#ASLI ENGINEERING

Database per Service Pattern in Microservices

SWIPE

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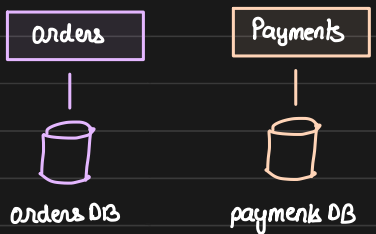
Database per Service Pattern

Almost all microservices need to persist data in some database

A database architecture we can use here could be Database per Service

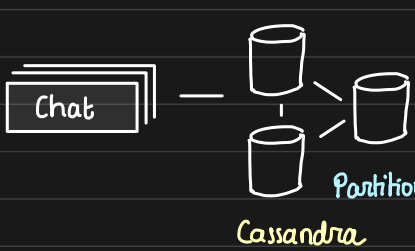


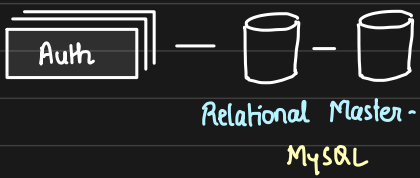
loose coupling is the highlight of microservices based architecture

Services should be
- independent to build, test, deploy, scale
- autonomous to take its own decision

→ Database decisions play a key role here.

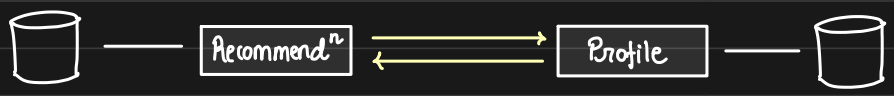
Social Network: Each service taking its own decision





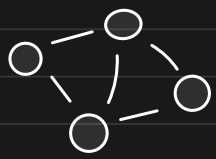
Advantages of going for Database per Service pattern

- you need loosely coupled components — No direct access to DB



- you have a very specific DB need for your service

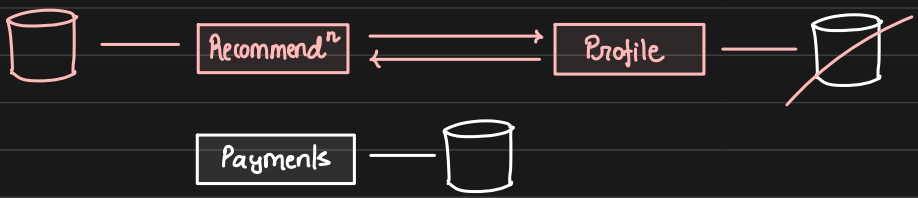
  eg: graph db to model relations in social media



- you want granular control and scaling of your service

  eg: horizontal, vertical, replica, partition, decentralized

- if a database goes down, it only affects the dependent services



- you have separate compliance need for a certain type of data

  eg: encryption at rest for PII and financial data

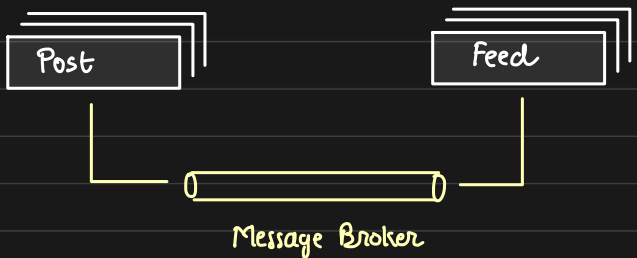
  ↳ doing it for 10GB table is simpler than 2TB of database

Disadvantages of adopting database-per-service

- cross-service transactions are complex and expensive → time → throughput

  eg: you will need to implement 2PC across services for TXN

- conveying updates across services is difficult



- multiple infra components to be monitored and managed