



JUG Ostfalen

ArchUnit

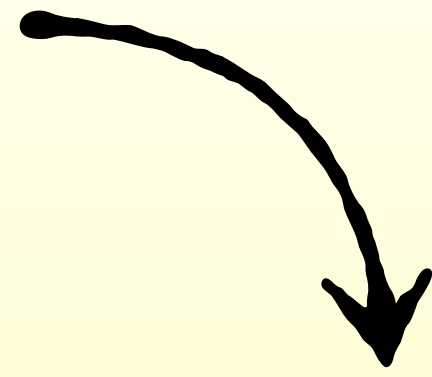
Testen von Architektur und Design

Thomas Much

 @thmuch

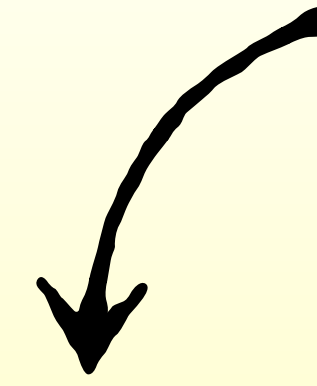
09.01.2020

Autor



Peter Gafert
@codecholeric
@archtests

glücklicher Anwender



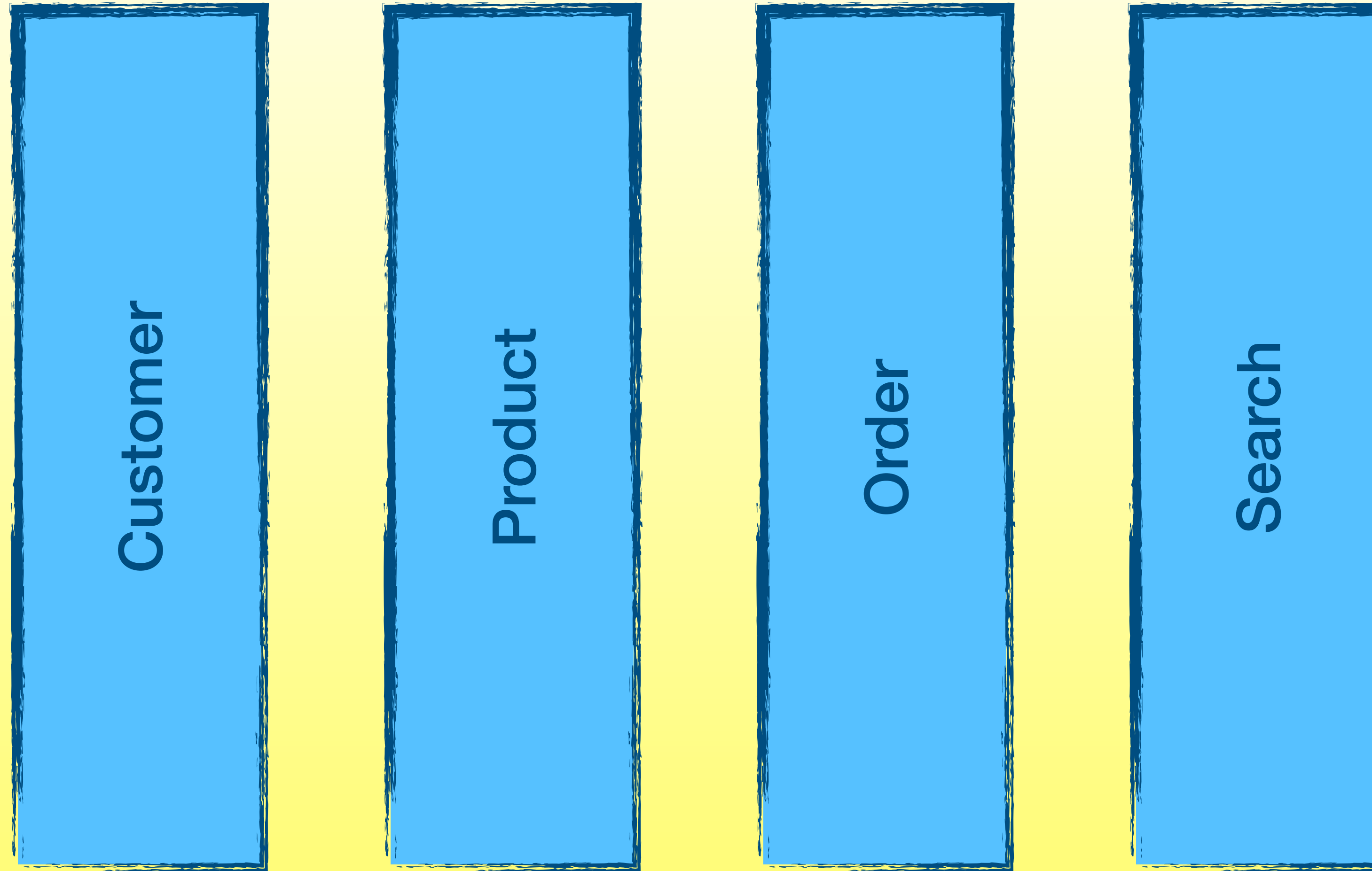
Thomas Much
@thmuch



Architektur und Design automatisiert prüfen –

Warum?

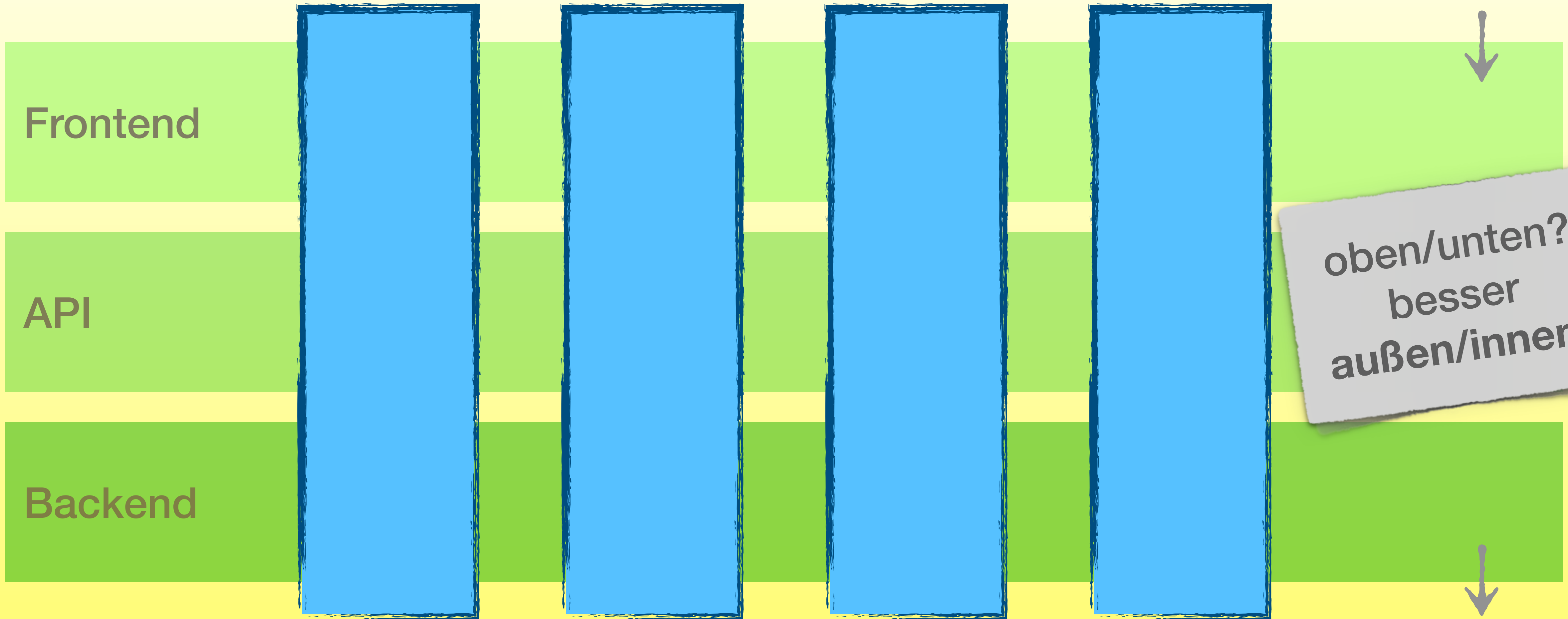
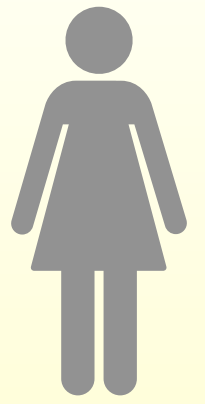
Microservices & SCS



