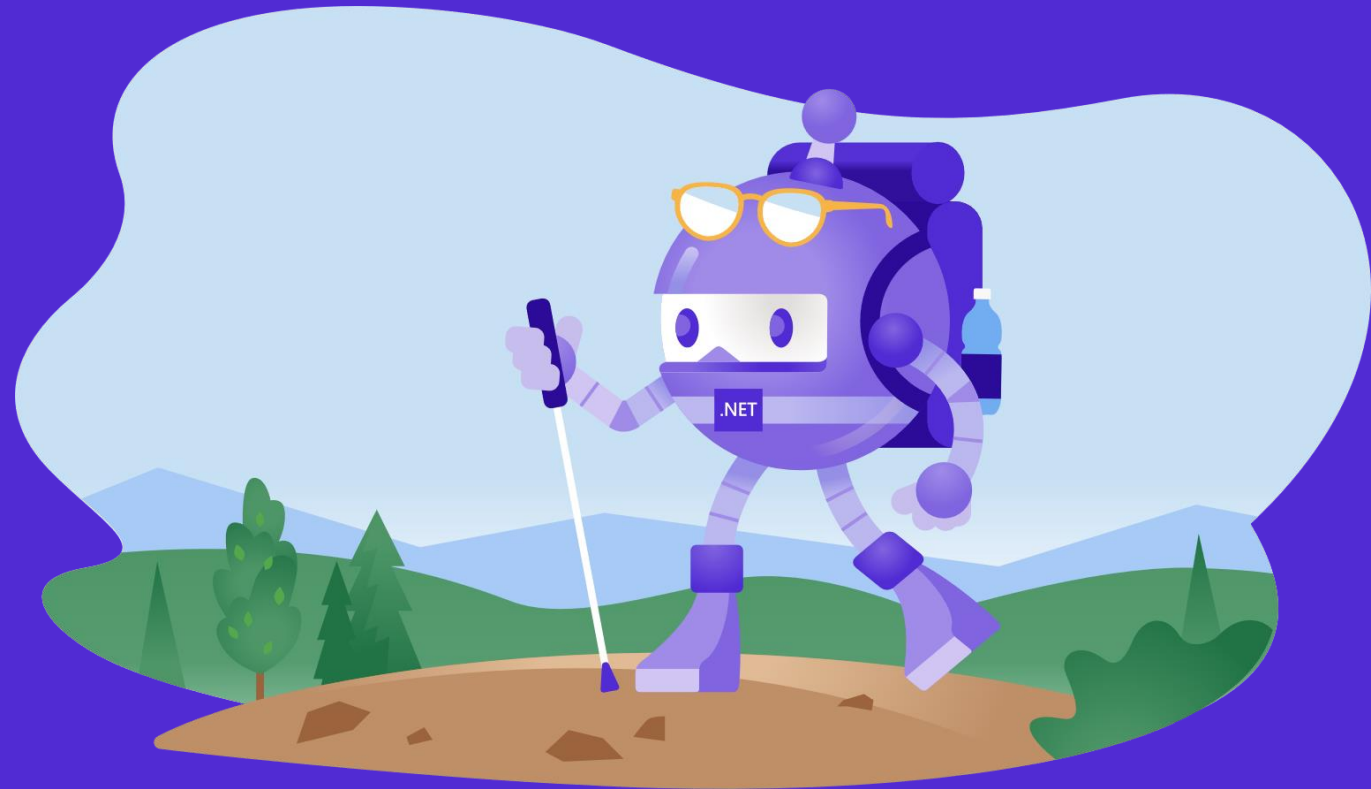


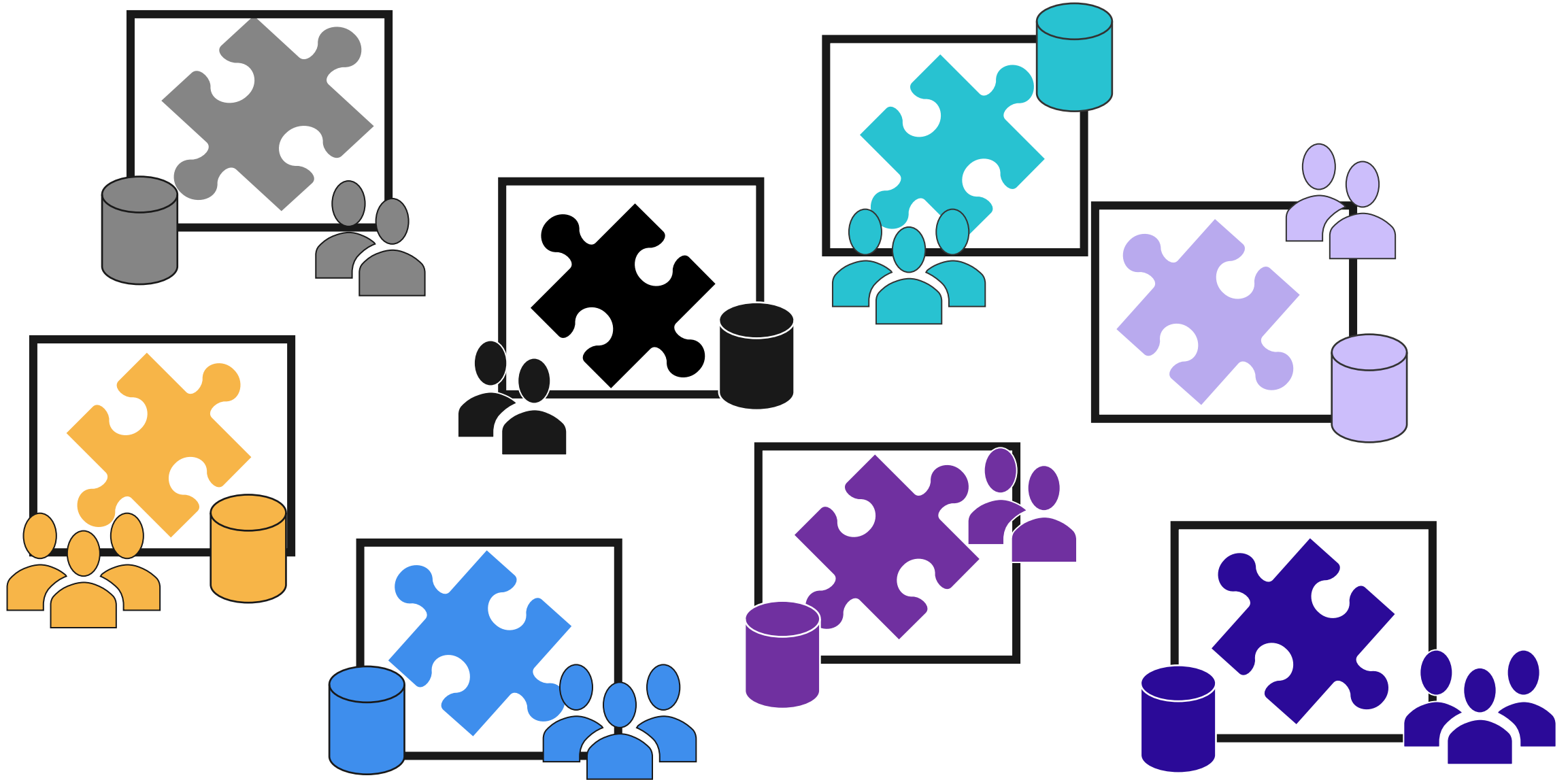
The Intersection of Microservices, Domain-Driven Design, & EF Core

Julie Lerman

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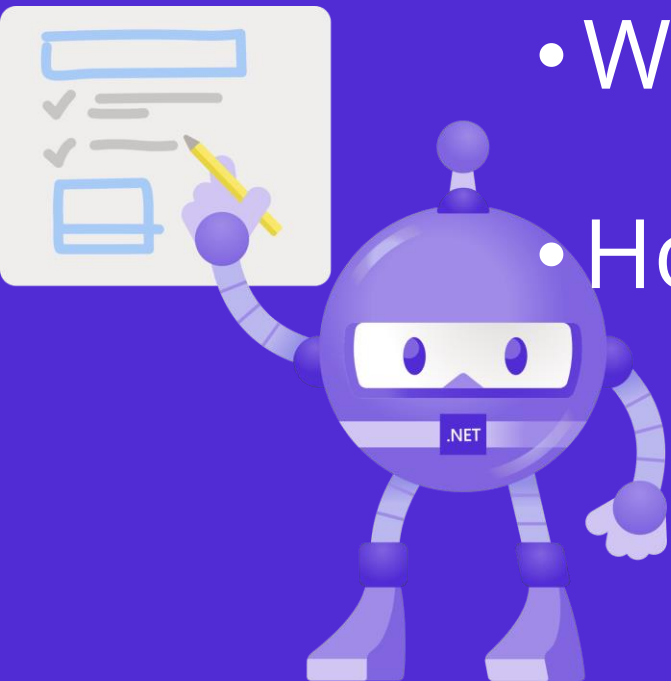


