



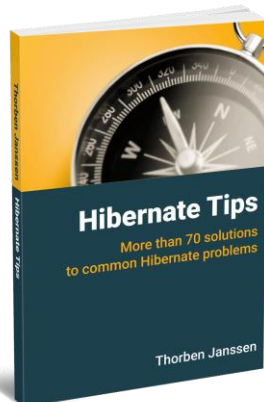
# 3 PATTERNS FÜR SKALIERBARE MICROSERVICES

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Hibernate Tips  
More than 70 solutions  
to common Hibernate problems

[www.hibernate-tips.com](http://www.hibernate-tips.com)



[thorben-janssen.com](http://thorben-janssen.com)



@thjanssen123



/c/ThoughtsOnJava



thorbenjanssenofficial



# Microservices



# Basic Rules

- Own database
- Knows no other databases
- Only local transaction



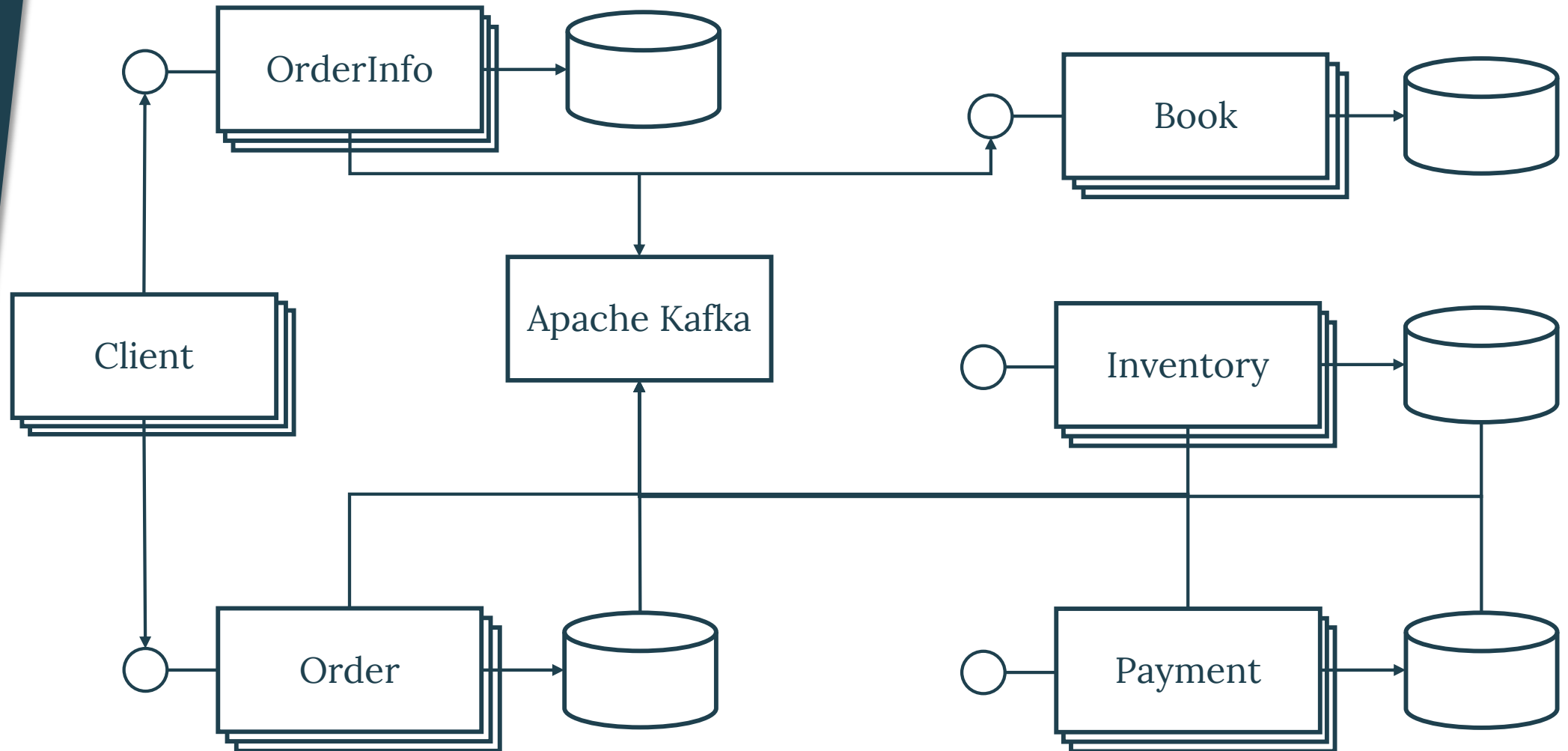


# Sharing data becomes a problem!

# Patterns

- Read
  - View Database
- Write
  - Outbox Pattern
  - SAGA Pattern

# Architecture





# View Database





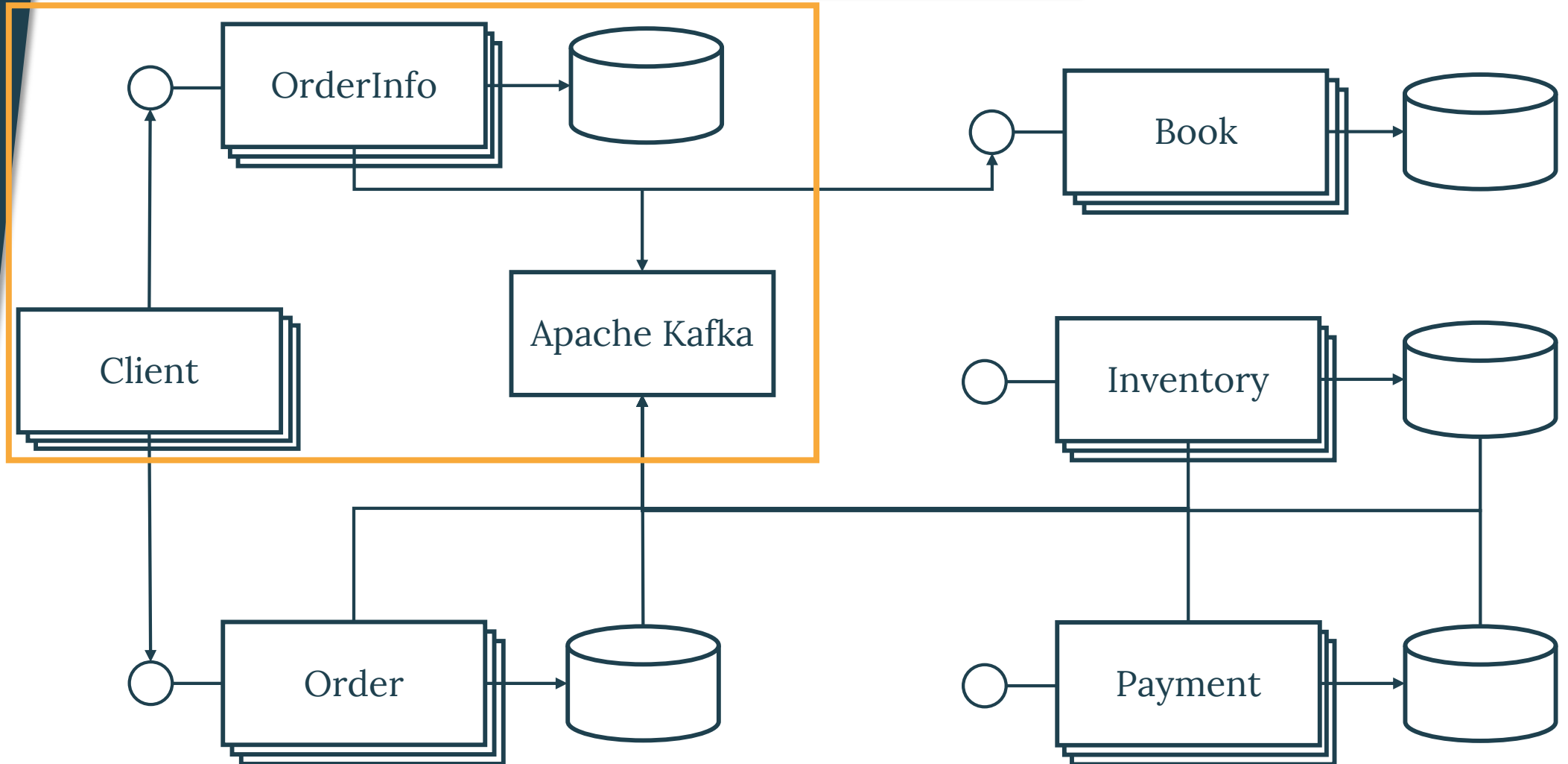
# General Idea

- Use a service-specific database
- Keep copy of required data
  - Aggregate and transform data
- Use simple query to retrieve data

