

28 DE AGOSTO DE 2024 - MEETUP DE ENGENHARIA DE SOFTWARE



CONSTRUINDO O FRONT UMA PEÇA POR VEZ

MICRO FRONTENDS



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Webcrumbs.org

QUEM JÁ TRABALHOU OU TRABALHA COM

MICRO

~~= Pacotes npm~~

~~= Monolito modular~~

~~= Diferentes apps para o cliente~~

FRONTENDS?

NOV
2016

/thoughtworks

- ~~Pacotes npm~~

- ~~Monolito modular~~

- ~~Diferentes apps para o cliente~~

Assess ?

We've seen significant benefit from introducing microservice architectures, which have allowed teams to scale delivery of independently deployed and maintained services. However, teams have often struggled to avoid the creation of front-end monoliths—large and sprawling browser applications that are as difficult to maintain and evolve as the monolithic server-side applications we've abandoned.

We're seeing an approach emerge that our teams call **micro frontends**. In this approach, a web application is broken up by its pages and features, with each feature being owned end-to-end by a single team. Multiple techniques exist to bring the application features—some old and some new—together as a cohesive user experience, but the goal remains to allow each feature to be developed, tested and deployed independently from others. The BFF - backend for frontends approach works well here, with each team developing a BFF to support its set of application features.

