WHAT IS THE STATE OF MICROSERVICES IN 2022?

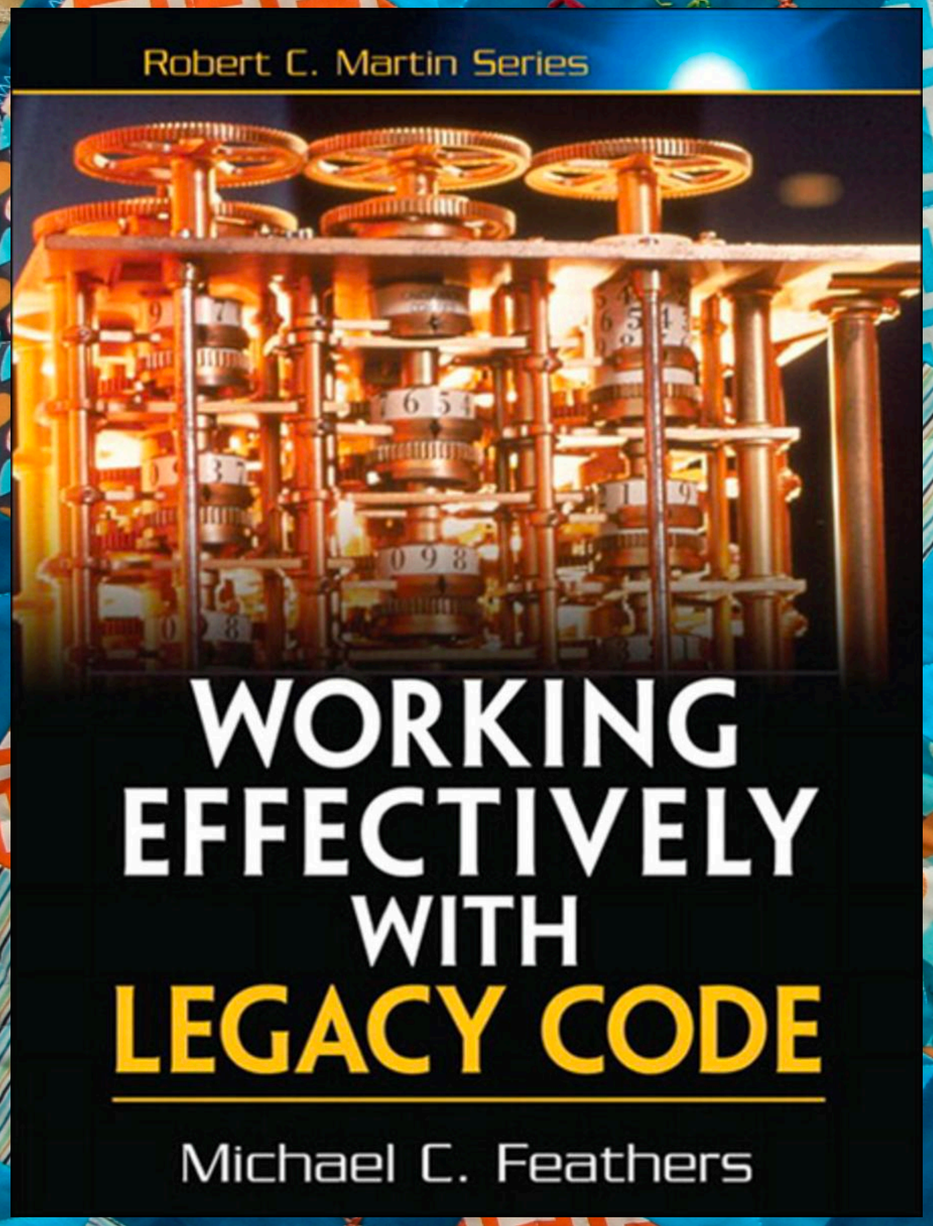
WE BUILT THE WRONG MICROSERVICES!

WE BUILT TOO MANY MICROSERVICES!

WE DIDN'T REALLY NEED MICROSERVICES!

WE CREATED THE SAME OLD ARCHITECTURE WITH MICROSERVICES!


WHAT WE'VE GOT
HERE IS FAILURE TO
DESIGN



WHERE ARE THE

SEAMS?

Applause from Pivotal, Mark Carlson, and 125 others

Matt Stine
Cloud Native Polymath and Product Manager @Pivotal. Subtweets are clearly my own.
Jun 2, 2017 · 6 min read

What's Your Decomposition Strategy?

It's a simple question really, but very few people have an answer.

The most frequent and most important question I get from the developers and architects with whom I work is this:

> *What microservices should we have?*

If you stop and ponder this question for a minute, you'll quickly come to realize that if you get the answer to this question wrong, it doesn't really matter what else you get right.

https://builttoadapt.io/whats-your-decomposition-strategy-e19b8e72ac8f

ON THE CRITERIA TO BE USED IN DECOMPOSING SYSTEMS INTO MODULES

D. L. Parnas

Department of Computer Science
Carnegie-Mellon University
Pittsburgh, Pa.

August, 1971

This paper discusses modularization as a mechanism for improving the flexibility and comprehensibility of a system while allowing the shortening of its development time. The effectiveness of a "modularization" is dependent upon the criteria used in dividing the system into modules.

The major progress in the area of modular programming has been the development of coding techniques and assemblers which (1) allow one module to be written with little knowledge of the code used in another module and, (2) allow modules to be reassembled and replaced without reassembly of the whole system.

Decomposition Techniques

LET'S BUILD AN ONLINE STORE!

Product Catalog

Orders

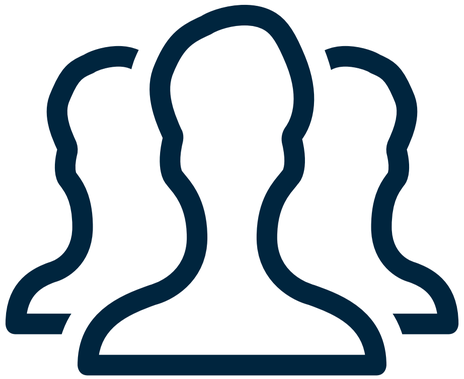
Inventory

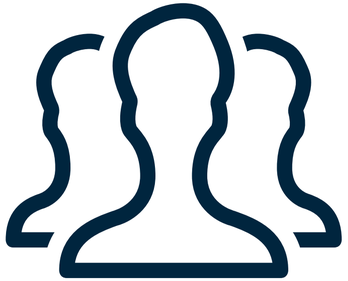
Payment

Notifications

Fulfillment

Shipping





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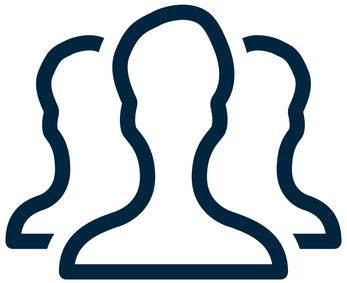

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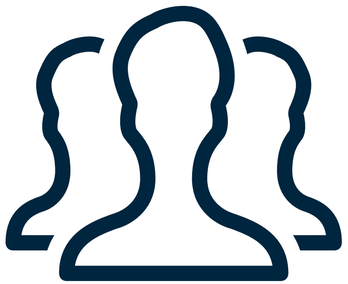

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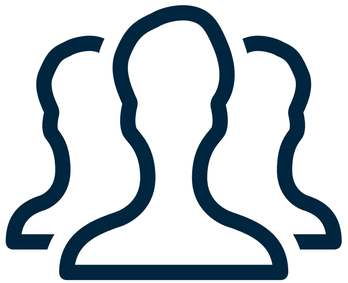

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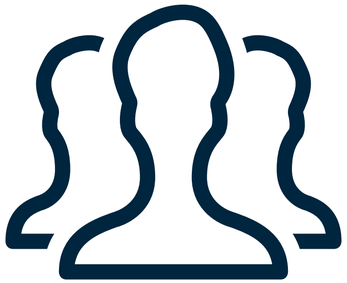

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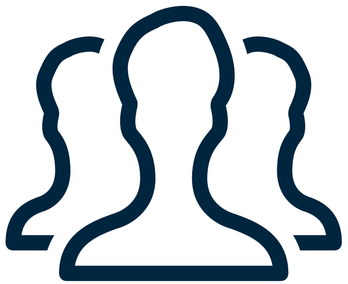

