# STATE OF MICRO FRONTEND

## a brief adventure

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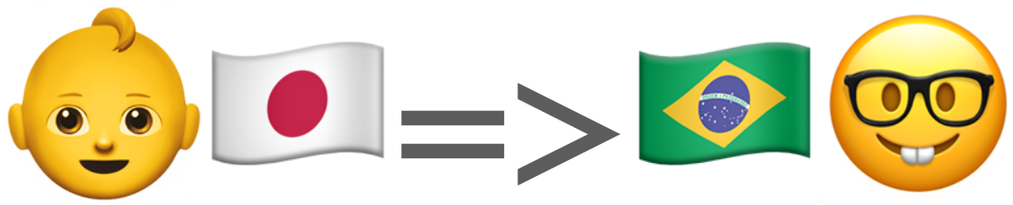
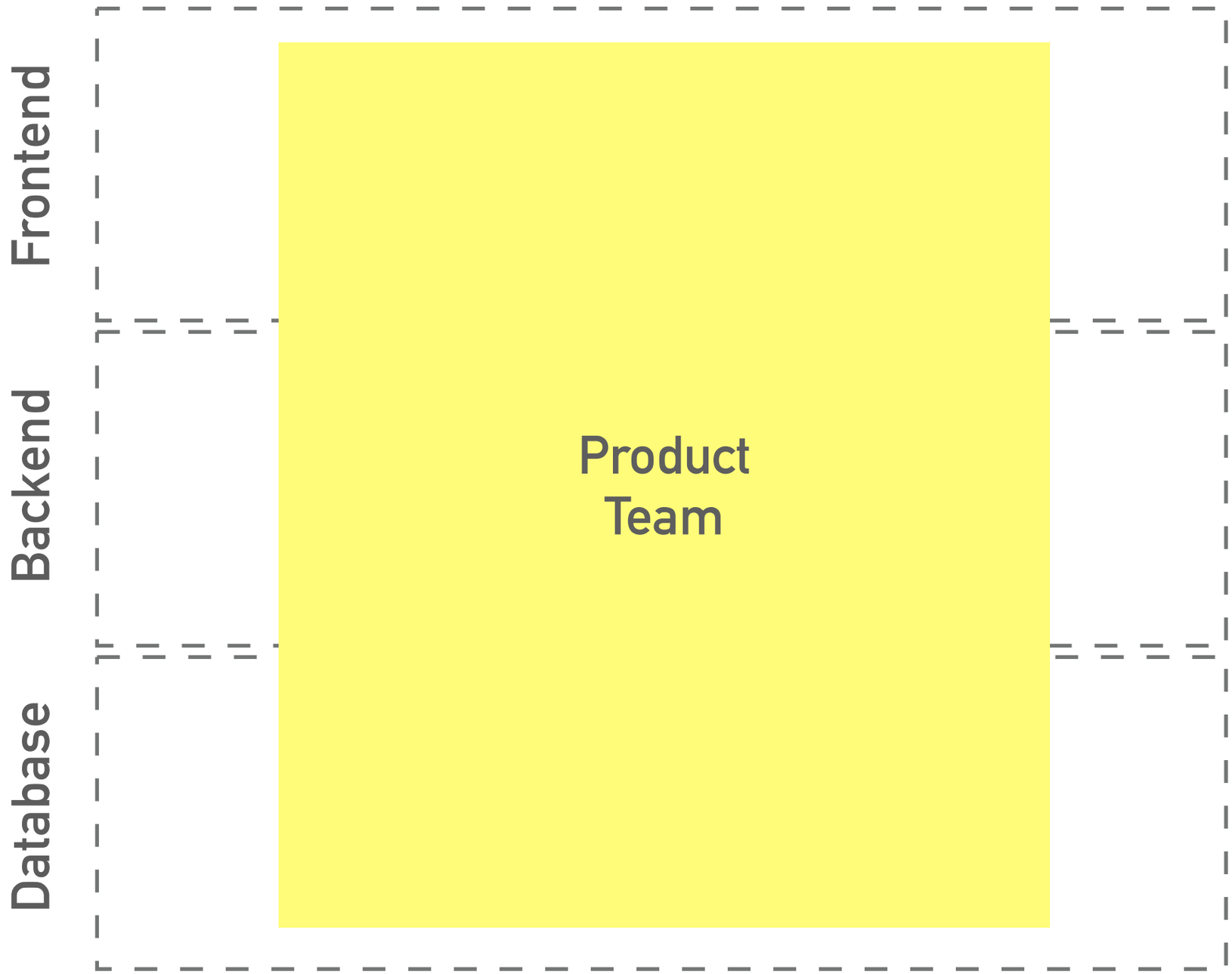



