How I learned to stop worrying and love the monolith

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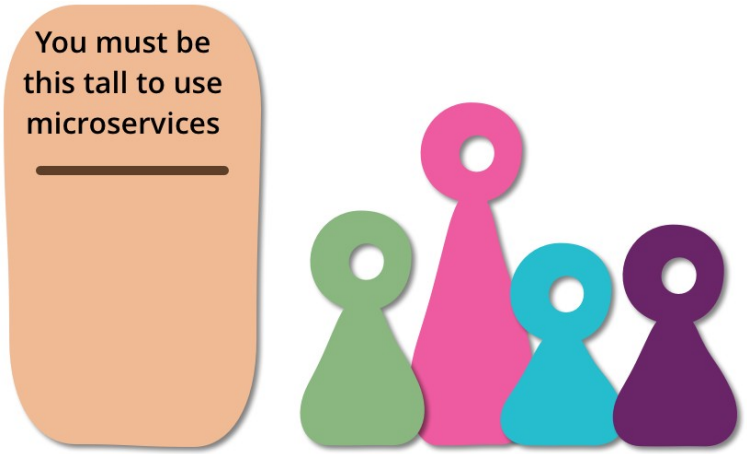
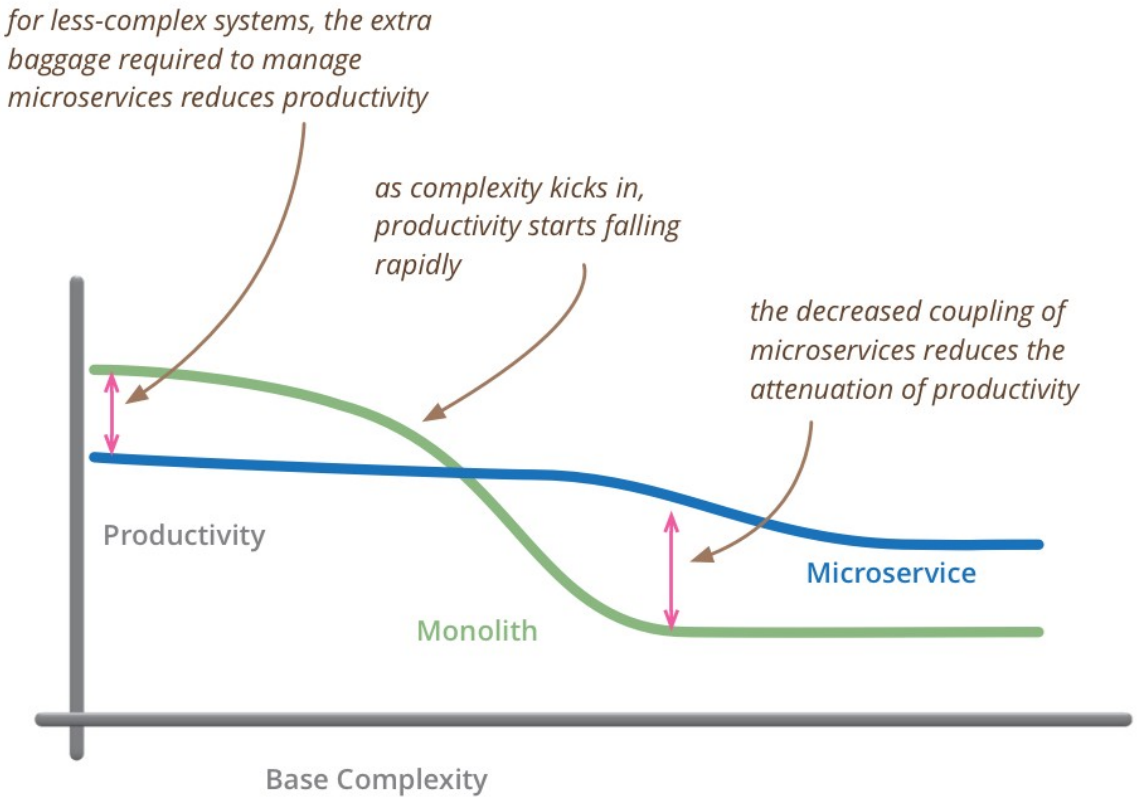
Monolith-first vs. microservices-first