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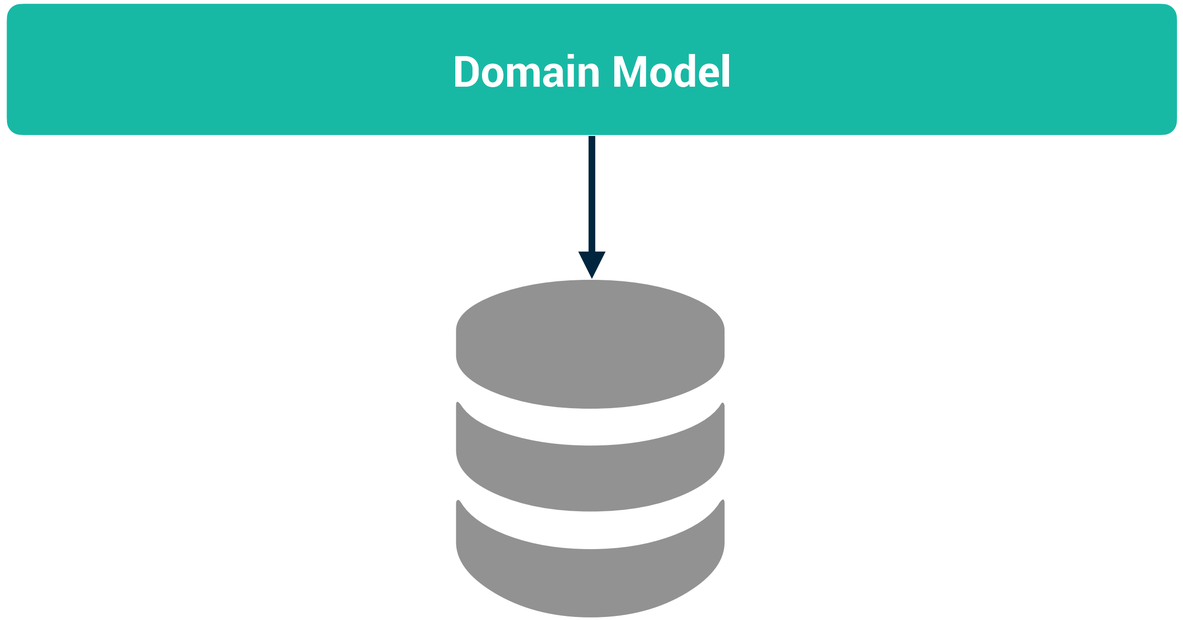

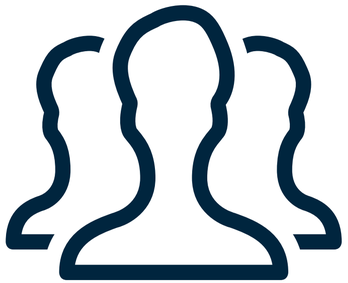

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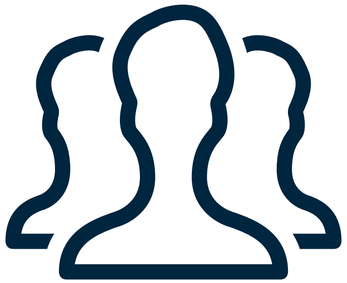

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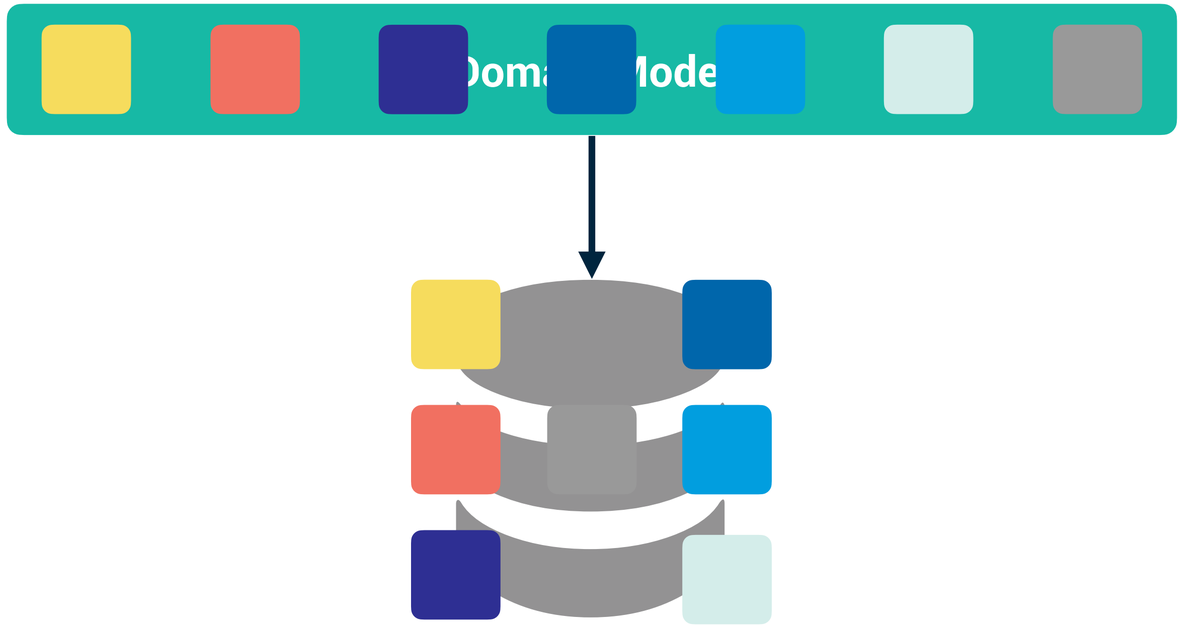

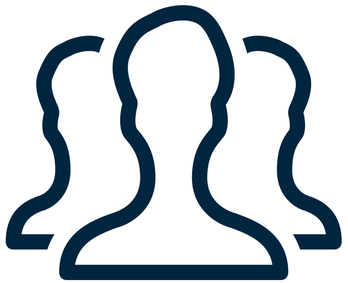

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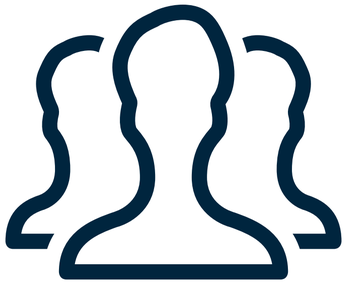

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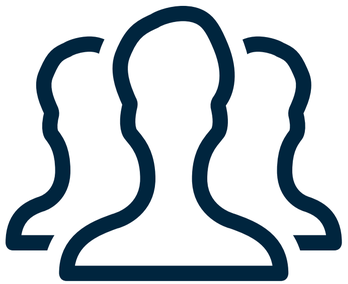

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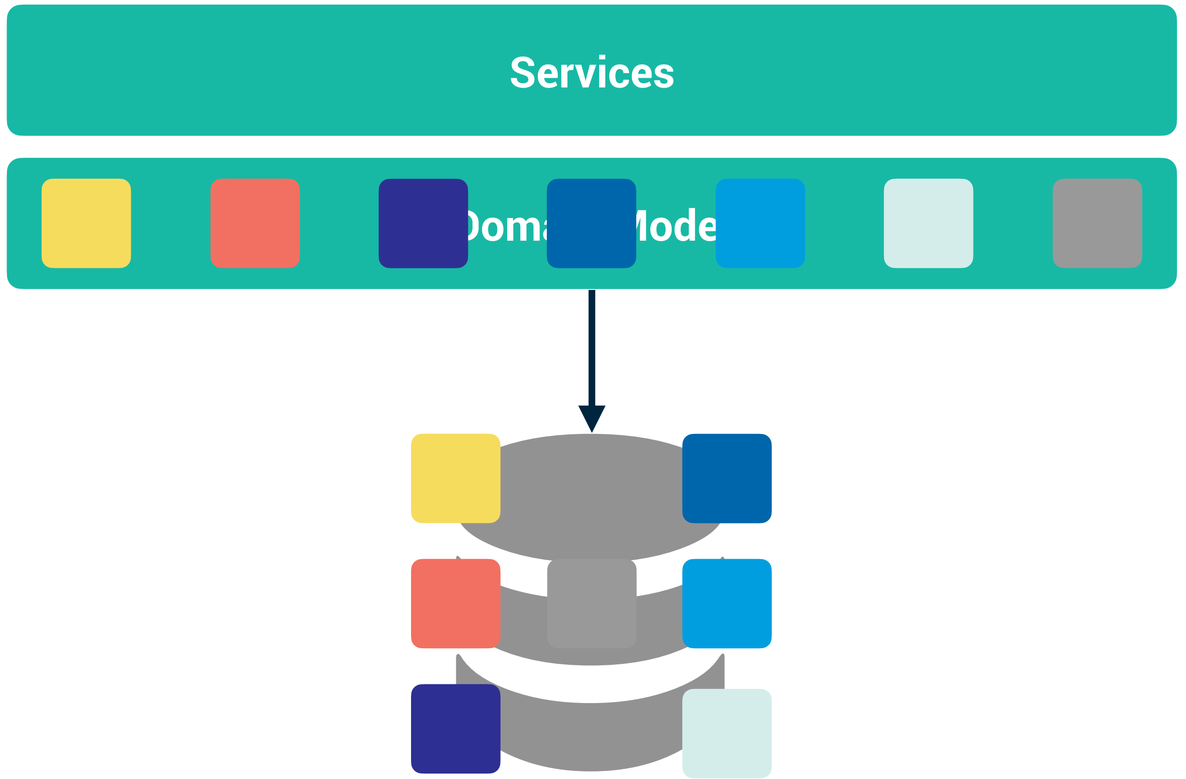

