Shared Database or Database by Service

in Microservices Architecture

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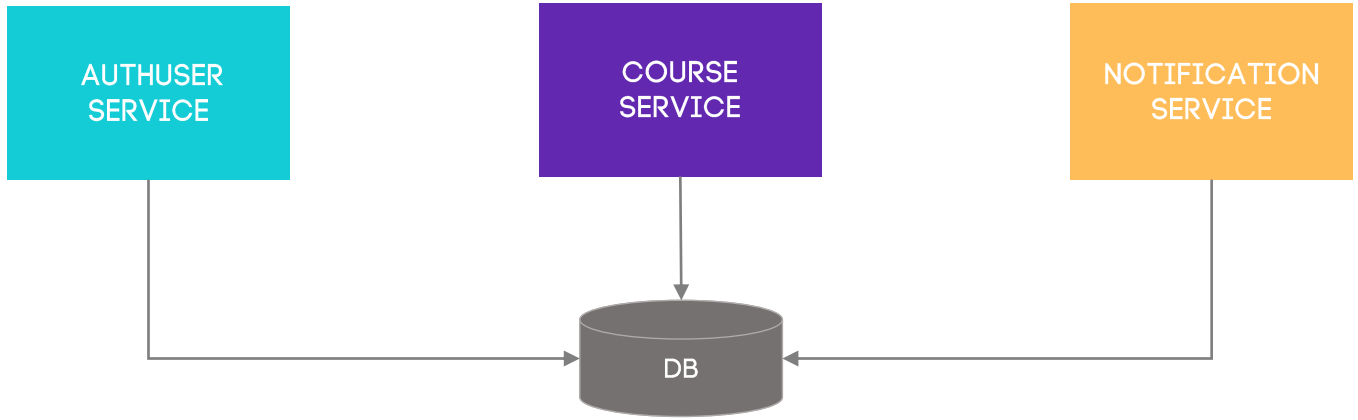
Shared Database

