

# Microservices Architecture

*Software Architecture*

Richard Thomas

May 8, 2023

*Microservices*

Inspired by DDD

*Definition 1.* Bounded Context

Logical boundary of a domain where particular terms and rules apply consistently.







*Definition 2.* Service Cohesion Principle

Services are cohesive business processes. They are a bounded context.

*Definition 3.* Service Independence Principle

Services should not depend on the implementation of other services.



### *Corollary 1.* Low Coupling

Services should have minimal coupling with other services.

*Corollary 2.* No Reuse

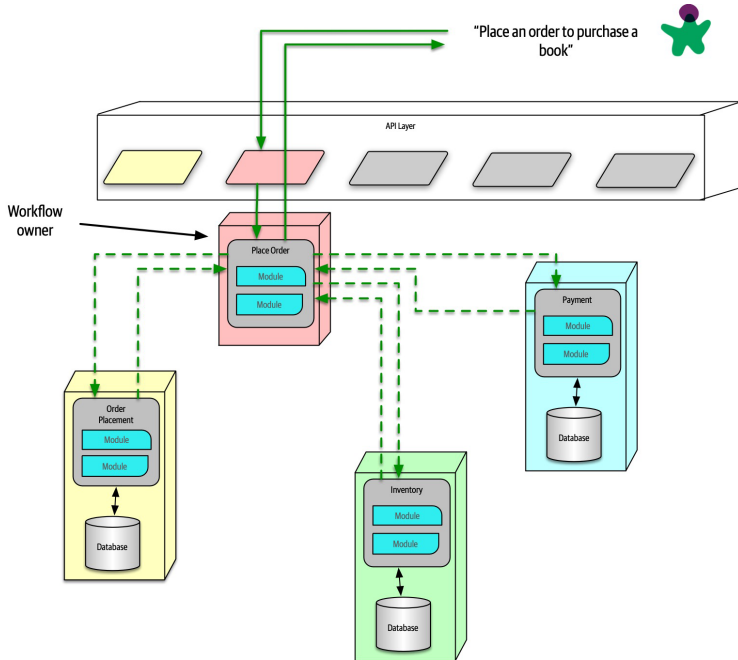
Services do not reuse components from other services, to avoid dependencies.

## *Choreography & Orchestration*

Choreography Similar to event-driven *broker*

Orchestration Similar to event-driven *mediator*





*Question*

How bad is the coupling with choreography or orchestration?

*Question*

How bad is the coupling with choreography or orchestration?

*Answer*

For a very large system, very bad.







*Question*

Are *browsing* and *purchasing* separate contexts?

*Question*

Are *browsing* and *purchasing* separate contexts?

*Answer*

- Are they a single business process or different processes?
- Do they share much or little data?

### *Question*

- What about *inventory management* and *browse*?
- How do they maintain a consistent product database?

## Pros & Cons

Modularity



Extensibility



Reliability



Interoperability



Scalability



Security



Deployability



Testability



Simplicity