Monolithen



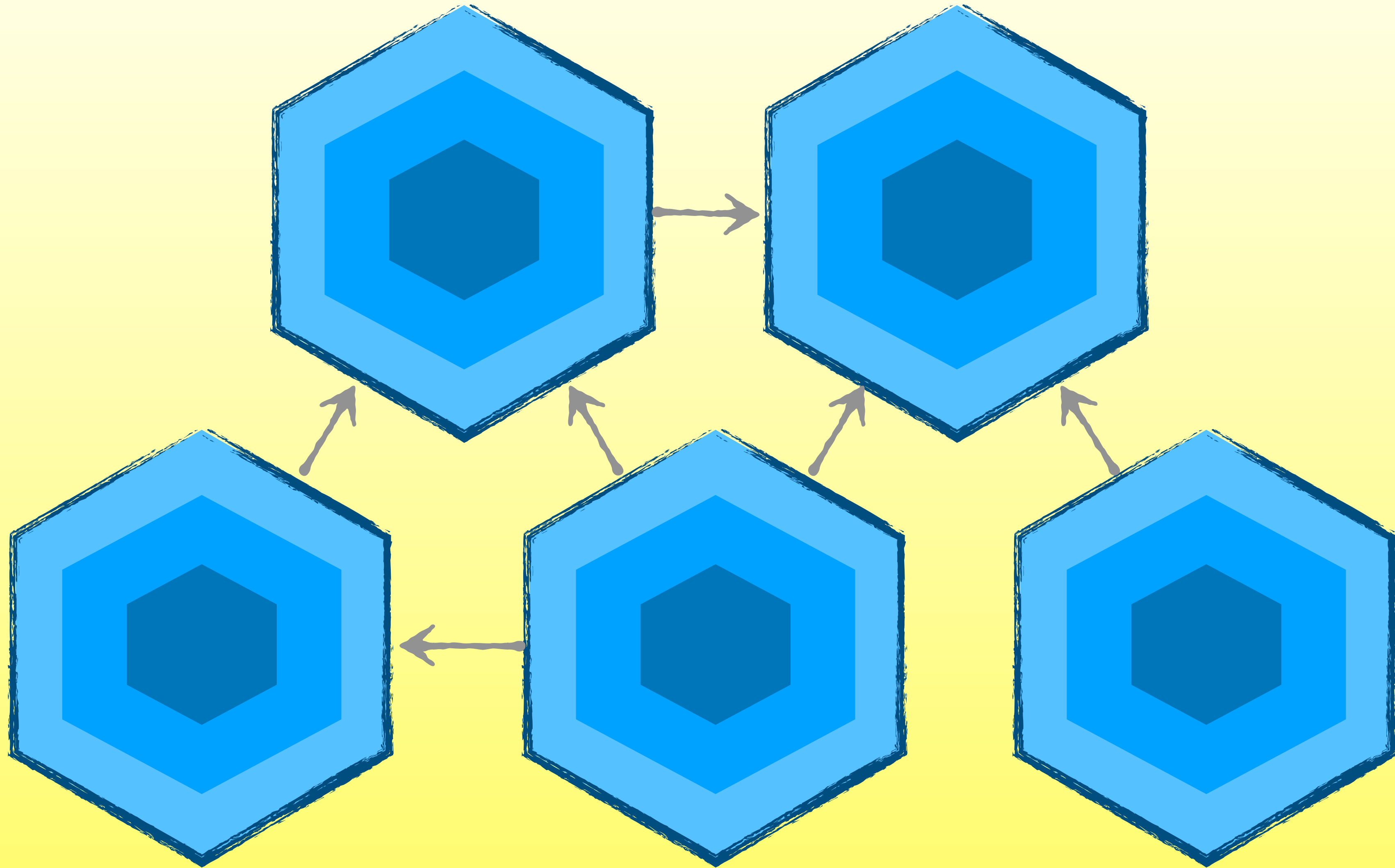
Microservices / Schichten?