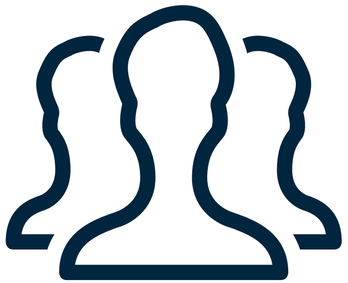

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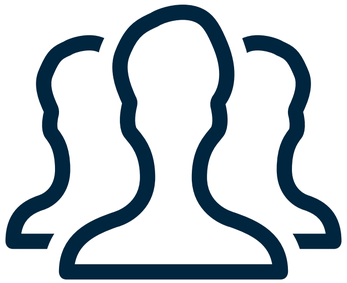

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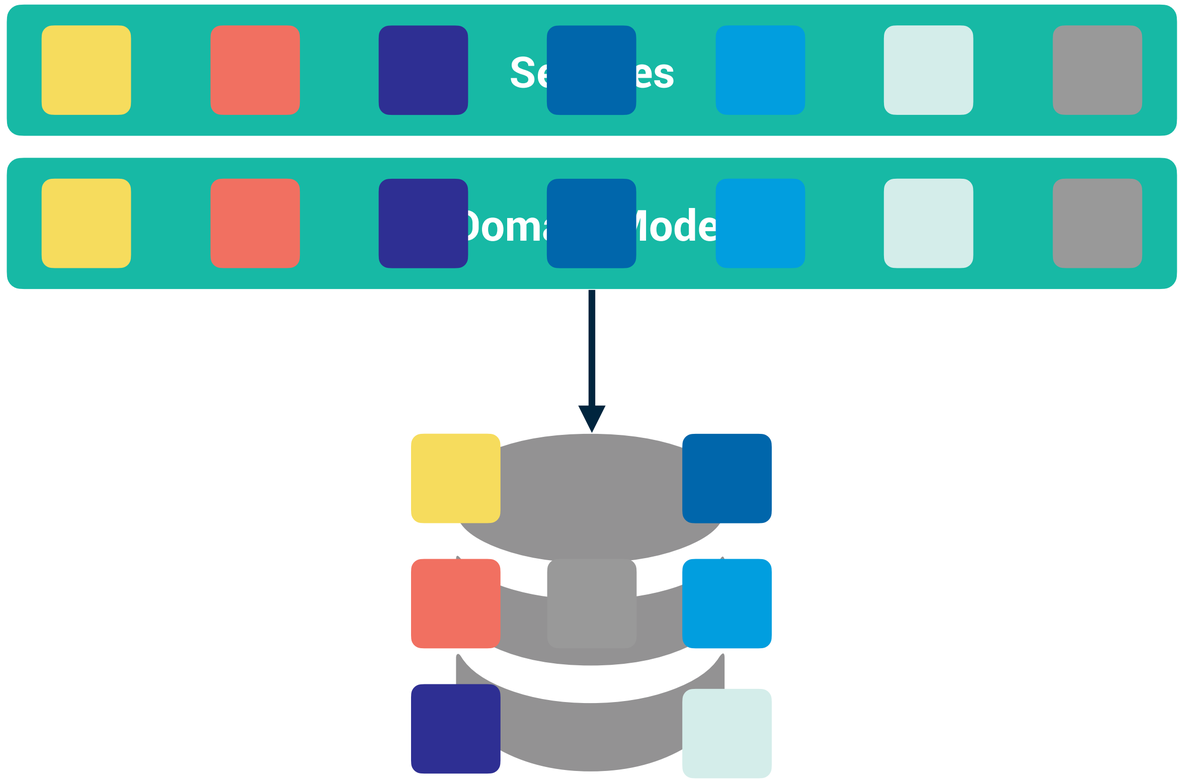

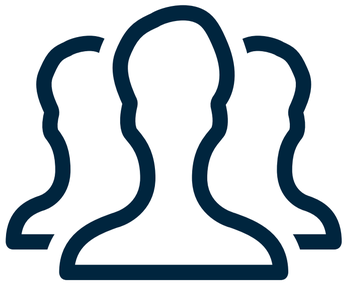

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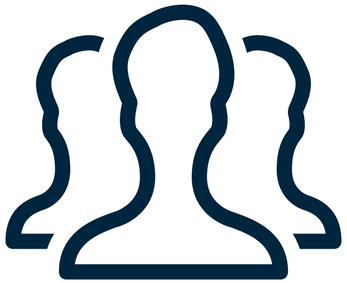

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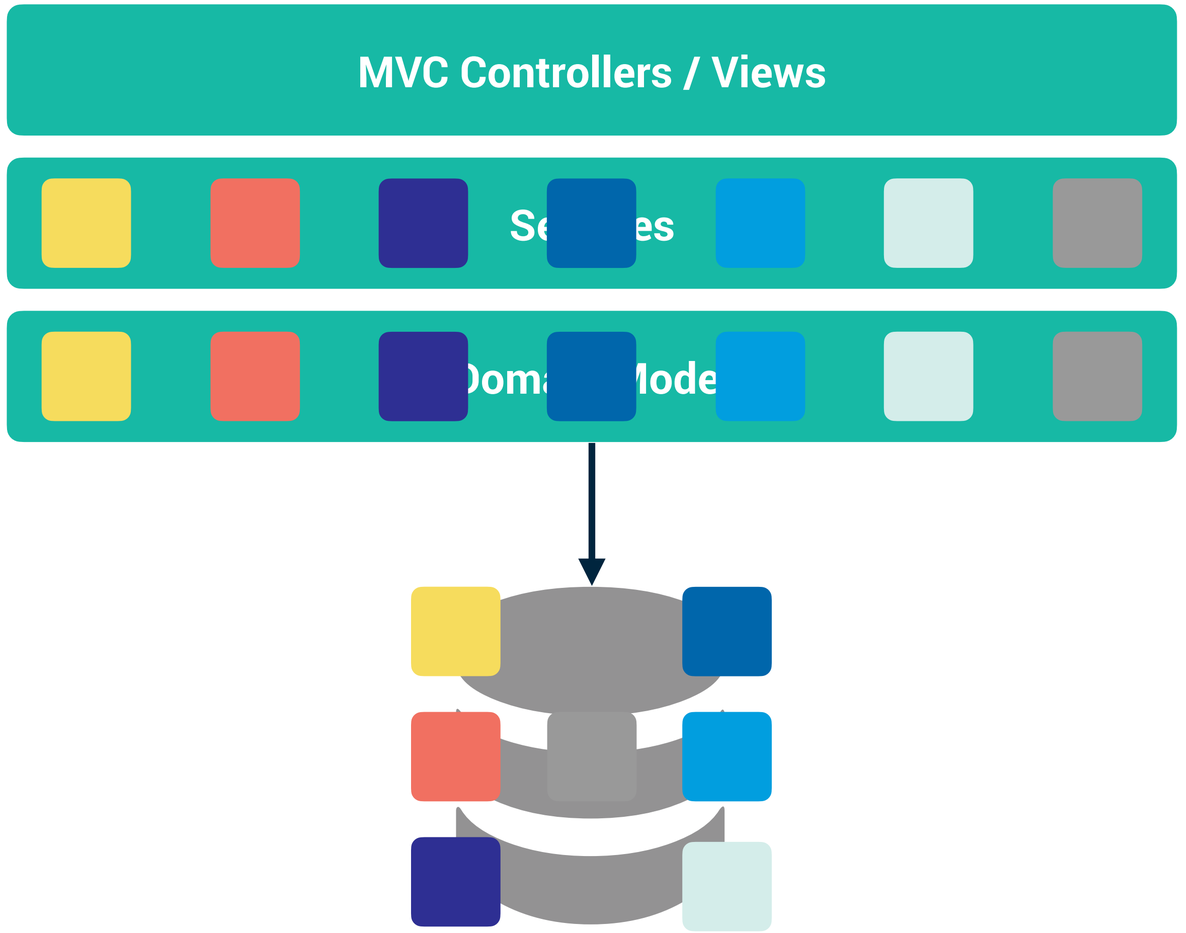

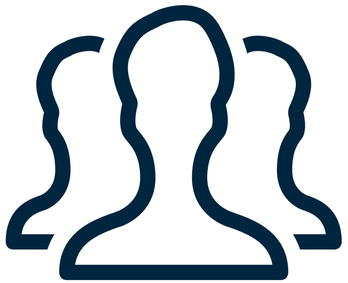

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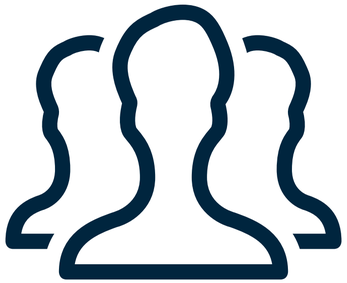