Why monolith-first

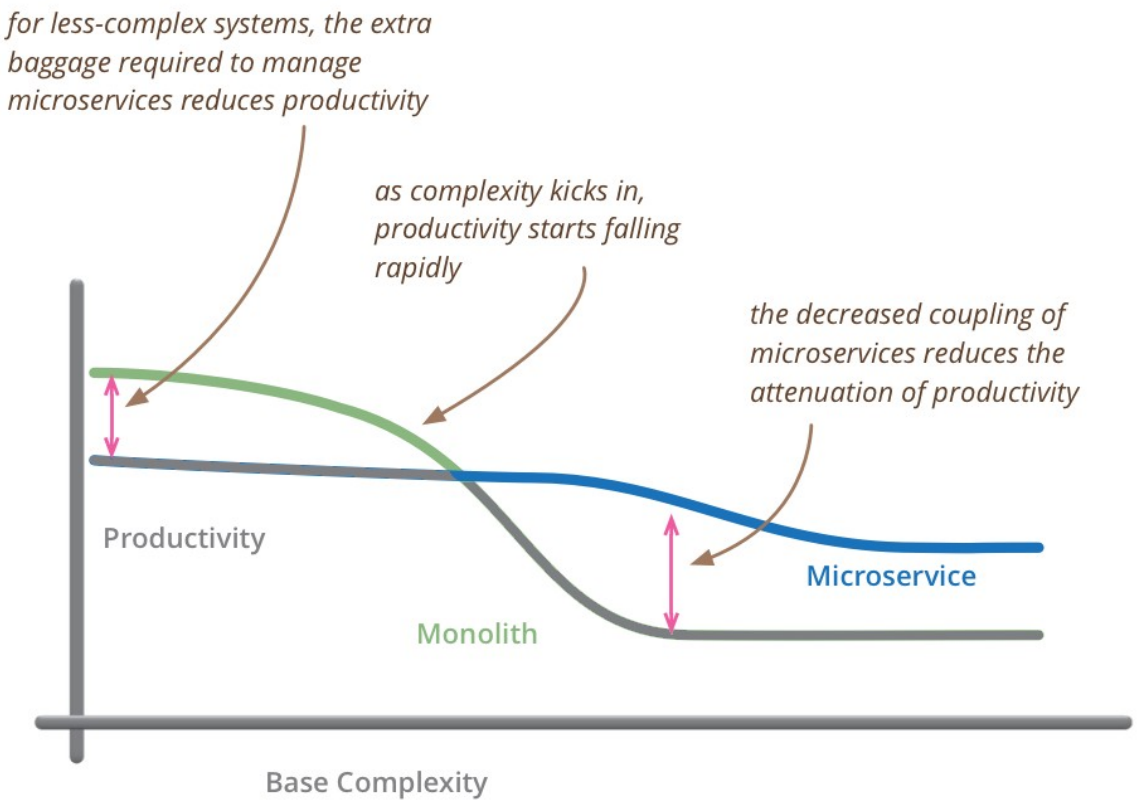
- YAGNI – You Aren't Gonna Need It
- Service boundaries are hard to get at the beginning – refactoring is more expensive
- Microservices require DevOps:
  - Continuous delivery
  - Rapid provisioning
  - Rapid application deployment
  - Central logging
  - Monitoring
  - etc.



Productivity

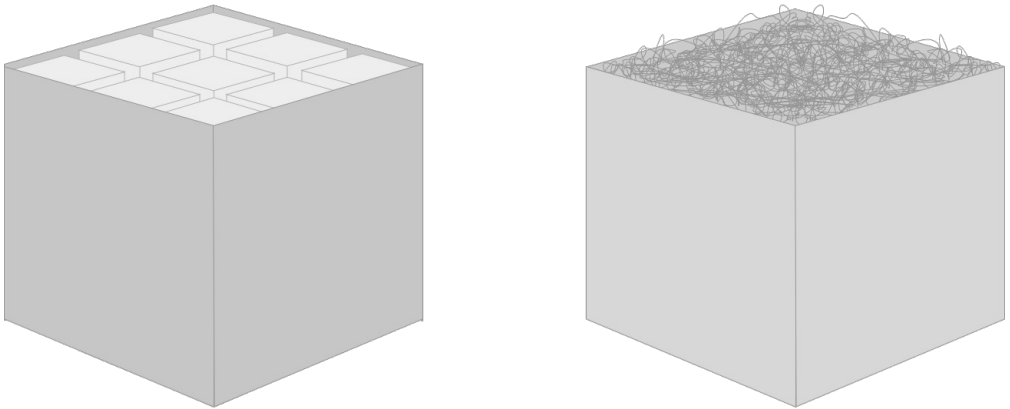


Productivity - Ideally



Why microservices-first?

