
AWS
re:Invent
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BOA315-R

Adopting microservices: Decompose, apply Strangler pattern, repeat

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Agenda

- Step 1 – Decompose
- Step 2 – Strangle
- Step 3 – Repeat!
- Key takeaways

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Step 1 - Decompose

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Levels of modularization

Microservices

Modular monolith

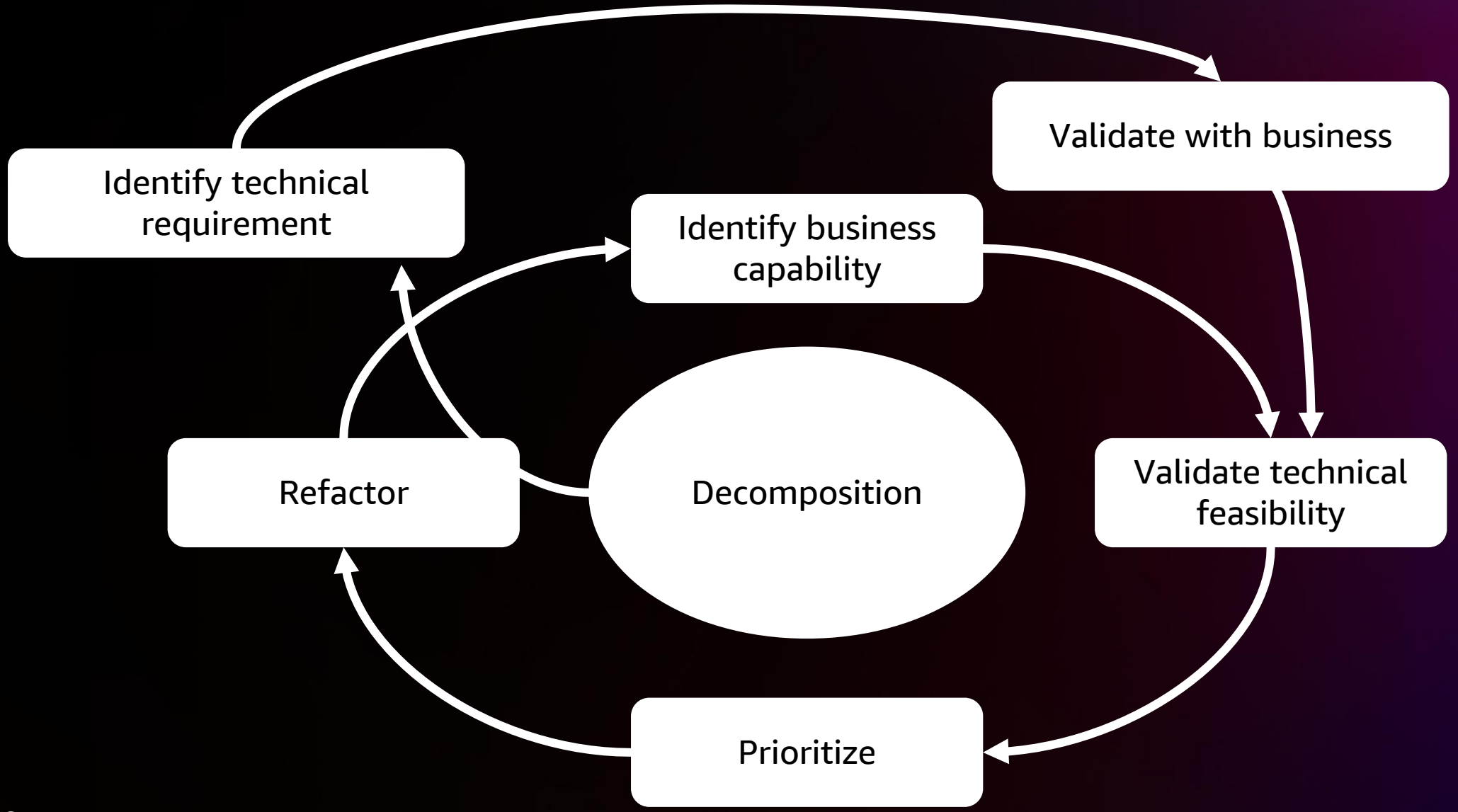
Monolith



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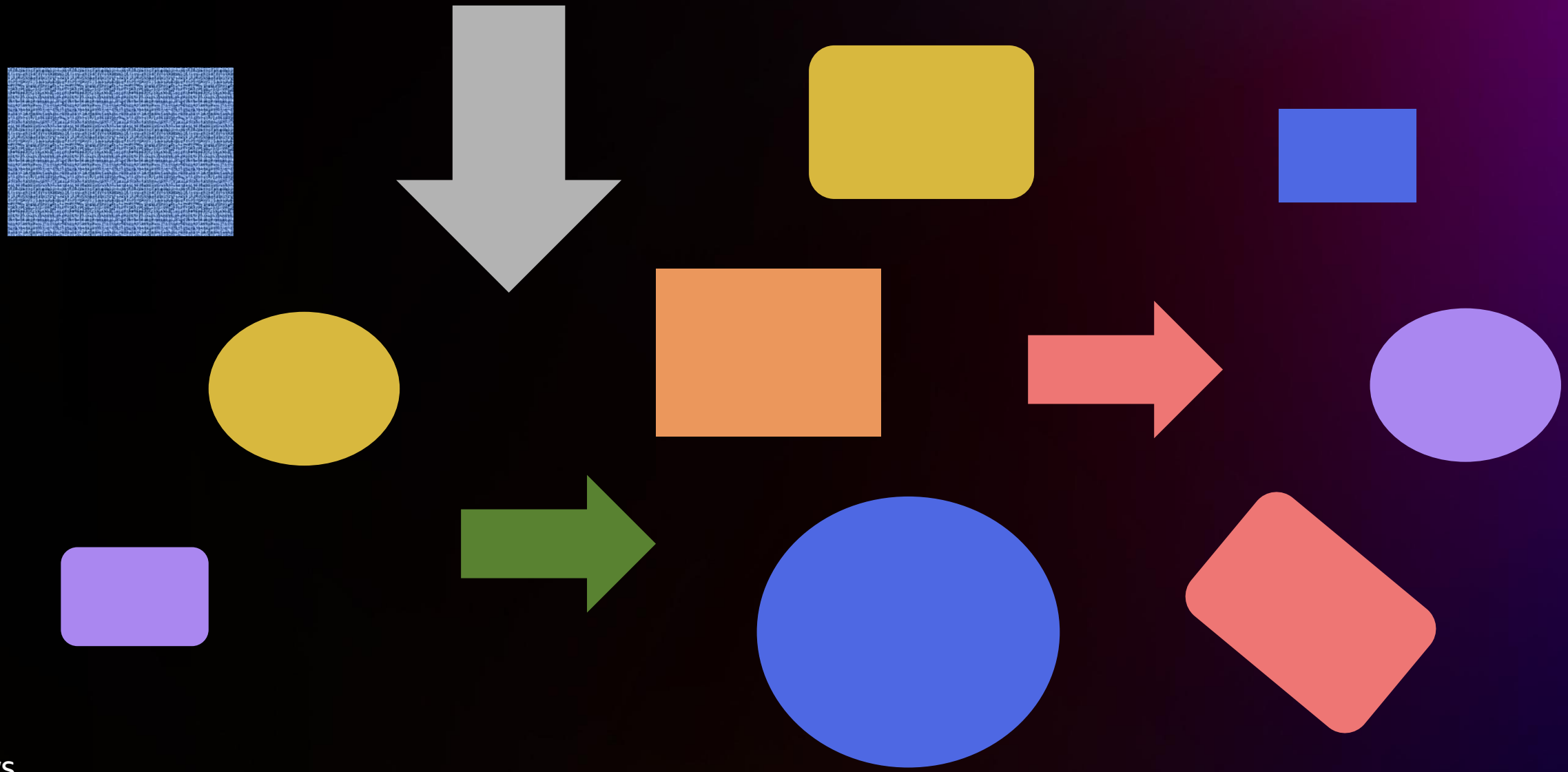
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The decomposition flywheel



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Exercise: How would you group these?