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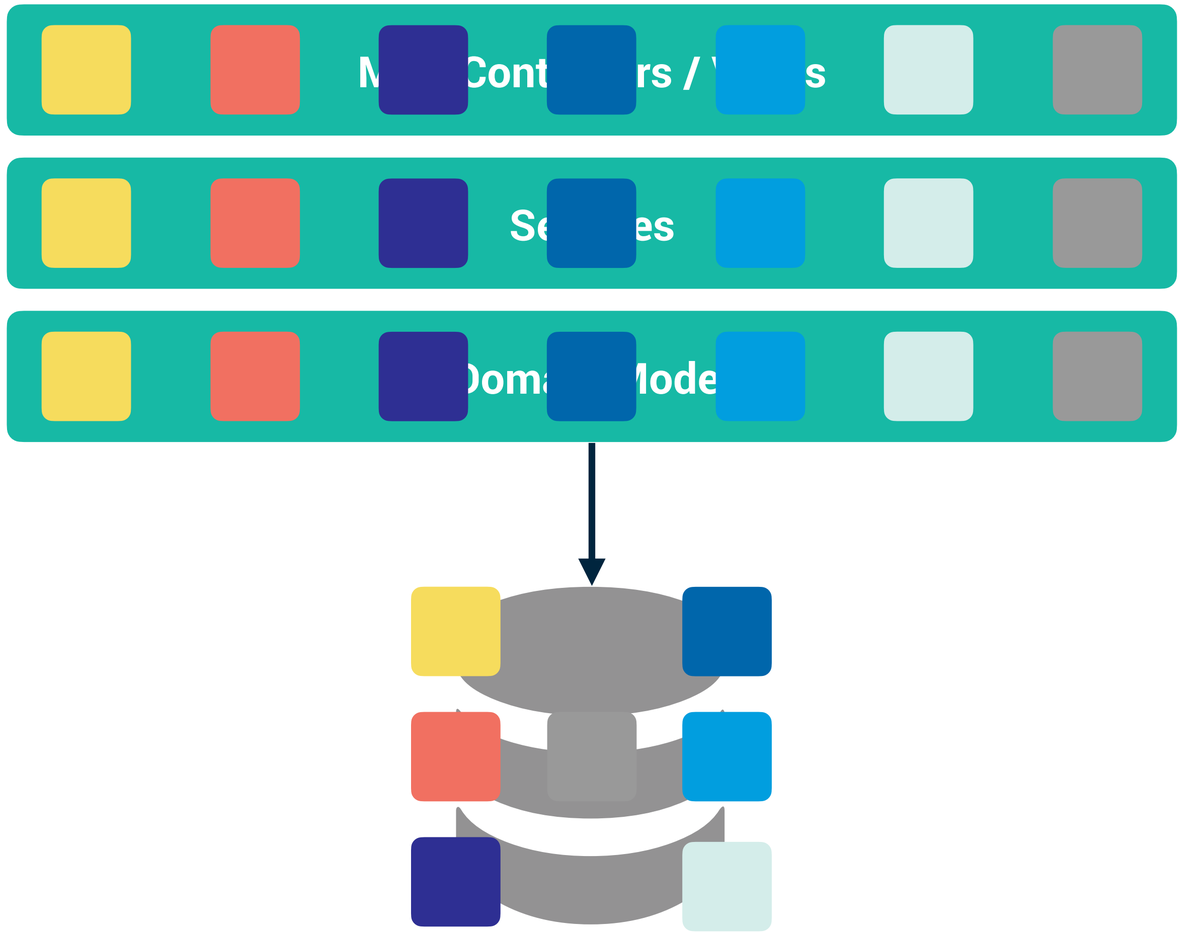

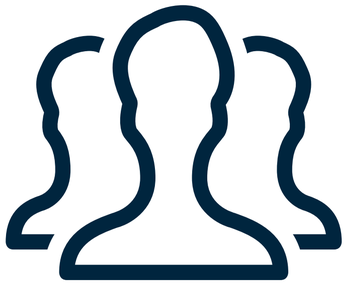

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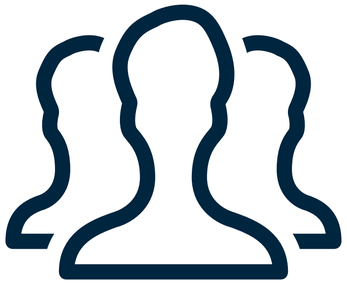

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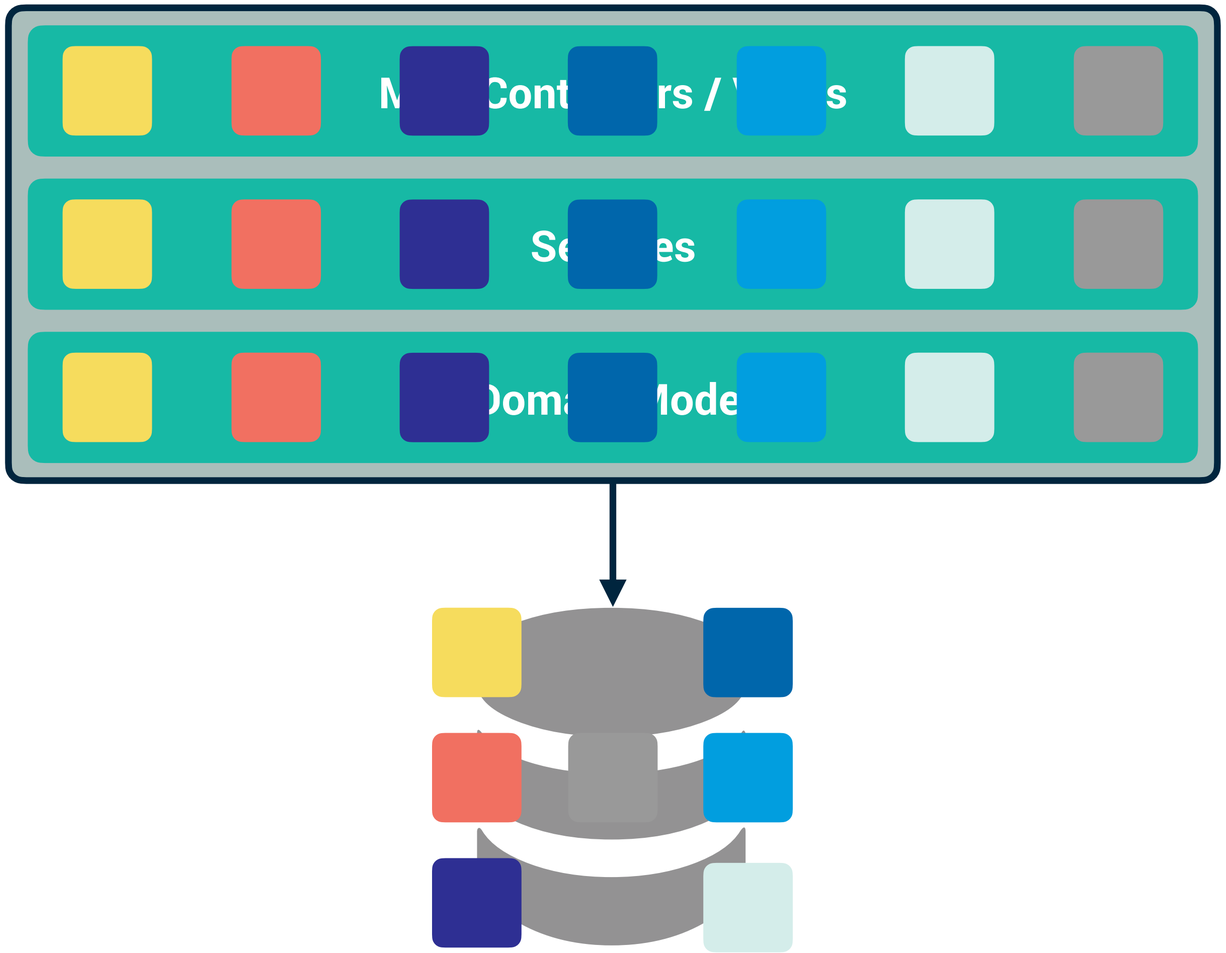