It’s hard to cut up a large (BBOM) monolith into microservices

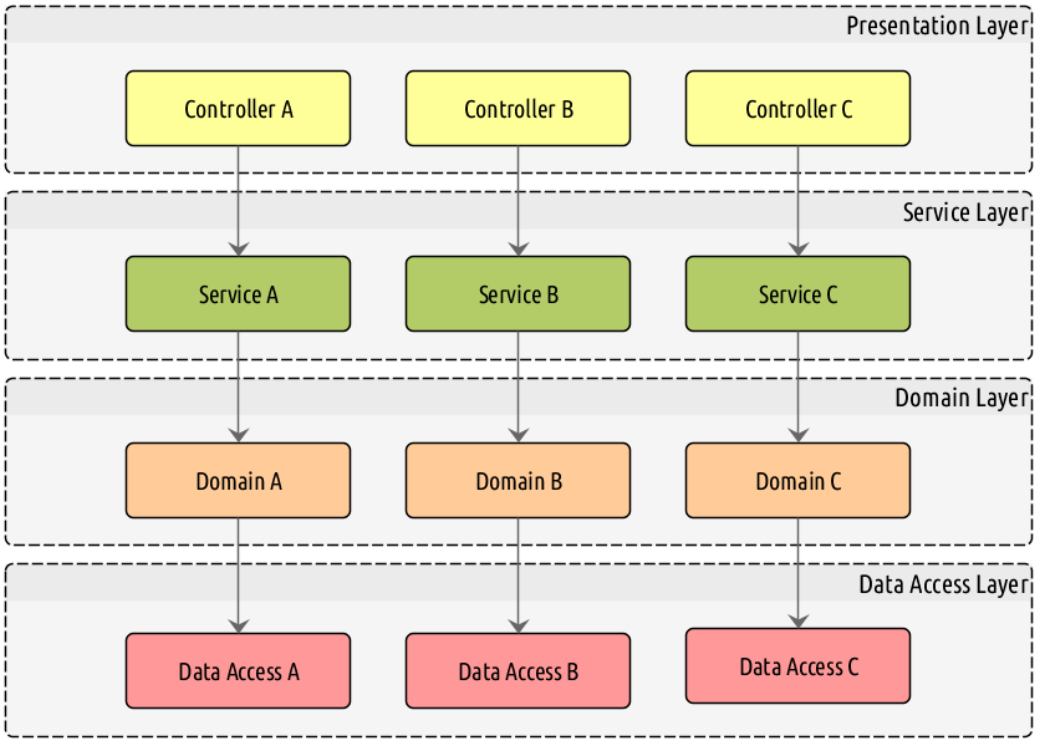


Code entropy

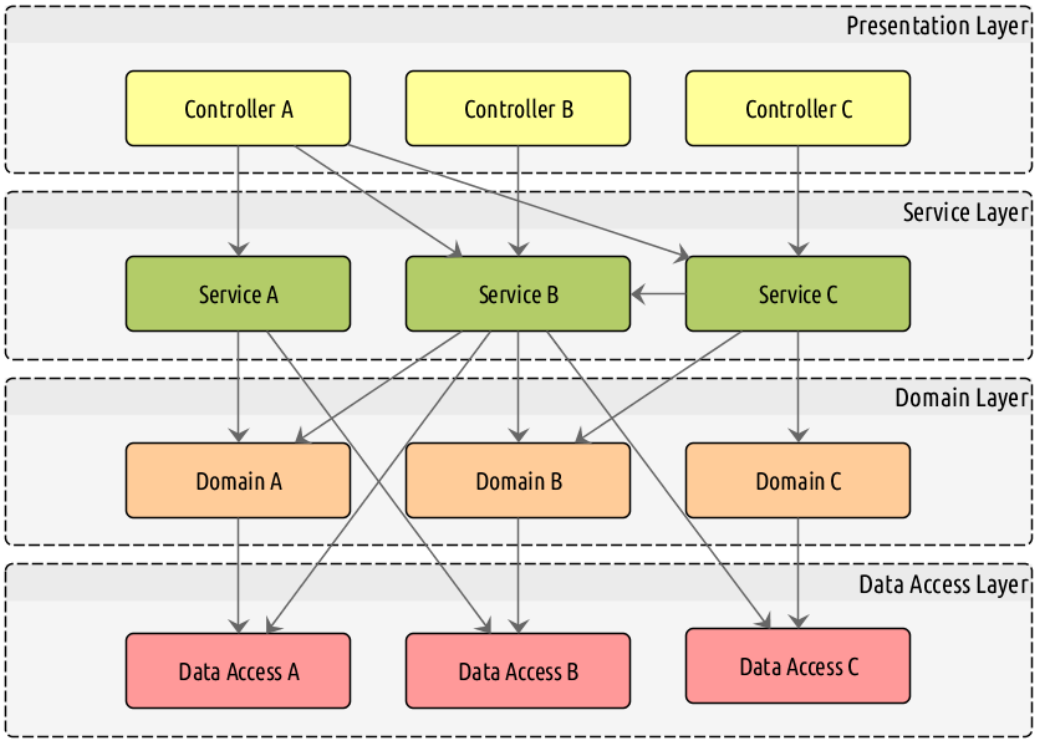
As a system is modified with the inclusion of new functionality, its disorder, or entropy, tends to increase.