Microservices/DDD Common Guidance



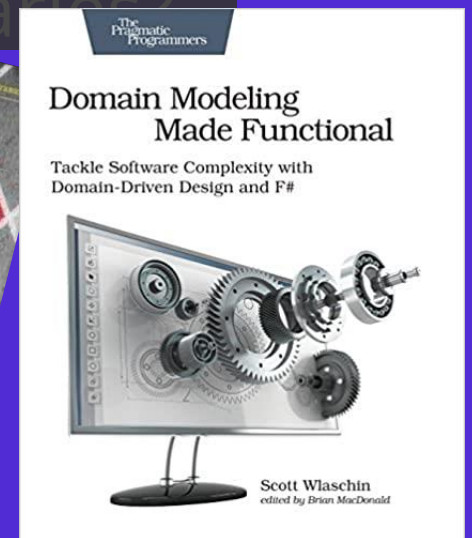
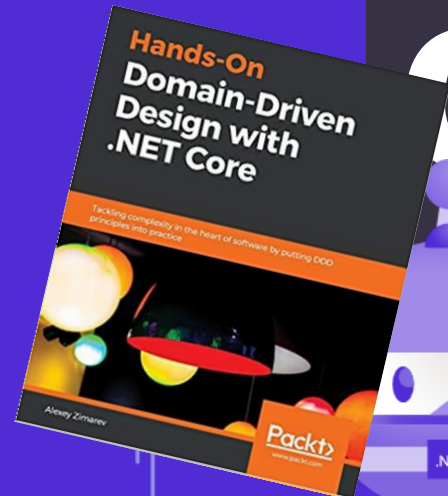
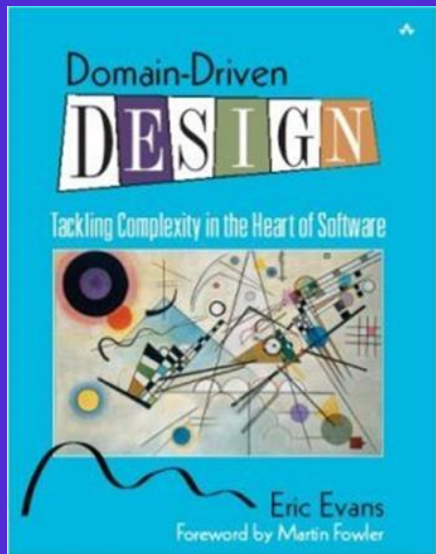
Microservices/DDD Common Questions

