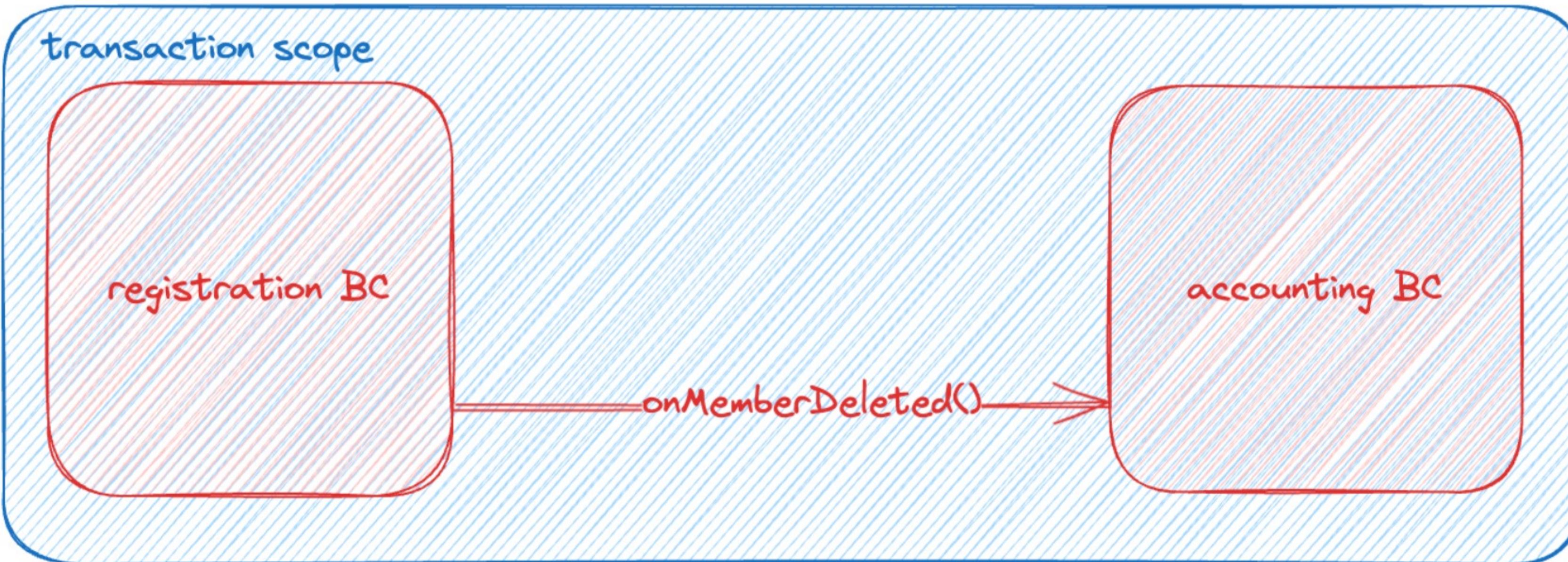


- ***DIRECT METHOD CALL***
  
- ***DIRECT METHOD CALL (SHARING TRANSACTION)***
  
- ***SYNC MEDIATOR***
  