- Web components
- Single SPA
- Module Federation

<https://www.thoughtworks.com/radar/techniques/micro-frontends>

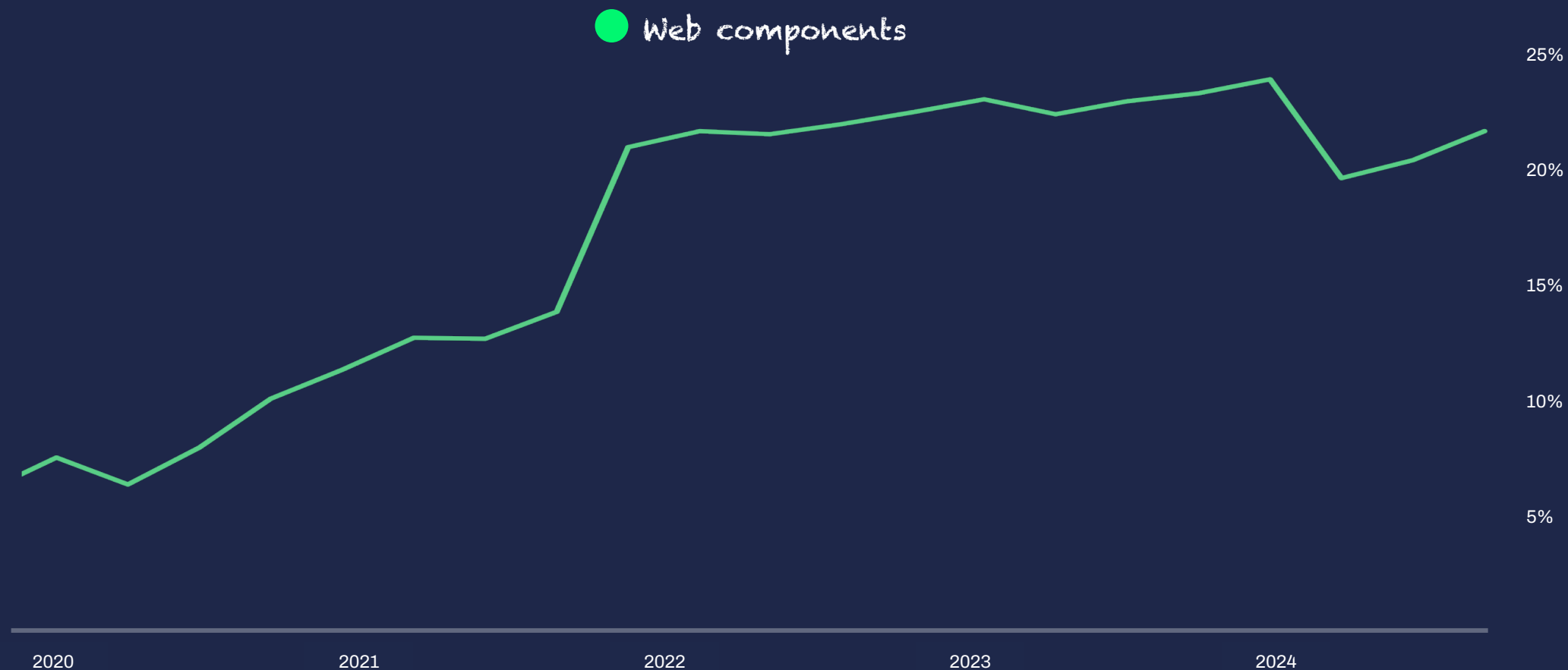


2024

- Web components
- Single SPA
- Module Federation

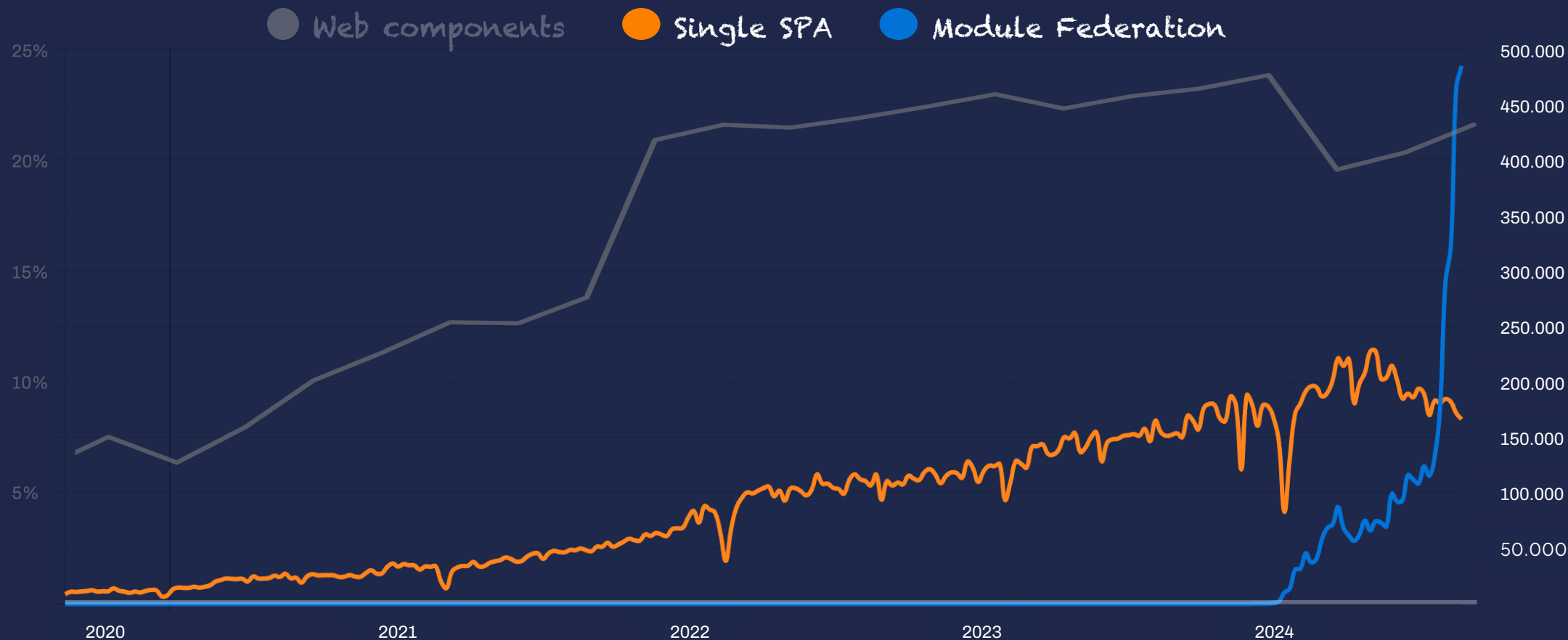
CRESCIMENTO DAS PÁGINAS CARREGADAS QUE USAM **WEB COMPONENTS**

chromestatus.com/metrics



CRESCIMENTO DO DOWNLOAD DE BIBLIOTECAS DE MICRO FRONTENDS

npmtrends.com





Isso eu resolvo
em poucos dias.