- How do we discover boundaries?
- What about overlapping types/data?
- What about cross boundary relationships?
- How to communicate across boundaries?



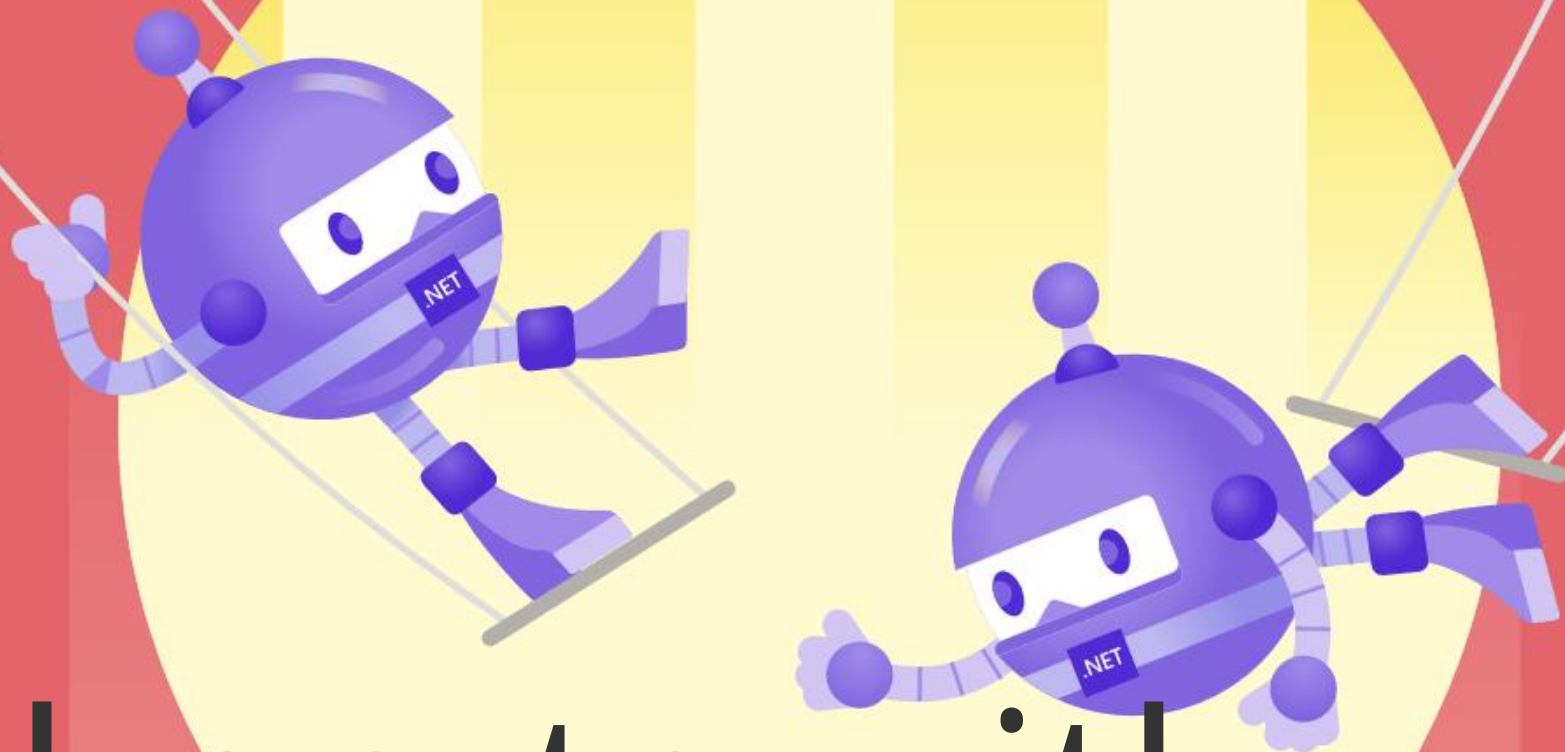
DDD brings 17 years of experience

- How do we discover boundaries?
- What about overlapping types/data?
- How to communicate across boundaries?





