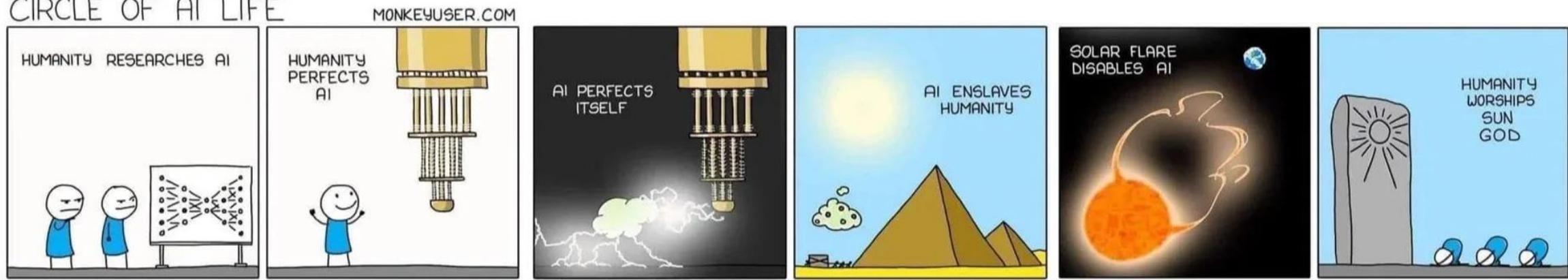


Modern Software Development

CIRCLE OF AI LIFE



Open Space

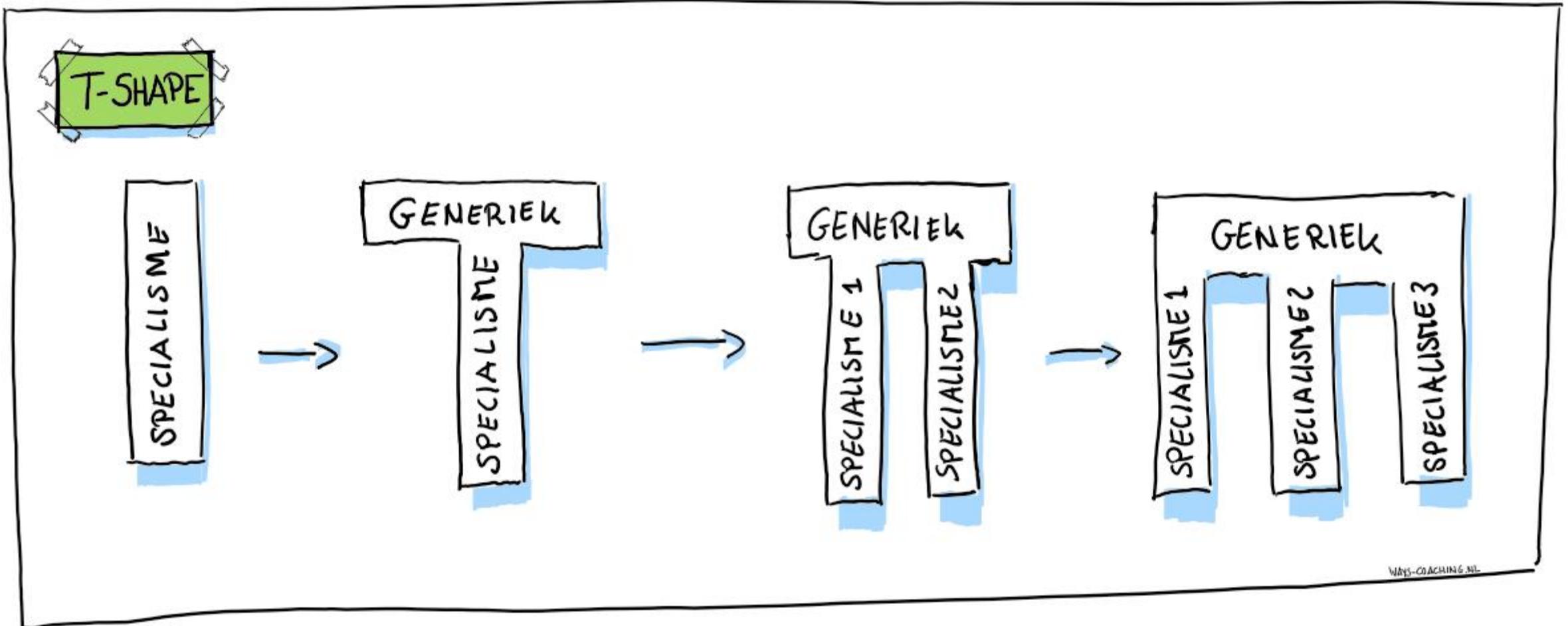
Wat verwachten jullie: is er een ontwikkeling of techniek die ons werk / vak de komende jaren gaat veranderen?