# Code Samples



# Architecture



# Outbox

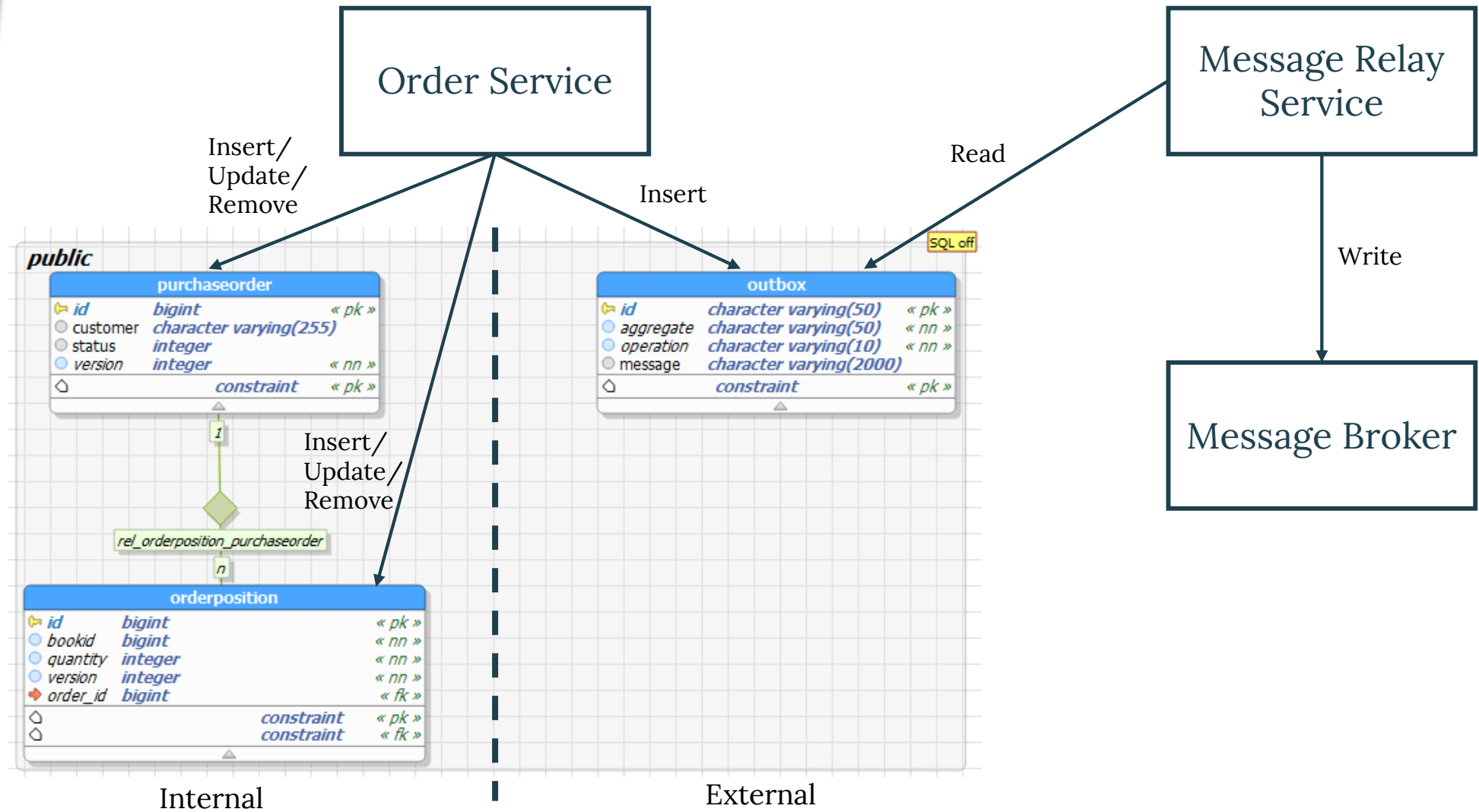




# General Idea

- 1 local transaction with DB
  - Split communication
- Outbox table as API