focus on the
domain



collaborate with
domain experts

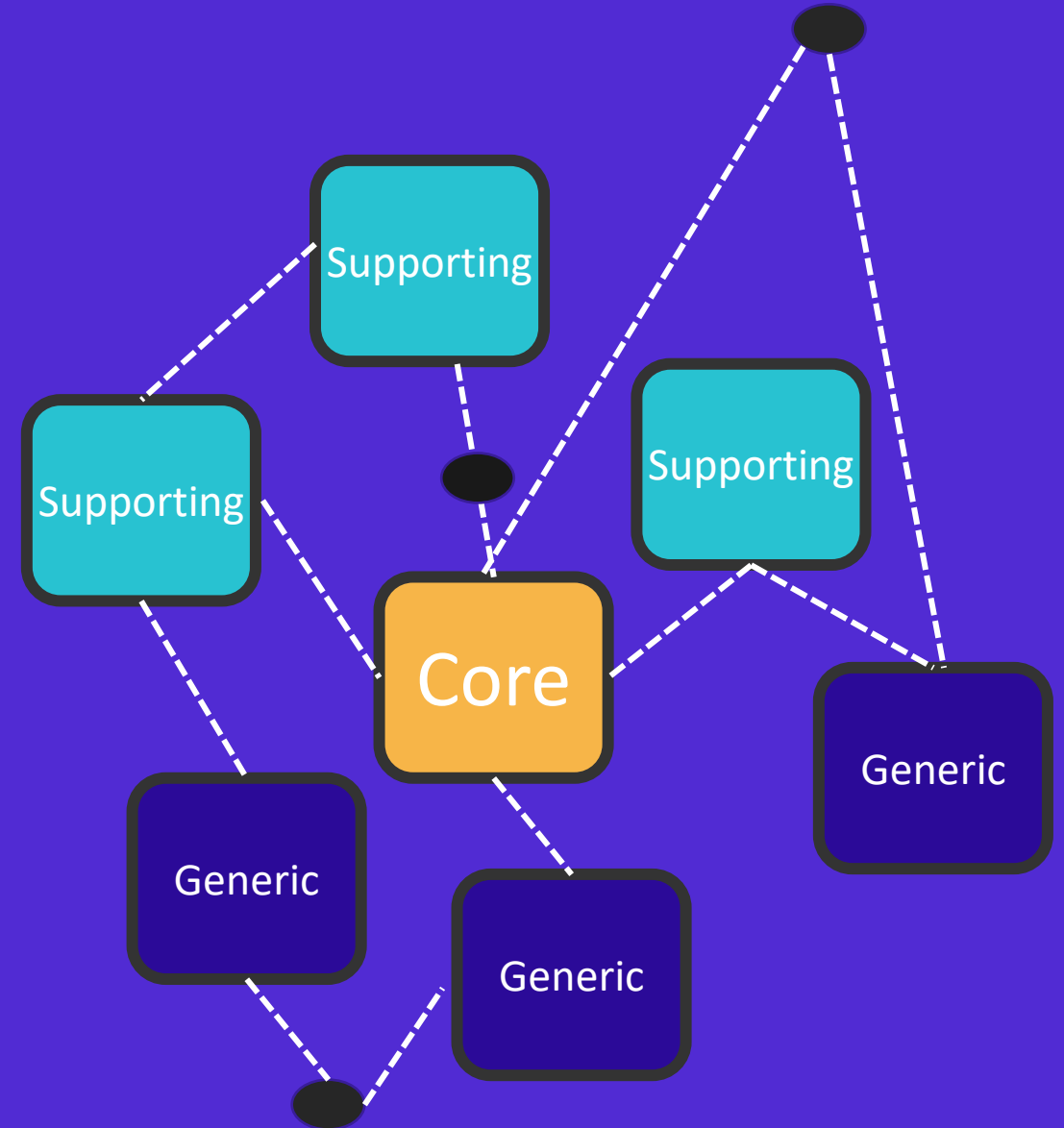
Strategic Design

Tactical Design

Strategic Design

Analyze & Model Business Problem

- Identify Sub-Domains
- Discern Core, Supporting, & Generic Sub-Domains
- Identify Bounded Contexts
- Determine communication using known patterns