Code



Review



Merge



Build



Deploy



Release





Code



Review



Merge



Build



Deploy

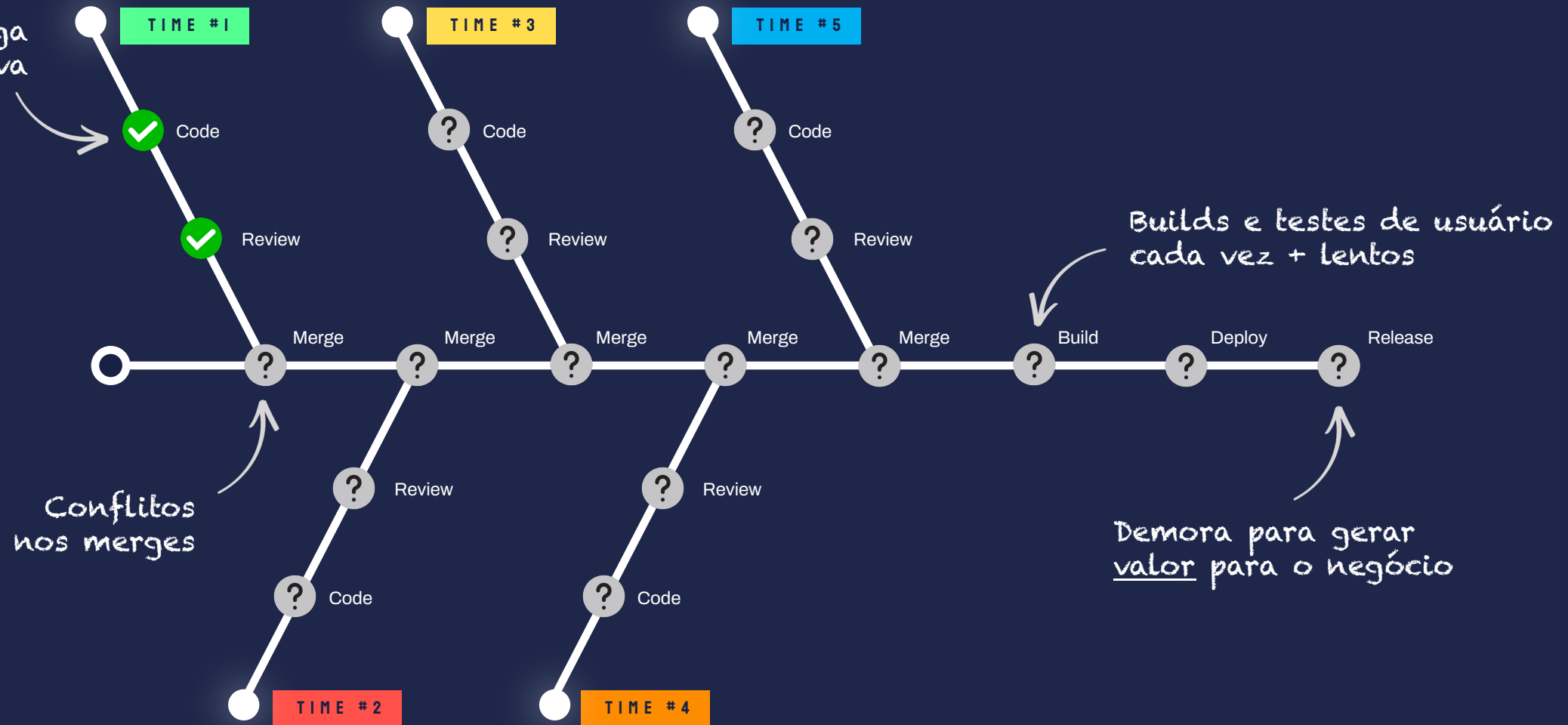


Release

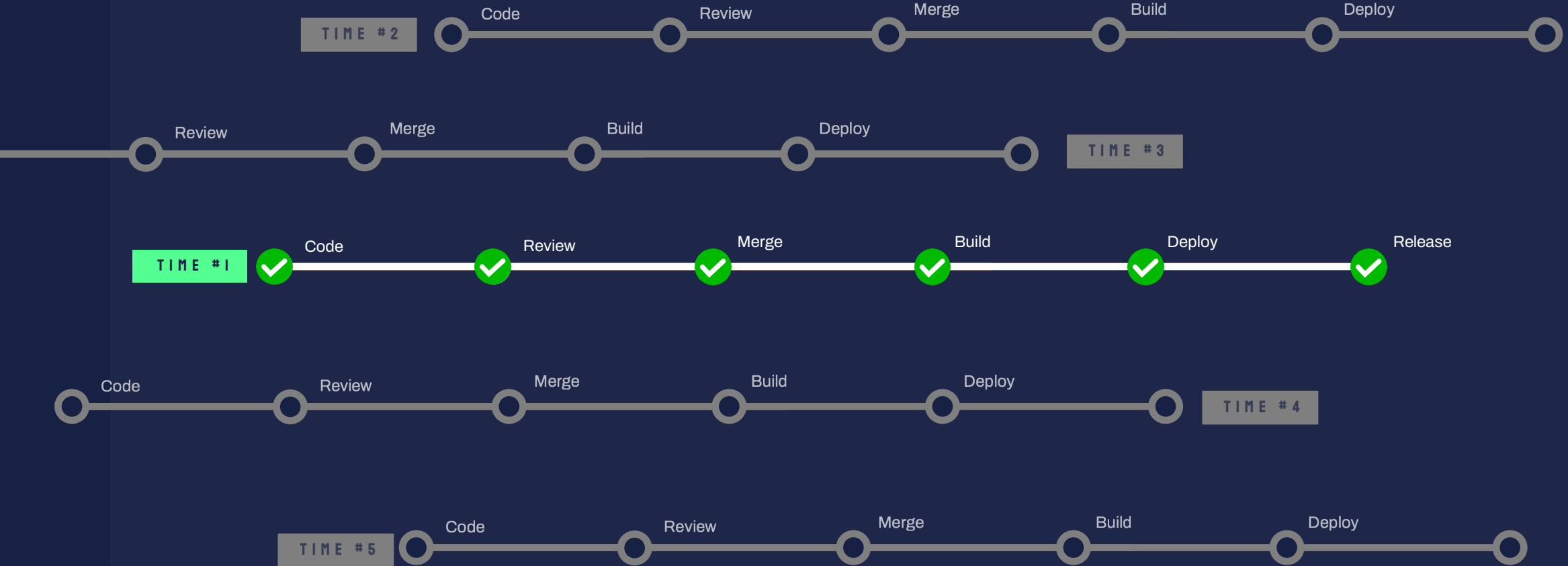


Alinhamento antes da
adoção de bibliotecas

Sobrecarga
cognitiva



DEPLOY INDEPENDENTE PARA OS TIMES



EXPERIÊNCIA ÚNICA PARA O USUÁRIO

Deploy

TIME #2

TIME #3

Deploy

TIME #1

Deploy

TIME #4

TIME #5

<https://the-tractor.store>



MACHINES

STORES



checkout

Scandinavia Sower

explore

Authentic Swedish engineering for optimal cold-climate performance

Sturdy build and mechanics for lifelong reliability

Iconic design reflecting the simplicity and efficiency of Scandinavian style



Baltic Blue

Nordic Gold

3100 Ø

out of stock

ADD TO BASKET

checkout

Recommendations



show team boundaries

AGNÓSTICO QUANTO A DEPENDÊNCIAS



<https://the-tractor.store>

The screenshot shows the 'MicroFrontends Tractor Store' website. The header includes the logo and navigation links for 'MACHINES' and 'STORES'. The main content area features a product listing for 'Scandinavia Sow' with a description, a large image of a blue tractor, and color options: 'Baltic Blue' and 'Nordic Gold'. The price is listed as '3100 Ø' and there is an 'ADD TO BASKET' button. A 'Recommendations' section at the bottom displays three smaller tractor images. A 'show team boundaries' toggle is visible in the bottom right corner.