- ***SYNC MEDIATOR (SHARING TRANSACTION)***
  
- ***ASYNC MEDIATOR***
  
- ***ASYNC MEDIATOR (OR BUS) WITH OUTBOX***

**COMPLEXITY**



# **DIRECT METHOD CALL: FRILLS LV 0**



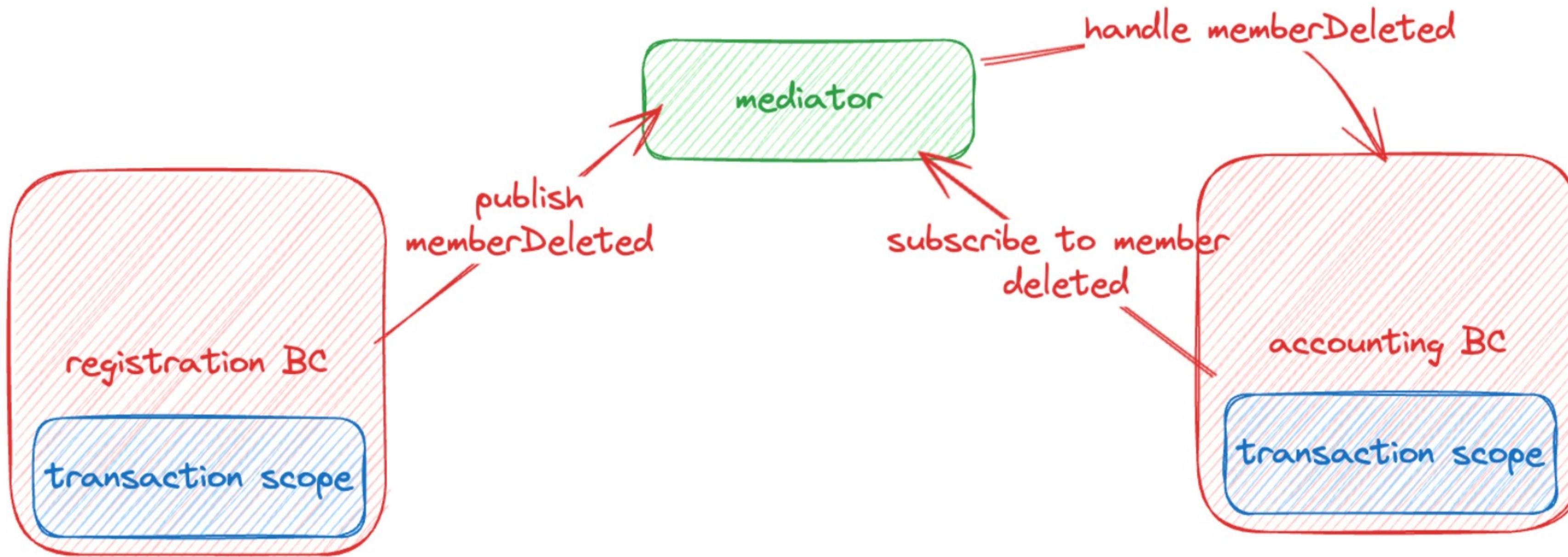
**PRO**

- **100% DATA CONSISTENCY**
- **STRONG CONSISTENCY**

**CONS**

- **TRANSACTION SCOPE COMES OUT OF THE BC**