- Monolith: new code added to single codebase
- Microservices: new code added as new service – new codebase

Monolith - hope

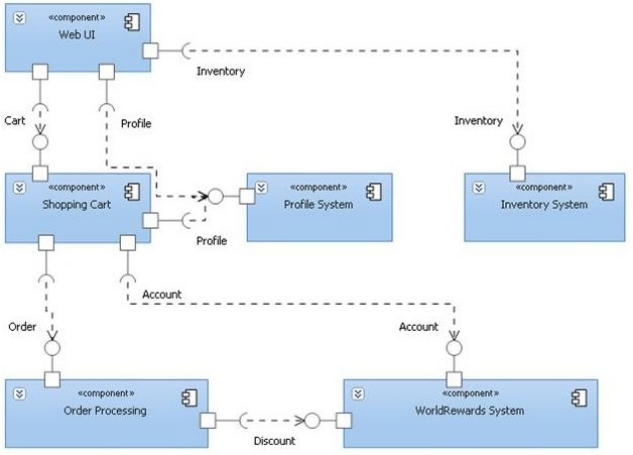


Monolith - reality



The model-code gap

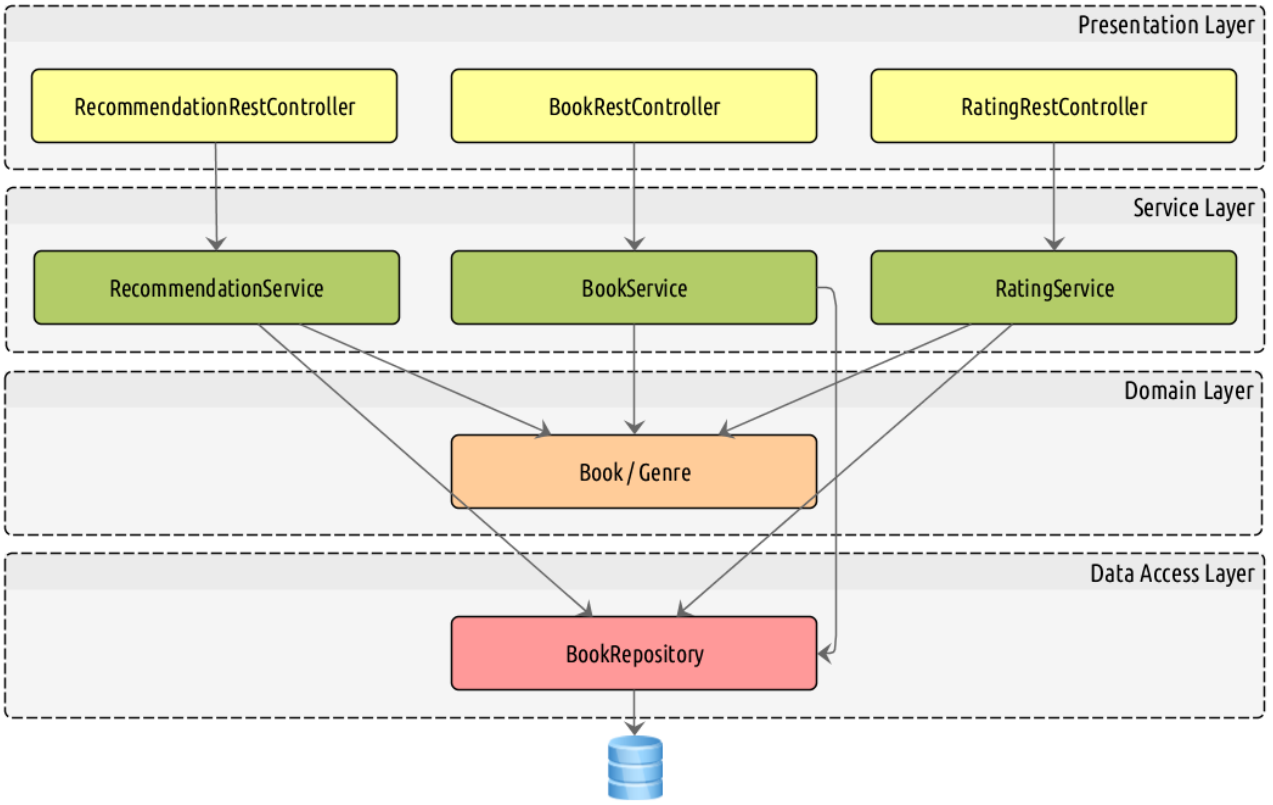
The architecture models include concepts such as component, services, modules, etc. but the code doesn't reflect this - the implementation often happens to be a bunch of classes sitting inside a traditional layered architecture.