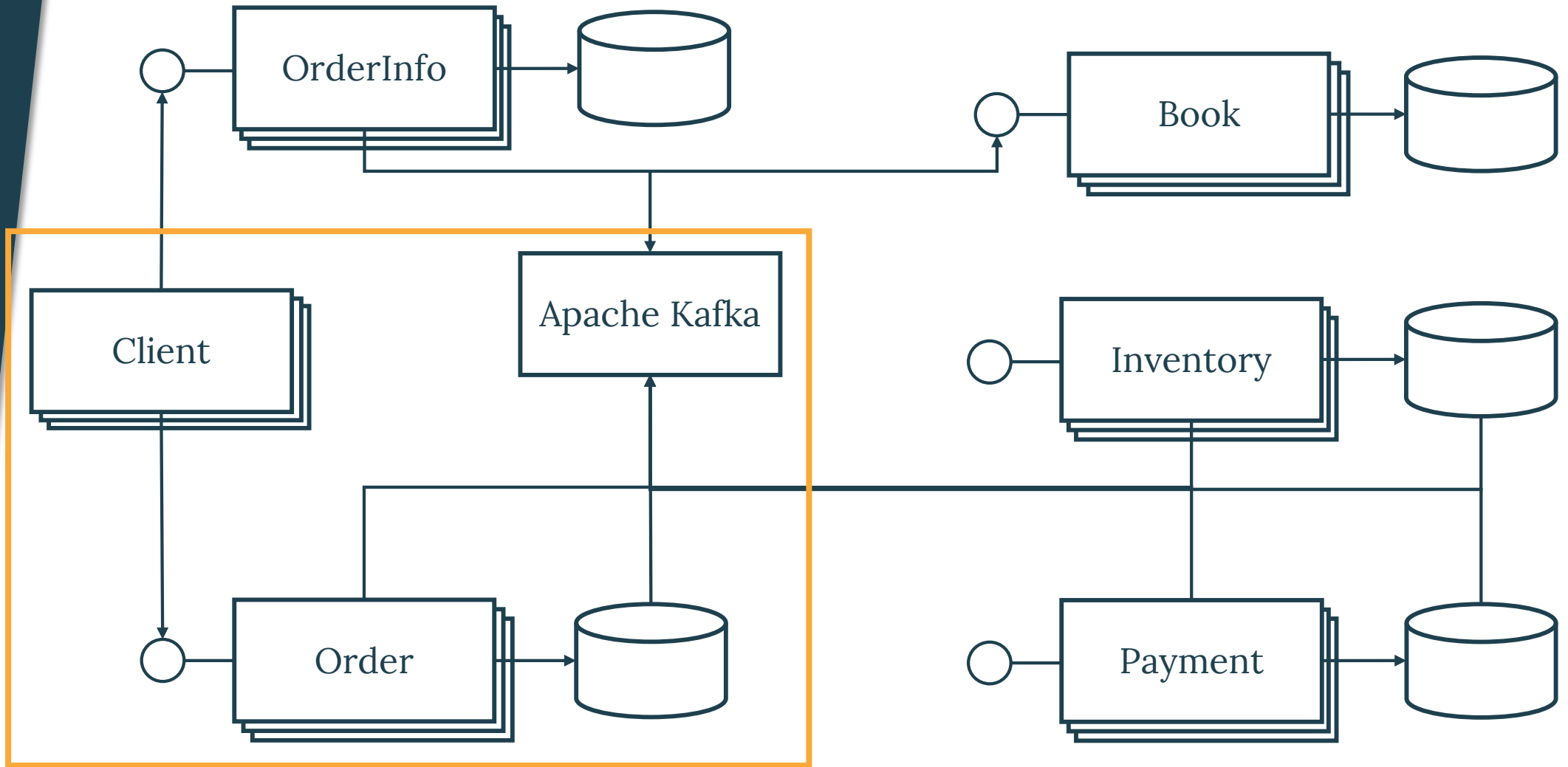
# Outbox Pattern





# Code Samples

# Architecture



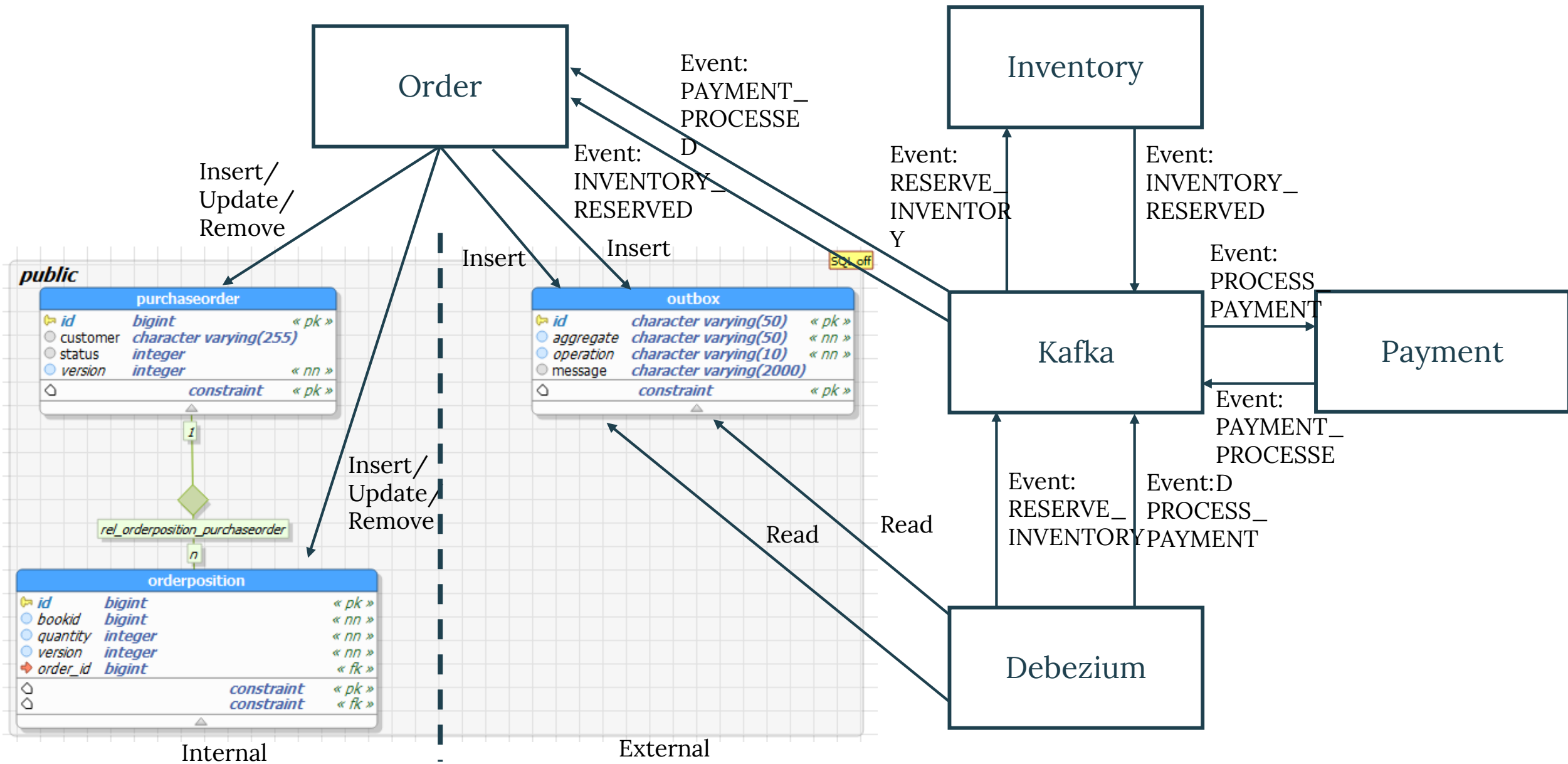
# Saga





# General Idea