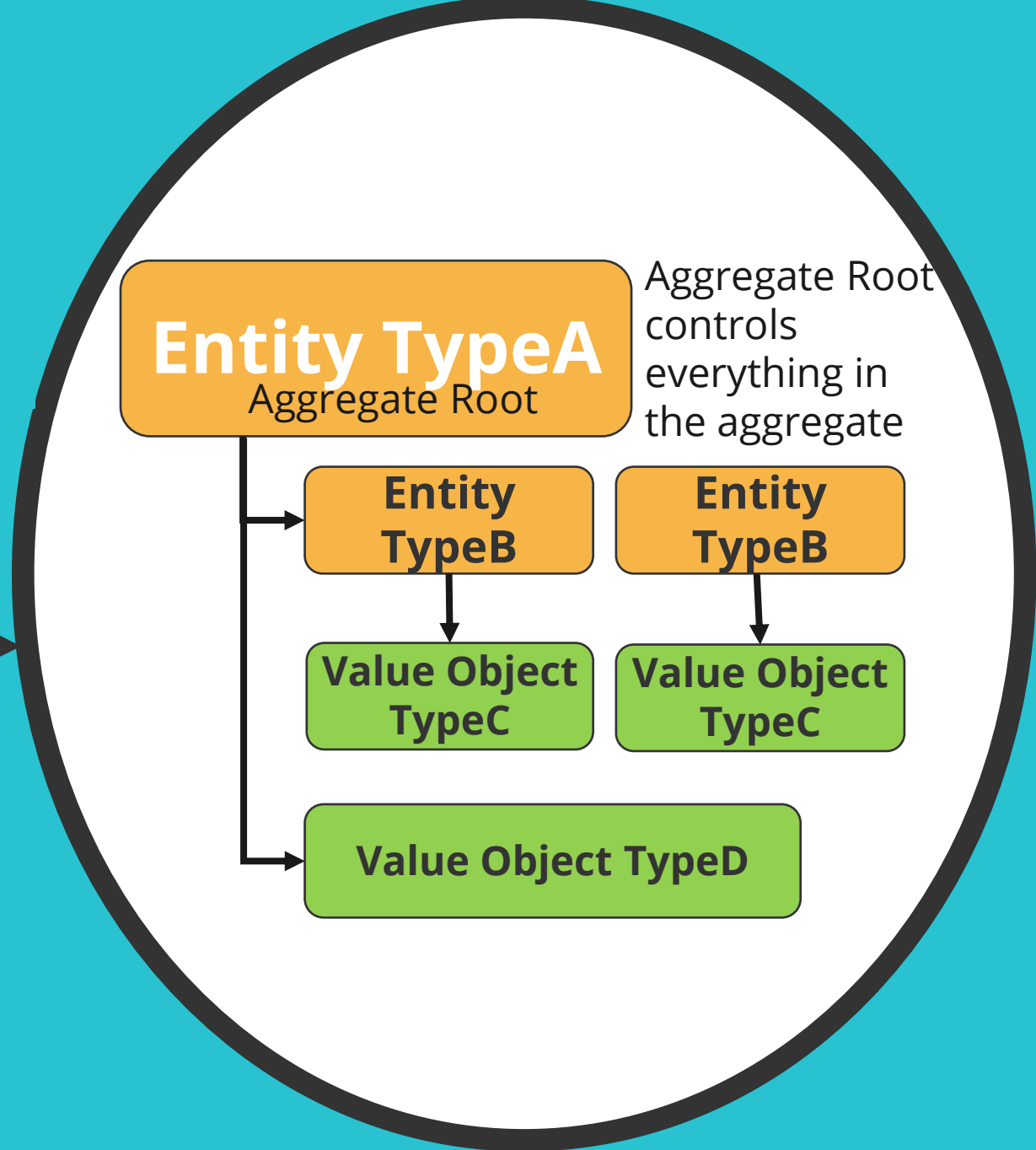




Bounded Context
is not necessarily equal to a
Microservice

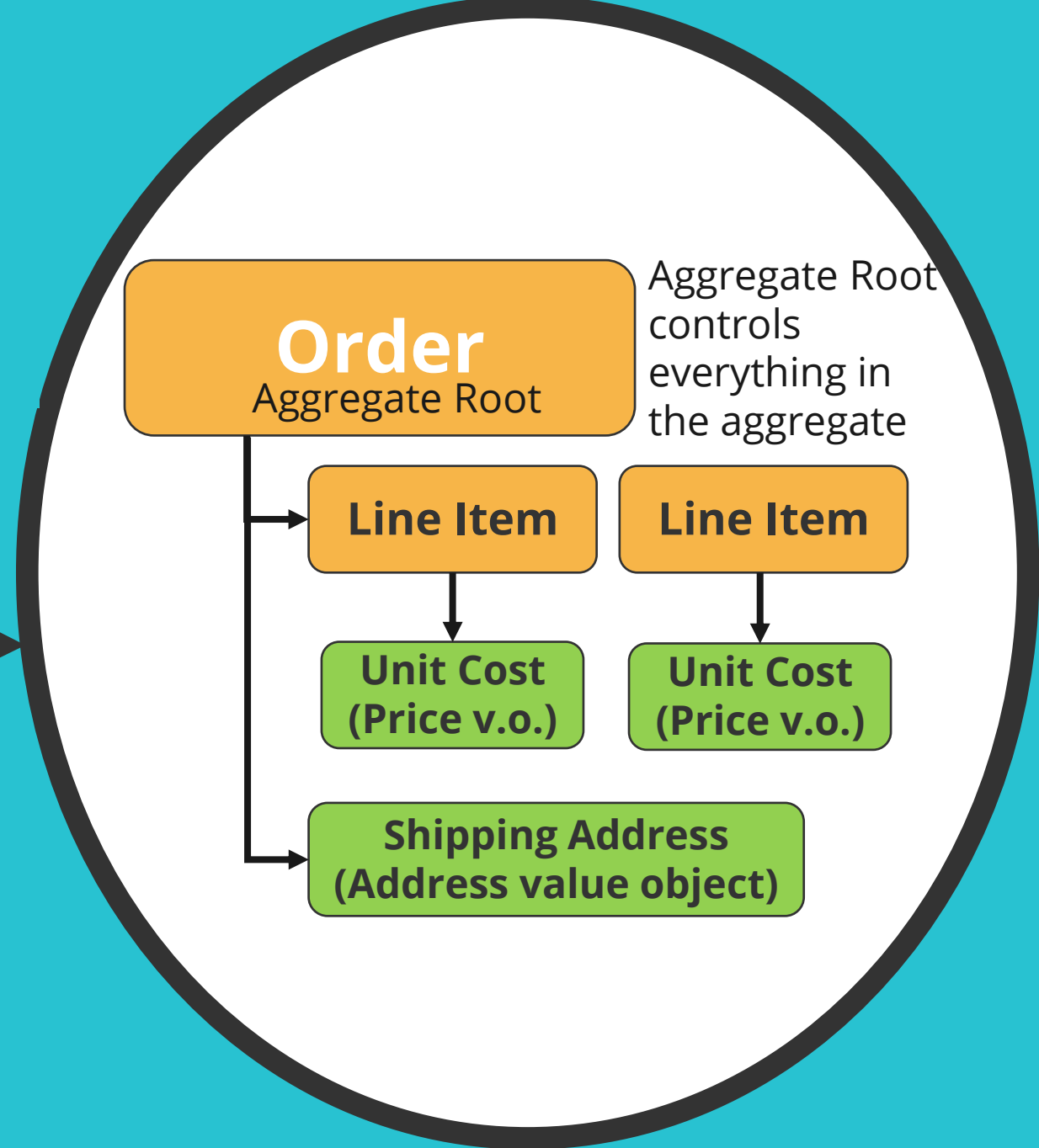
Tactical Design within a Bounded Context