viridis

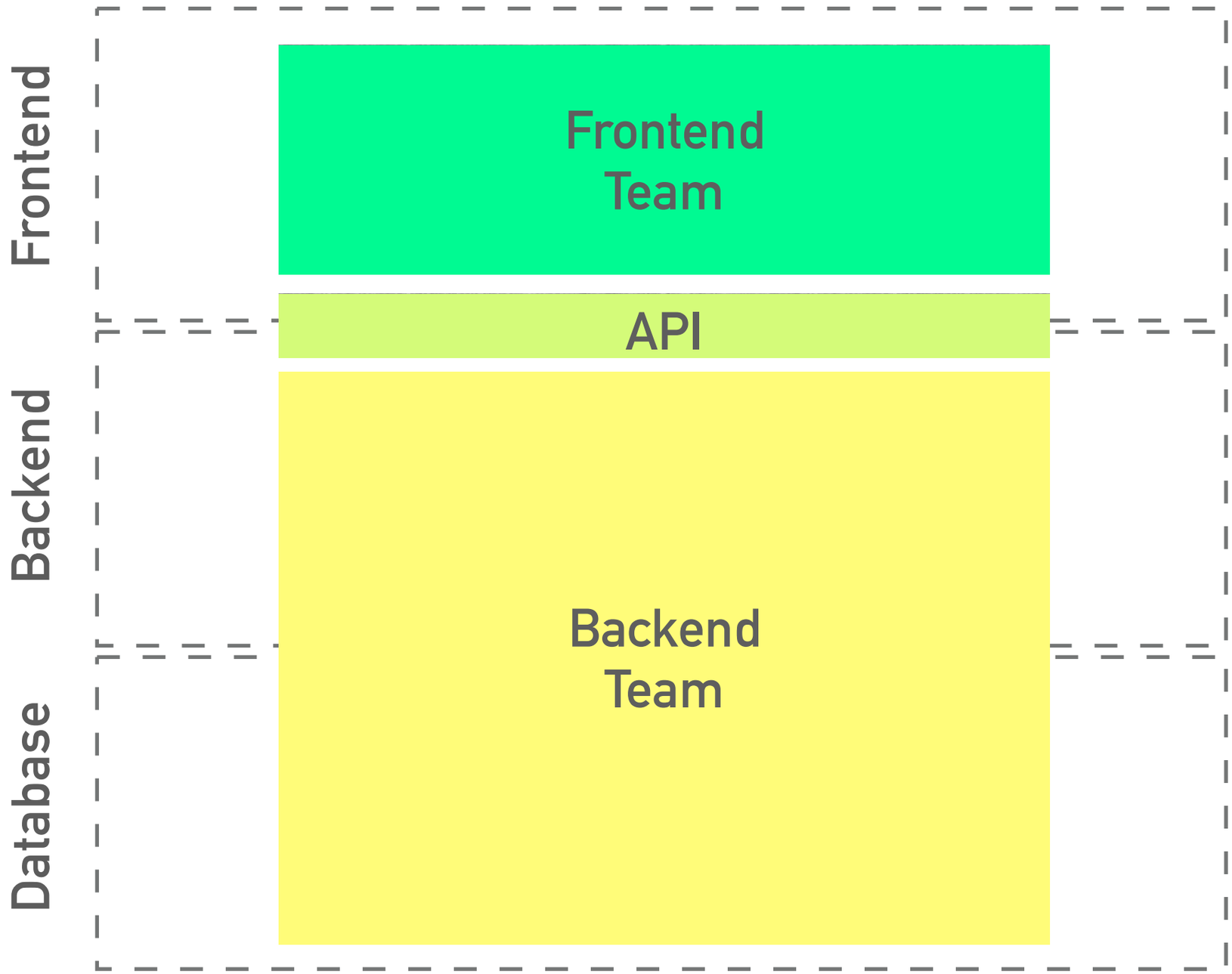
# OVERVIEW

*Web Development*

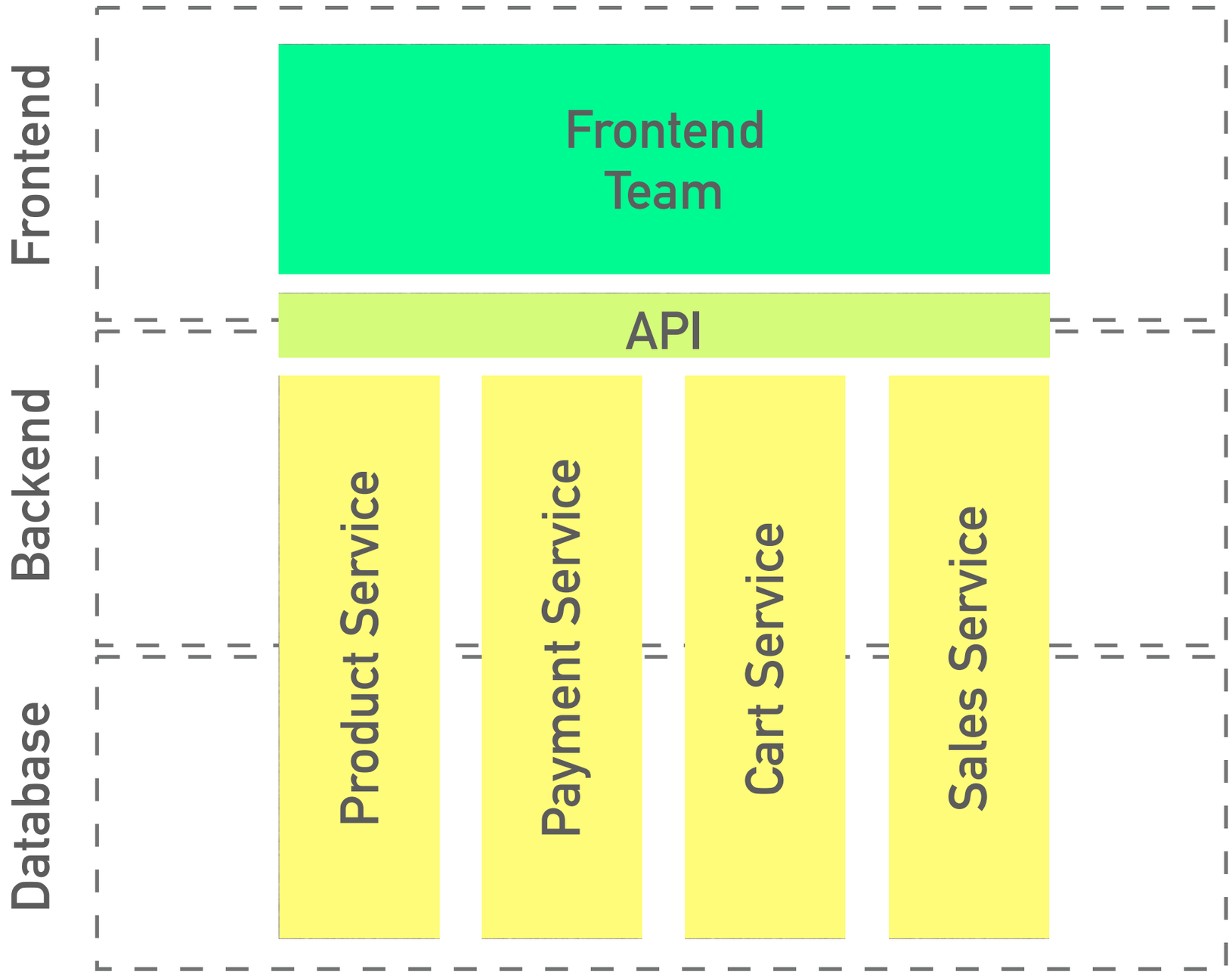
# MONOLITH



# FRONTEND & BACKEND



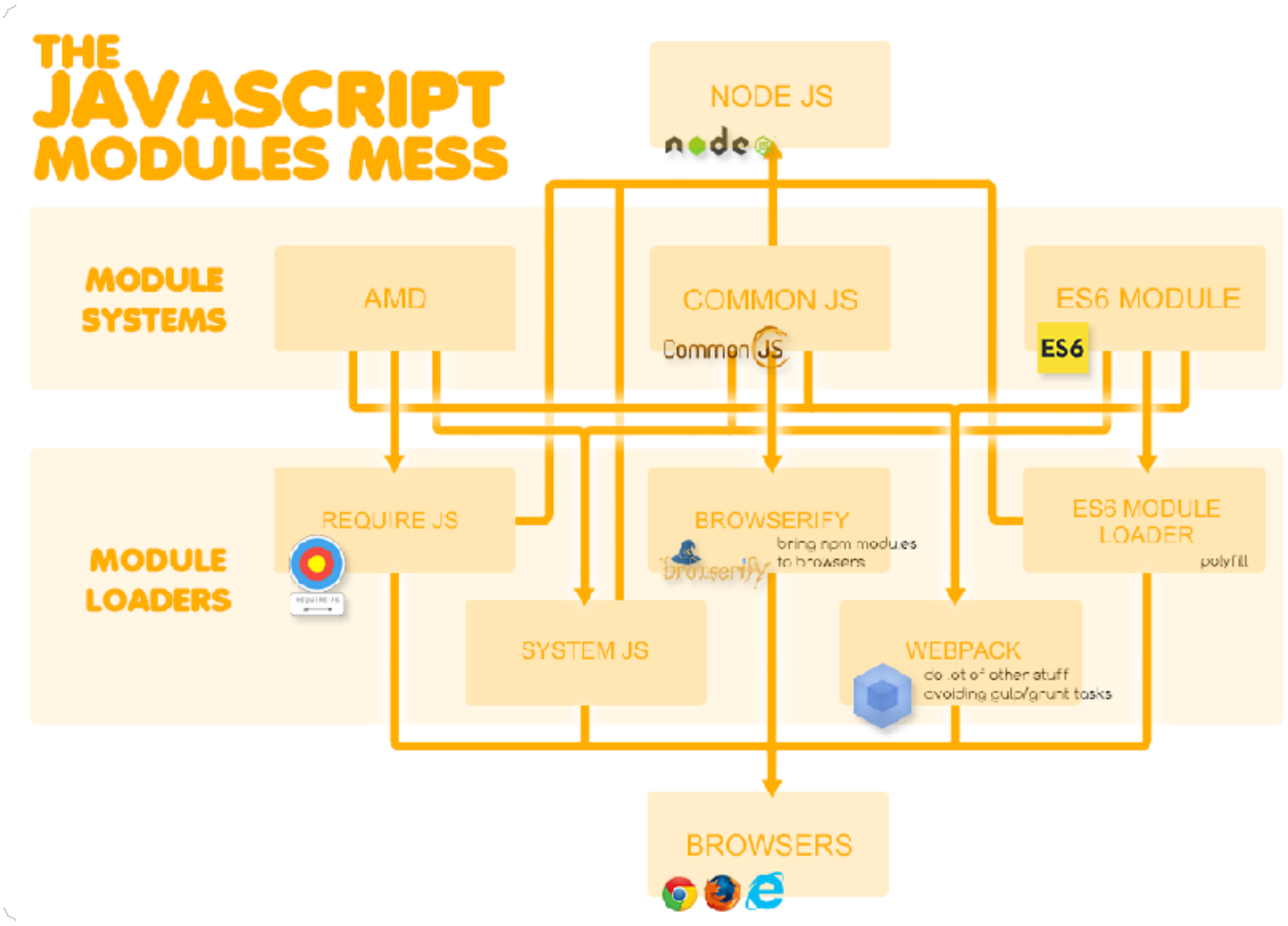
# MICROSERVICE



# FRONT-END

*one more overview…*

# JS MODULES


THE JAVASCRIPT MODULES MESS
NODE JS
MODULE SYSTEMS
AMD
COMMON JS
ES6 MODULE
ES6
MODULE LOADERS
REQUIRE JS
BROWSERIFY
bring npm modules to browsers
ES6 MODULE LOADER
polyfill
SYSTEM JS
WEBPACK
do .ot o' other stuff
avoiding gulp/grunt tasks
BROWSERS