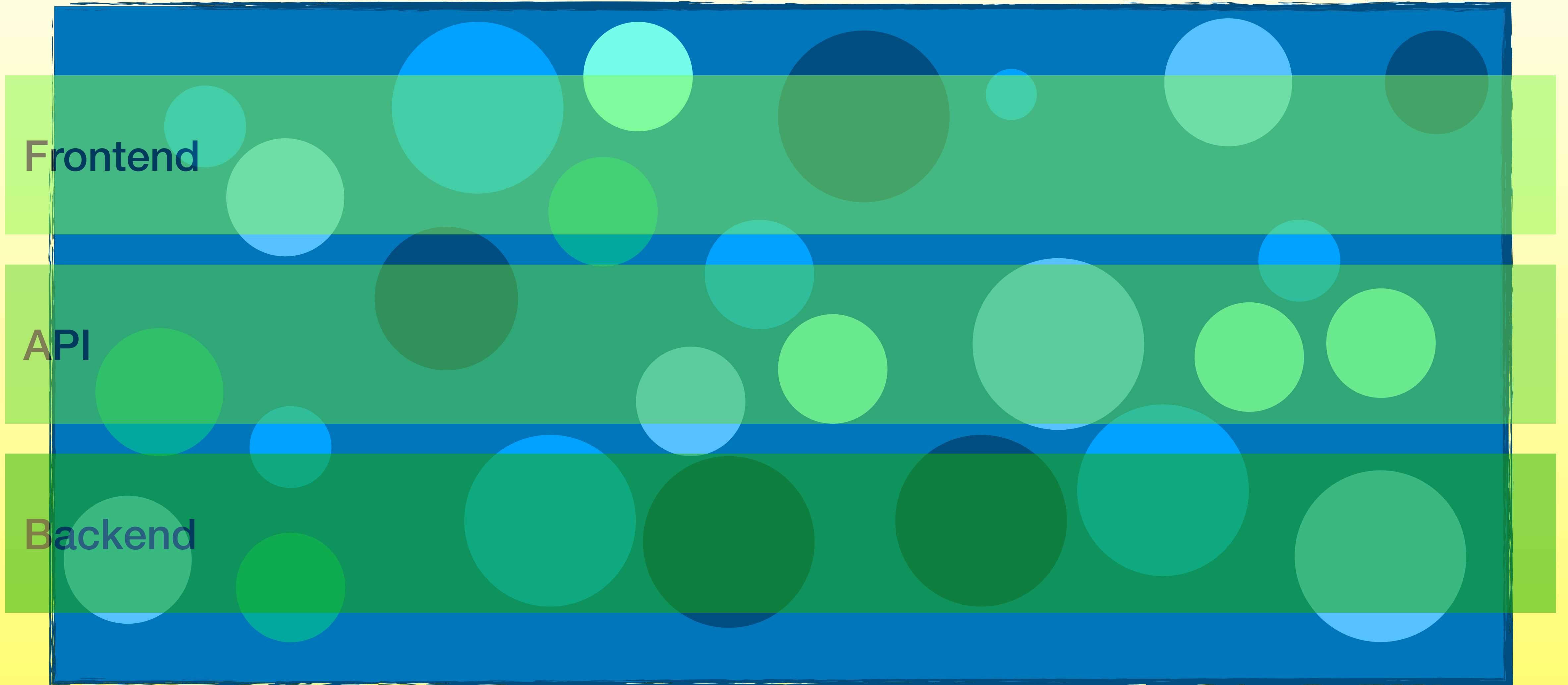
oben/unten?
besser
außen/innen!