Aggregate
Transactional unit



Tactical Design within a Bounded Context

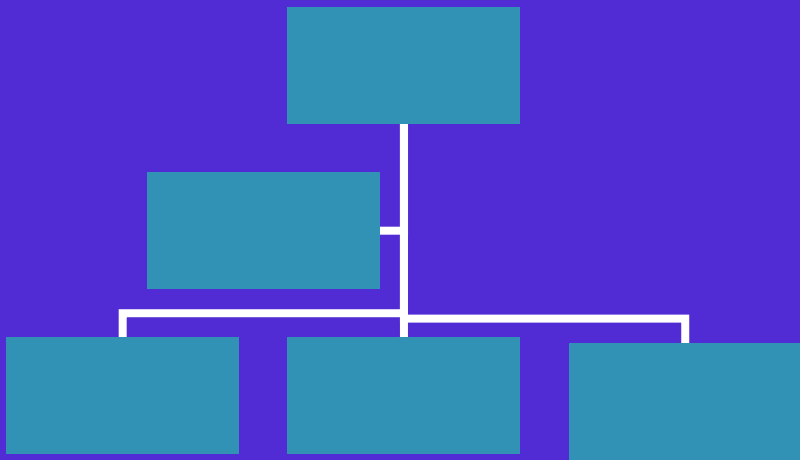
Aggregate
Transactional unit



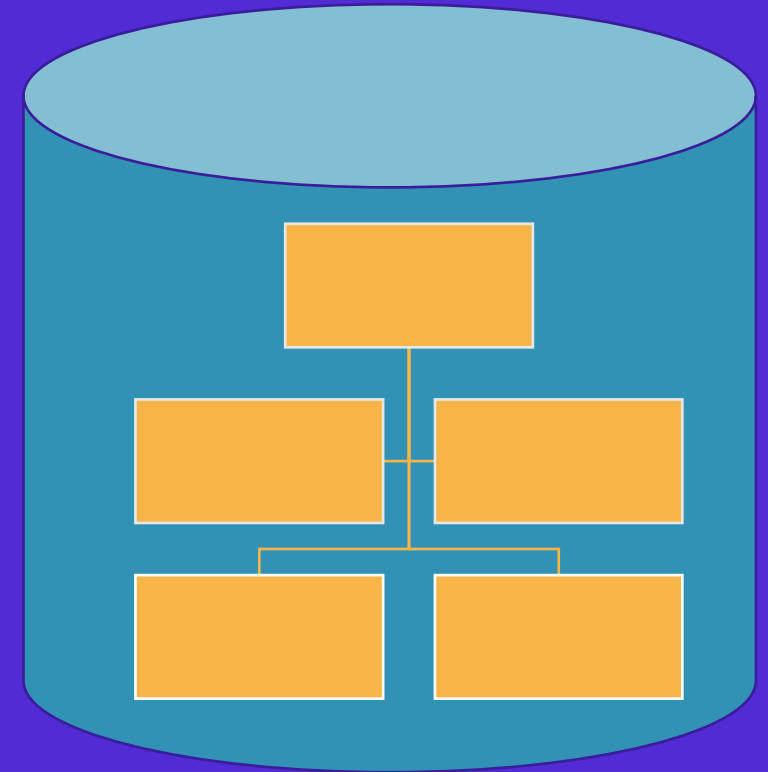
Key Aggregate Guidance

- Design your models based on *domain* needs
- Aggregate root maintains invariants & rules of the entire aggregate
- Entities focus on behavior (rich vs. “anemic”)
- Protect properties via encapsulation
- Define types in value objects where possible
 - They masquerade as 1:1
- DDD has patterns to solve other worries later