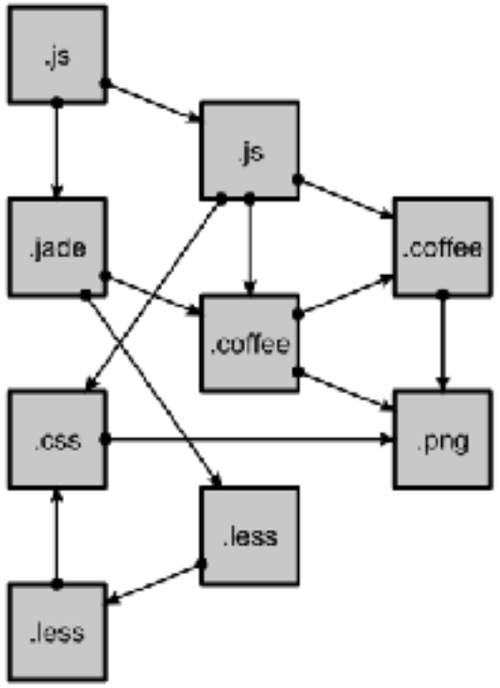
# BUNDLERS

webpack

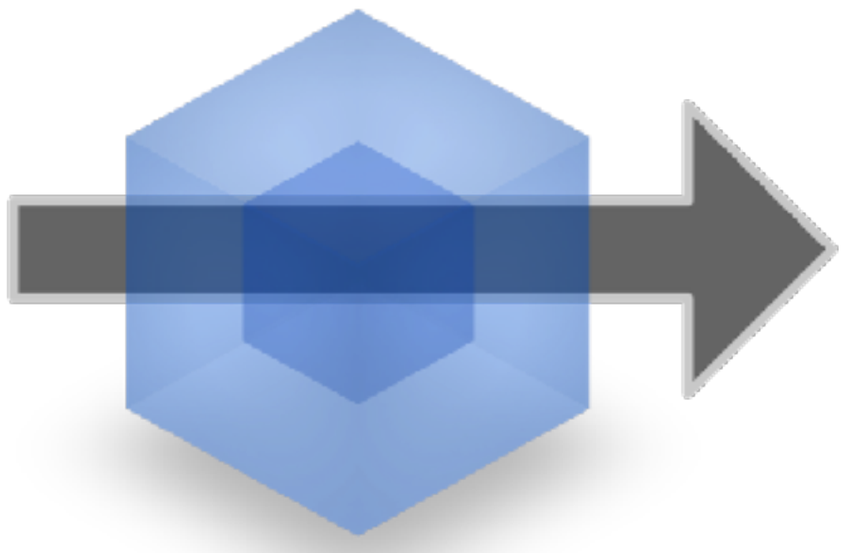
PARCEL

Blazing fast, zero configuration web application bundler

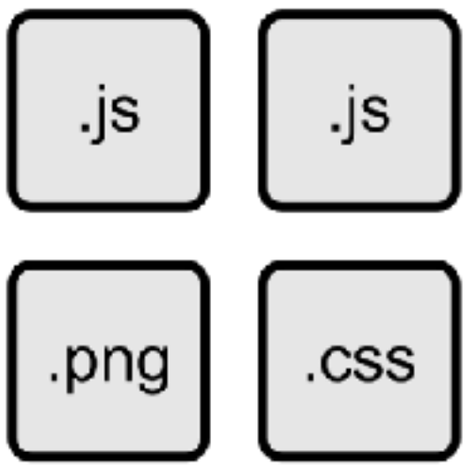
rollup.js




modules
with dependencies



webpack
MODULE BUNDLER




static
assets

# COMPONENTS





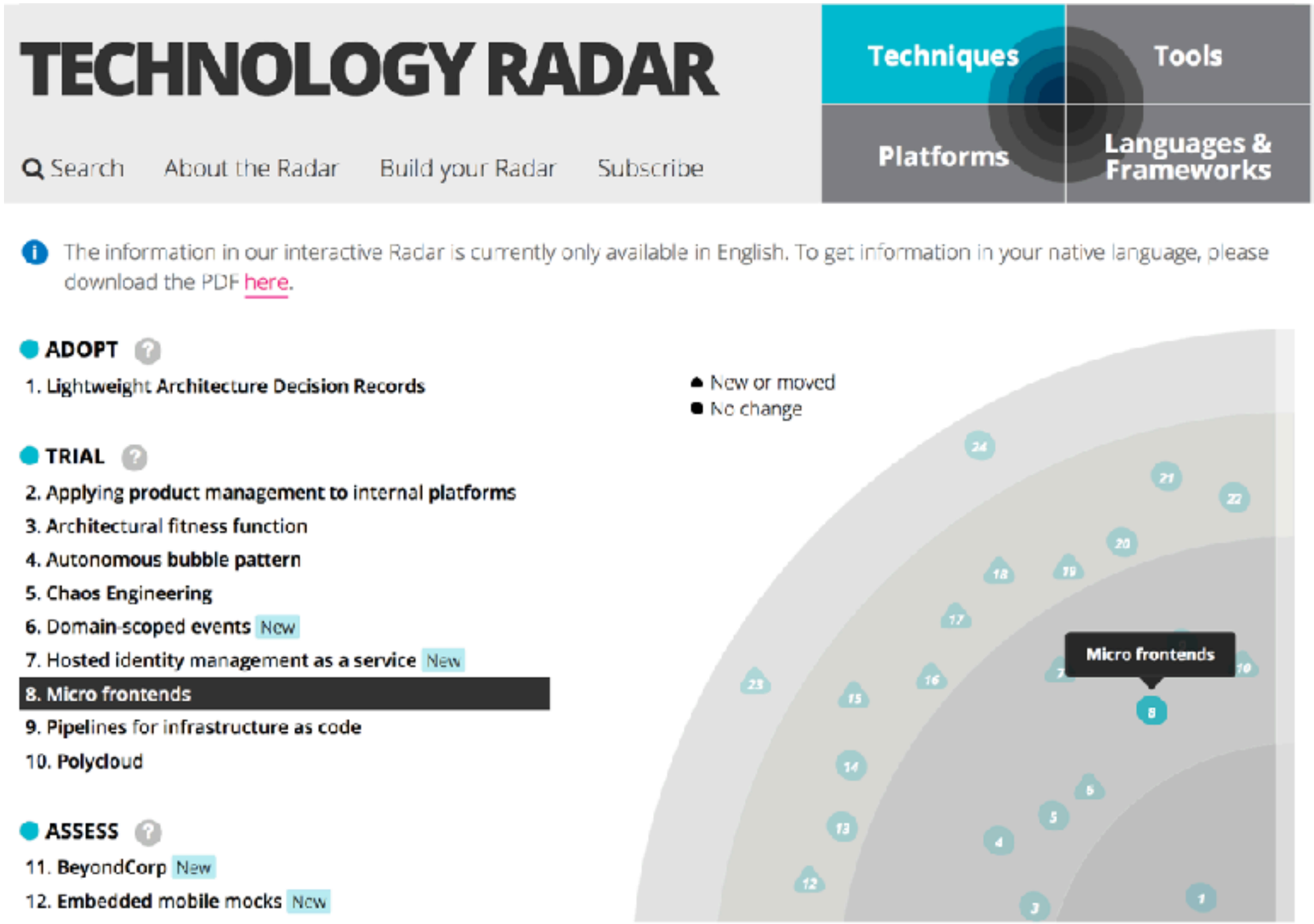
# FRONTEND DEVELOPMENT

# BUT IF...

# MICRO FRONTEND

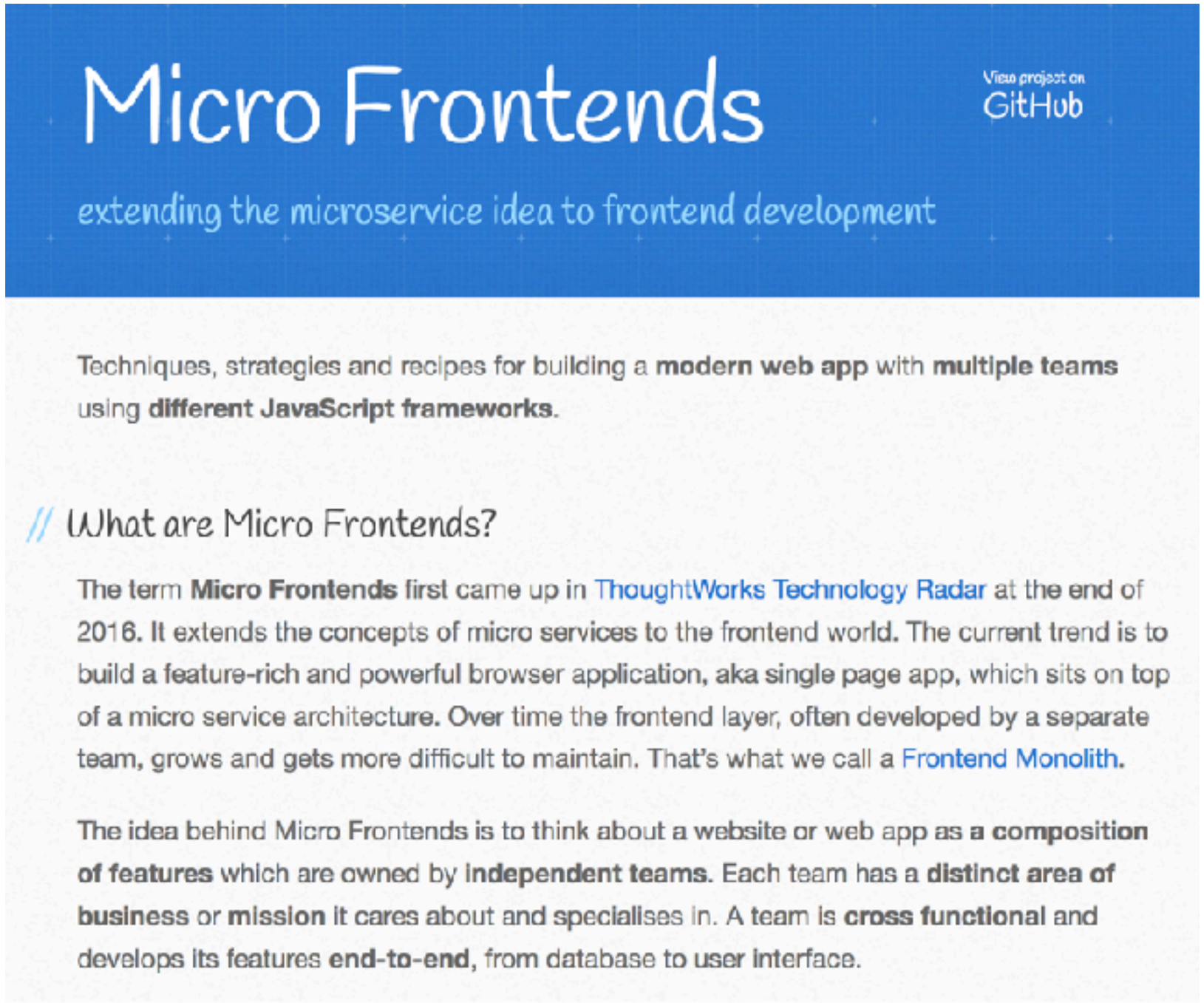
*the concept*

# MICRO FRONTEND




Technology Radar (https://www.thoughtworks.com/radar/techniques)