MicroFrontends
Tractor Store

MACHINES STORES

Scandinavia Sow

Authentic Swedish engineering for optimal performance

Sturdy build and mechanics for lifelong reliability

Iconic design reflecting the simplicity and elegance of the style

Baltic Blue Nordic Gold

3100 Ø

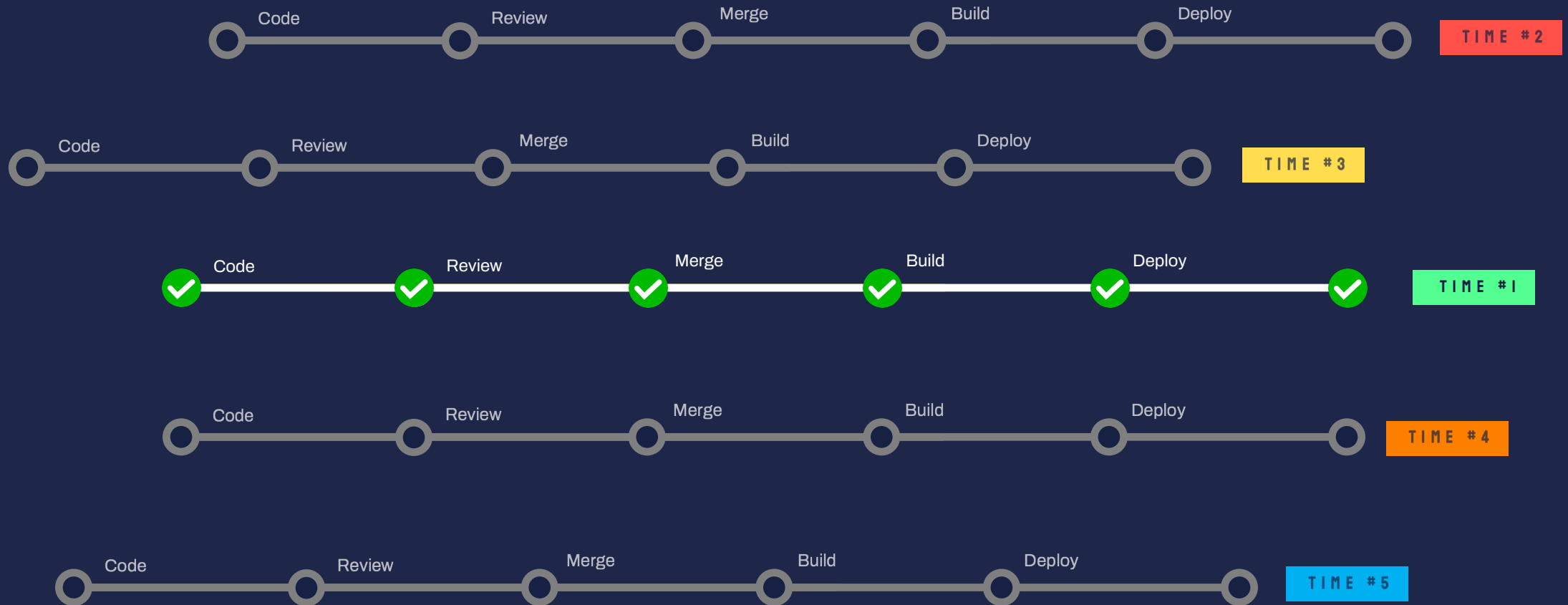
ADD TO BASKET

Recommendations

show team boundaries

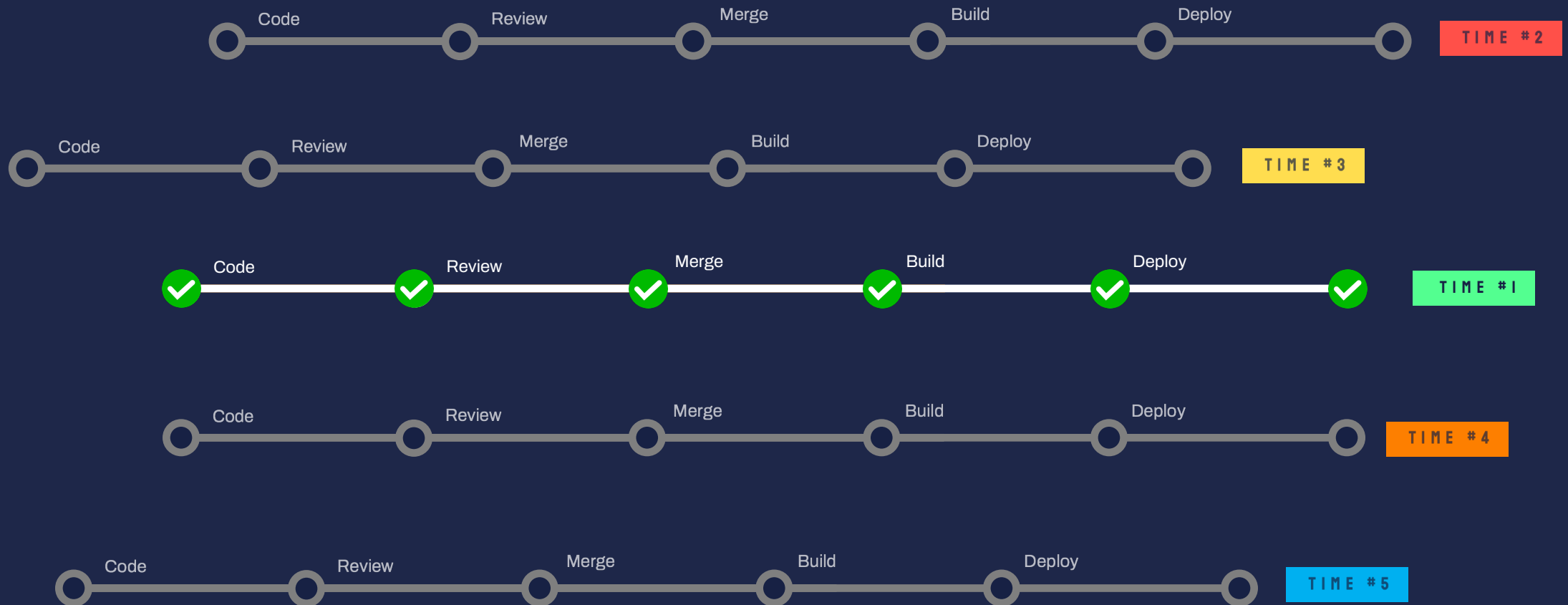
ESTRUTURAS DOS TIMES → ARQUITETURA DOS SISTEMAS