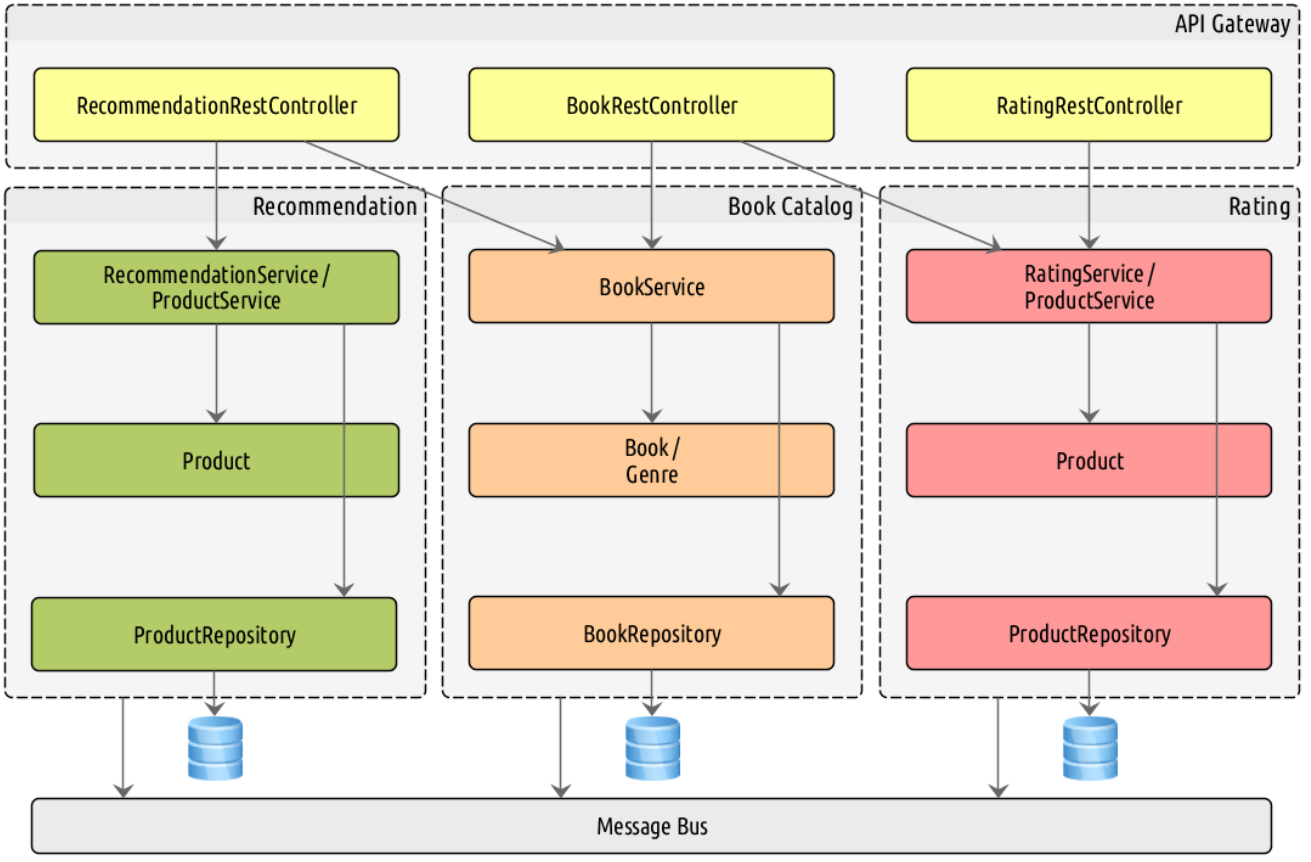
vs.