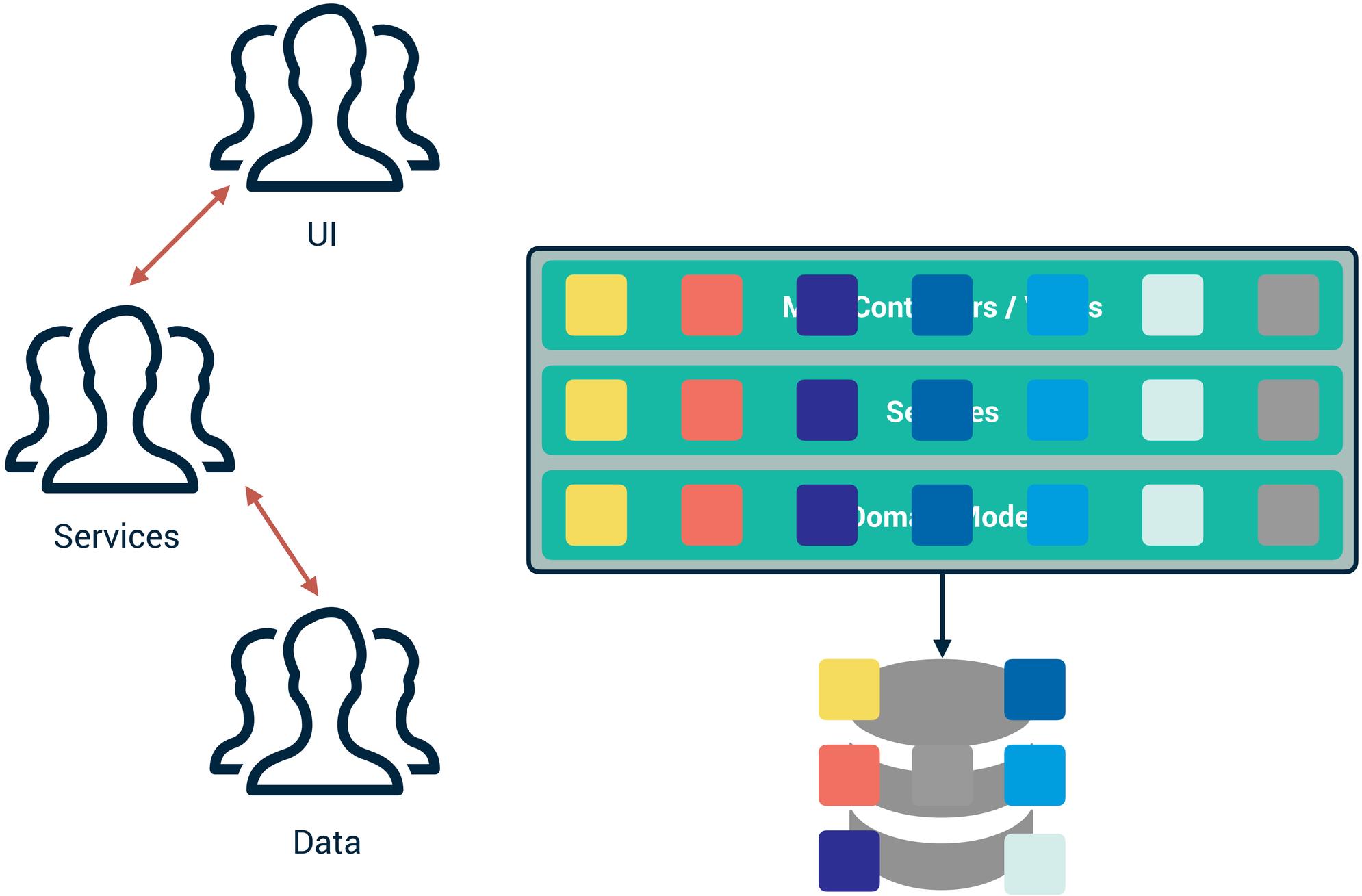
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Services
Data

FUNCTIONAL DECOMPOSITION

Changes

Struggles with knowledge spread across all modules, so often each module has to change in response to a desired functional change.

Independent Development

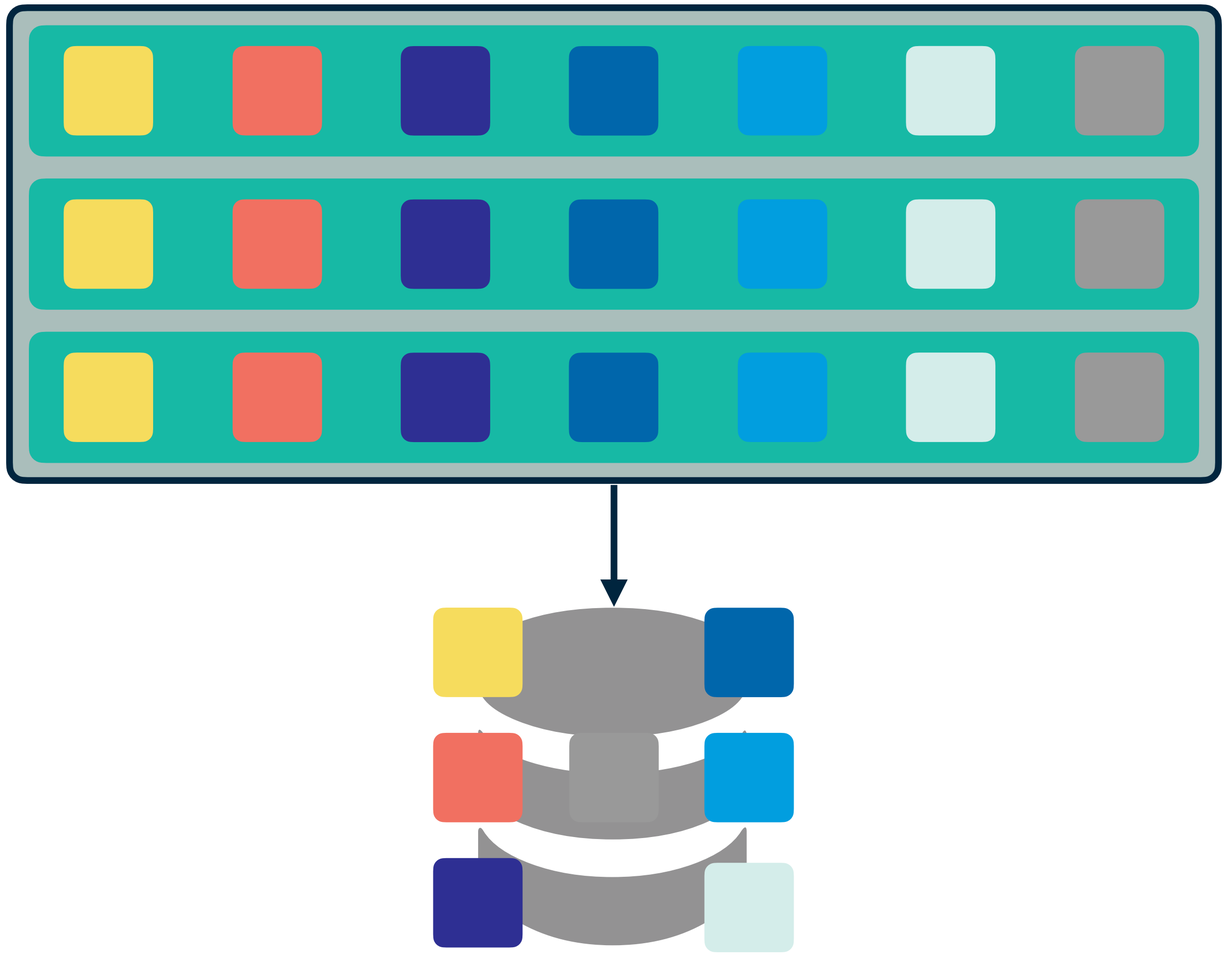
Dependent on shared data formats and schema. Must be jointly defined and agreed upon across multiple groups.