# MICRO FRONTEND

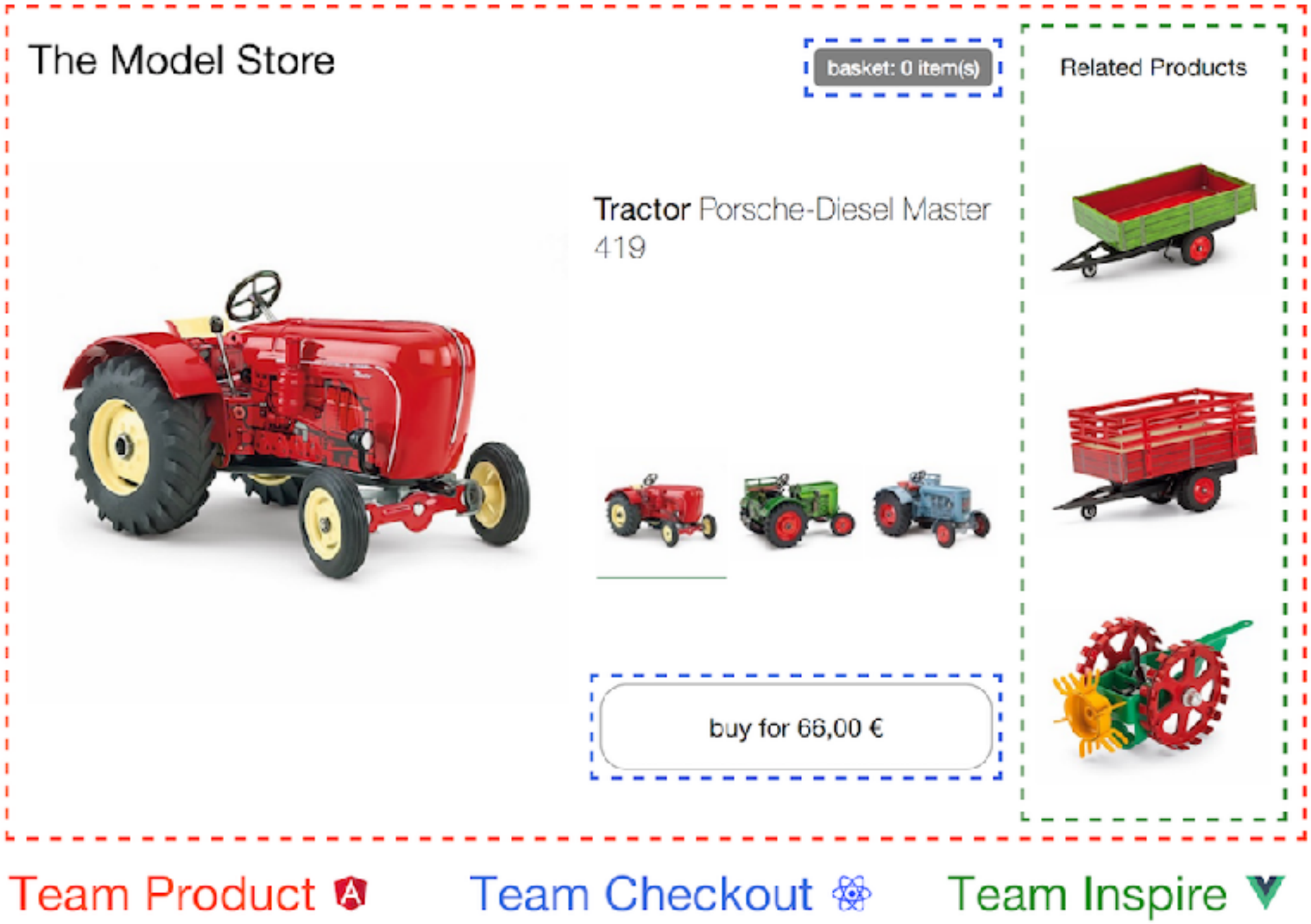



Michael Geers (https://micro-frontends.org/)

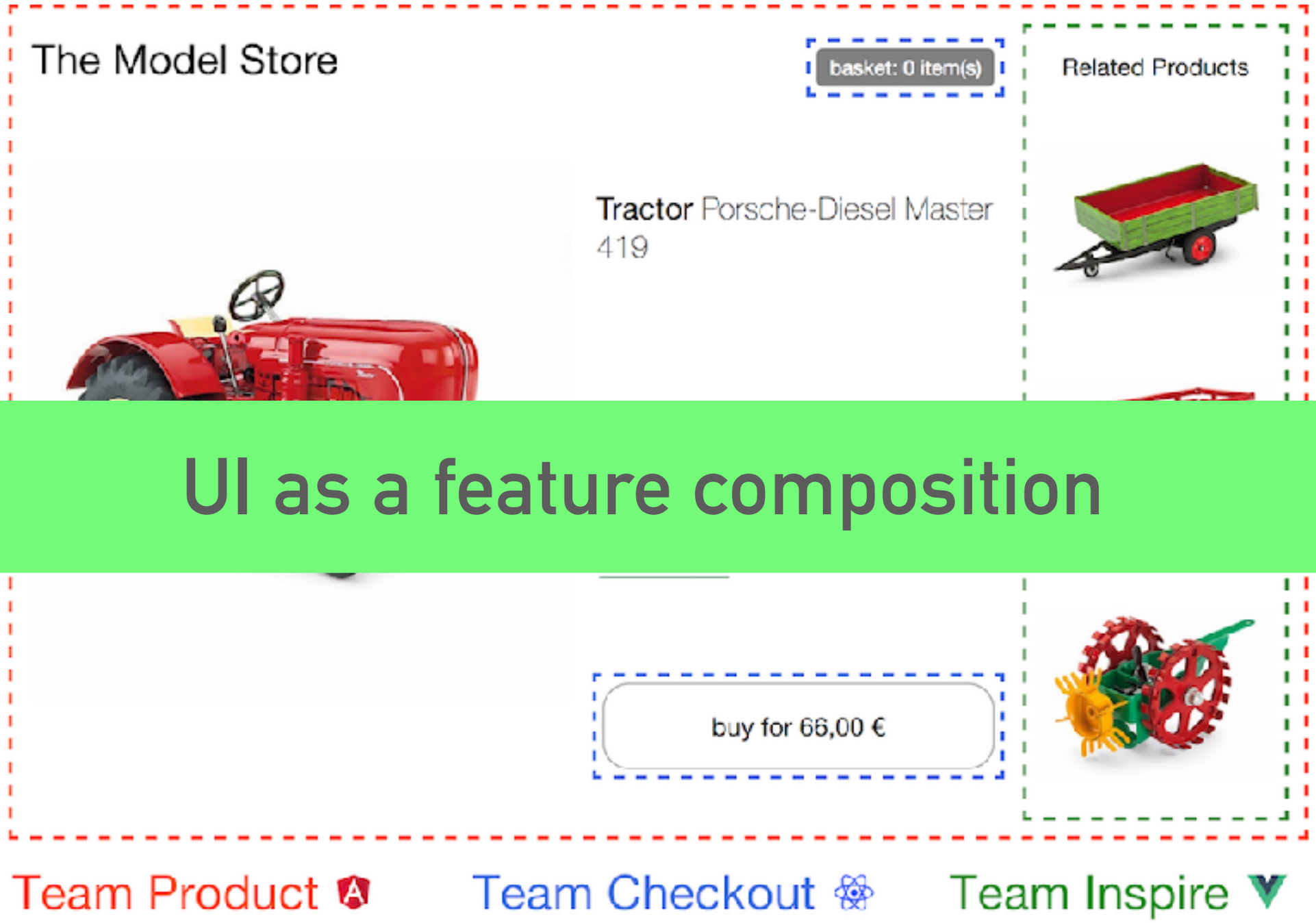
> […]think about a website or web app as **a composition of features** which are owned by **independent teams.**