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Domain-Driven Design (DDD)

Domain

Subdomain

Bounded context

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Domain-Driven Design (DDD)

Entity

Value object

Aggregate

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Exercise: DDD



Core Domain

Supporting Domains

General Domains

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Modular architecture principles

Single responsibility

Common closure

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Step 2 - Strangle

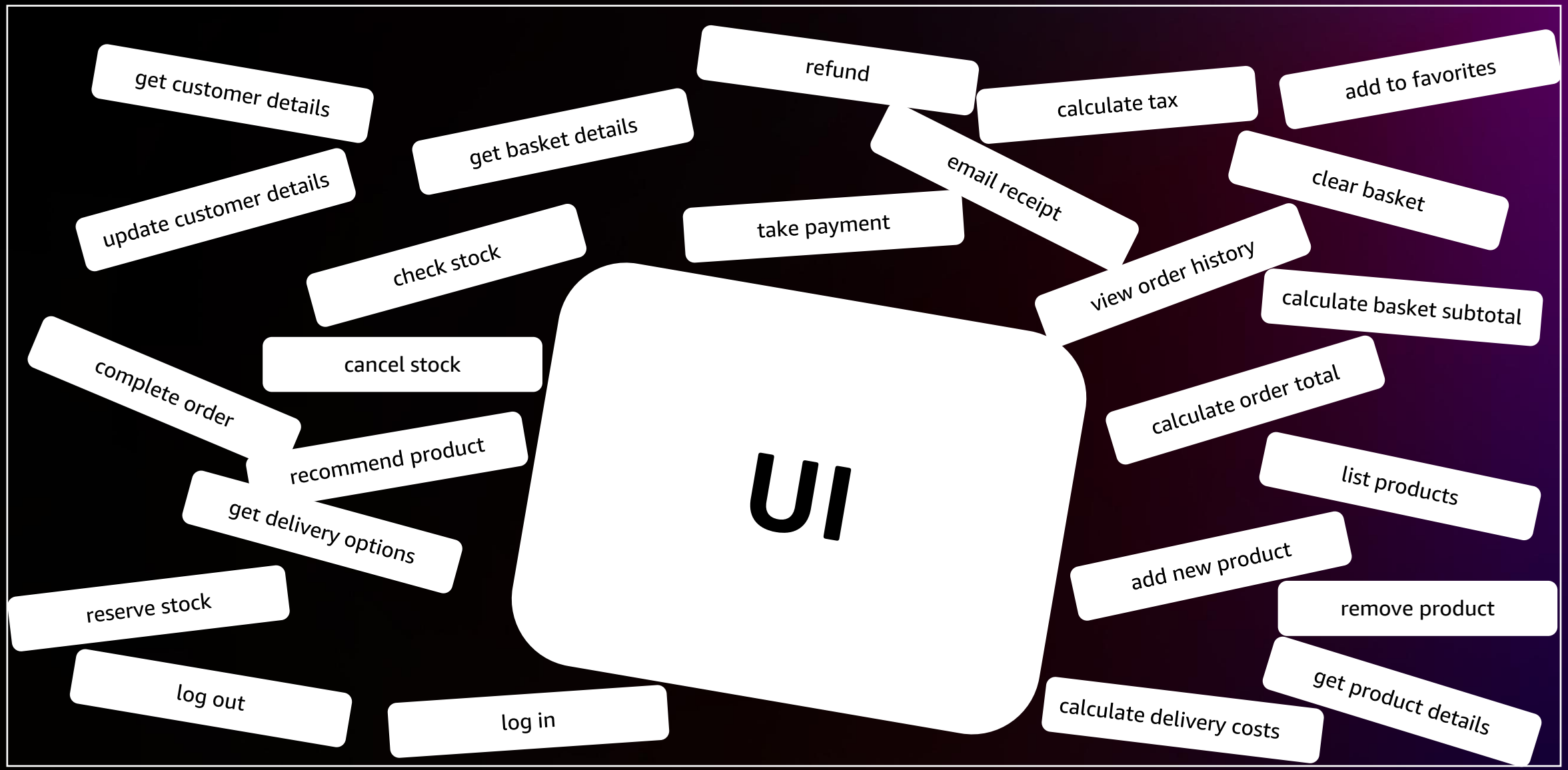
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Strangler Fig pattern