Ignore Data Persistence When Modeling

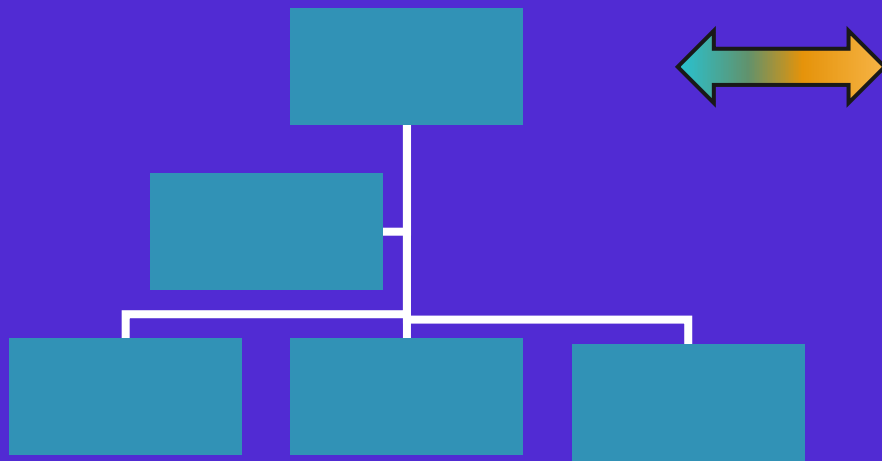


Domain Model

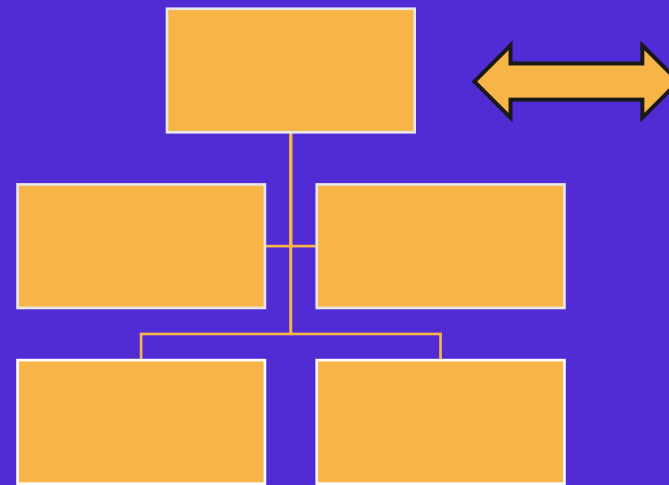


DB Schema

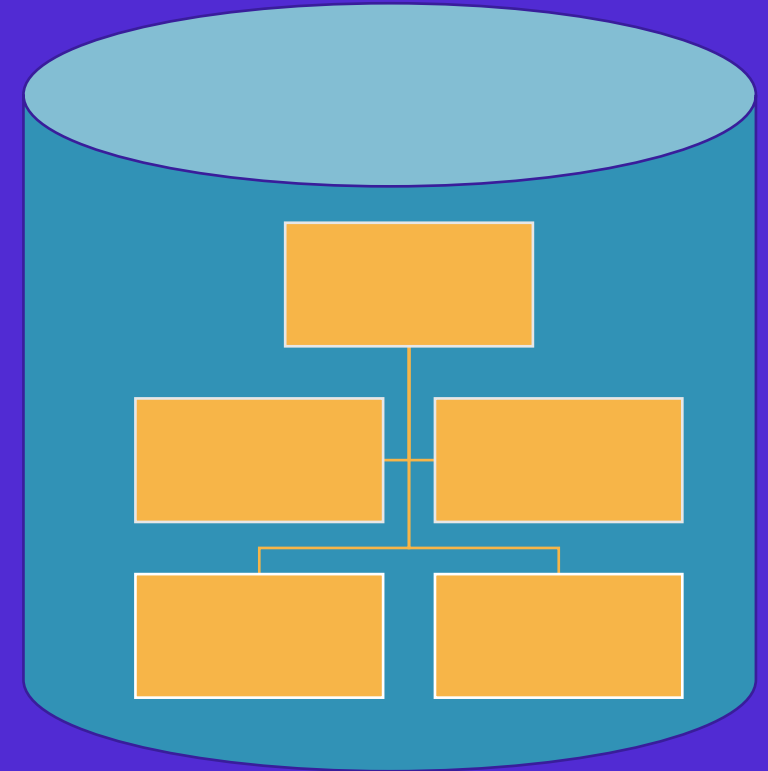
EF Core Can Achieve Many Mappings



Domain Model



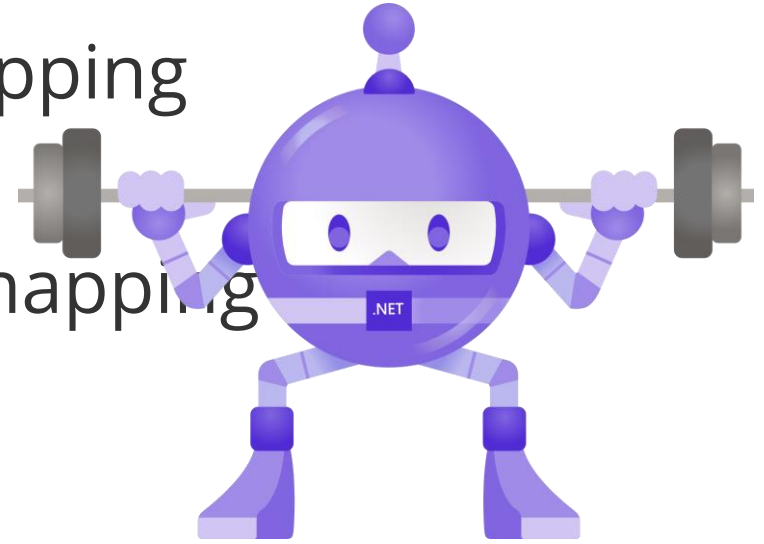
Data Model
via EF Core



DB Schema

Let EF Core worry about DB mapping

- Private property support via field mapping
- Private collection support
- Owned entities enable value object mapping