- **REGISTRATION BC MUST KNOW ACCOUNTING BC**

# SYNC MEDIATOR: FRILLS LV 1



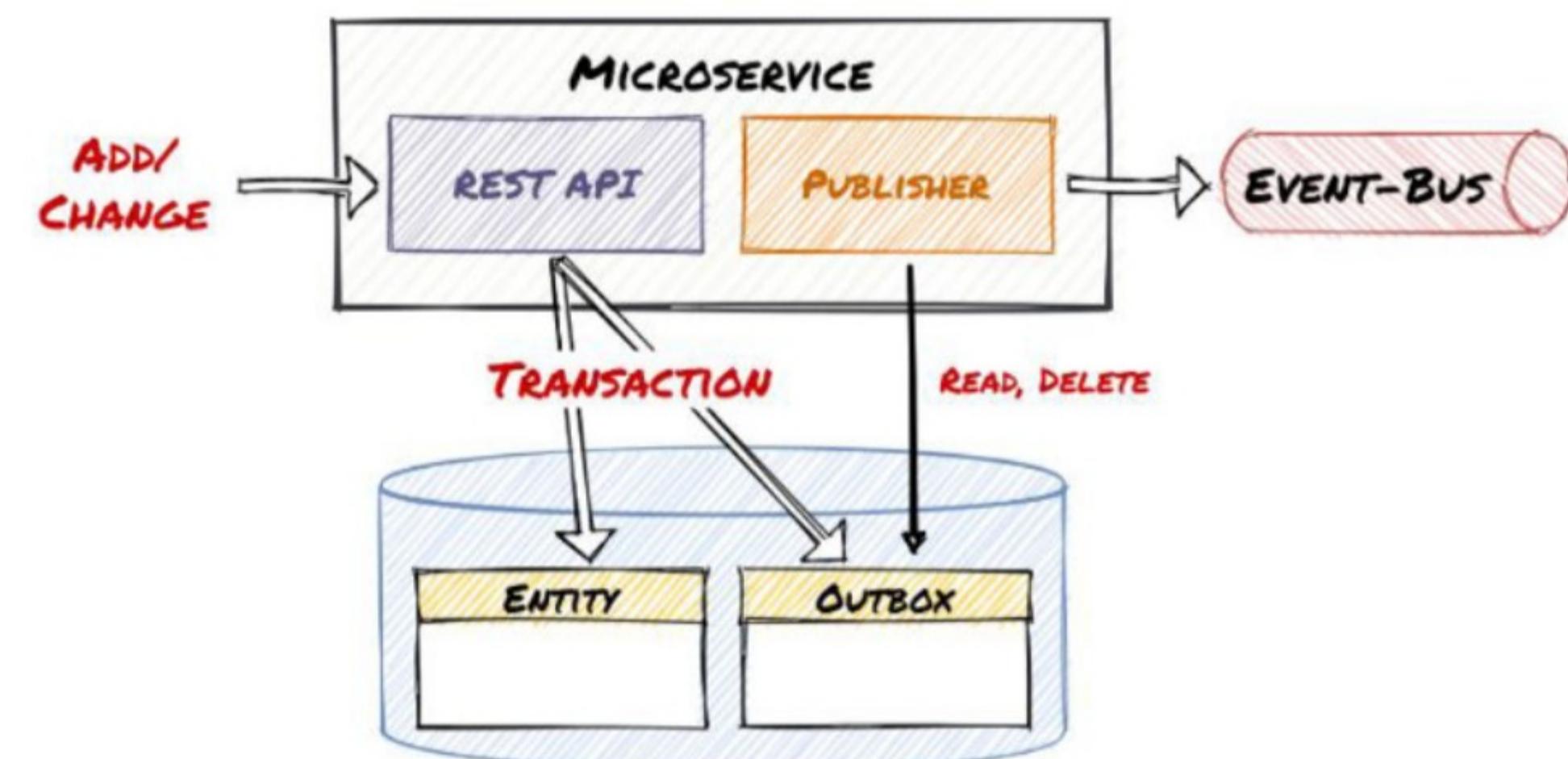
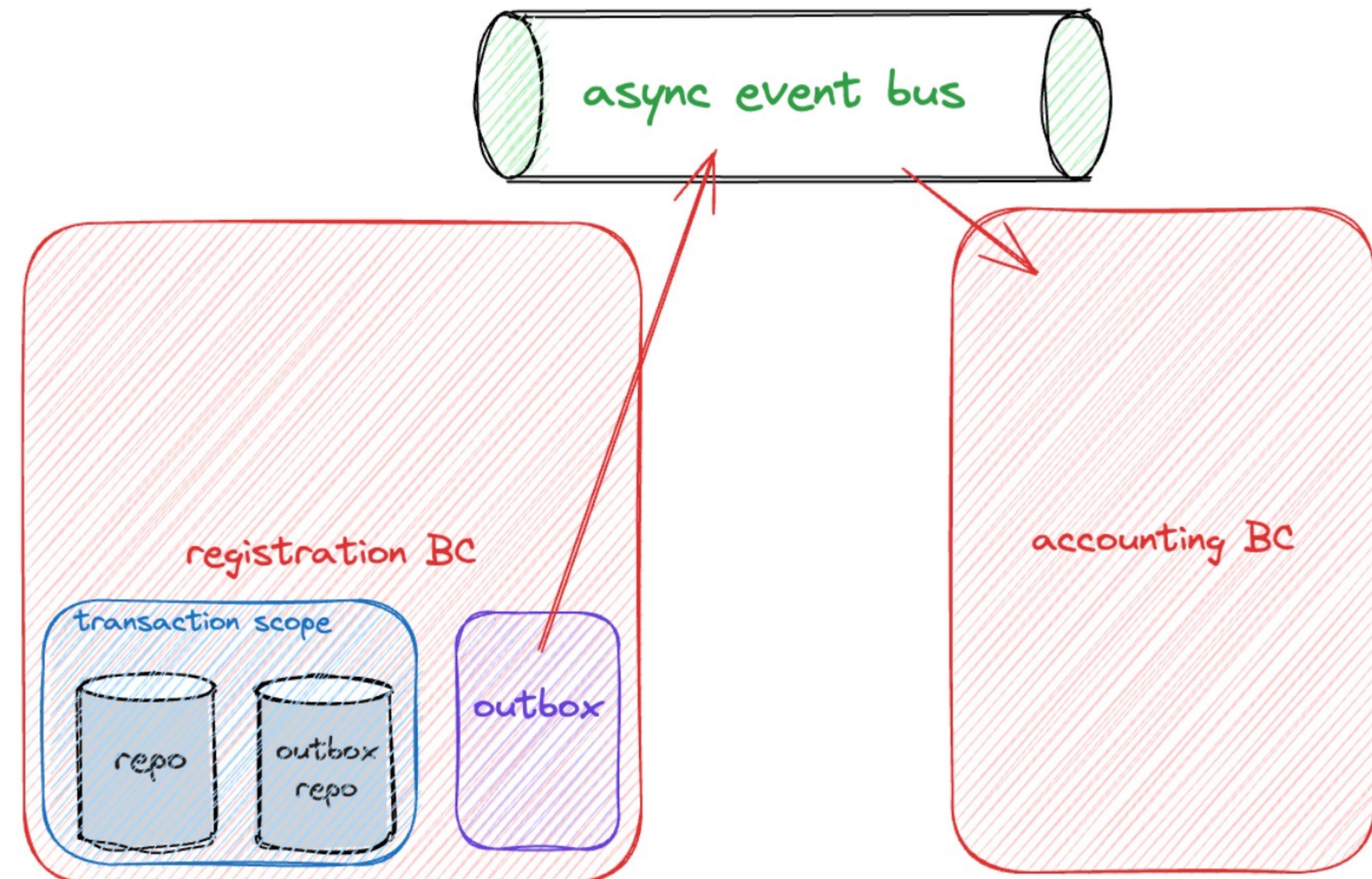
**PRO**