Prós

- Strong Consistency
- ACID Transactions locally

Contras

- Strong Coupling
- Impaired performance
- No data modeling isolation



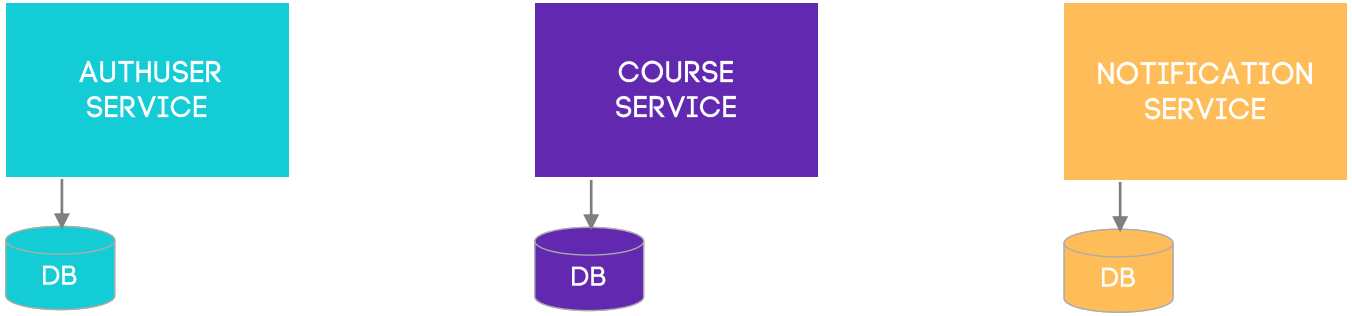
Database by Service

Prós

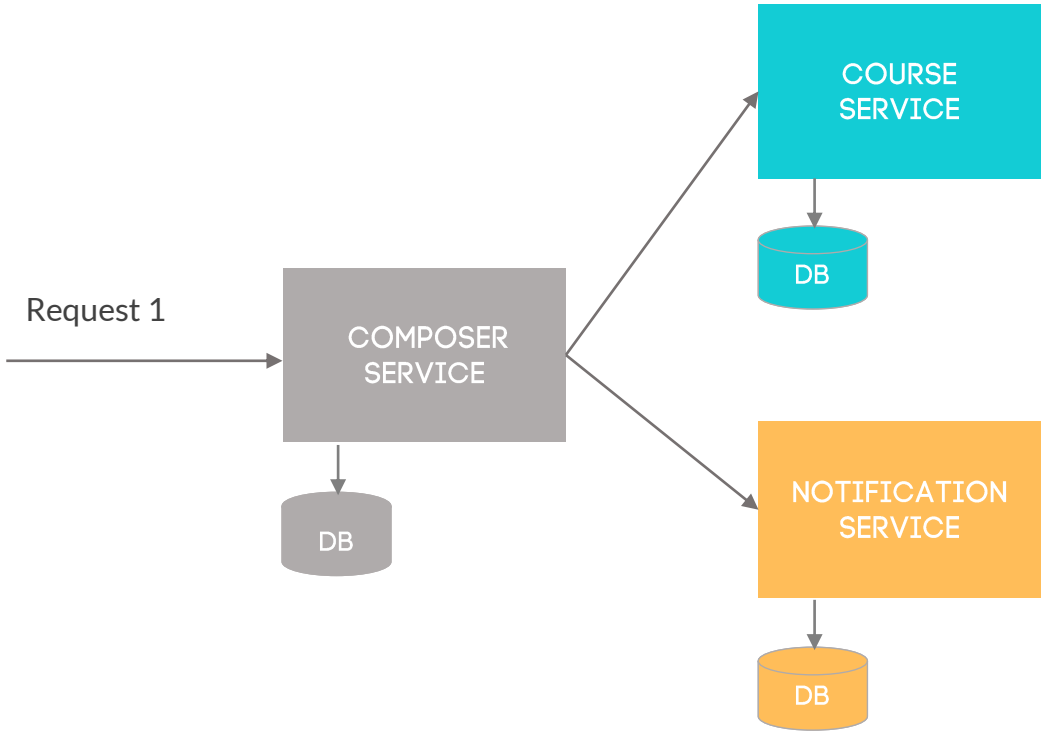
- Loose Coupling
- Isolated Data modeling
- flexibility in choosing the Database by Microservice
- Less dependency between teams

Contras

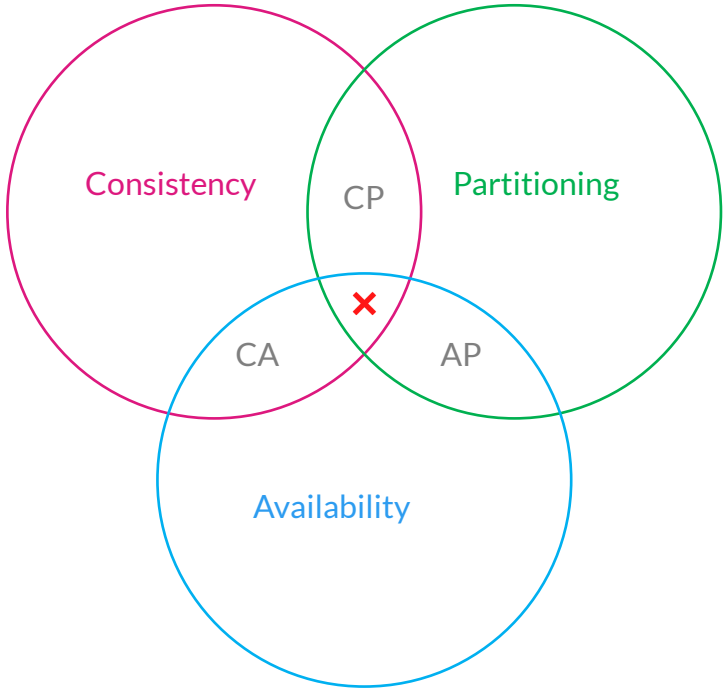
- Data Synchronization
- Distributed Transactions
- CAP Theorem and Eventual Consistency
- Data Replication