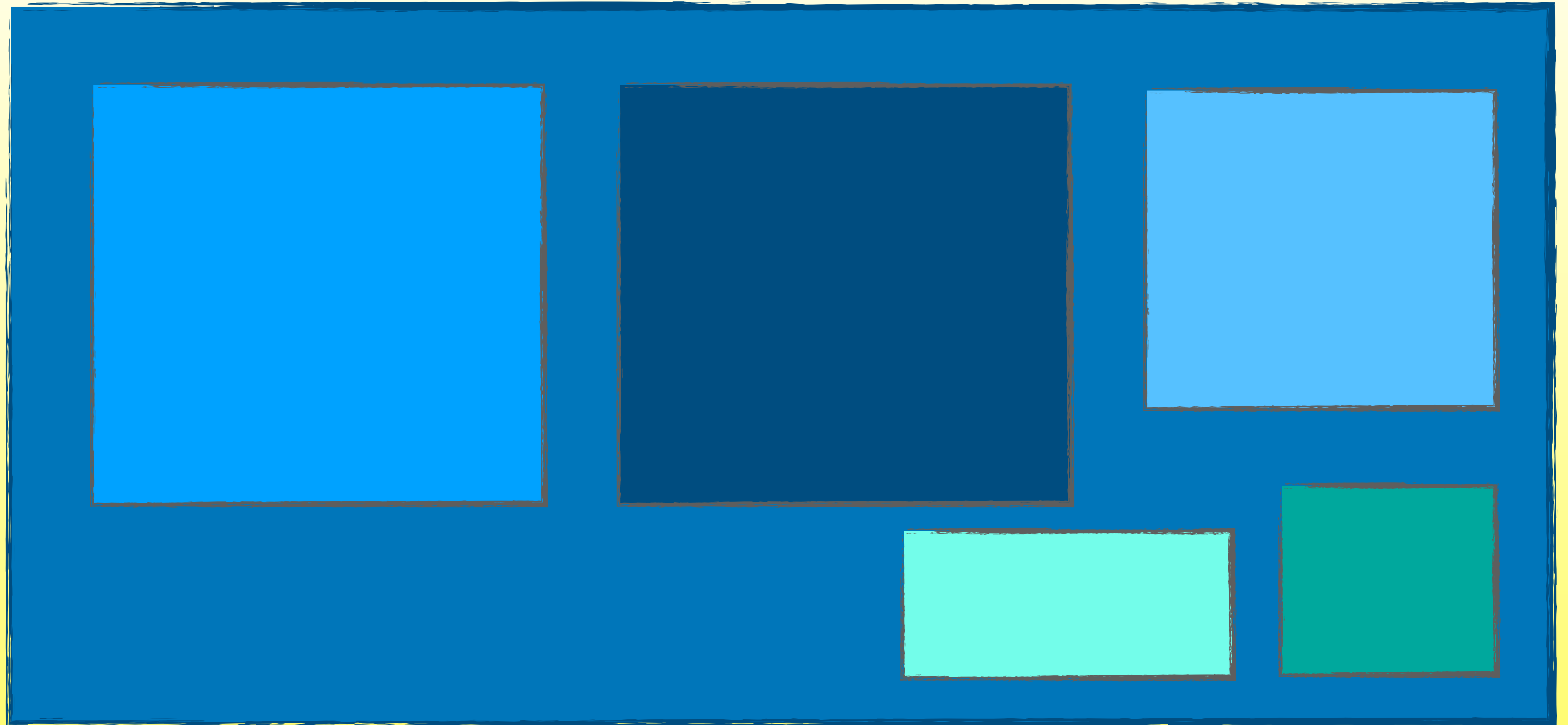
Microservices / DDD



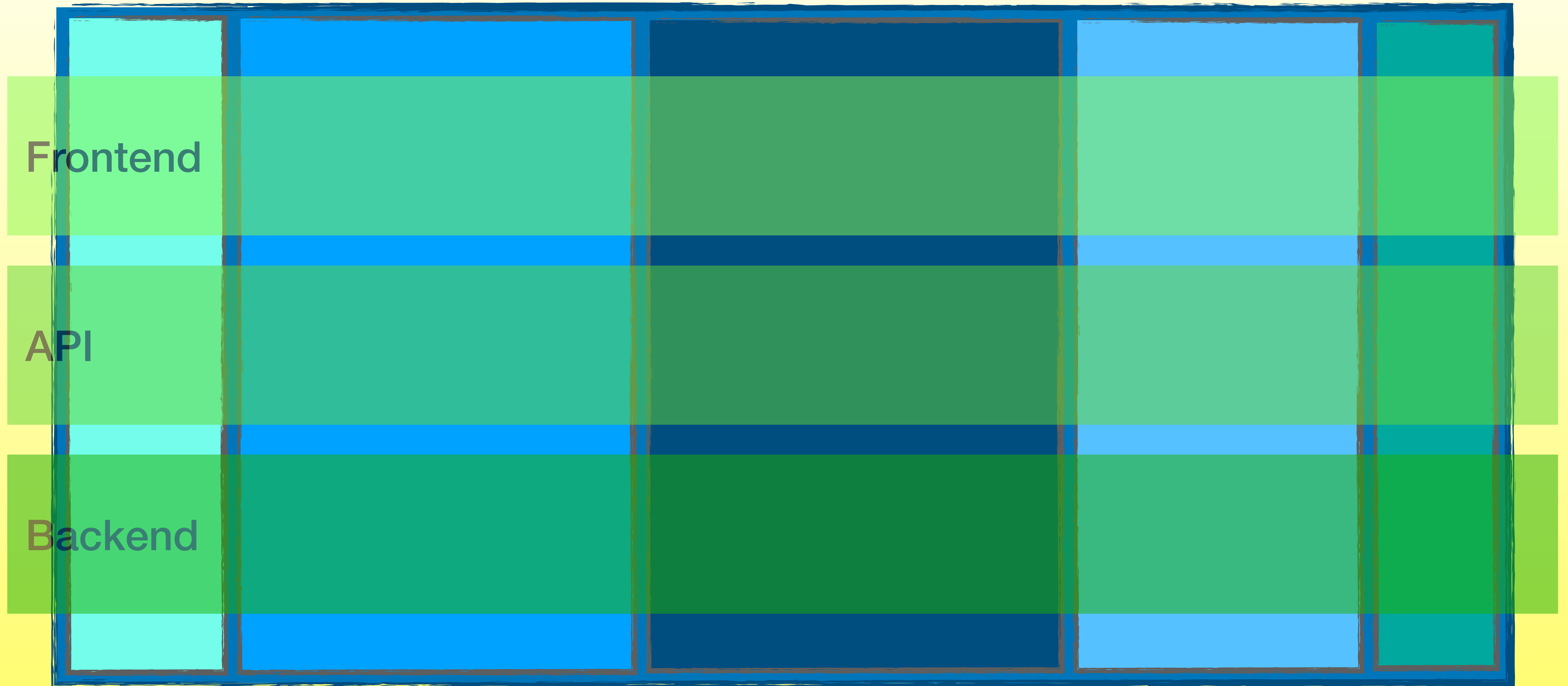
Monolithen



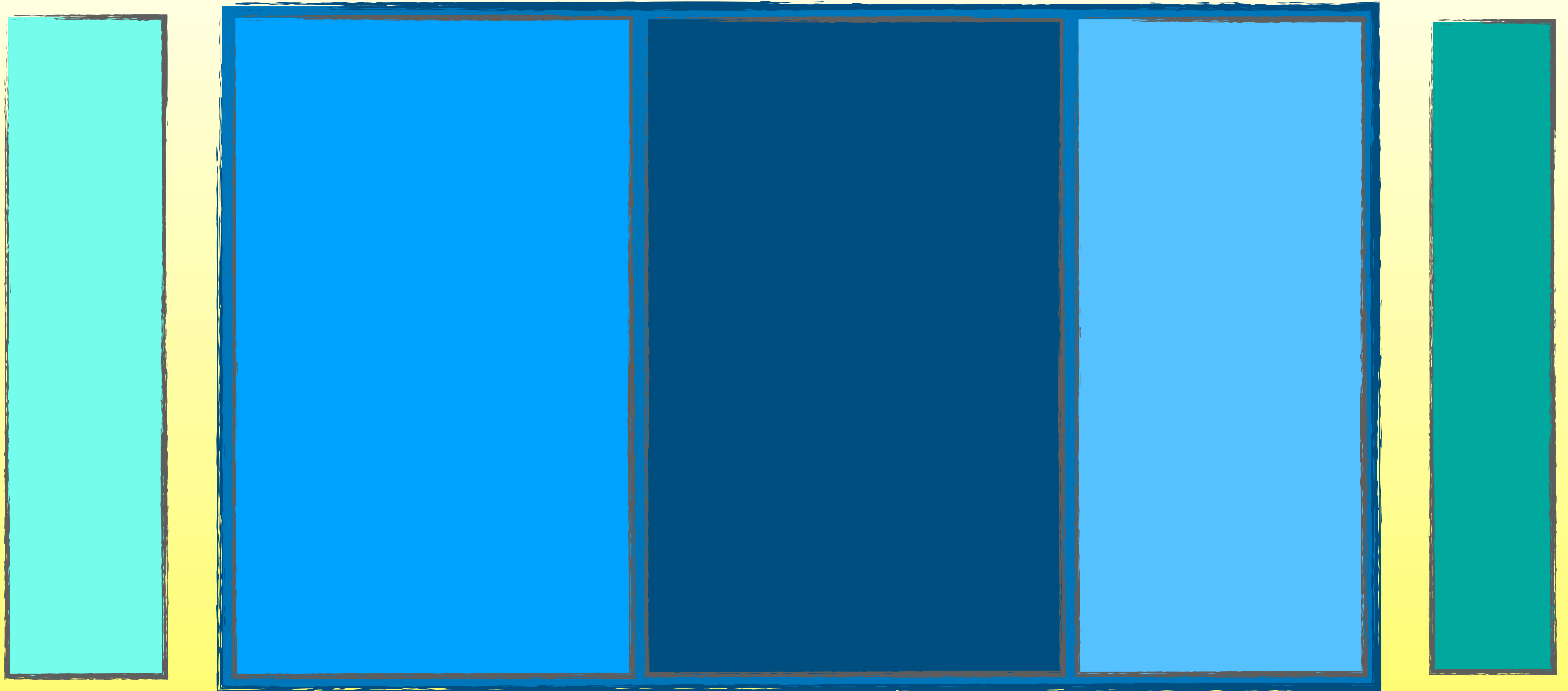
Freundliche Monolithen



Noch freundlichere Monolithen



Abgespeckte Monolithen



Architektur testen – warum?

Wartbarkeit

Ersetzbarkeit

Code-Conventions

Verständlichkeit

Dokumentation

Kommunikation

Wir
sind
ein
Team!

Architektur testen

Abhängigkeiten, Kohäsion & Kopplung

Konventionen & Patterns