Releasable incremental refactoring

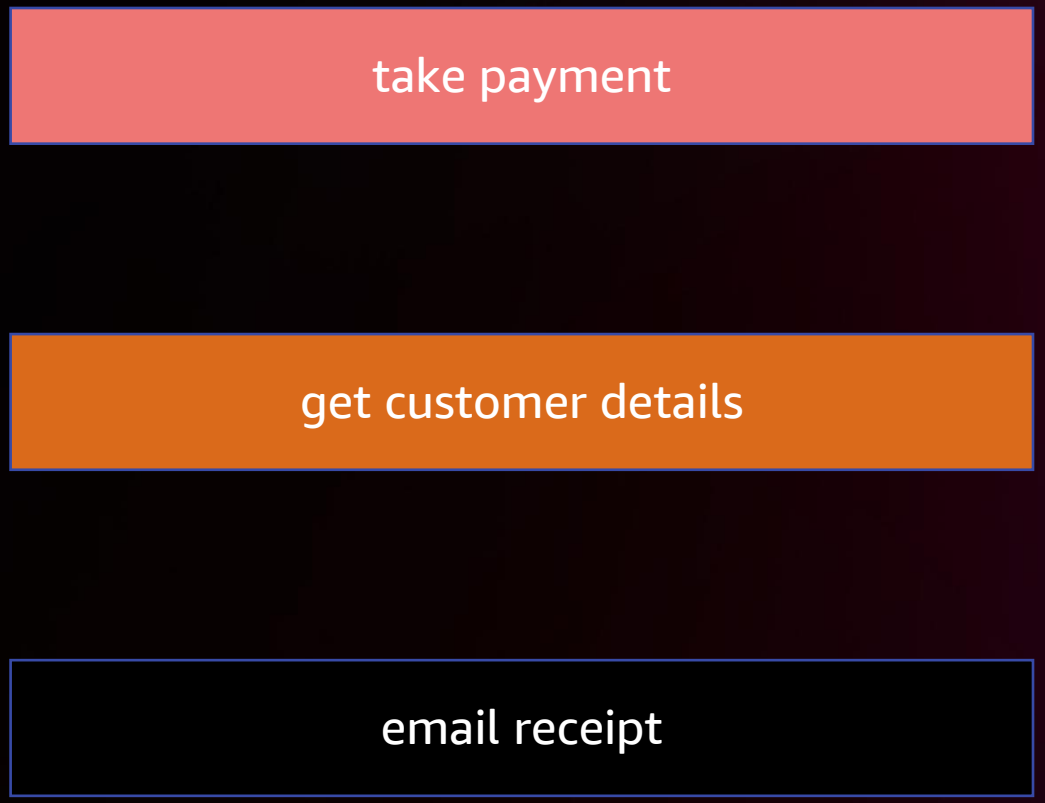
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Retro Games Shop