Topics

- State of Agile (Scrum, SAFe, Kanban)
- State of Java, State of .NET
- State of Quality Assurance
- State of Software Architecture
- Front-end and mobile trends
- AI
- Software Development Tools en IDE's

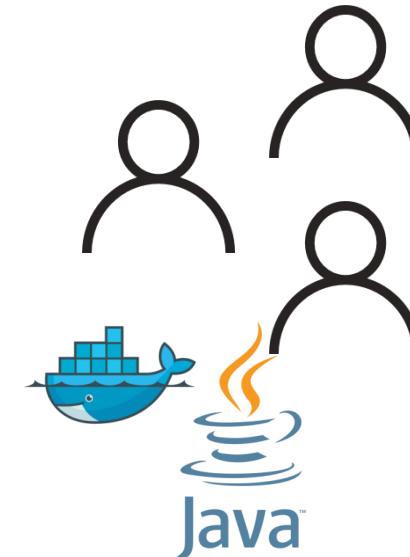
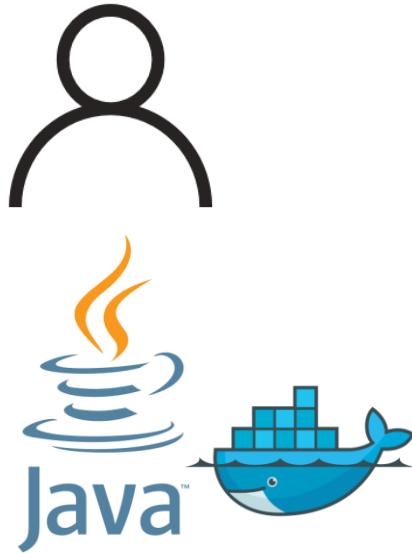


AGILE



State of Agile (State of DevOps)