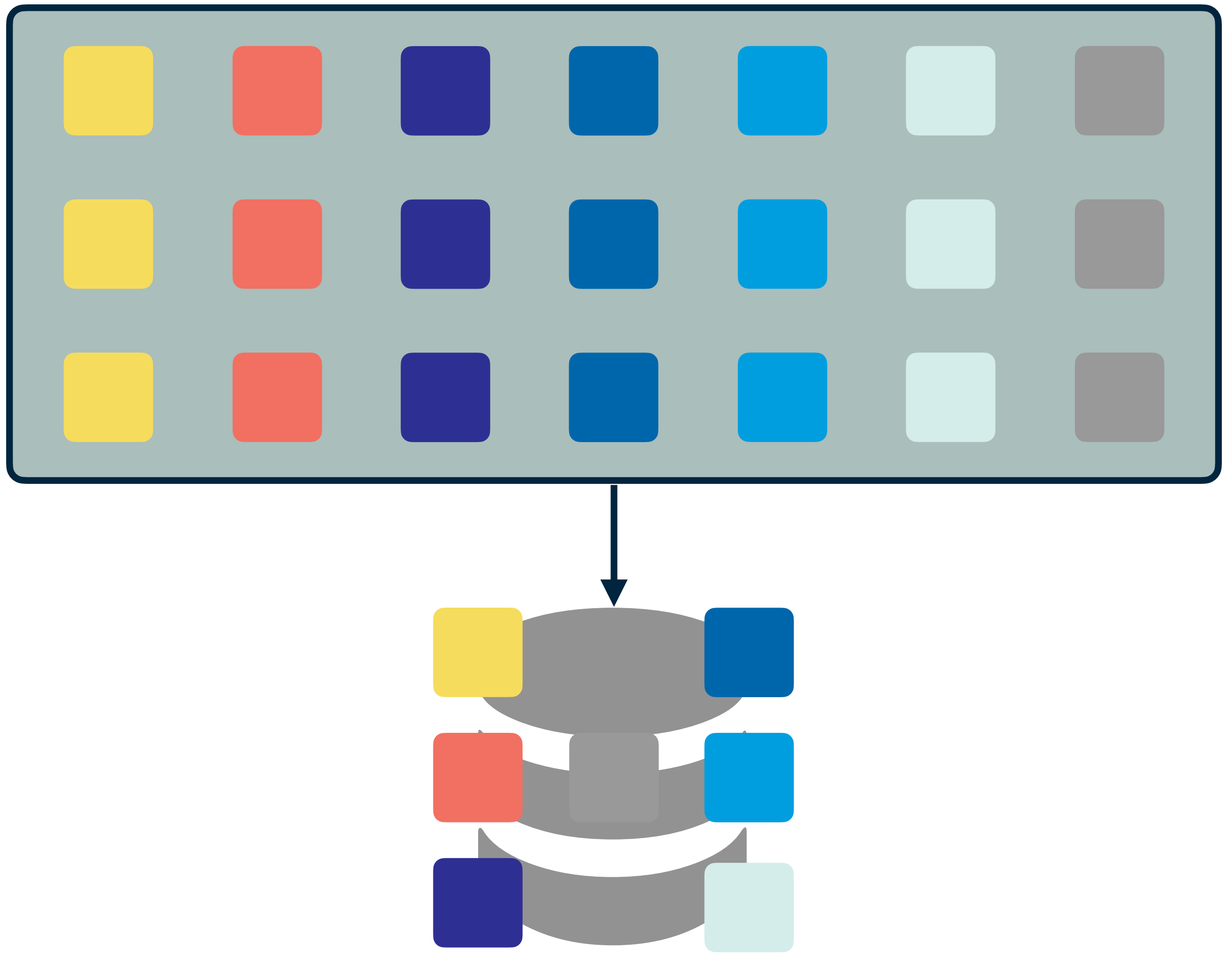
Comprehensibility

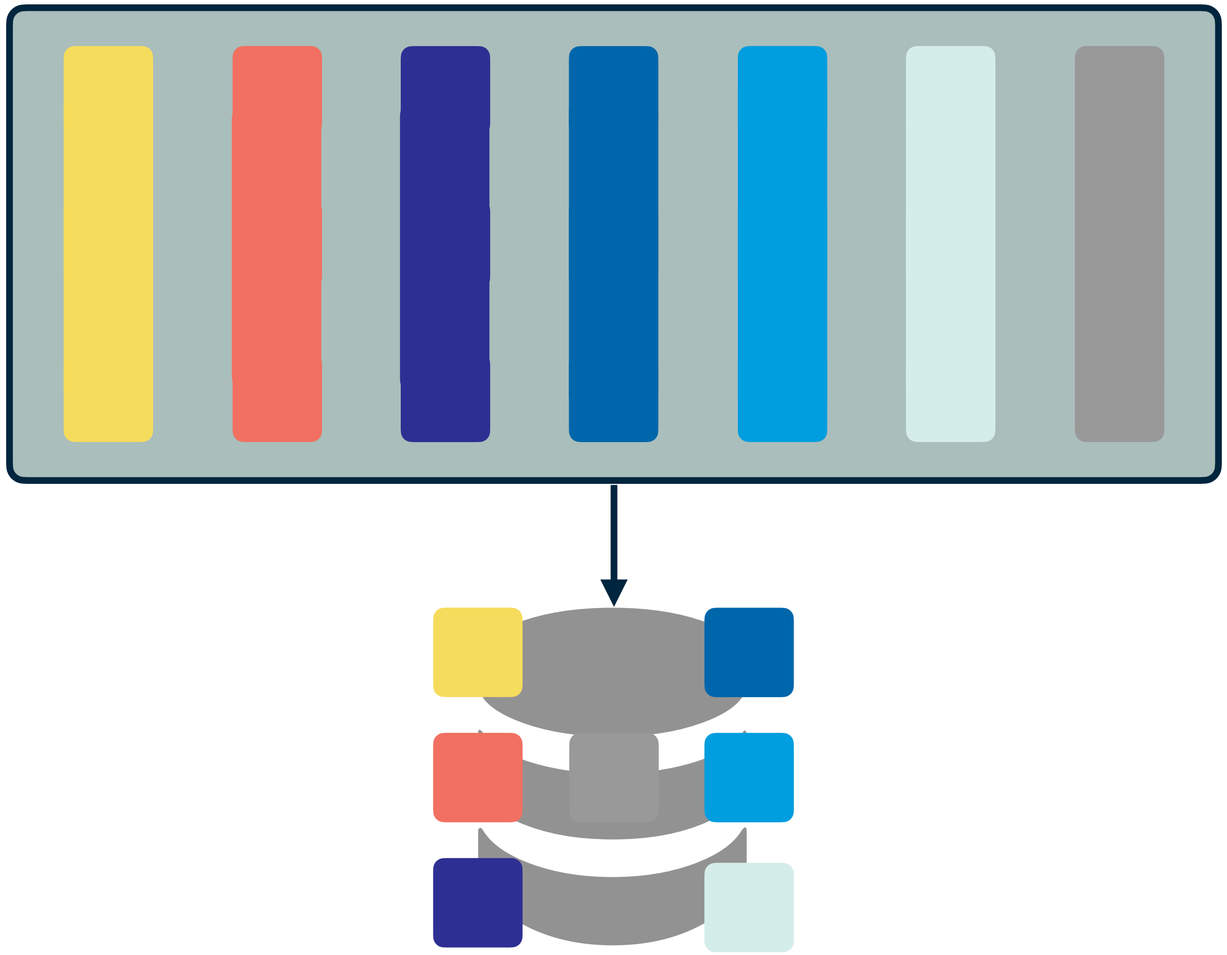
You need to know something about how all of the modules work to understand the whole system.