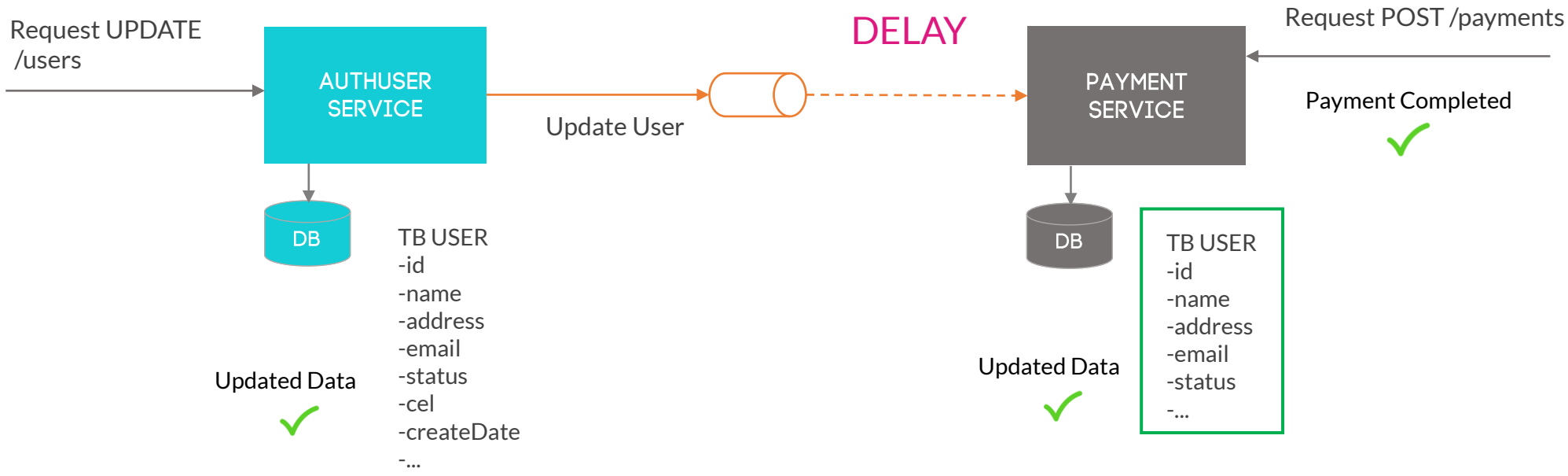
API Composition



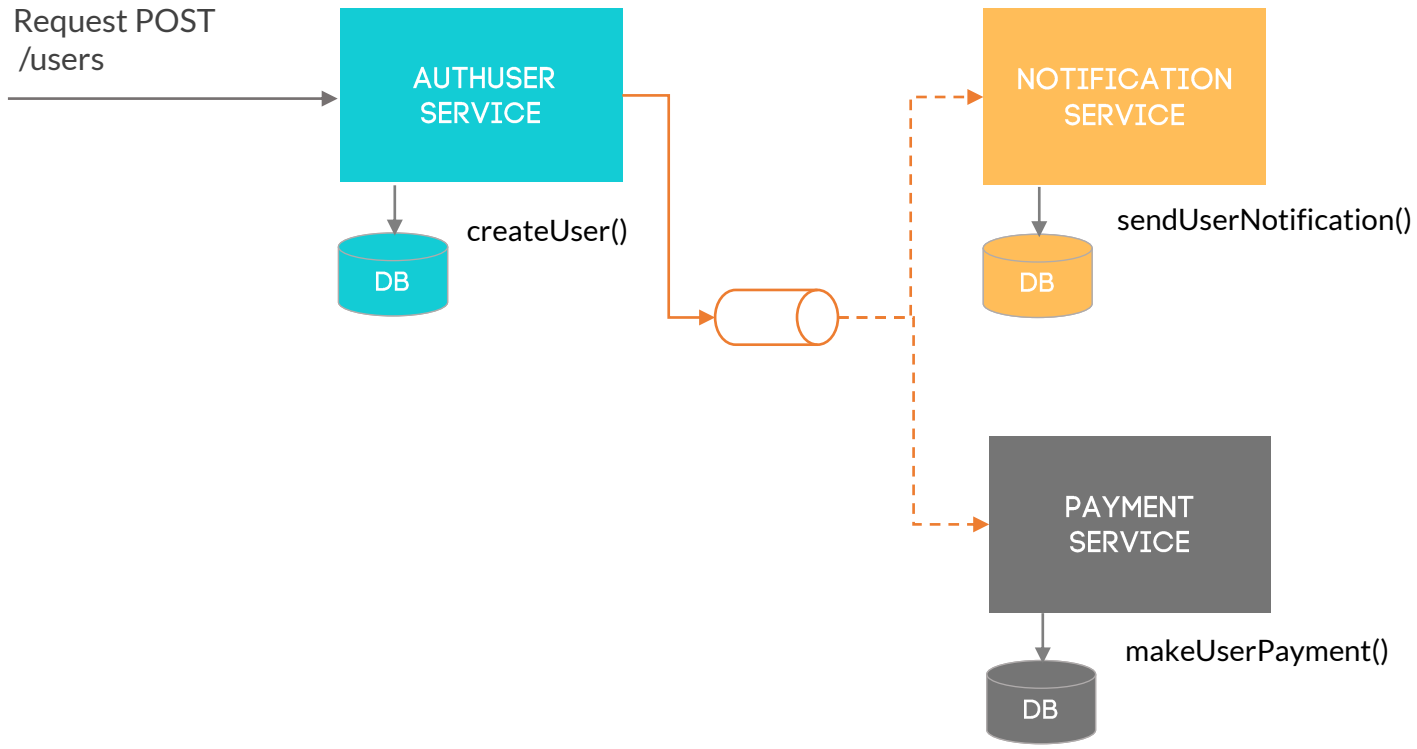
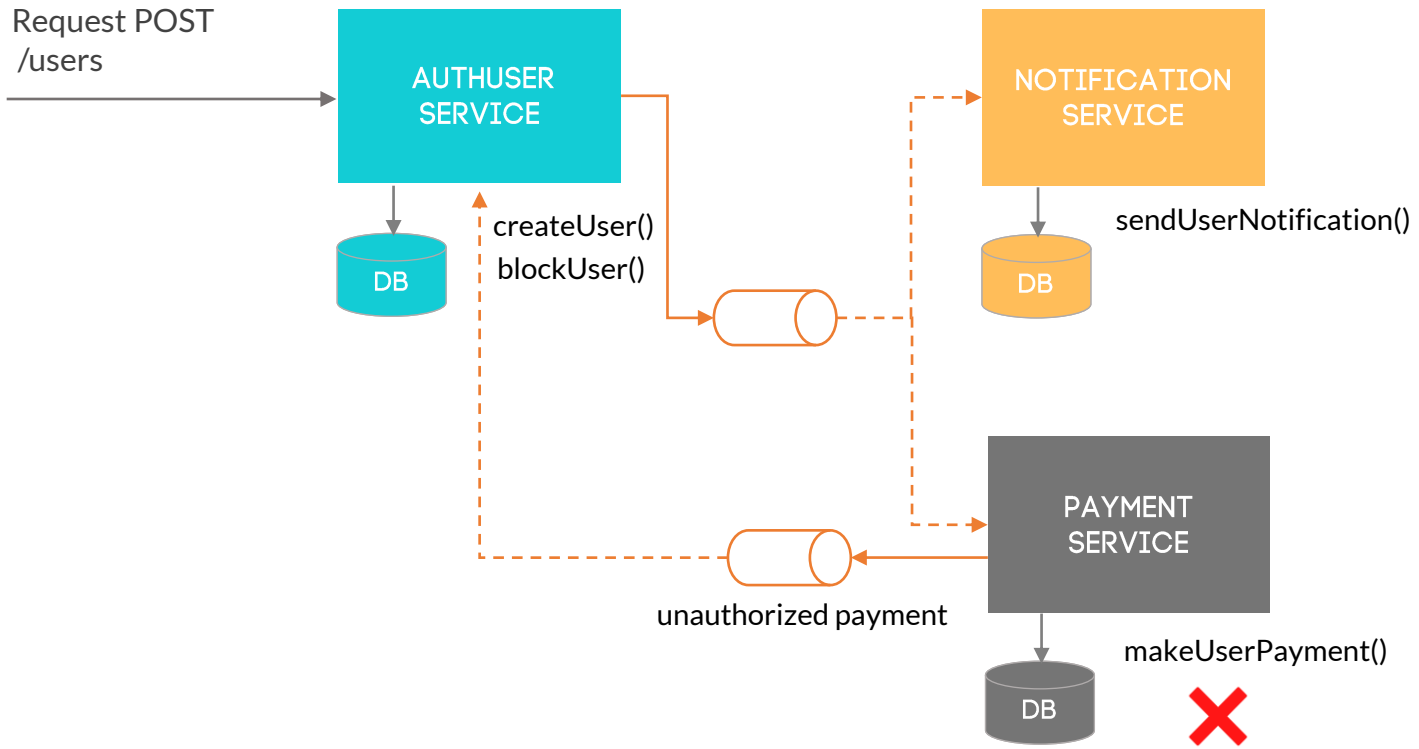
CAP Theorem or Brewer's Theorem



Occasional Consistency and Data Replication



Distributed Transactions



Data Compensation