- Van T-shaping naar DevOps naar Platform Engineering



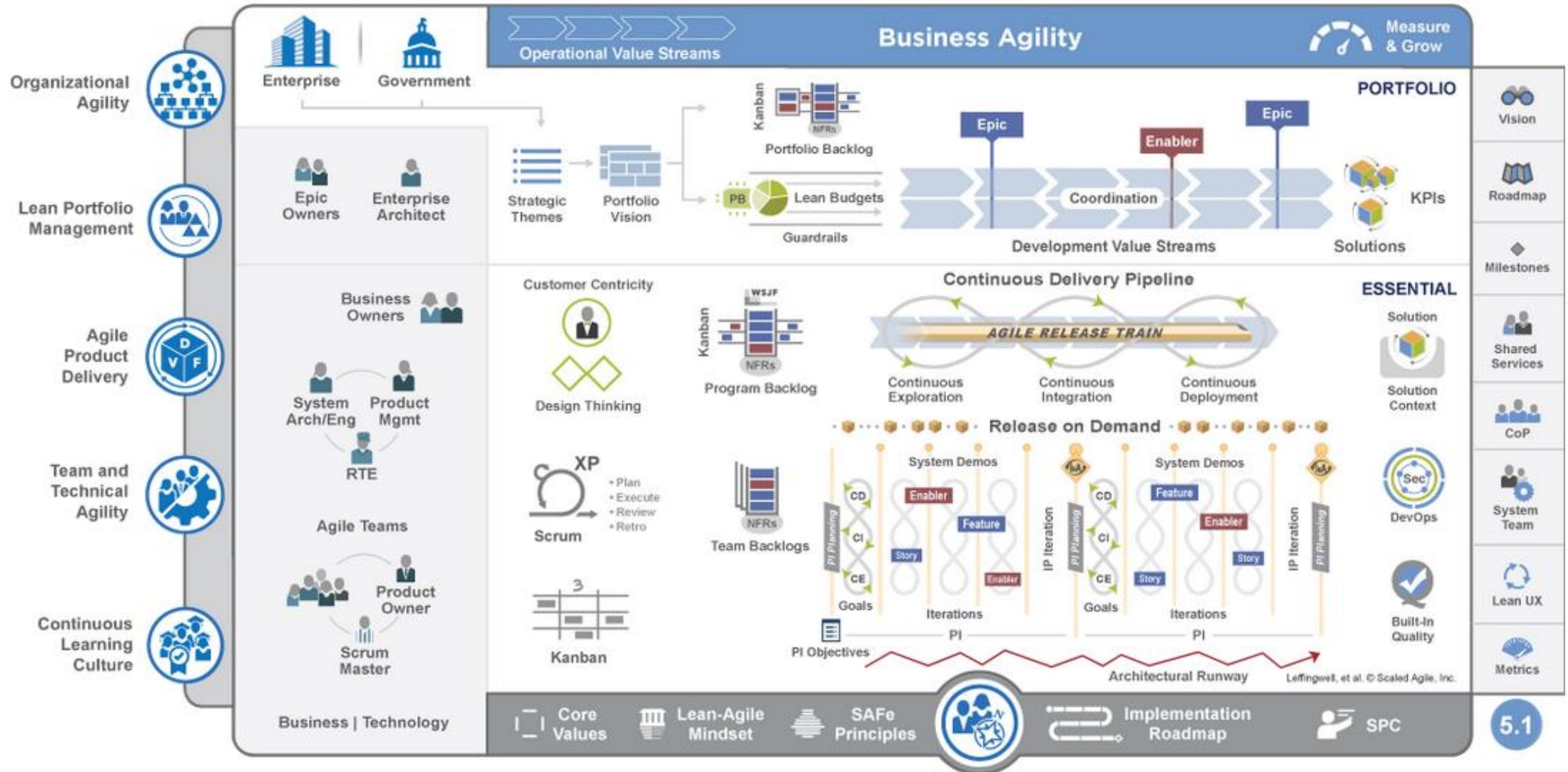
State of Agile (State of DevOps)

- Kanban FTW, maar what about Scrum?
- Sprints? Retro's?

State of Agile (State of DevOps)