*-Michael Geers*

# MICRO FRONTEND



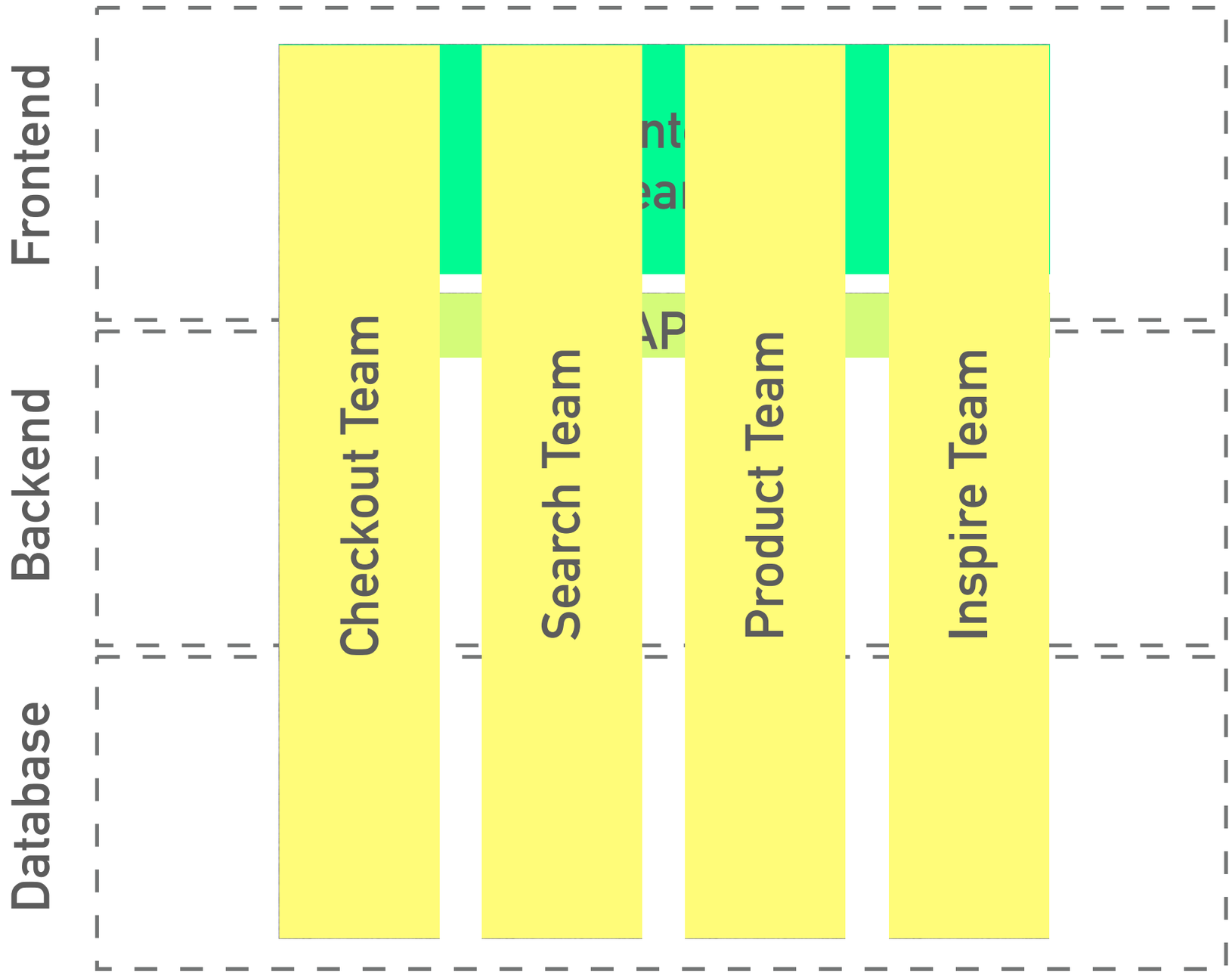
# MICRO FRONTEND




## UI as a feature composition

> Each team has a **distinct area of business** or **mission** it cares about and specialises in. A team is **cross functional** and develops its features **end-to-end**[…].
>
> *-Michael Geers*

# MICRO FRONTEND



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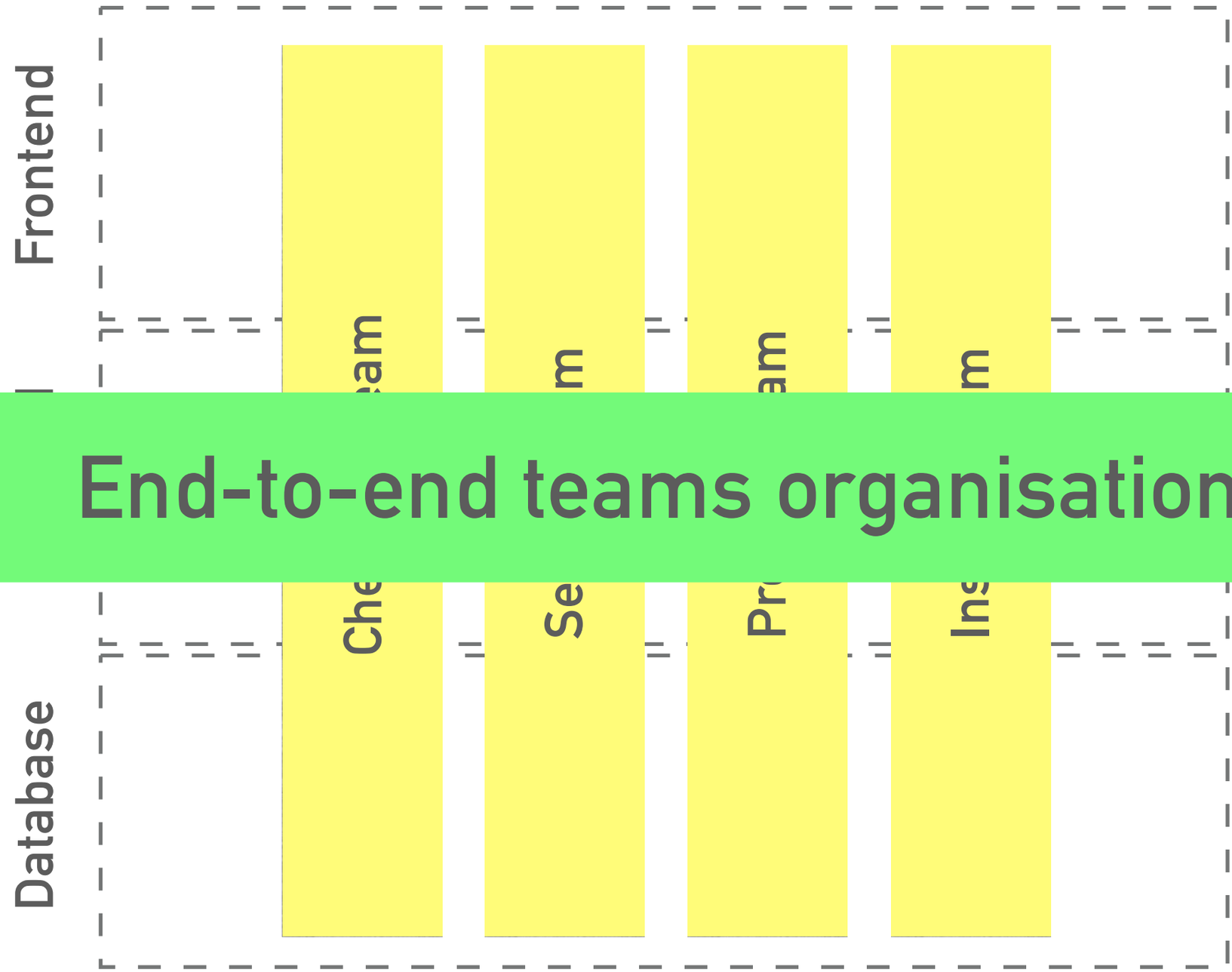
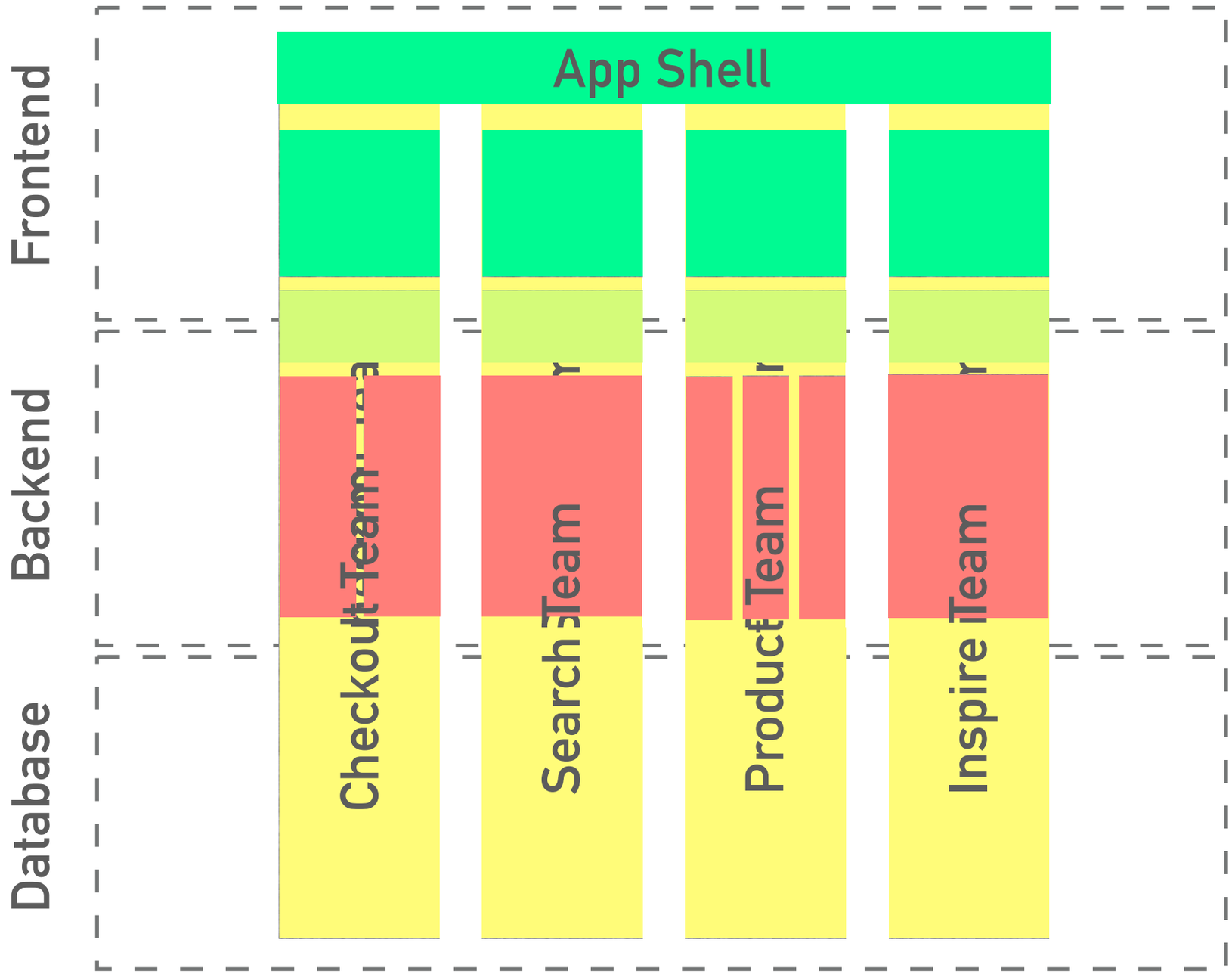