Unser Weg zu ArchUnit

JDepend

Degrath

jQAssistant

Classycle
Checkstyle

~~kommerziell~~

veraltet
oder
nicht flexibel genug
oder
eigene (Konfigurations-)Sprache



Ende 2017
„ArchUnit 0.4“



Architektur-Prüfungen als Unit-Tests

Normaler Java-Code!

Flexibel erweiterbar – auch Design-Prüfungen realisierbar

Prüfung auf Bytecode-Ebene

ArchUnit einbinden

Group ID	Artifact ID	Latest Version		Updated
com.tngtech.archunit	archunit	0.12.0	(15)	03-Nov-2019
com.tngtech.archunit	archunit-junit5-engine-api	0.12.0	(9)	03-Nov-2019
com.tngtech.archunit	archunit-junit5-engine	0.12.0	(9)	03-Nov-2019
com.tngtech.archunit	archunit-junit5-api	0.12.0	(9)	03-Nov-2019
com.tngtech.archunit	archunit-junit4	0.12.0	(9)	03-Nov-2019
com.tngtech.archunit	archunit-junit	0.8.3	(6)	20-Jul-2018

```
<dependency>  
  <groupId>com.tngtech.archunit</groupId>  
  <artifactId>archunit</artifactId>  
  <version>0.12.0</version>  
  <scope>test</scope>  
</dependency>
```