- Scaled Agile blijft groeien: SAFe, Nexus, Scrum at Scale

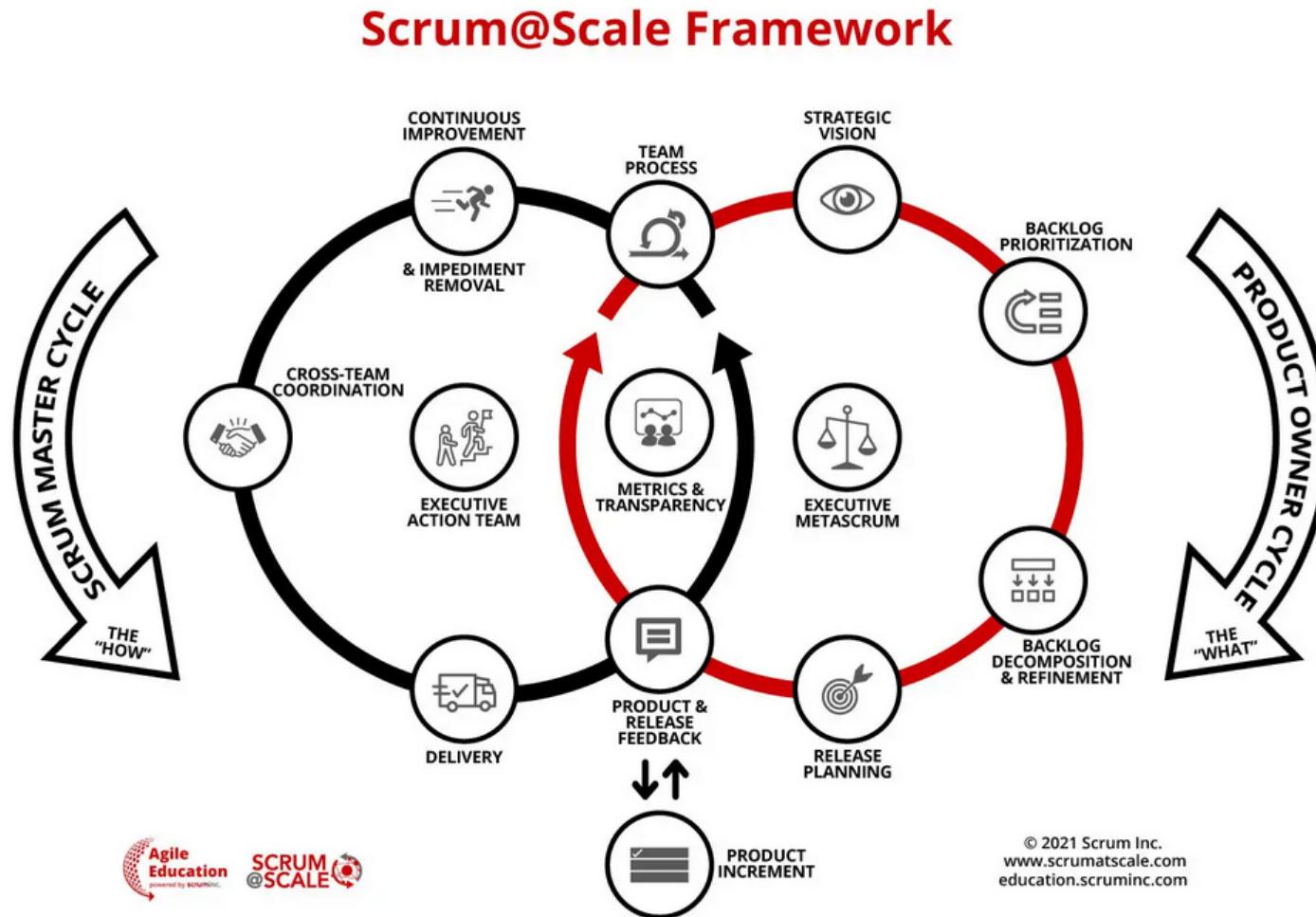
SAFe® combines Lean, Agile, and DevOps practices for business agility.



Bron afbeelding: SAFe

Lean-Agile Leadership

Published in 2017, **Scrum@Scale** is the new kid on the block in agile scaling frameworks and guides you in scaling agile for product delivery.