# MICRO FRONTEND



Independent Deploy

Reduced Scope

Separate Teams

Scalability

Reusability

Code Isolation

Shared libs

Optimised Bundle

Difficult UX

Complex Architecture

# APPROACHES

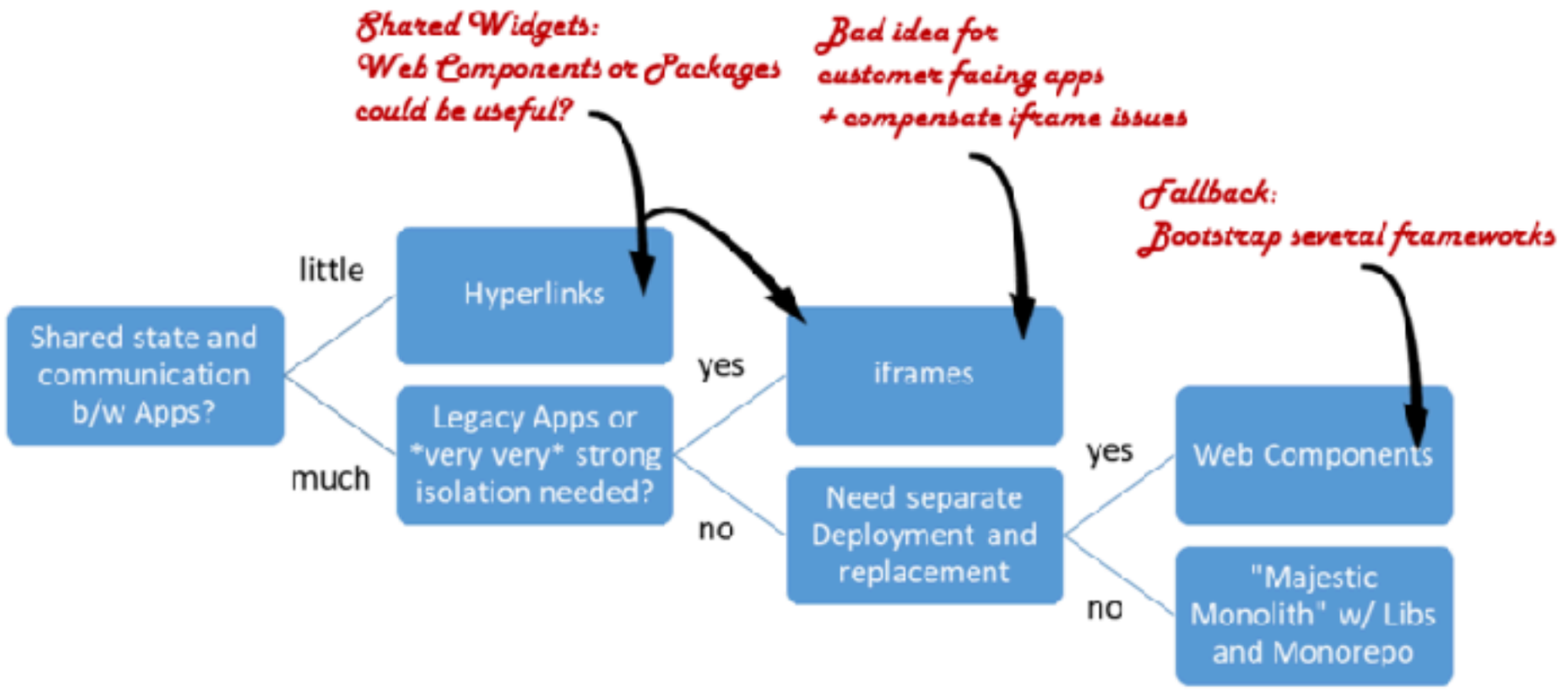
*which way?*

# MICRO FRONTEND

28. Dezember 2017 Angular, Angular And Architecture

**A Software Architect's Approach Towards Using Angular (And SPAs In General) For Microservices Aka Microfrontends**

TLDR; To choose a strategy for implementing micro frontends with SPA, you need to know your architectural goals, prioritize them and evaluate them against the options available. This article does this for some common goals and presents a matrix which reflects the results of the evaluation. To provide some orientation, you also might find this decision tree useful:




A software architect's approach towards using Angular (and SPAs in general) for microservices aka microfrontends