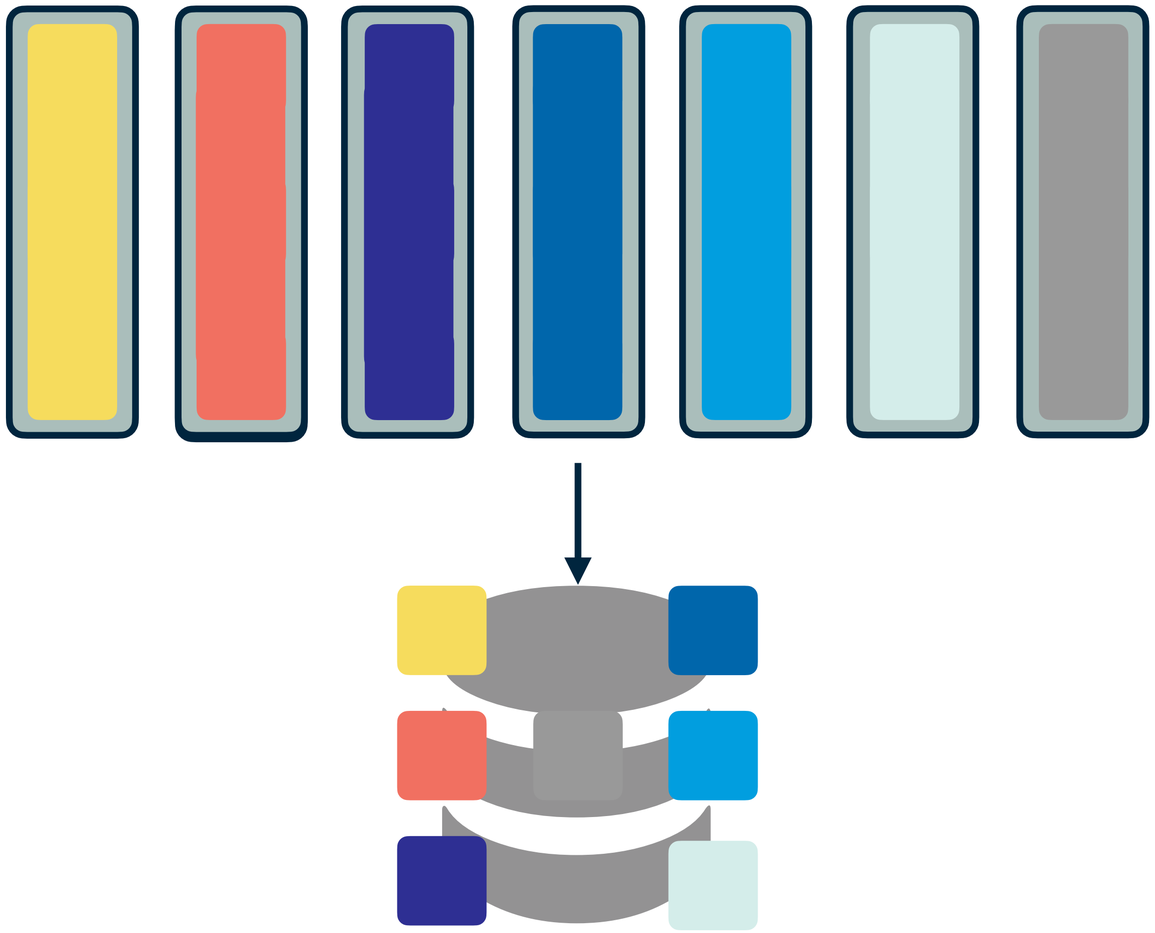
Decomposition Techniques

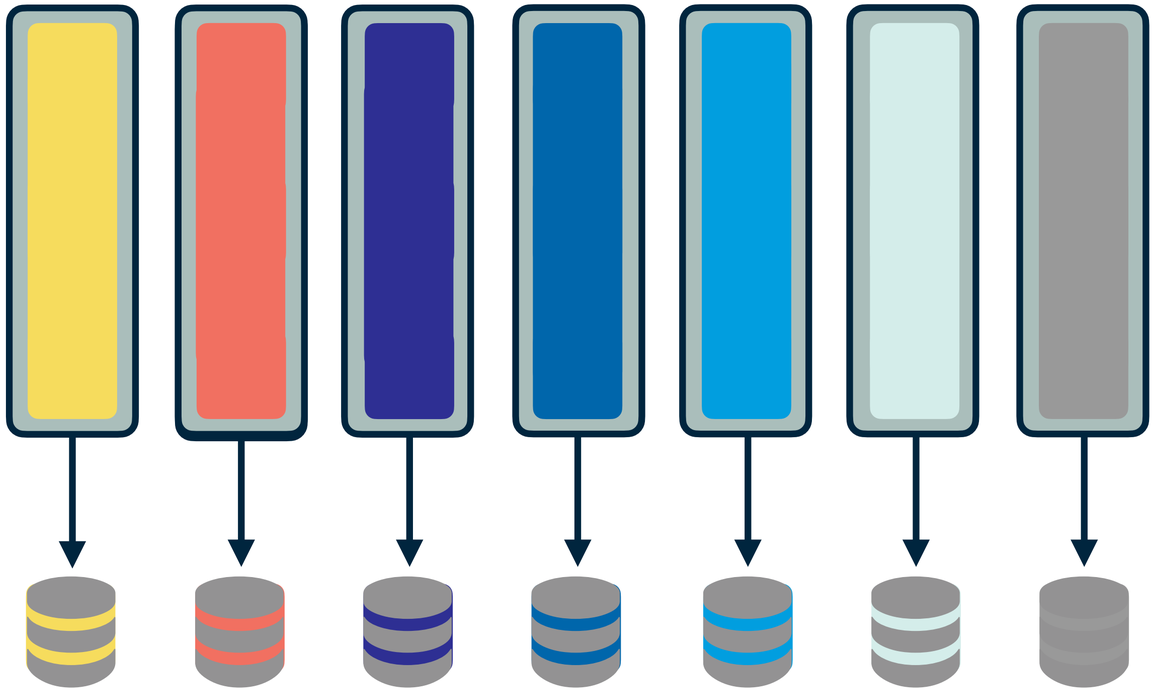
LET'S REFACTOR TO A CAPABILITY DECOMPOSITION

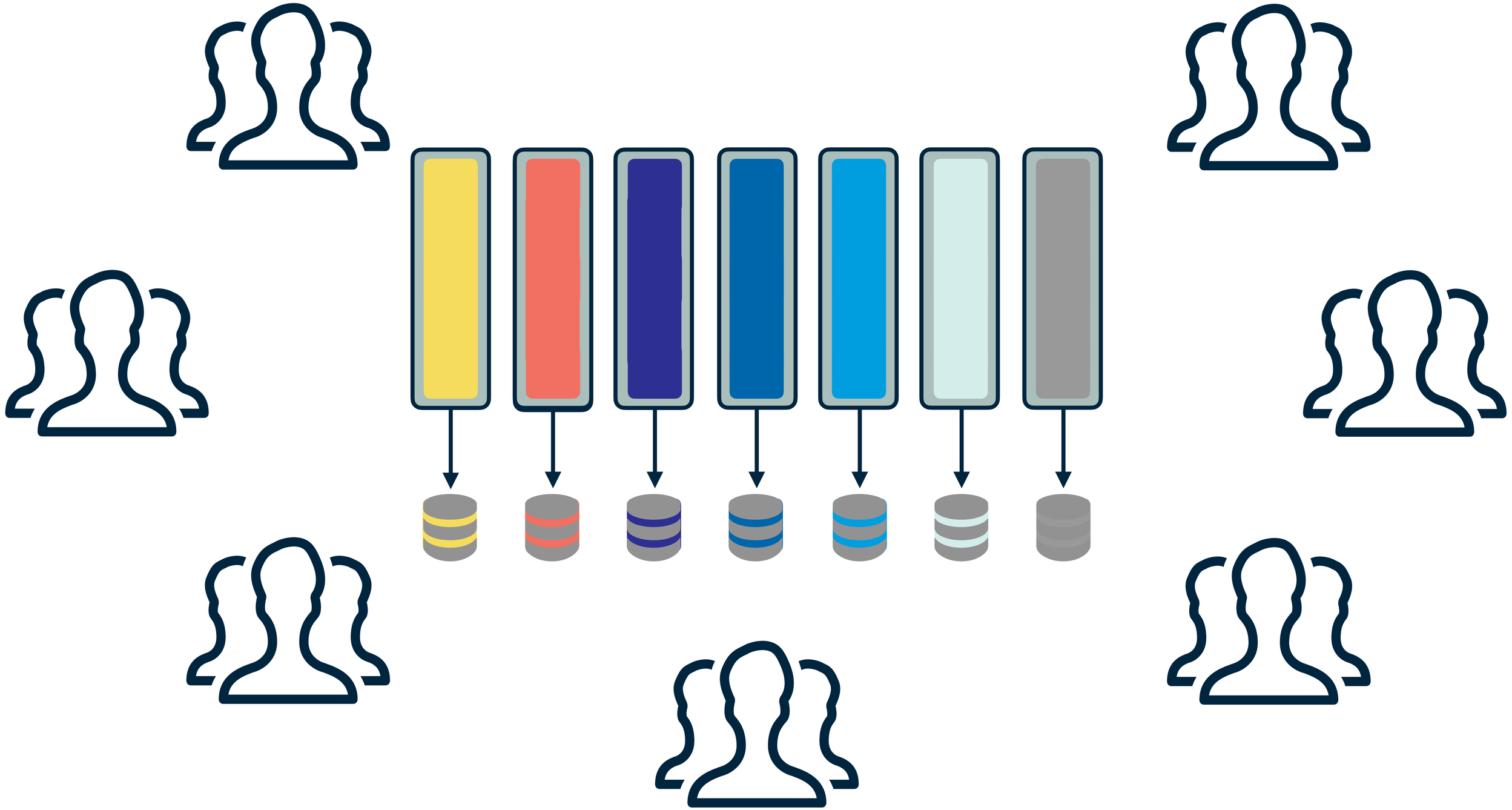


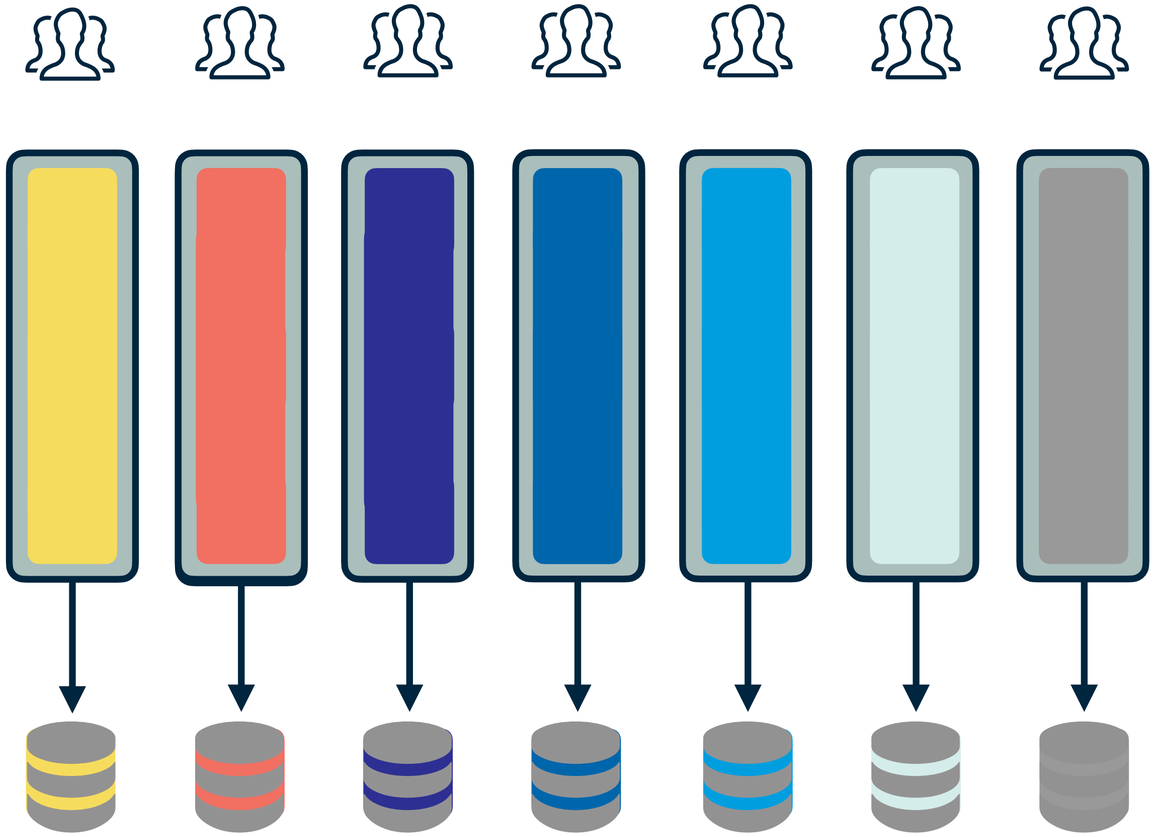












CAPABILITY DECOMPOSITION

Changes

Usually isolates a change to a single module.