ArchUnit ausführen

Mit jedem Unit-Test-Framework nutzbar

Spezielle Unterstützung für JUnit 4 / 5

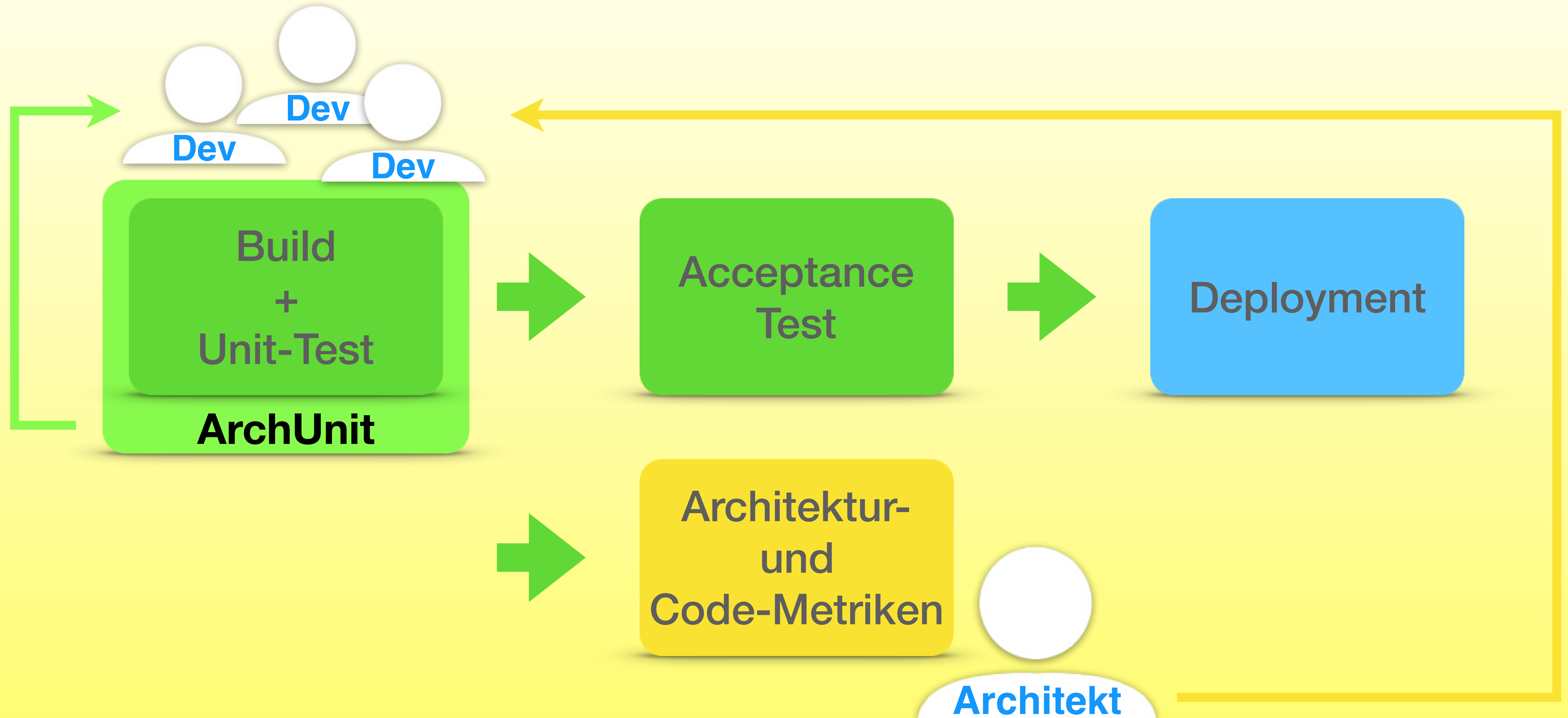
Java & Kotlin

Maven- & Gradle-Plugin

A small blue badge with the word "NEW" in white capital letters, tilted slightly to the right.

Live-Demo

Warum ArchUnit?





Alternativen & Ergänzungen

 jQAssistant

 structure101

 sonarqube

 Deptective 
<https://github.com/moditect/deptective>

 SONARGRAPH

u.a.

Modulithen mit Spring Boot

Moduliths

A playground to build technology supporting the development of

build passing

tl;dr

Moduliths is a Spring Boot extension based on ArchUnit to achieve

- *Verify modular structure between individual logical modules*

Prevents cyclic dependencies as well as explicitly defined all
to public components in API packages (convention based, c

- *Bootstrap a subset of the modules of a monolithic Spring P*

<https://github.com/odrotbohm/moduliths>

https://www.archunit.org

[Getting Started](#)[Motivation](#)[News](#)[User Guide](#)[API](#)[About](#)

Persistence

Unit test your Java architecture

Start enforcing your architecture within 30 minutes using the test setup you already have.

[Start Now](#)

ArchUnit is a free, simple and extensible library for checking the architecture of your Java code using any plain Java unit test framework. That is, ArchUnit can check dependencies between packages and classes, layers and slices, check for cyclic dependencies and more. It does so by analyzing given Java bytecode, importing all classes into a Java code structure. You can find examples for the current release at [ArchUnit Examples](#) and the sources on [GitHub](#).



<https://github.com/TNG/ArchUnit-Examples>

<https://github.com/thmuch/archunit-demos>



Schichten

Architektur

Slices

Design

Vertikalen

Konventionen

Fragen?

Monolithen

Module

SCS

Abhängigkeiten

Microservices

Kopplung

Kohäsion



Danke!



Thomas Much

 @thmuch