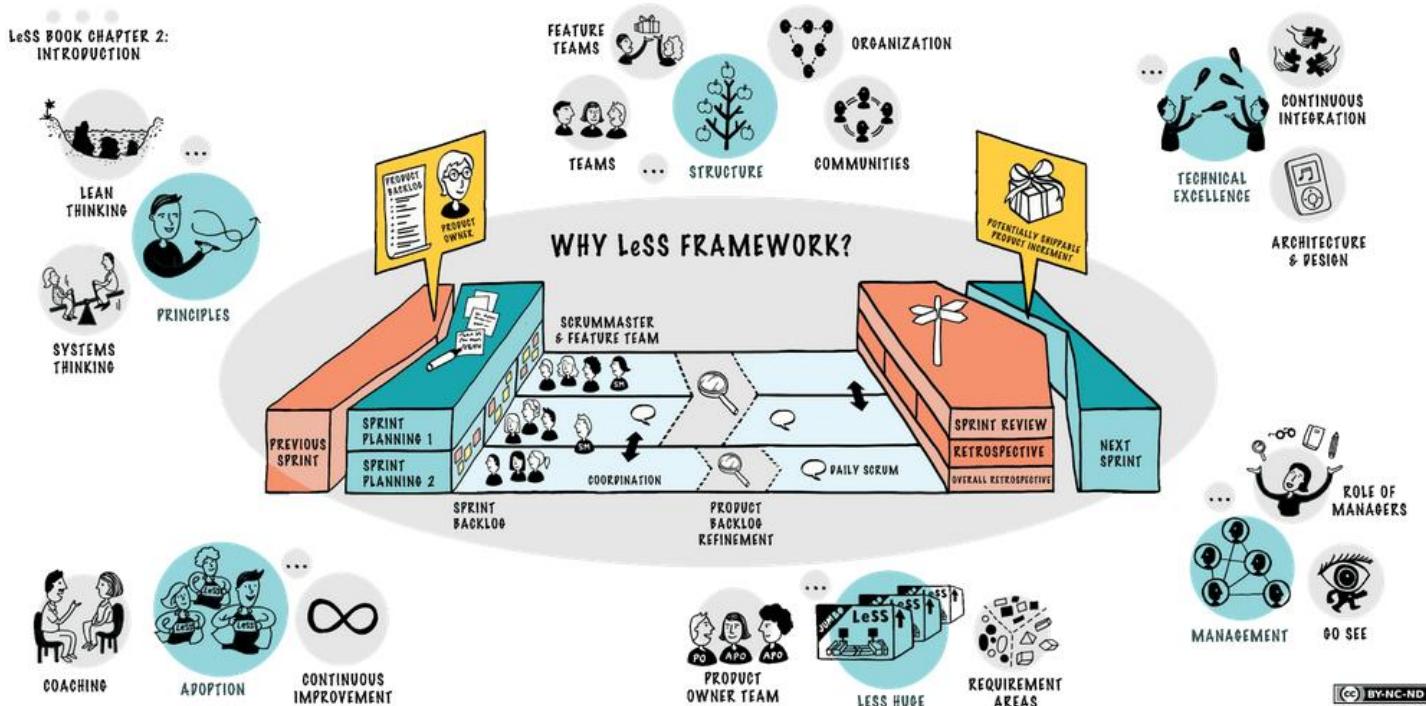
Scrum of Scrums introduces a *team of teams* with its own backlog for everything needed to coordinate the teams' work and resolve impediments that a single team can't tackle on their own.