Independent Development

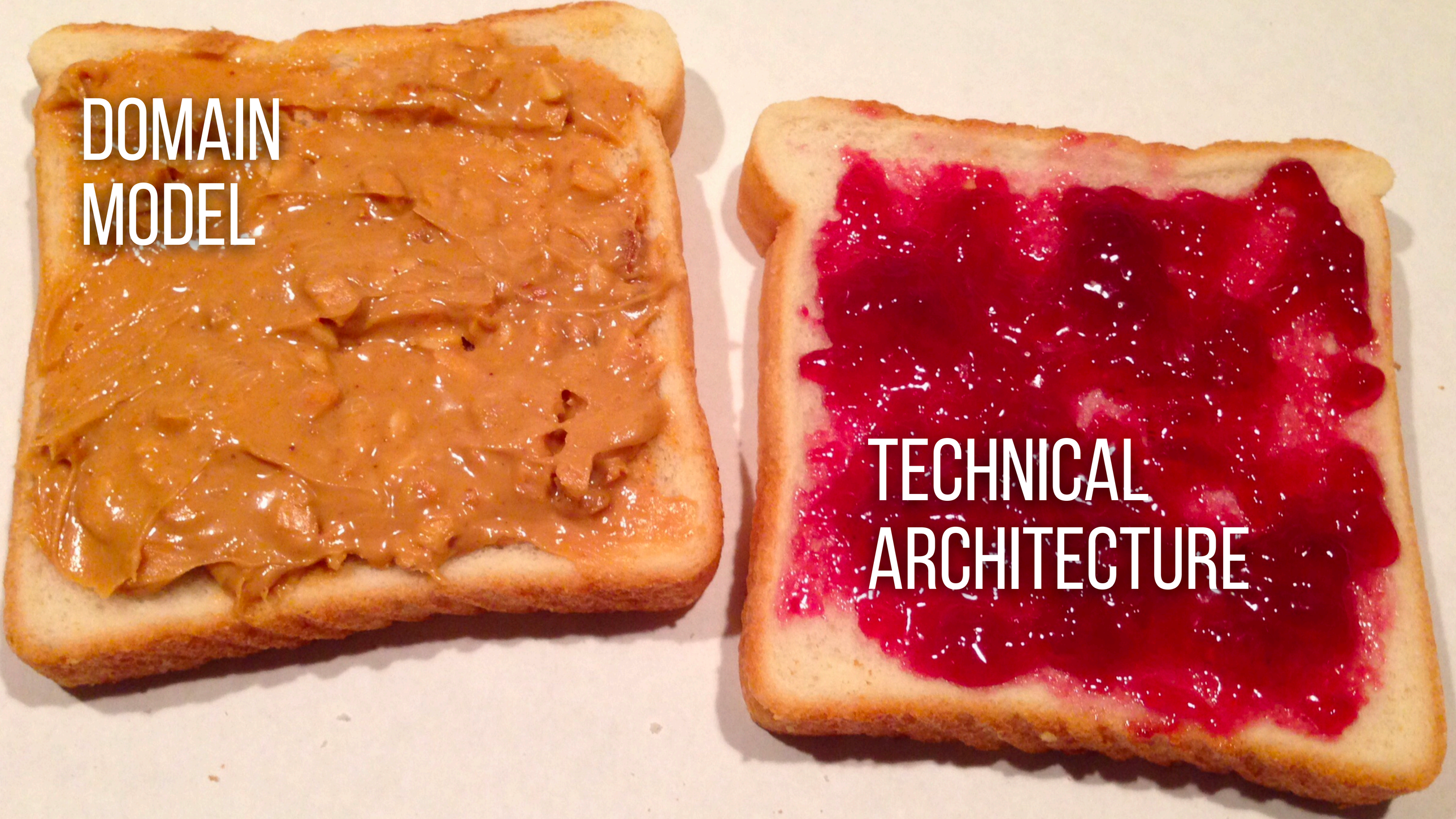
Has abstract interfaces that encapsulate the work to be done..

Comprehensibility

You can understand modules independently.

We have tried to demonstrate…it is almost always incorrect to begin the decomposition of a system into modules on the basis of a flowchart…instead that one begins with a list of difficult design decisions or design decisions which are likely to change. Each module is then designed to hide such a decision from the others. Since, in most cases, design decisions transcend time of execution, modules will not correspond to steps in the processing…we must abandon the assumption that a module is one or more subroutines, and instead allow subroutines and programs to be assembled collections of code from various modules.

THE FUNDAMENTAL WAYS IN WHICH WE DESIGN MODULES EFFECTIVELY HAS NOT CHANGED IN THE LAST 50 YEARS.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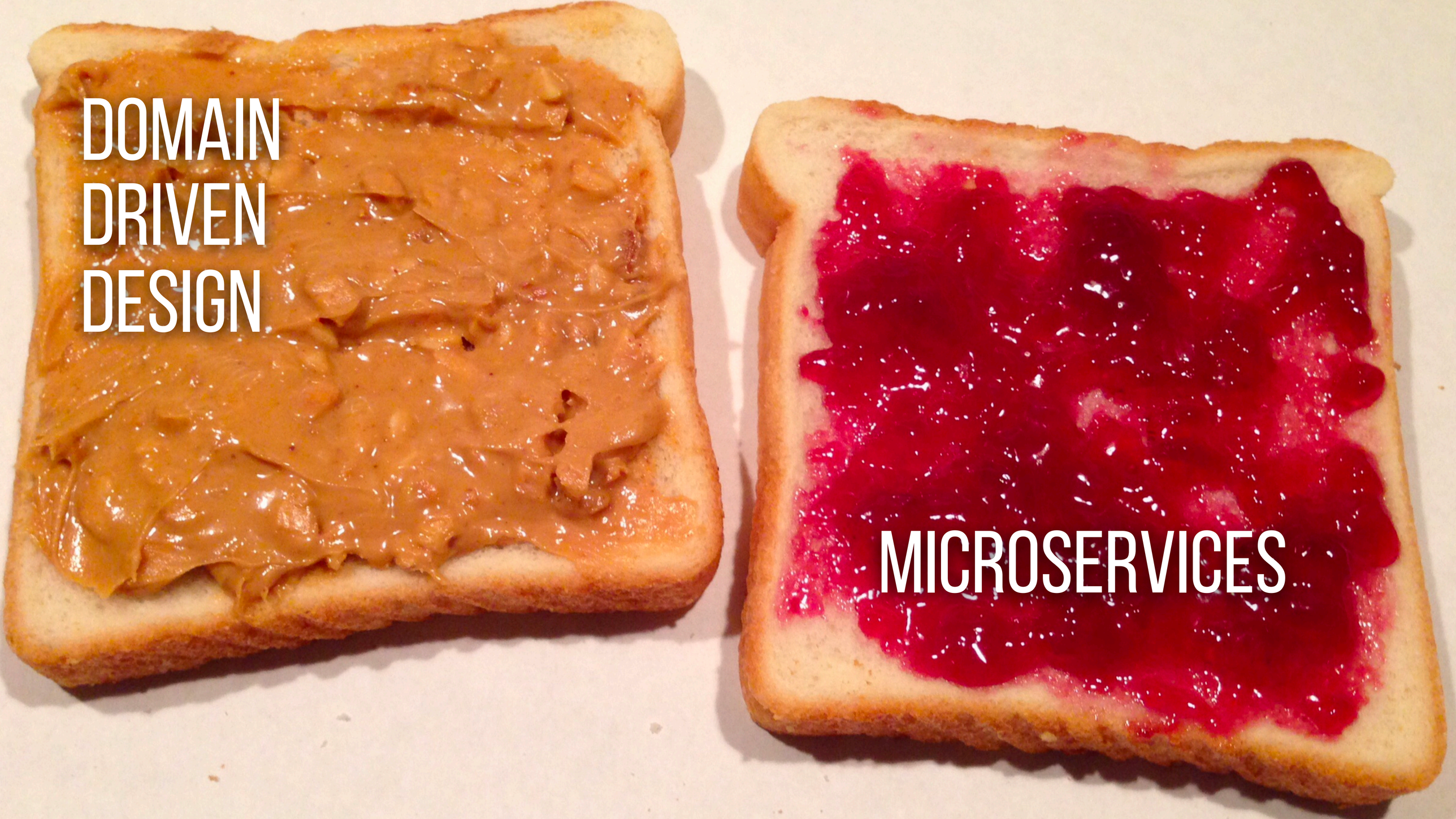
DOMAIN
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MICROSERVICES