Lei de Conway

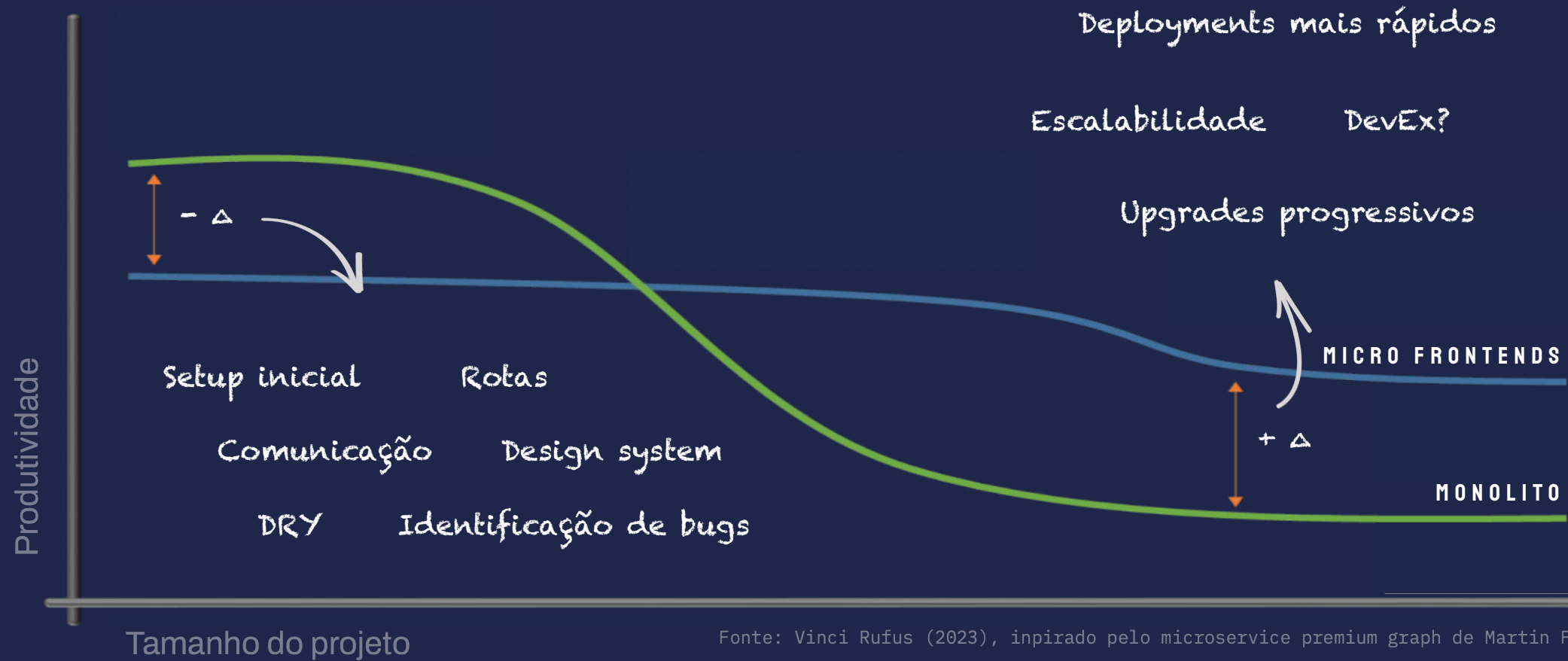


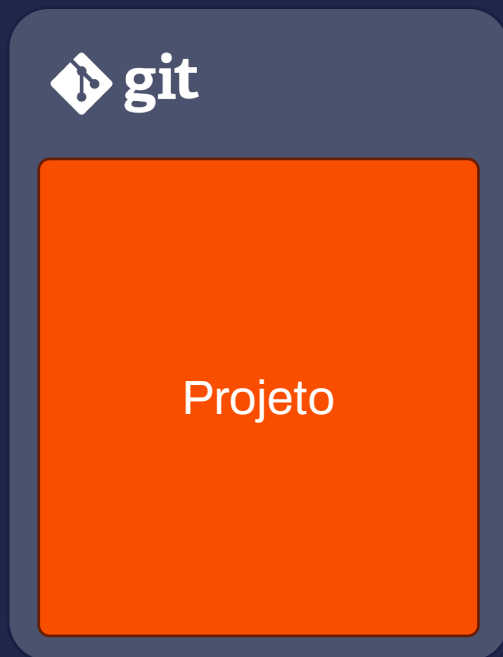
ESTRUTURAS DOS TIMES ← ARQUITETURA DOS SISTEMAS

Manobra de Conway



FAZ SENTIDO MICRO FRONTENDS PARA O MEU PROJETO?





Monolito



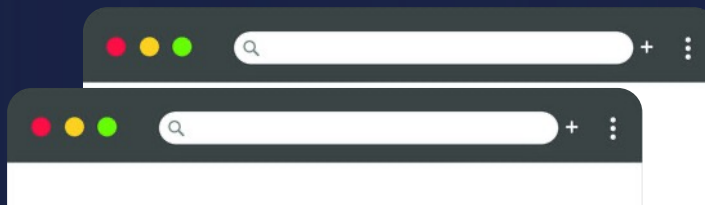
Polyrepo



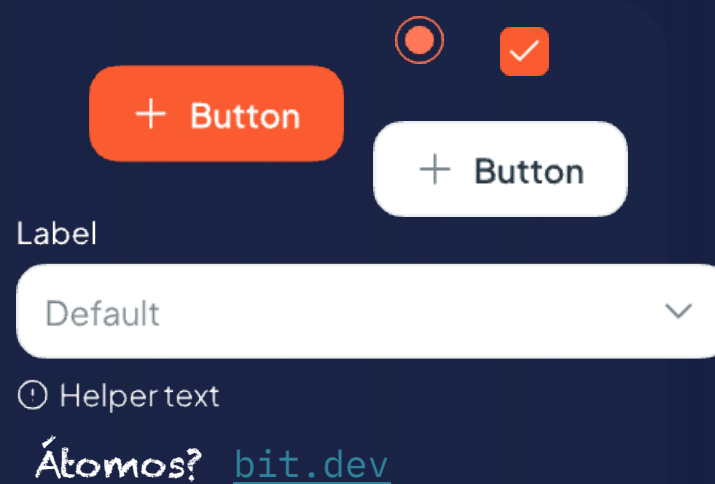
Monorepo

QUANTOS
REPOSITÓRIOS?

QUAL O TAMANHO DO MICRO?



Vertical / Multi-SPA?