- **REGISTRATION BC DOES NOT HAVE TO KNOW ACCOUNTING BC**
- **NO ASYNCHRONICITY**
- **TRANSACTION REMAINS INSIDE THE BC**

**CONS**

- **DATA CONSISTENCY NOT GUARANTEED**

# ASYNC BUS WITH OUTBOX: FRILLS LV 2



## PRO

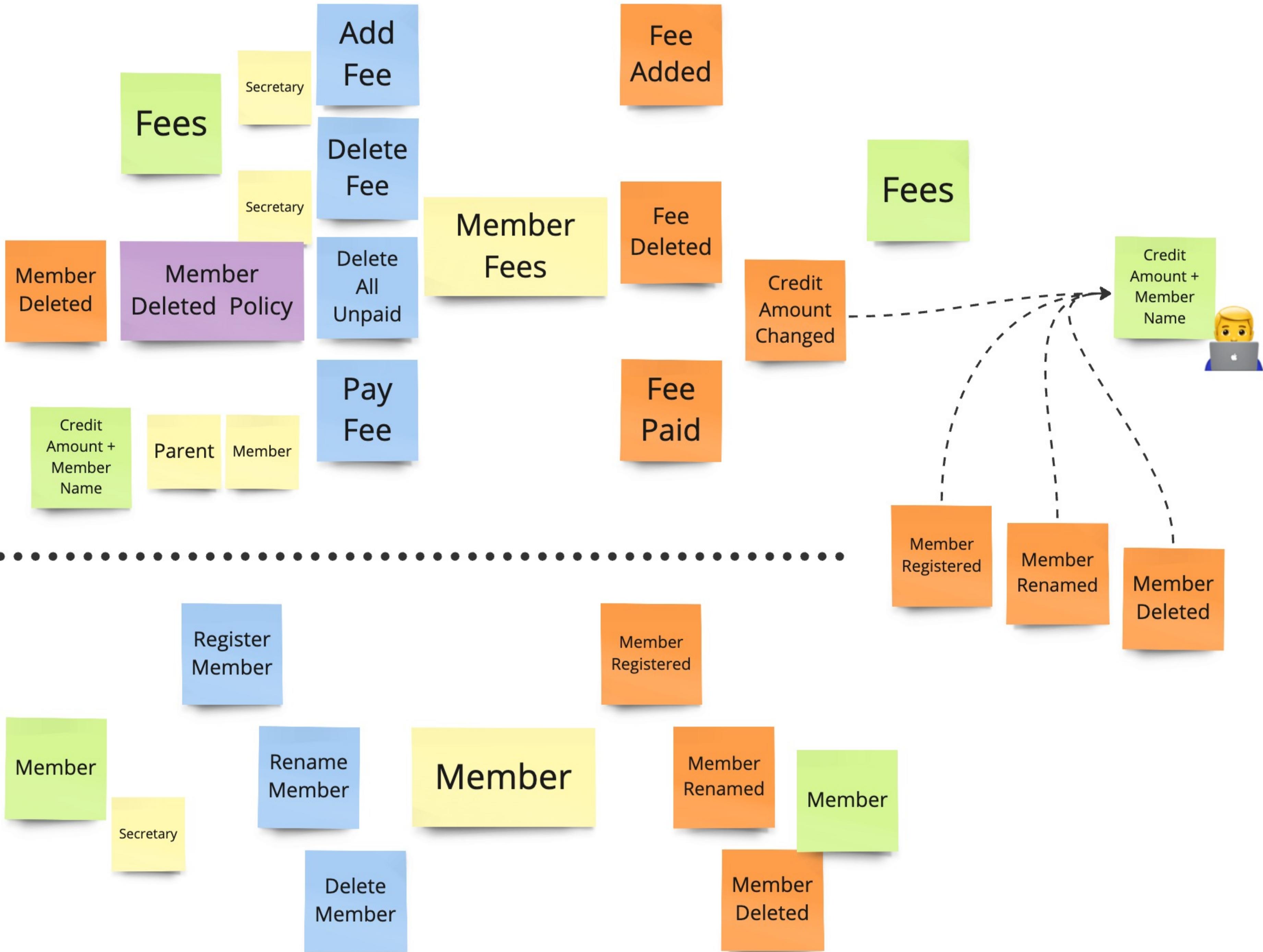
- **100% DATA CONSISTENCY**

## CONS

- **ASYNCHRONICITY**
- **OUTBOX COMPLEXITY**
- **EVENTUAL CONSISTENCY**

# ACCOUNTING

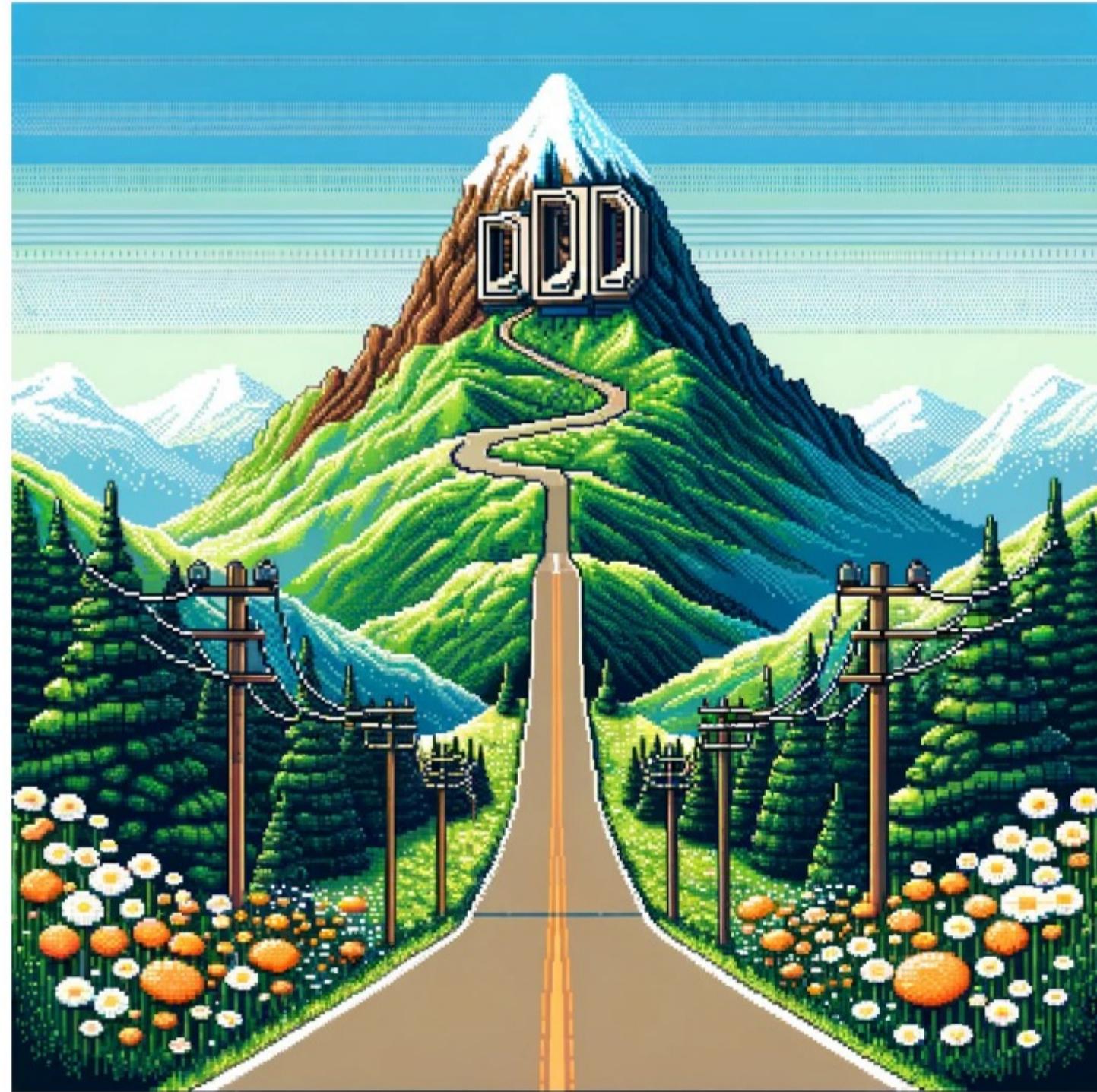
# CREDIT AMOUNTS READ MODEL



# FINAL CONSIDERATIONS

- **DDD + EVENTSTORMING** 💎
  - **BETTER DOMAIN UNDERSTANDING**
  - **MODEL BEHAVIOR NOT DATA**
- **CQRS** 💎 💎
  - **SIMPLER DOMAIN LOGIC**
  - **DIFFERENT KIND OF REPRESENTATION**
- **EVENT SOURCING** 💎 💎 💎
  - **⚠ DIFFERENT PARADIGM TO UNDERSTAND AND IMPLEMENT**
  - **⚠ FORCED TO MODEL DIFFERENTLY WRITE / READ SIDES**
- **EVENT DRIVEN ARCHITECTURE - ASYNC** 💎 💎 💎 💎 💎
  - **MAXIMUM SCALABILITY**
  - **⚠ LOT OF ACCIDENTAL COMPLEXITY**

# **DDD TOOLKIT: THE PRAGMATIC WAY IN TS**



★ **TS LIBRARY:**  
[HTTPS://FIZZBUDS.GITHUB.IO/DDD-TOOLKIT/](https://fizzbuds.github.io/ddd-toolkit/)

**EXAMPLE NESTJS PROJECT:**  
[HTTPS://GITHUB.COM/FIZZBUDS/NEST-DDD-TOOLKIT](https://github.com/fizzbuds/nest-ddd-toolkit)