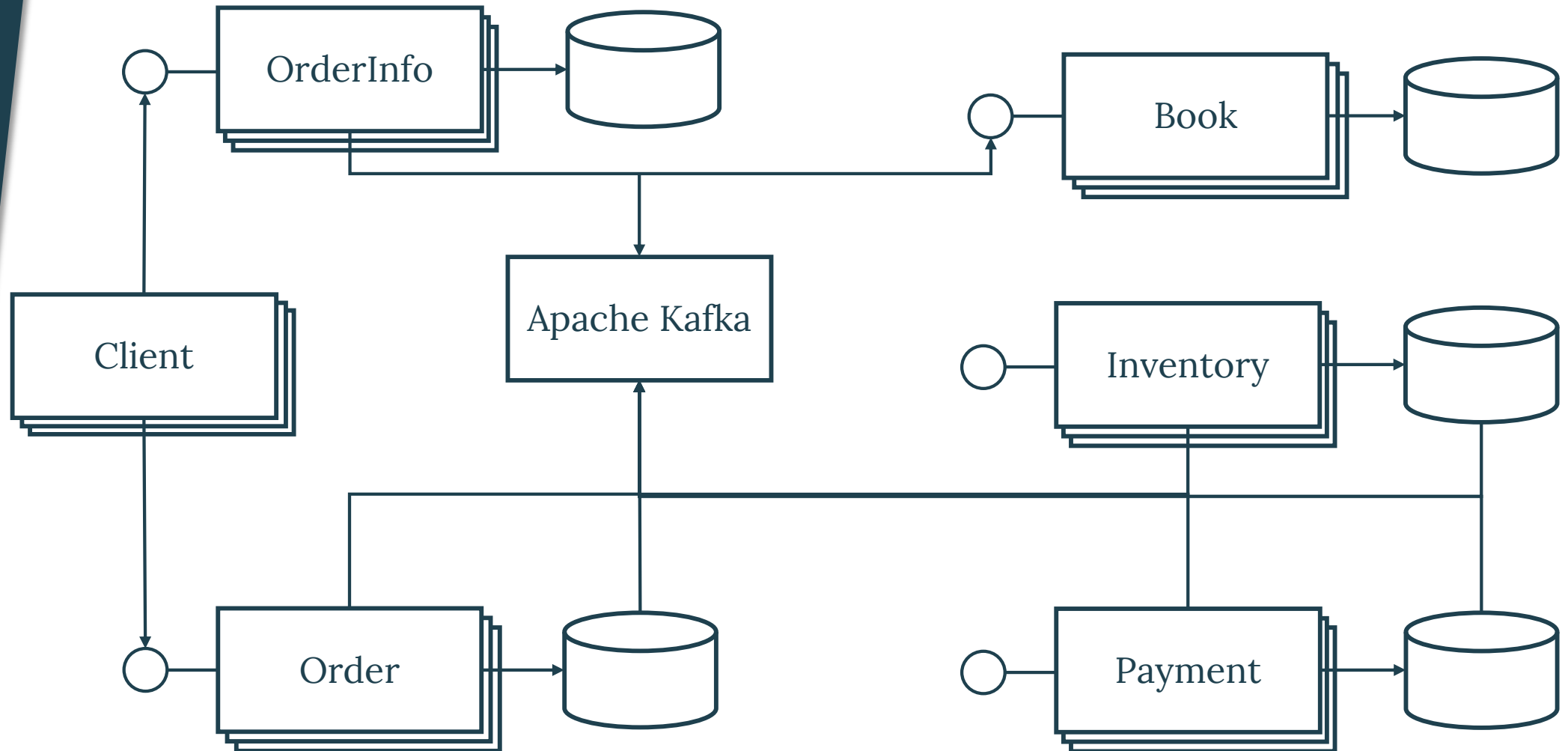
- Split operation in multiple steps
- Consistency
  - ACID transaction for each step
  - Eventual consistency for operation
    - Requires compensation steps



# Code Samples

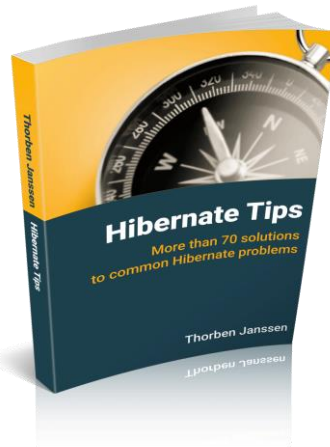


# Architecture



# Consulting, Tutorials & Online Courses

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