Recommendations

Horizontal / Micro-Apps? the-tractor.store



Falcon Crest Work Rustic
Rose



Countryside Commander
Barn Red



Rapid Racer Raceway Red



Caribbean Cruiser Ruby
Fields

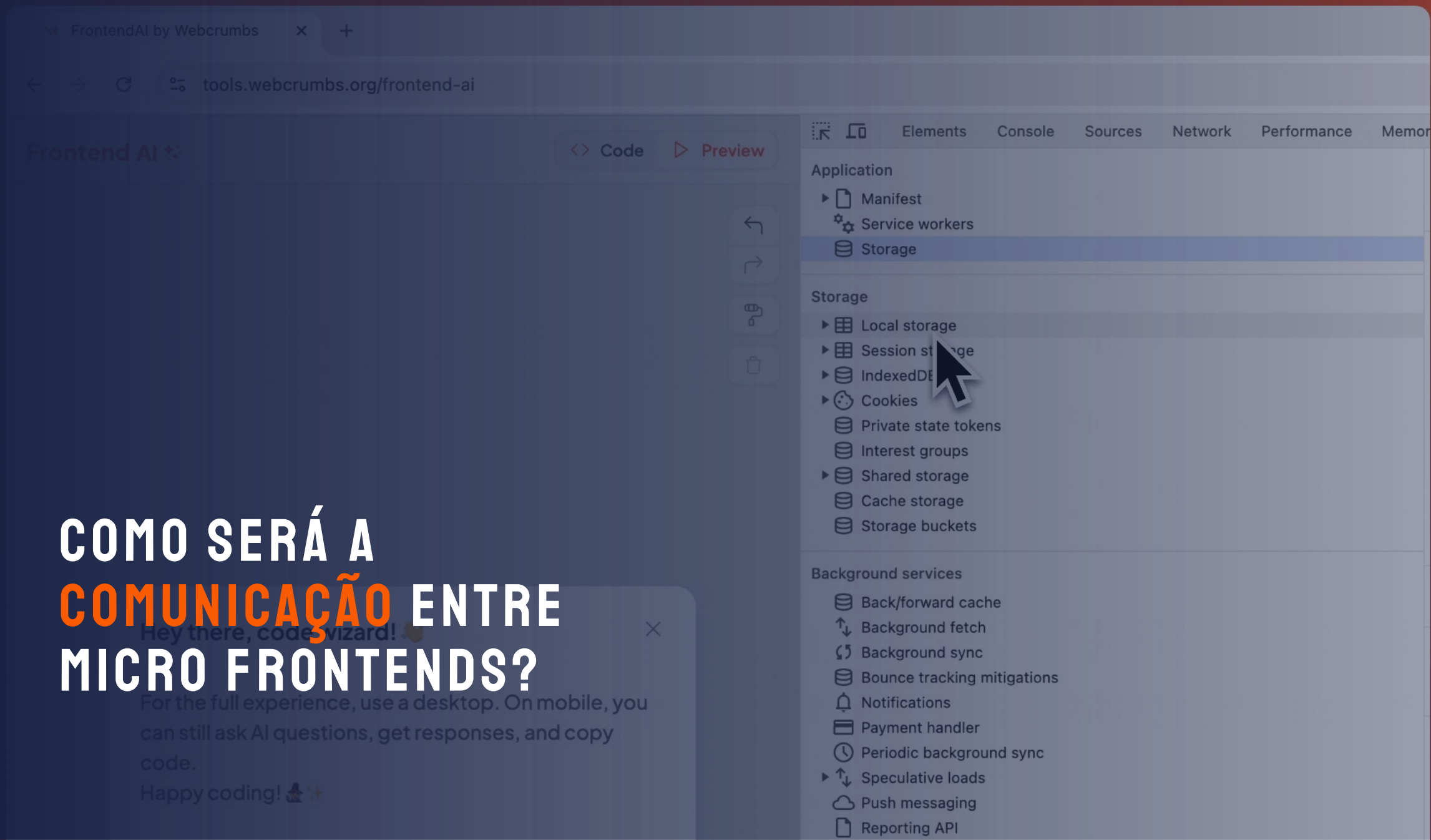
explore

COMO SERÁ A COMUNICAÇÃO ENTRE MICRO FRONTENDS?

Hey there, code wizard! 🧙‍♂️

For the full experience, use a desktop. On mobile, you can still ask AI questions, get responses, and copy code.