# ARCHITECTURAL CANDIDATES

*Dynamic MFE Loading*

IFrames

Plugins

Web Components

Multiple SPA

*MFE Page*

Hyperlink

*Code Level Integration*

Packages

Monorepo

# ARCHITECTURAL GOALS

*Optimisation*

**Optimised bundle**

Shared libs

Tree Shaking

*Isolation*

**Runtime Isolation**

Separate development

Separate deployment

*Flexible*

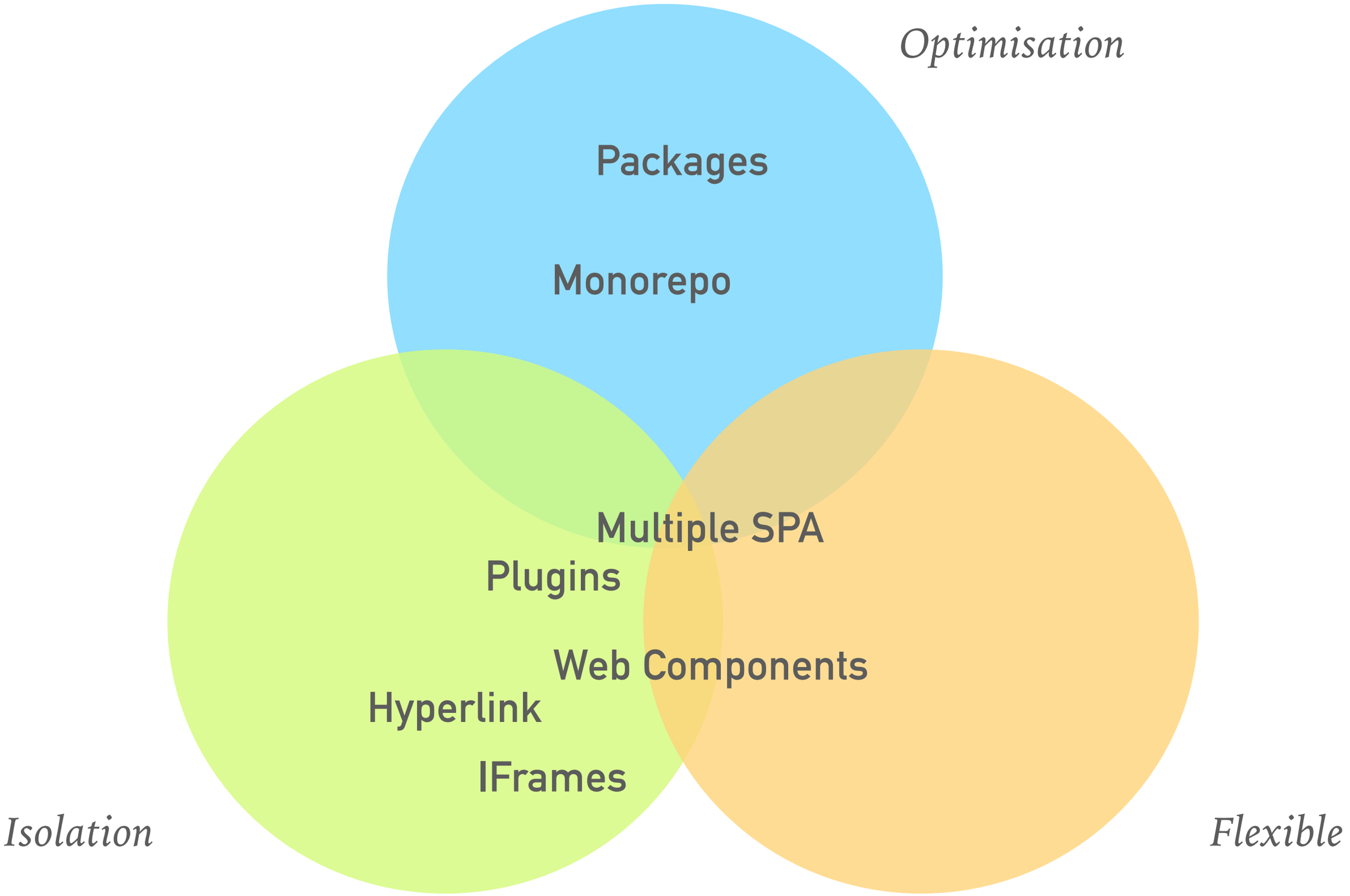
**Support Different Frameworks**

Multiple MFE on page

Prevent version conflicts

Single Page Shell

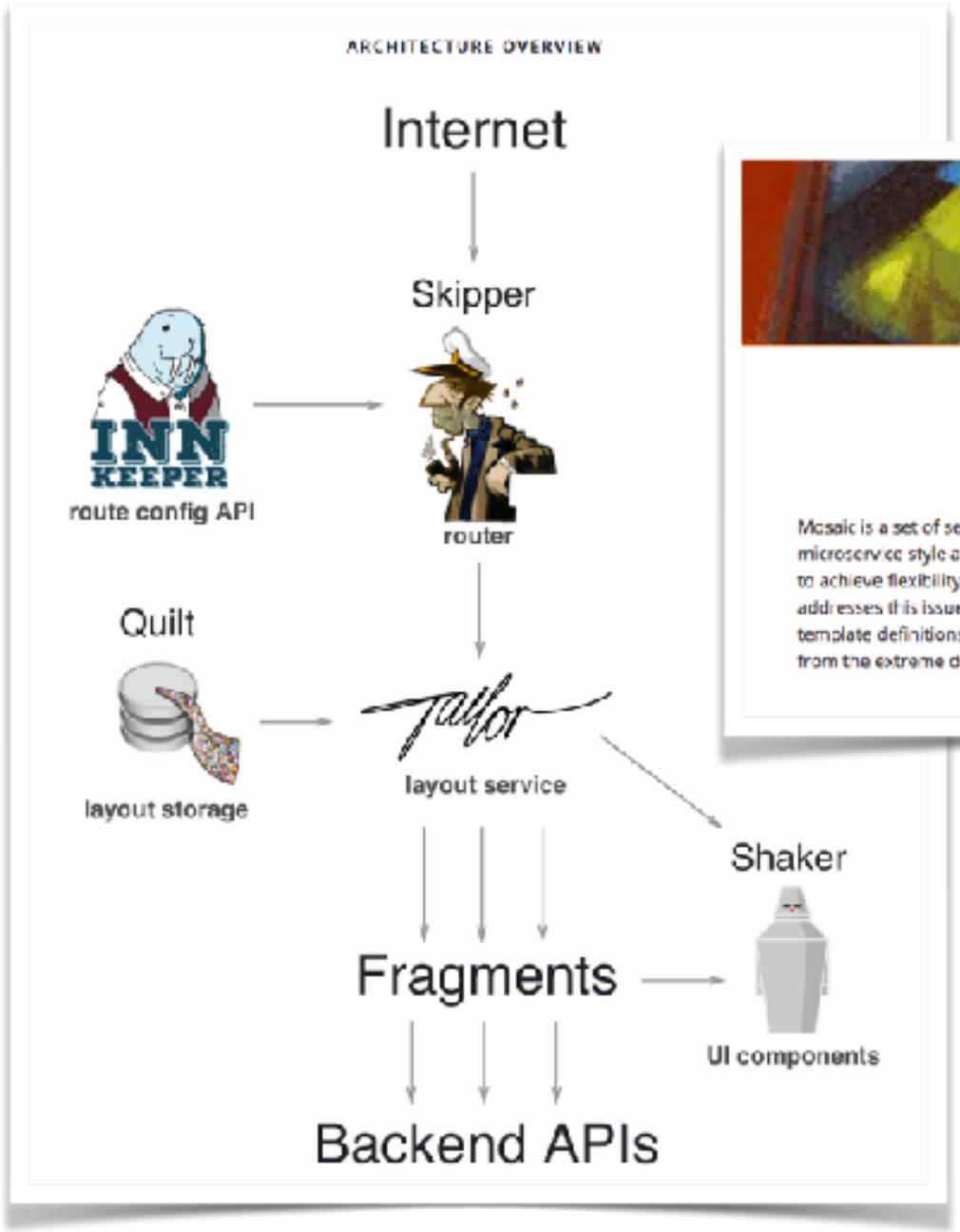
# EVALUATION


Optimisation
Packages
Monorepo
Multiple SPA
Plugins
Web Components
Hyperlink
IFrames
Isolation
Flexible

# USE CASES

*who is using?*

# ZALANDO PROJECT MOSAIC





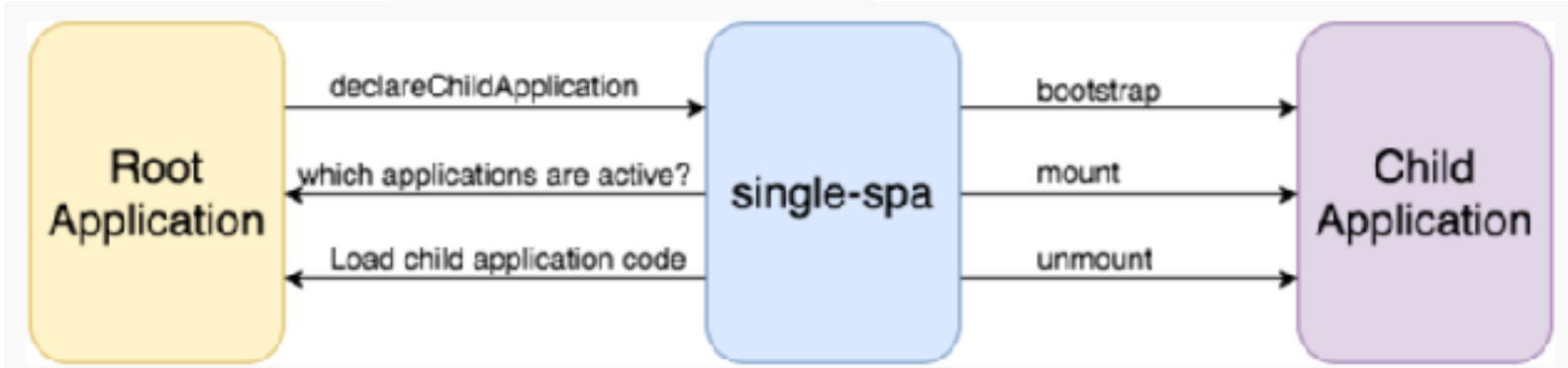
Zalando Project Mosaic (https://www.mosaic9.org/)

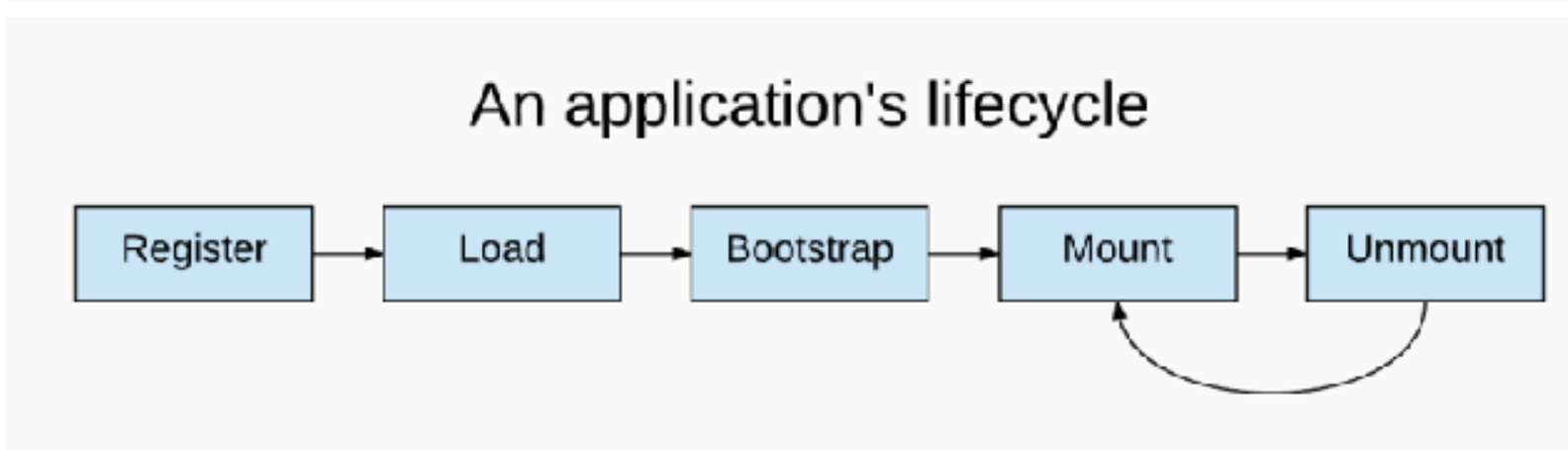
# SINGLE-SPA

single-spa

a javascript framework for front-end microservices

GET STARTED




single-spa (https://single-spa.js.org/)