Bron afbeelding: Agilist Org

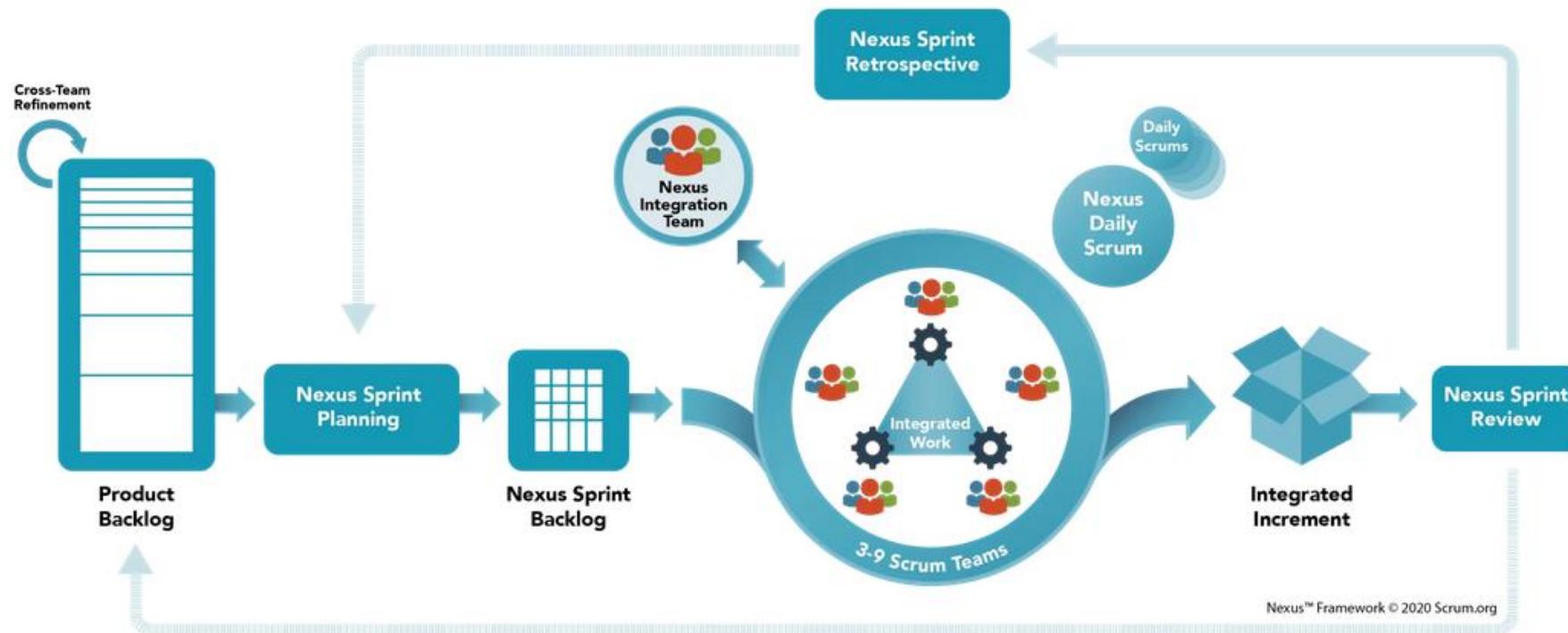
LeSS is a framework for scaling agile product delivery. The idea driving everything in **Large Scale Scrum** is to (let you)

- do more with less.
- avoid overhead and avoid local optimizations
- adopt a whole product focus by organizing your teams around the diverse ways your product brings value to your customers. For example, a team focusing on voice features and another on texting.



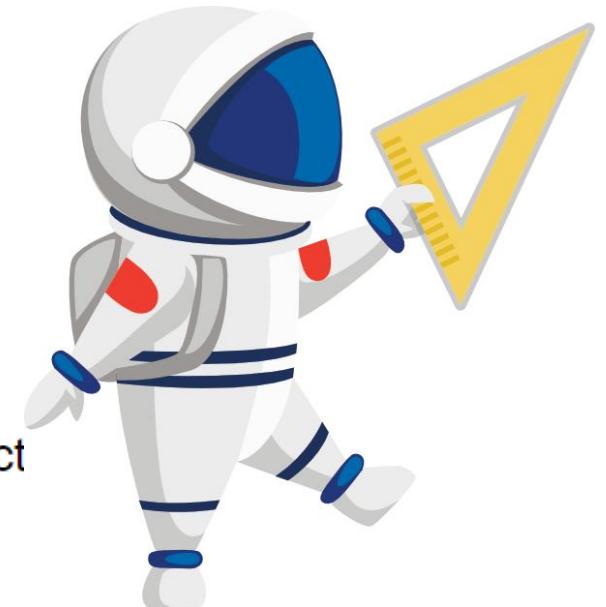
Bron afbeelding: The Less Company

Nexus is a framework for scaled agile product delivery.