Bookstore

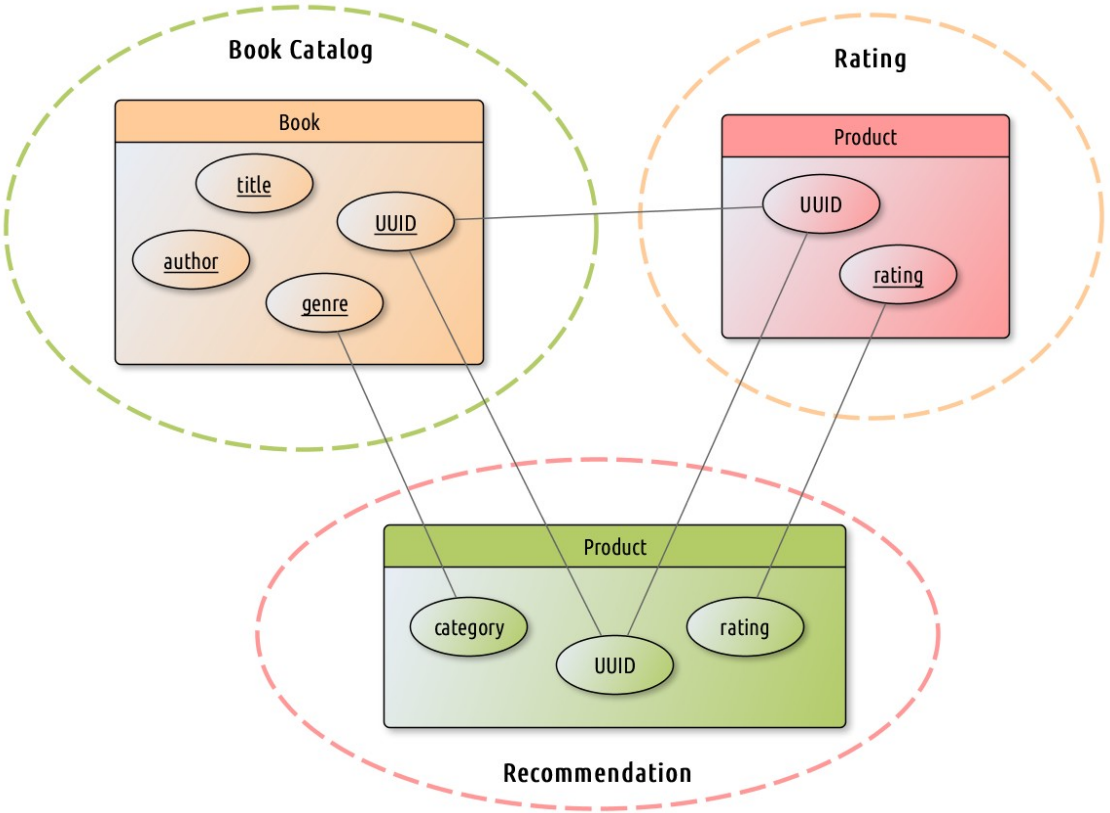
Bookstore monolith



Bookstore monolith restructured



Context map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