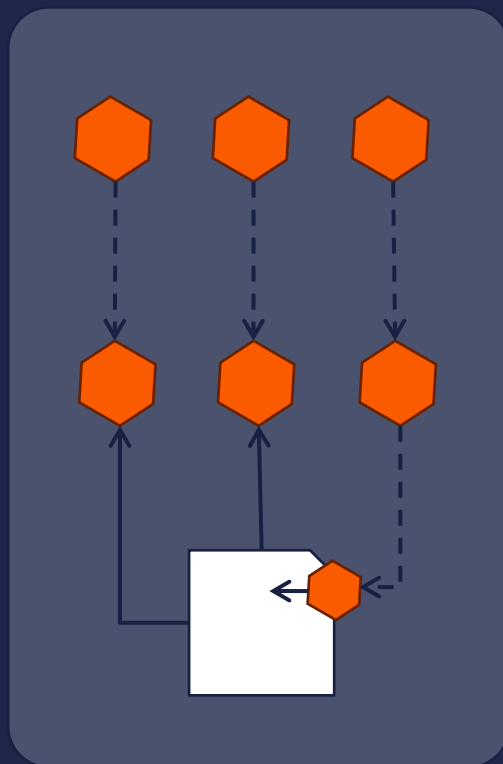
Happy coding! 🛠️ ✨



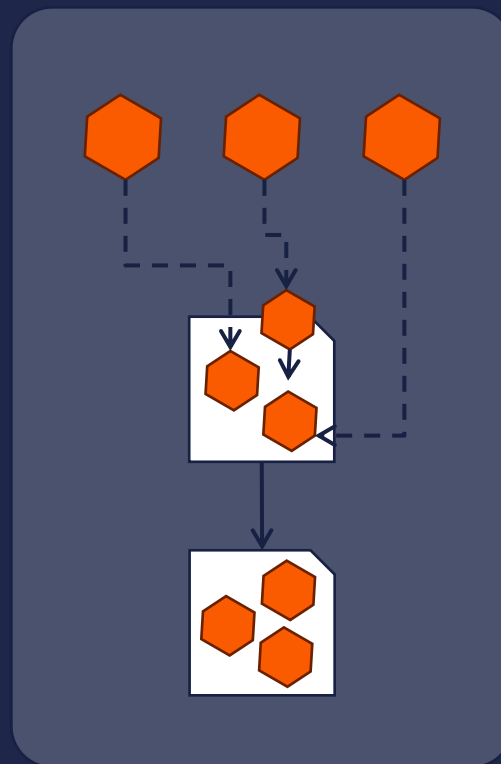
SERVIDOR

CDN

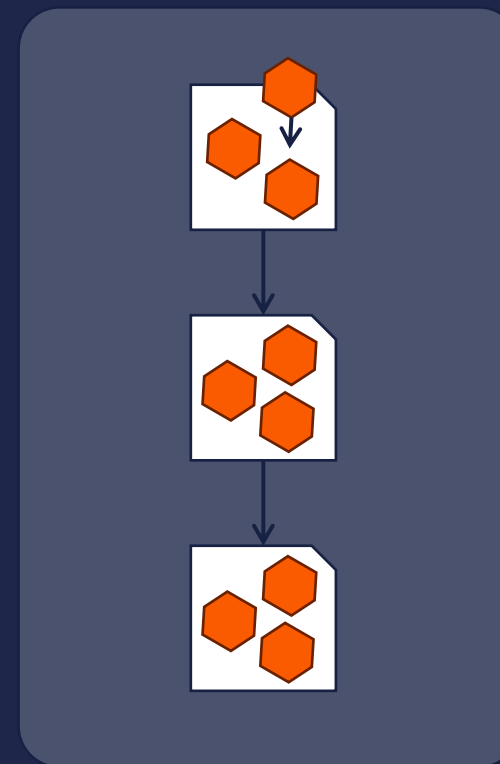
CLIENTE



Cliente



Edge



Servidor

ONDE COMPOR?

Luca Mezzalira (2021)

COMO COMPOR?

WEB COMPONENTS

Tecnologia padronizada em 2016 que permite criar tags html de components customizados, com HTML, CSS e JavaScript. Podem ser construídos com diferentes frameworks e combinados em uma mesma página.

IFRAMES

Permitem incorporar uma página a outra e isolar as aplicações, mantendo a comunicação por mensagens.

DIRETIVAS ESI

Compõe a página no CDN por meio de `<esi:include src="..." />`

MODULE FEDERATION

Plugin introduzido com o Webpack 5.0, permite que um app seja acessado e acesse outros, no *build* ou *runtime*, por meio de um ponto de entrada para o bundle dos micro frontends.

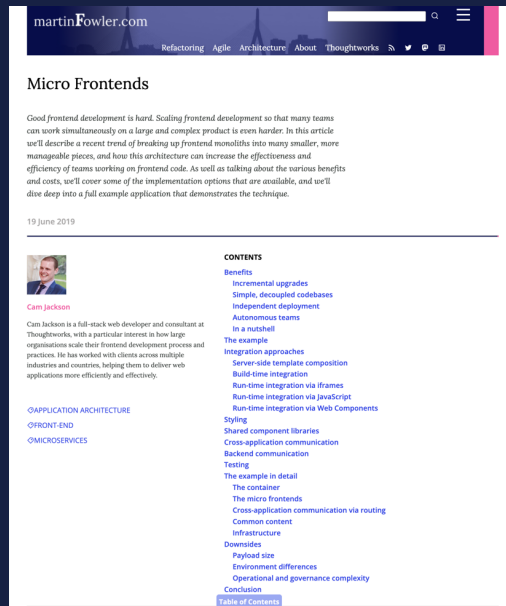
SINGLE SPA

Gerencia o carregamento, descarregamento e a comunicação entre diferentes micro frontends, permitindo que coexistam em uma mesma página e compartilhem estados, quando necessário.

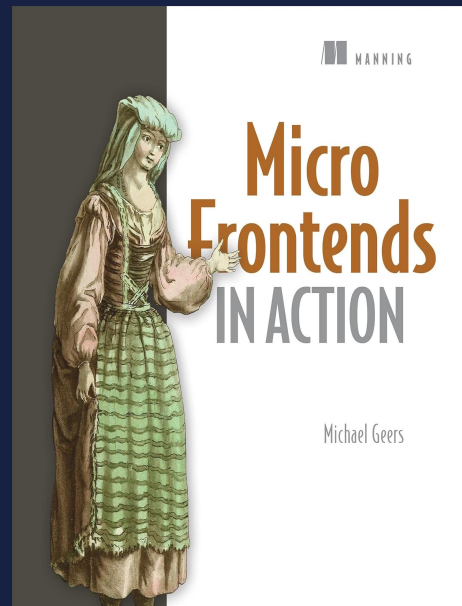
NEXT FEDERATION

Module Federation para Next.js, permite compor micro frontends no lado do servidor.

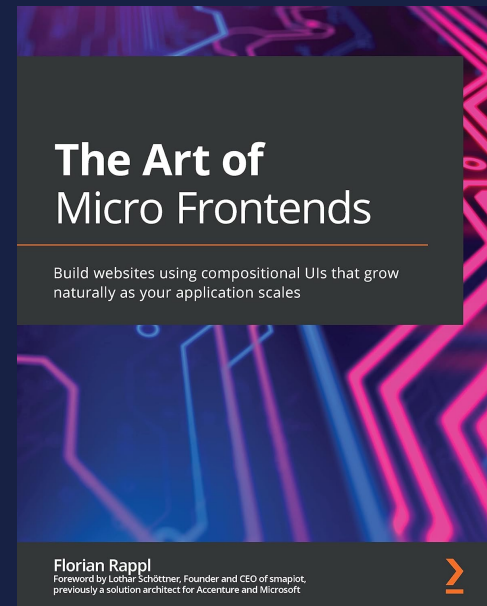
COMO COMEÇAR?