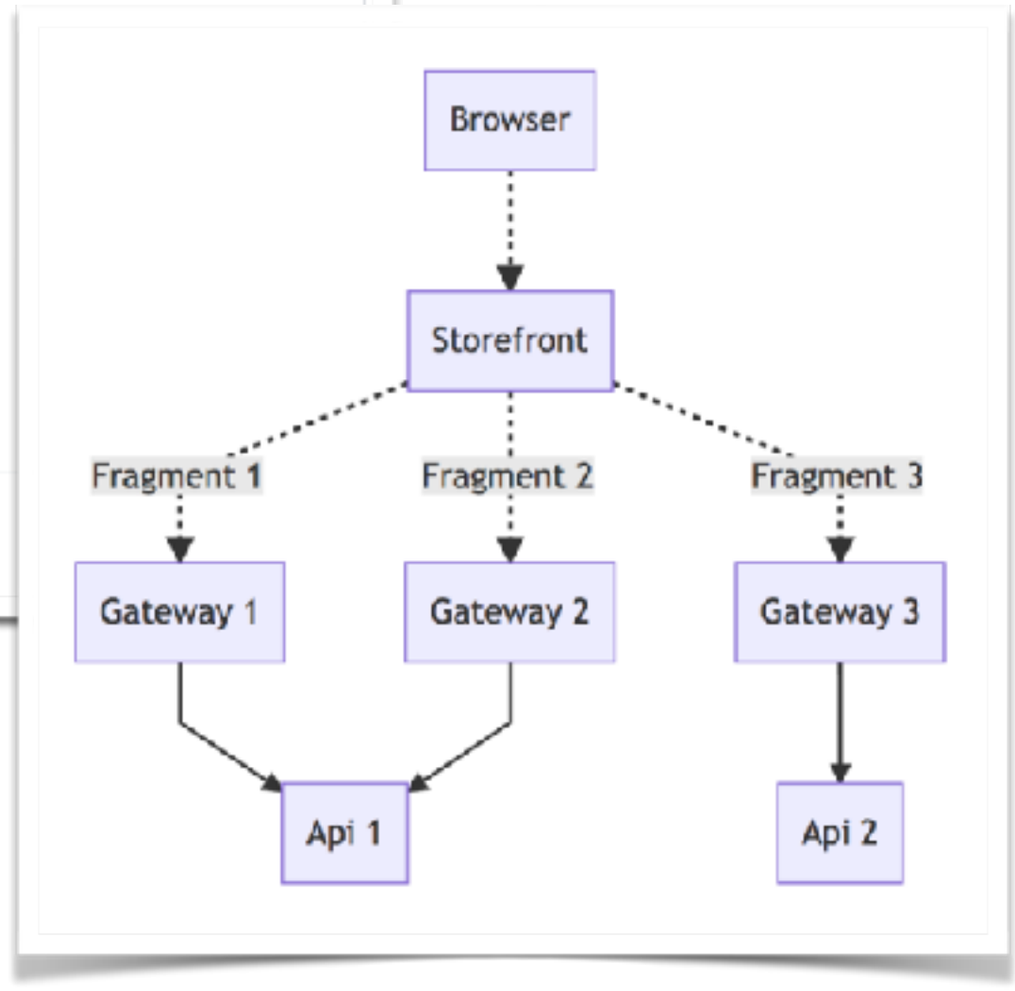
# PUZZLEJS

README.md

PuzzleJs Framework

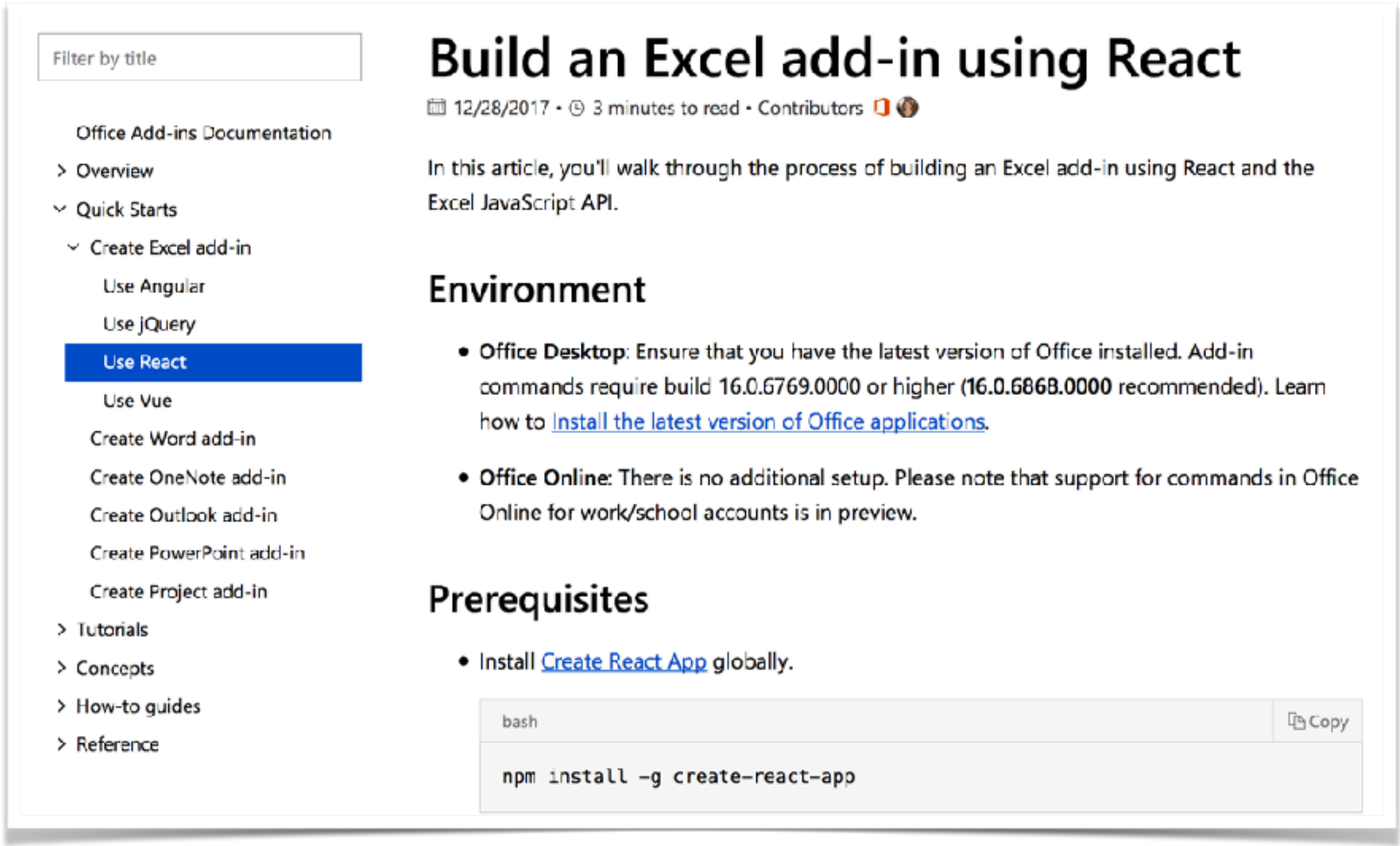
Front-end microservices framework for scalable and blazing fast websites.

build passing npm package 3.9.8




PuzzleJs (https://github.com/puzzle-js/PuzzleJs)

# MICROSOFT OFFICE ADDINS




Microsoft Office Add-ins (https://docs.microsoft.com/en-us/office/dev/add-ins/)

“

No silver bullet.

*-Fred Brooks, 1986*

# QUESTIONS?

# REFERENCES

## About Microfrontend


ThoughtWorks Technology Radar (https://www.thoughtworks.com/radar/techniques/micro-frontends)

Michael Geers (https://micro-frontends.org/)

Elisabeth Engel slides (https://slides.com/elisabethengel/micro-frontends/)

Collection of Microfrontend posts (https://micro-frontends.zeef.com/elisabeth.engel?ref=elisabeth.engel&share=ee53d51a914b4951ae5c94ece97642fc)

Software Architects approach for Microfrontend (http://www.softwarearchitekt.at/post/2017/12/28/a-software-architect-s-approach-towards-using-angular-and-spas-in-general-for-microservices-aka-microfrontends.aspx)

Microsoft Office Add-ins (https://docs.microsoft.com/en-us/office/dev/add-ins/)


## Trials


https://medium.com/@_rchaves_/building-microfrontends-part-i-creating-small-apps-710d709b48b7

https://hackernoon.com/front-end-microservices-with-web-components-597759313393

https://medium.com/onfido-tech/micro-frontends-at-onfido-the-component-chimera-32212214408e

https://www.softwarearchitekt.at/post/2018/08/19/angular-react-vue-js-and-co-peacefully-united-thanks-to-micro-apps-and-web-components.aspx


## Frameworks


Zalando Project Mosaic (https://www.mosaic9.org/)

PuzzleJs (https://github.com/puzzle-js/PuzzleJs)

single-spa (https://single-spa.js.org/)