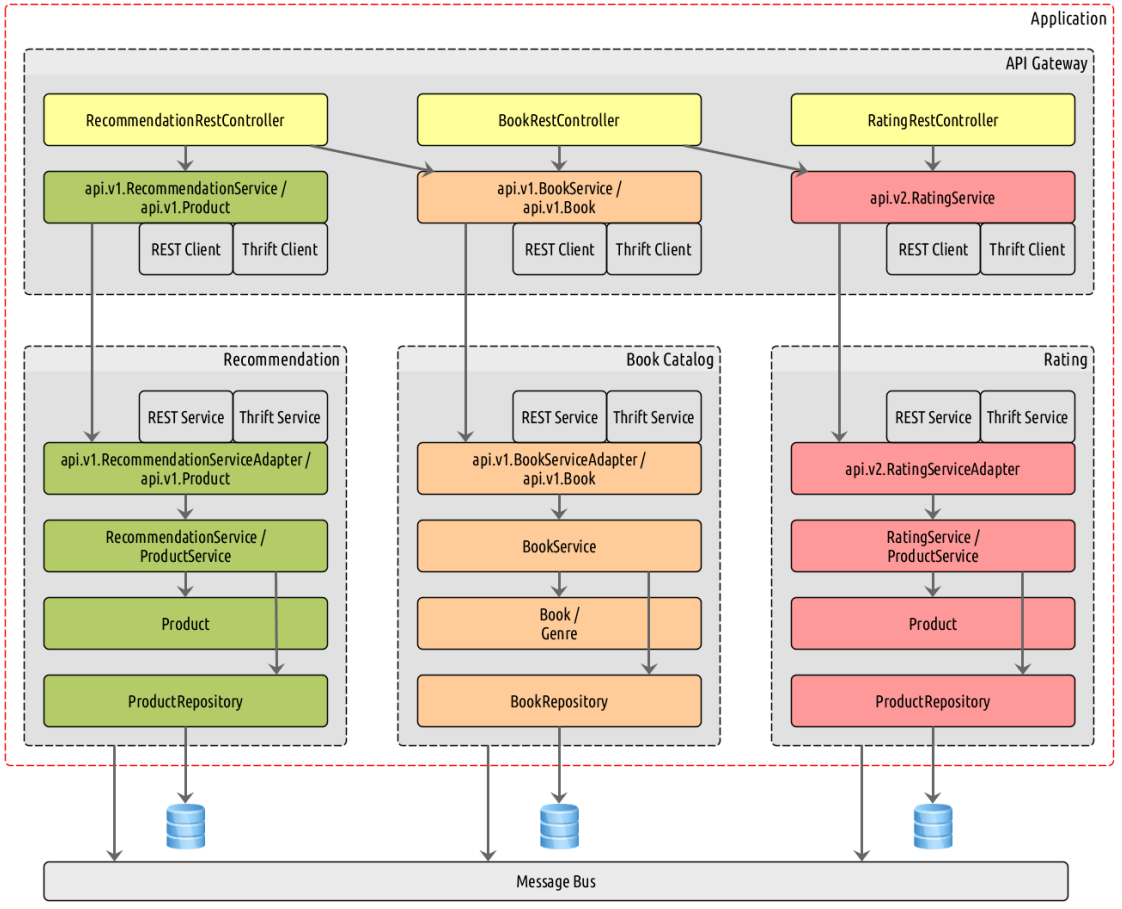
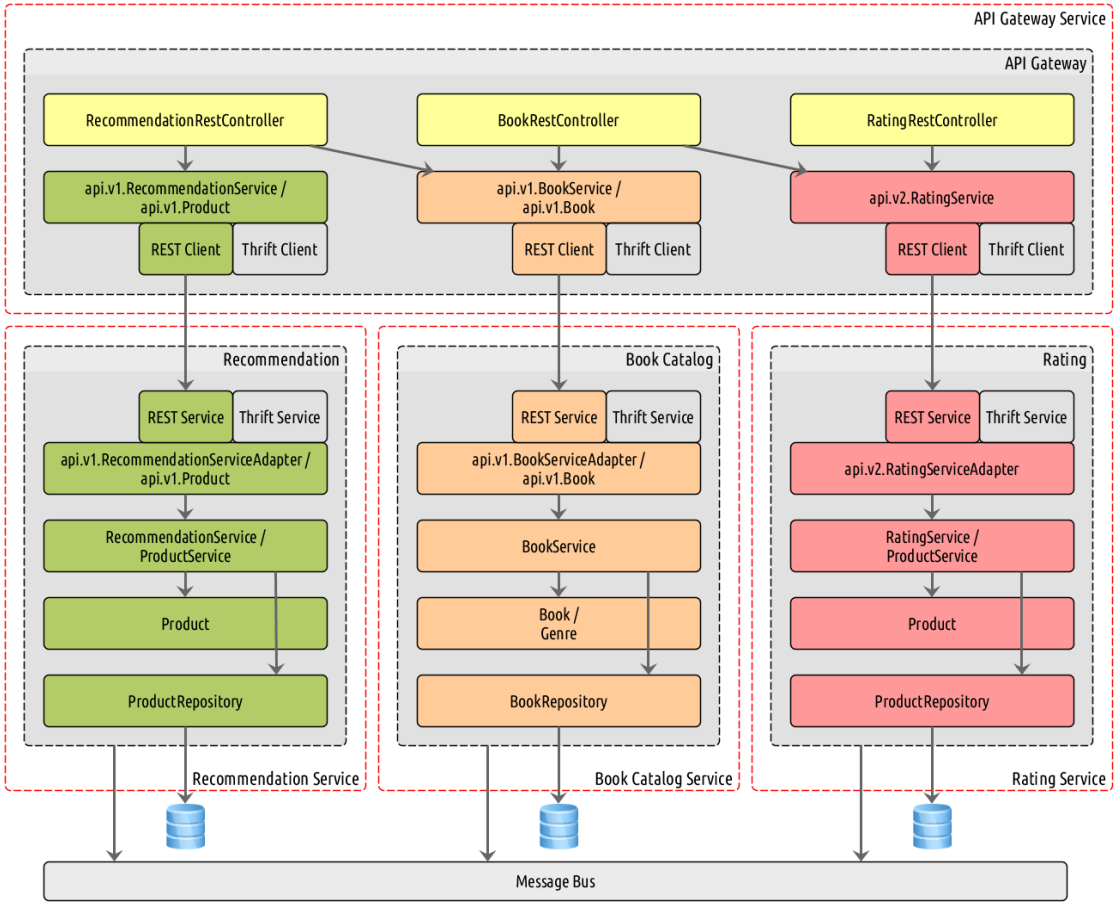
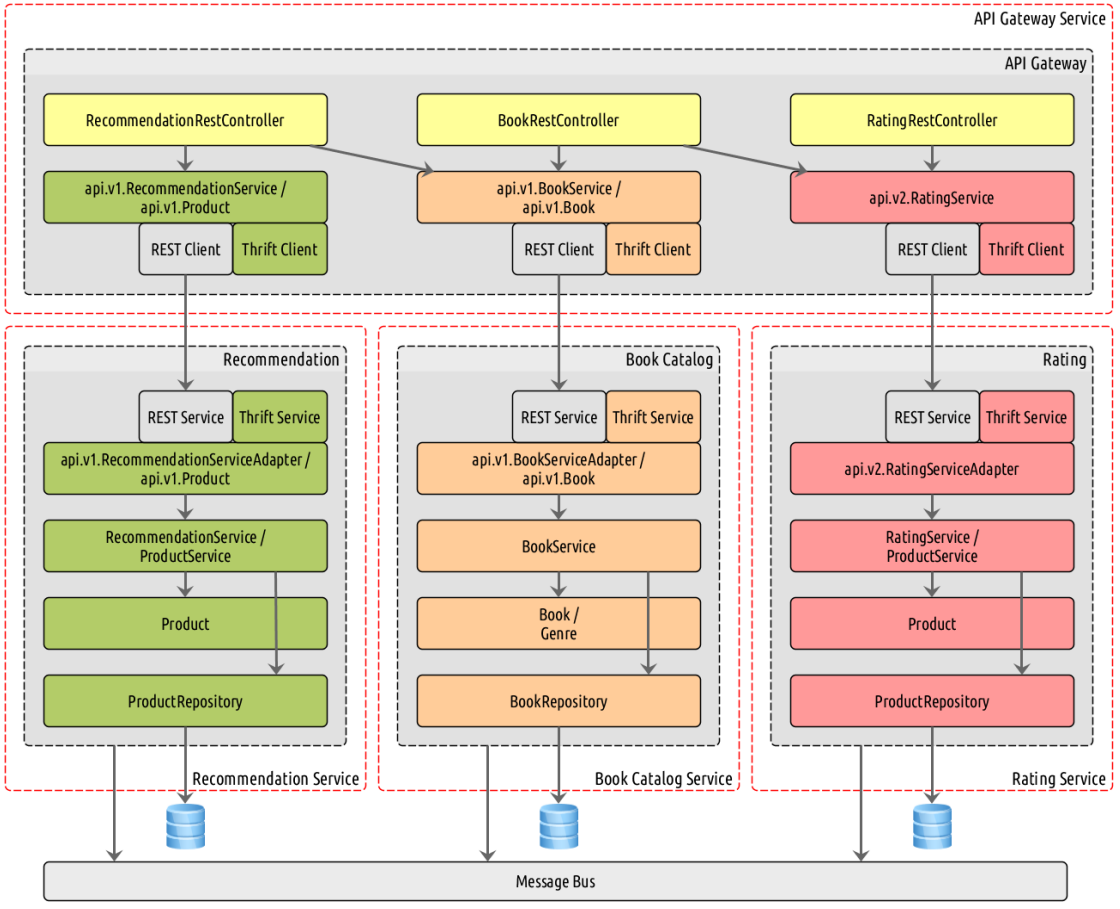
Deployment as monolith