Agile Design Thinking

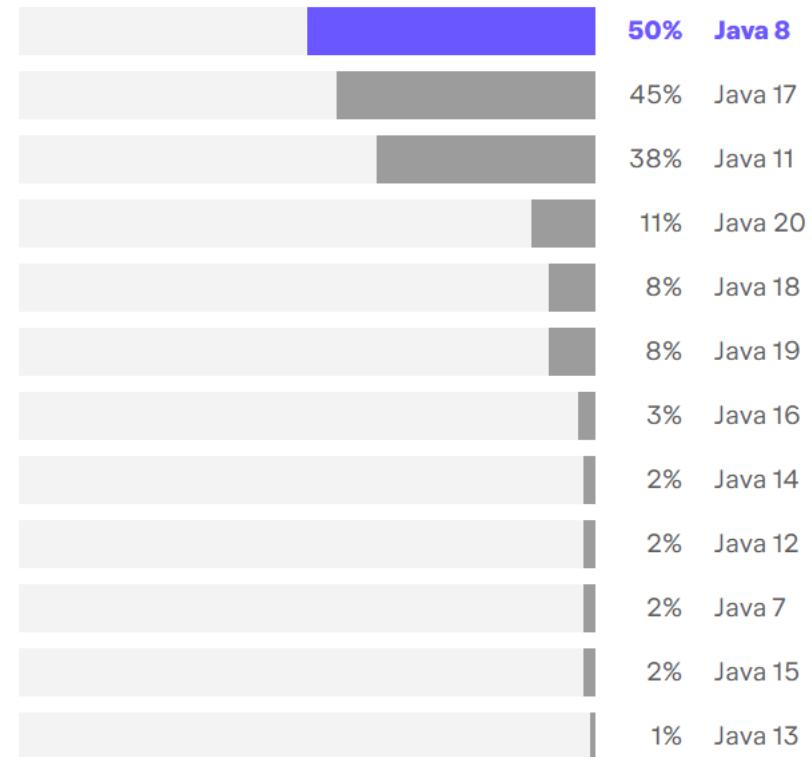
- Agile Design Thinking (laten we hier nou net een MC sessie voor gepland hebben)
- Leer out-of-the-box denken
- Ontdek hoe creatief denken je verder kan helpen in je carrière
- Verbreed je kennis
- Leer hoe Design Thinking impact heeft op bedrijven
- Ontdek hoe een briljante gebruikerservaring (UX) leidt tot een succesvol product



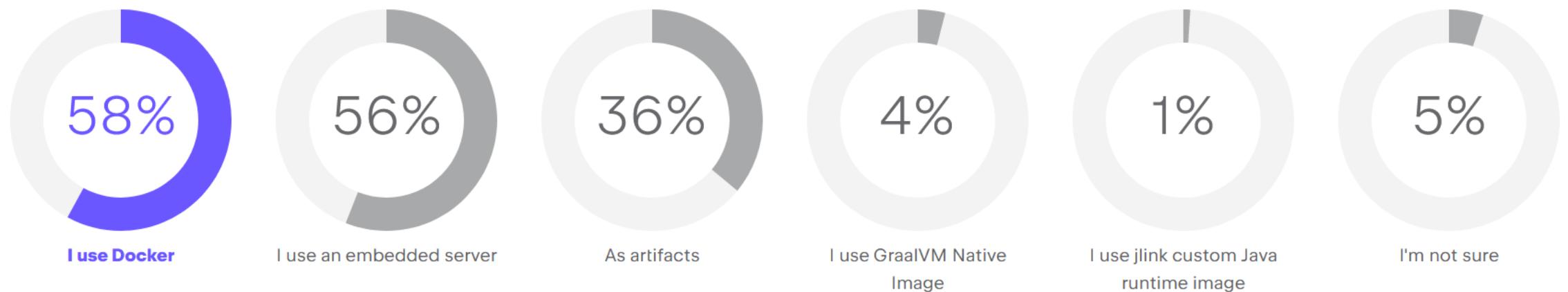
State of Java

- AWS is on the rise
- Zou Java 8 eindelijk niet meer bovenaan staan?
- Testcontainers