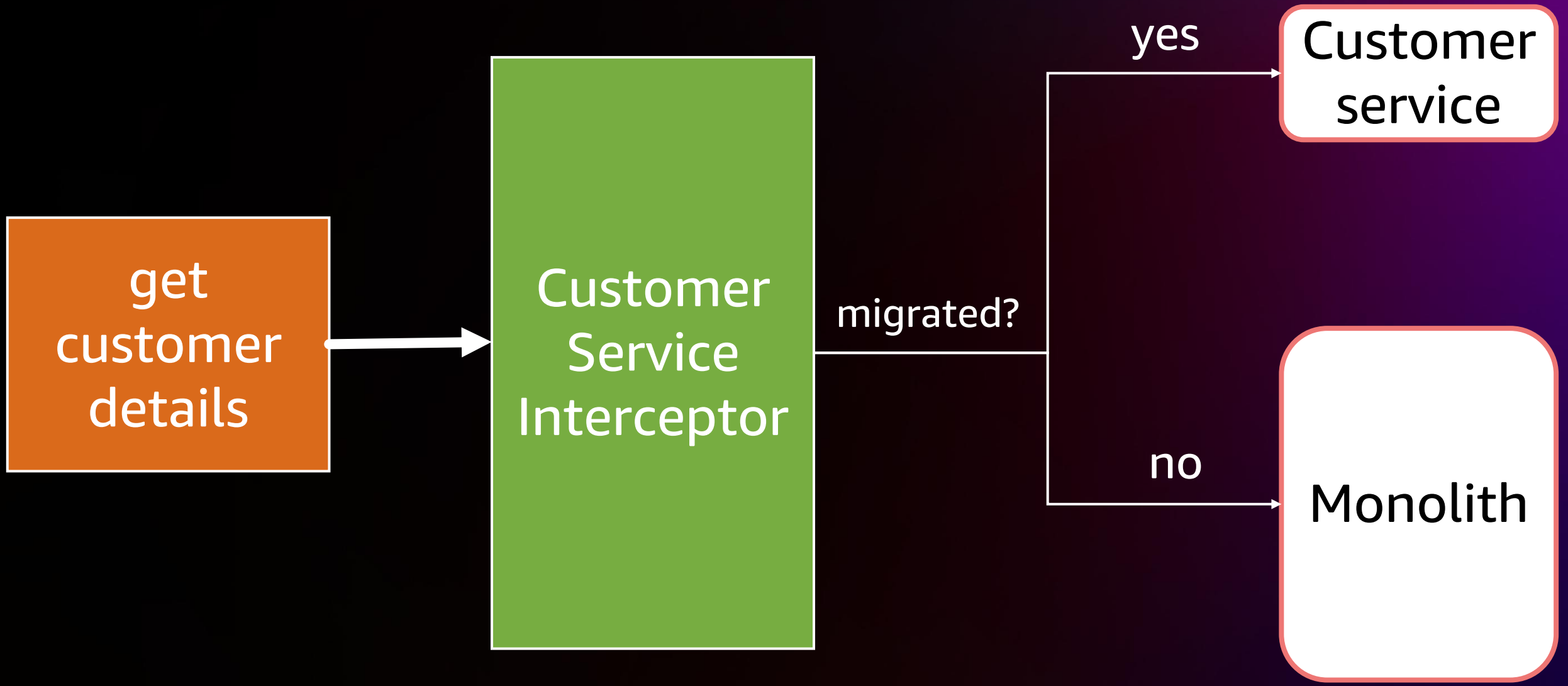
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Exercise: Prioritizing refactoring



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Rerouting logic with interceptors

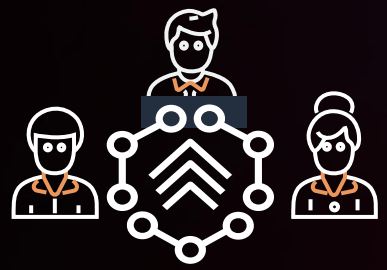


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Step 3 – Repeat!

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What is AWS Migration Hub Refactor Spaces?