Deployment as microservices

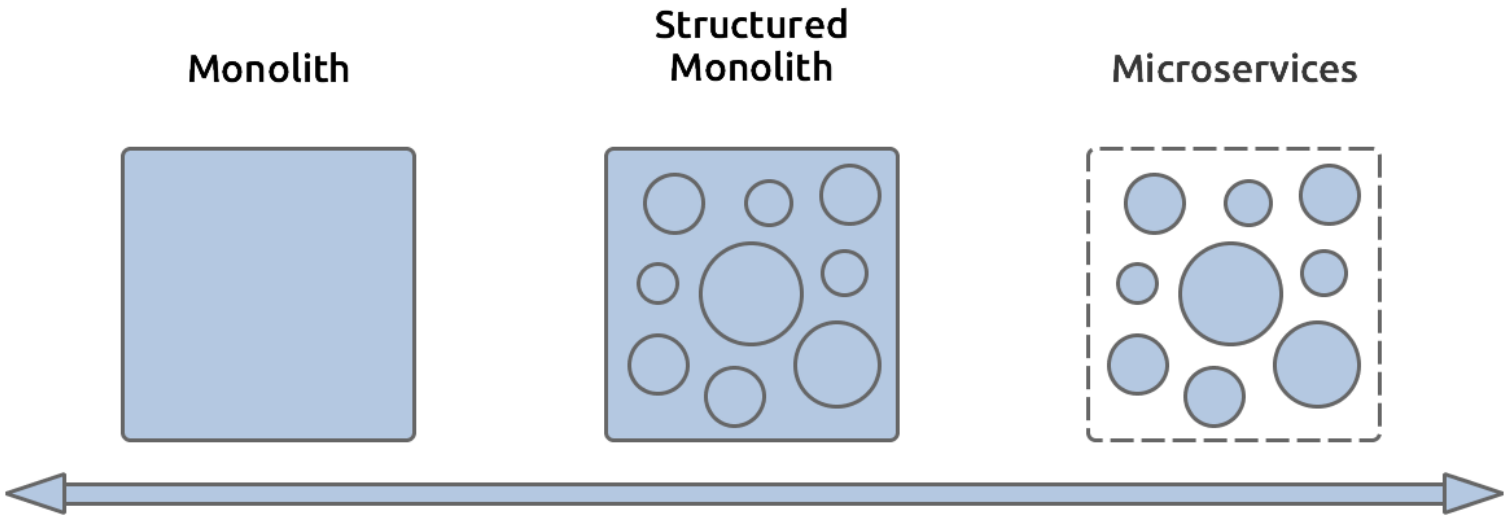


Deployment as microservices



Monolith to microservices

Monolith to microservices



Monolith codebase: YES
Monolith deployment: YES

Monolith codebase: NO
Monolith deployment: YES

- Components
- High cohesion
- Low coupling

Monolith codebase: NO
Monolith deployment: NO

+ Polyglot programming
+ Heterogeneous technology stack
+ Individually deployable, upgradeable, replaceable, scalable

(Microservices) architectural prerequisites

- Forget about layers – your package structure should depict functional concepts
- Use Domain-Driven Design's bounded contexts to isolate and model components
- Use database per component to achieve full decoupling
- Propagate data changes between components asynchronously using a message bus
- Use ports and adapters when components needs to talk synchronously (RPC) – carefully consider when to use this

To conclude

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I'll keep saying this ... if people can't build monoliths properly, microservices won't help. #qconlondon #DesignThinking #Modularity

RETWEETS 244 LIKES 100

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Monolithic

Microservices

Thank You

Time for some Q&A

eventory

YOUR OPINION IS VERY IMPORTANT TO ME.

- FIND MY LECTURE ON THE SCHEDULE IN THE EVENTORY APP.
- RATE AND COMMENT MY PERFORMANCE.

THANKS TO YOUR FEEDBACK, I WILL KNOW WHAT TO IMPROVE!