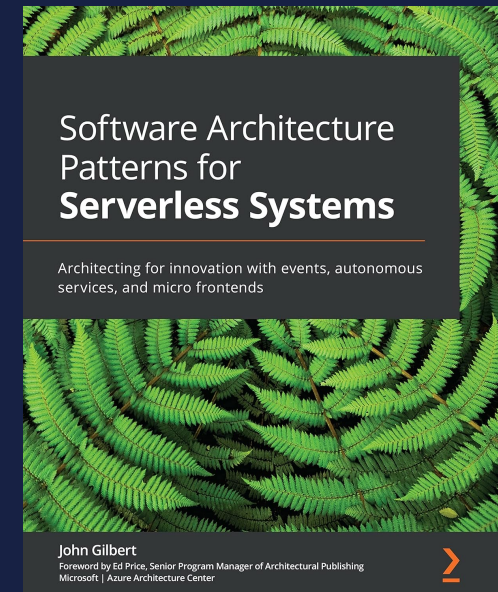
MARTIN FOWLER
Junho 2019



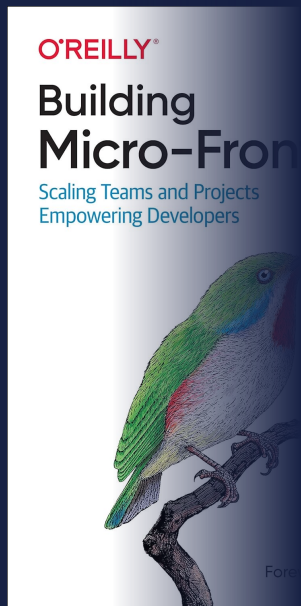
MICHAEL GEERS
Junho 2021



FLORIAN RAPPL
Junho 2021

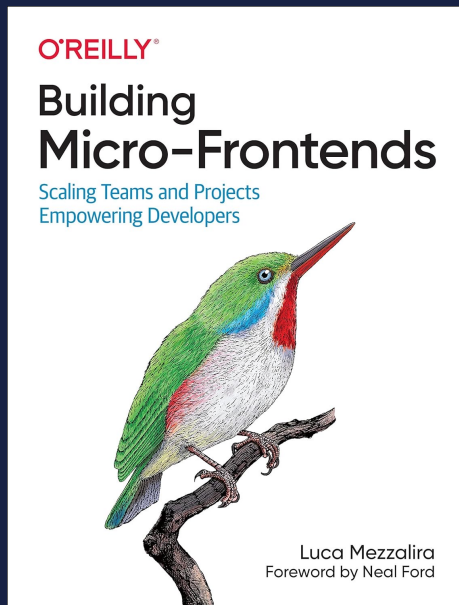


JOHN GILBERT
Julho 2021



LUCA MEZZALANA
Dezembro 2021

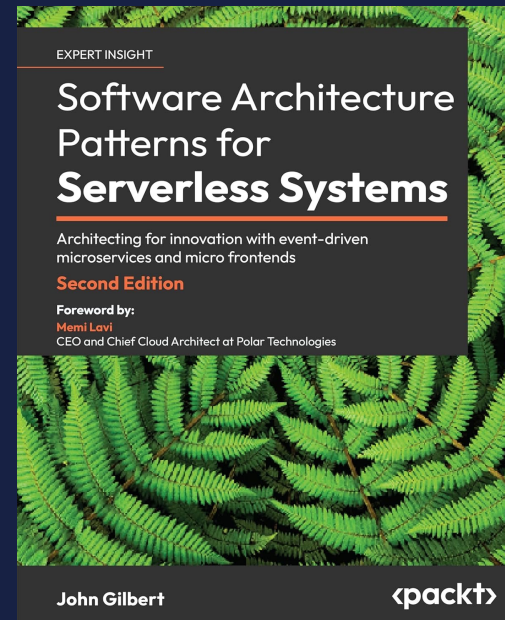
COMO COMEÇAR?



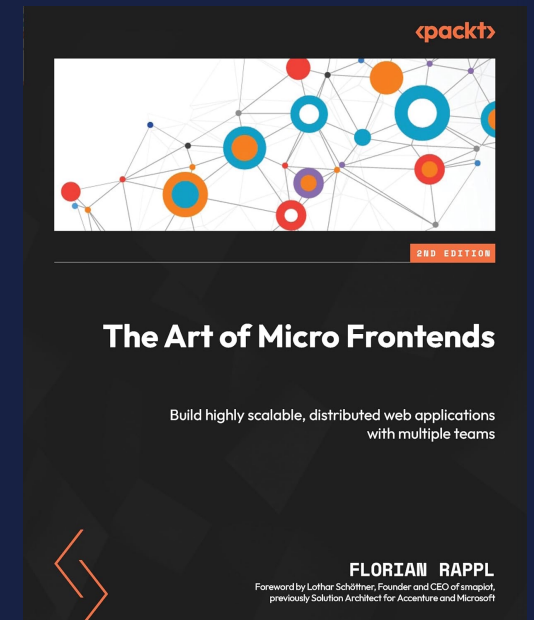
LUCA MEZZALIRA
Dezembro 2021



VINCI RUFUS
Outubro 2023



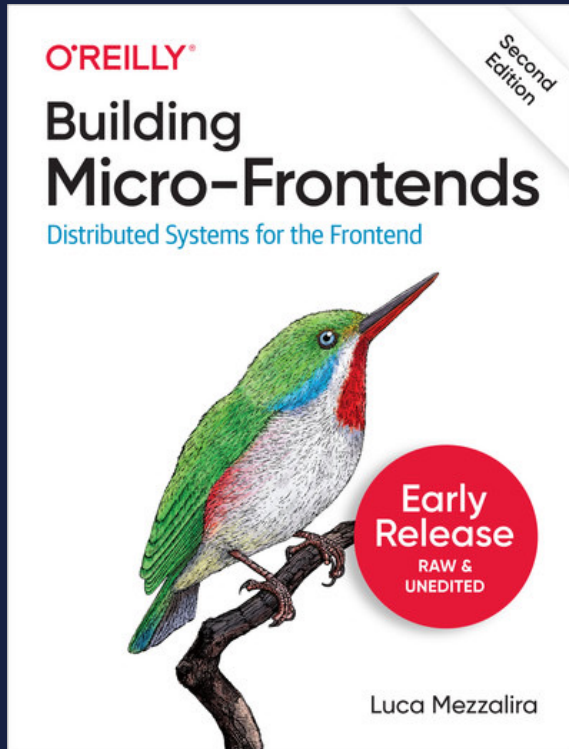
JOHN GILBERT
Fevereiro 2024



FLORIAN RAPPL
Setembro 2024

CONTEÚDOS GRATUITOS

O'Reilly Portal



buildingmicrofrontends.com

COMO COMEÇAR?



COMO COMEÇAR?



PROJETO PILOTO



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MICRO FRONTENDS



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Bora conversar?