AWS Migration Hub
Refactor Spaces



Reduce the time to set up and manage a refactor environment



Shield application consumers from infrastructure changes



Reroute traffic from old to new across multiple AWS accounts

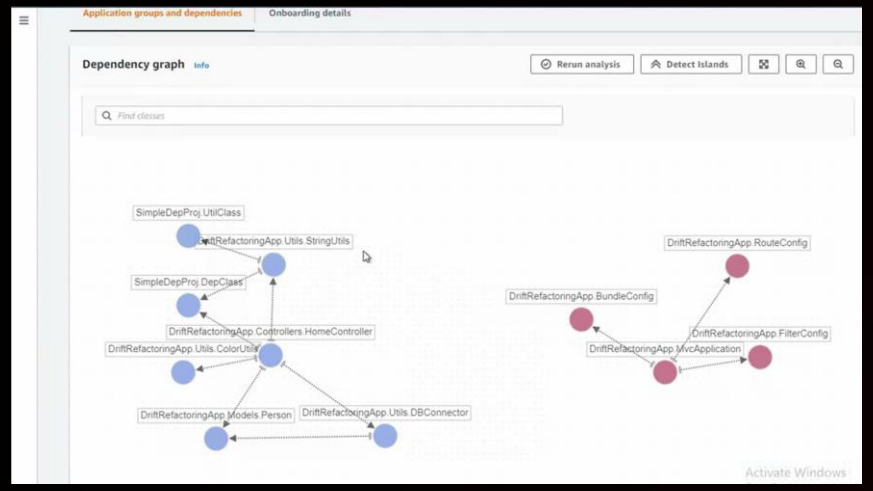
Start **refactoring** applications in **days** instead of months

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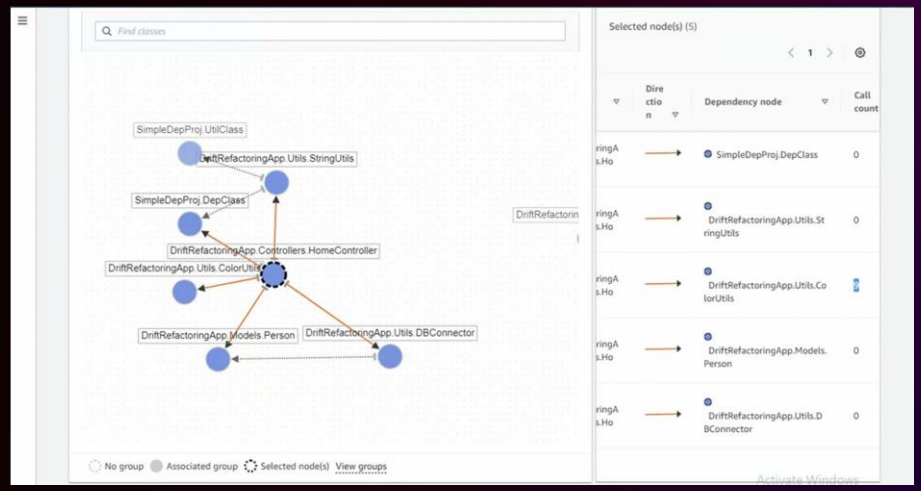
AWS Microservices Extractor Service for .Net

Assisted Strangler Pattern implementation for .Net applications

- Scans and creates holistic graph visualization of code base
- Generates static and runtime analysis
- Automates the implementation of interceptors
- Automates Isolated Deploy extracting identified components into separate code projects



Graph visualization



Viewing associated runtime call count

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Key takeaways

- Strangler Fig: Releasable incremental refactoring
- Use DDD… or not. Find what works for you
- Use interceptors to slowly strangle a monolith. Ideally, intercept on network paths so there’s minimum change to the monolith
- If code is deeply rooted on the monolith use Branch By Abstraction pattern with Feature Flags or refactor local call into API calls so you can intercept on network paths
- Use AWS Migration Hub Refactor Spaces to accelerate the implementation of a a multi-account strangler façade using Amazon API Gateway

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Thank you!

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