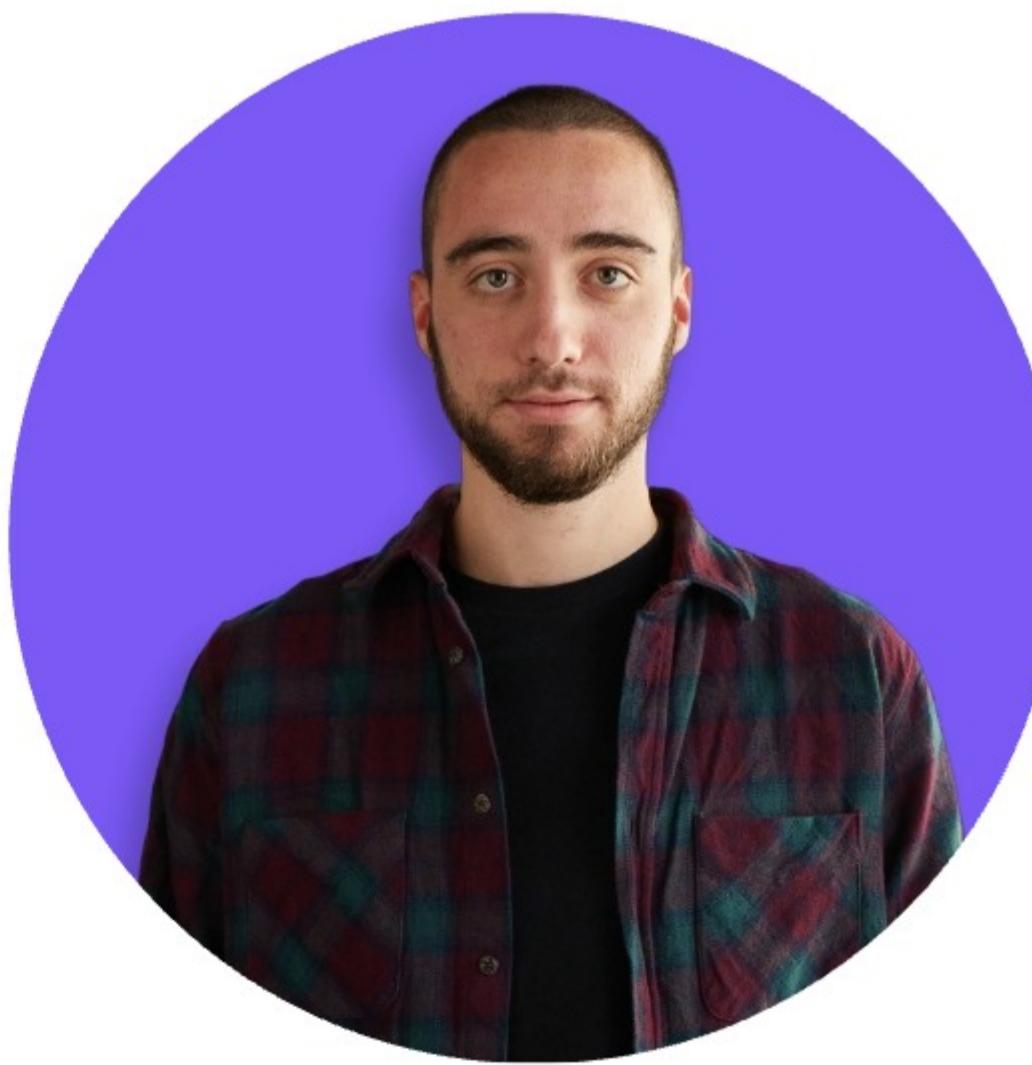
## **PRAGMATISM AT DATA LEVEL**

**PRODUCTION-READY AGGREGATE REPO WITH TRANSACTIONAL HOOKS TO PERSIST WRITE AND READ MODELS WITHOUT INCONSISTENCIES, EVENTUAL CONSISTENCY AND OTHER HEADACHES**

## **PRAGMATISM AT ARCHITECTURE LEVEL**

**PRODUCTION-READY SYNCHRONOUS IN-MEMORY BUS FOR EVENTS, COMMANDS AND QUERIES.**

# **THANKS**



**GABRIELE TOSELLI**



**LUCA GIOVENZANA**