- Shadow properties
- Value Converters
- Keyless entities
- Many-to-Many mapping coming in EF Core 5
- More ...

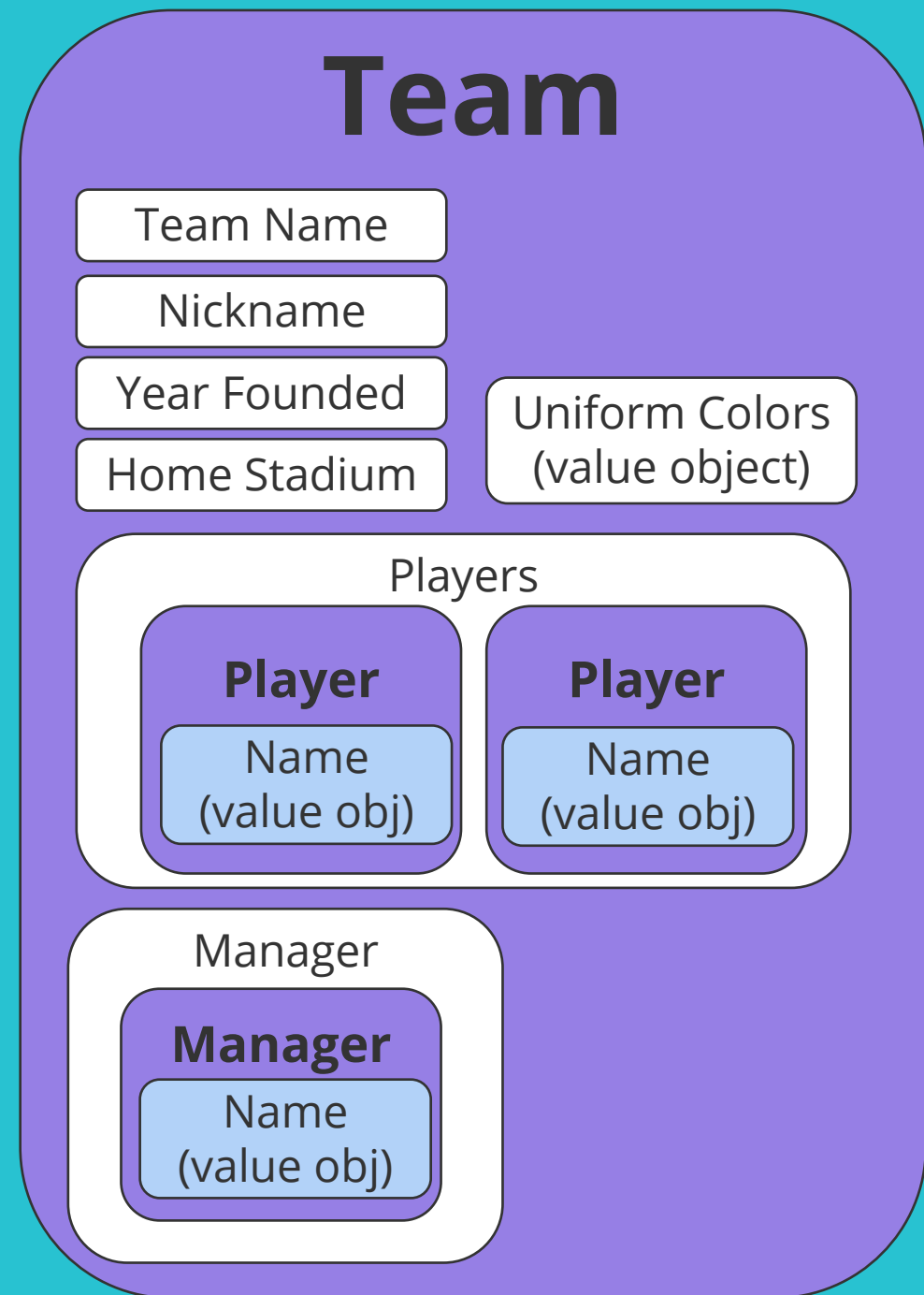


*A query perf regression popped up in EF Core 3, fixed in EF Core 5

And the demos...



Team Aggregate Root in Team Management Bounded Context



Thanks for joining!

Julie Lerman

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Code at github.com/julielerman/dotnetconfms2020