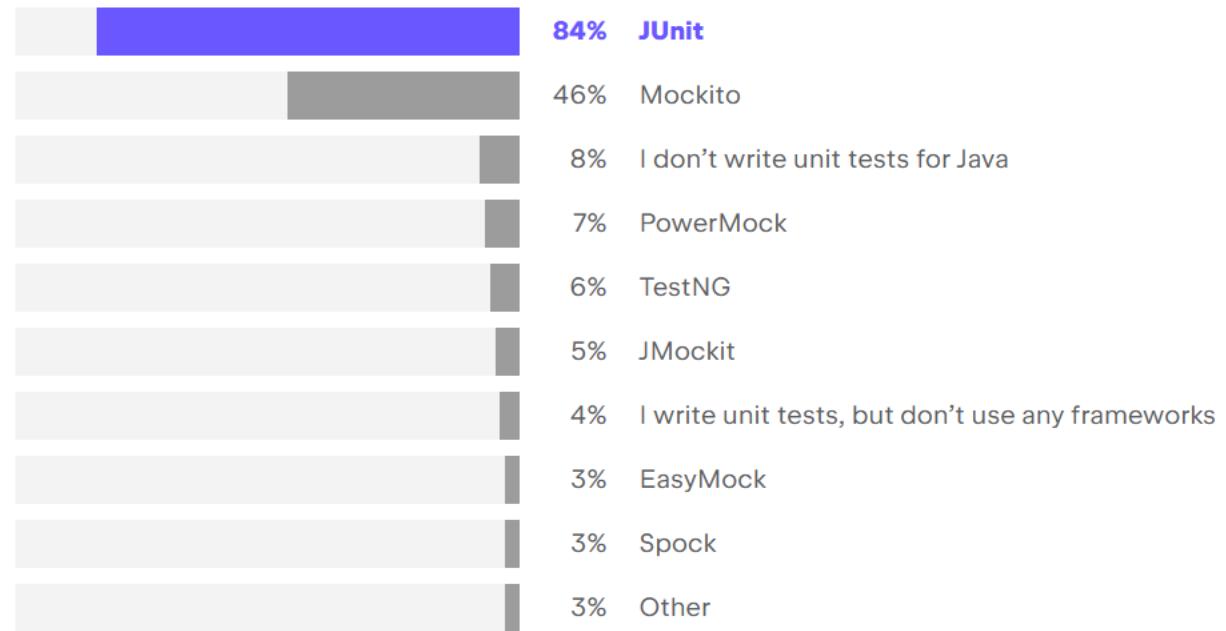
Which versions of Java do you regularly use?



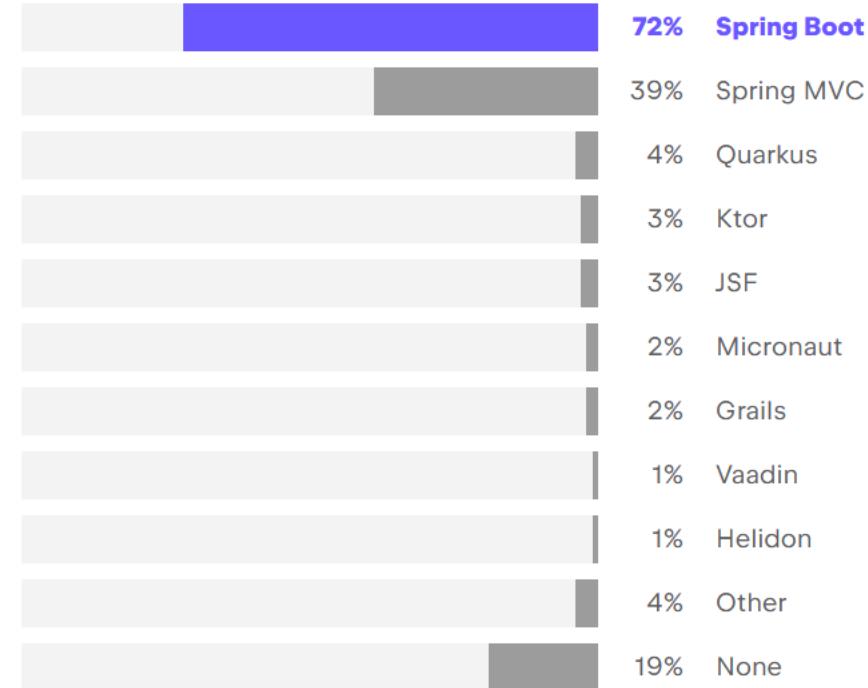
How do you package your web applications?



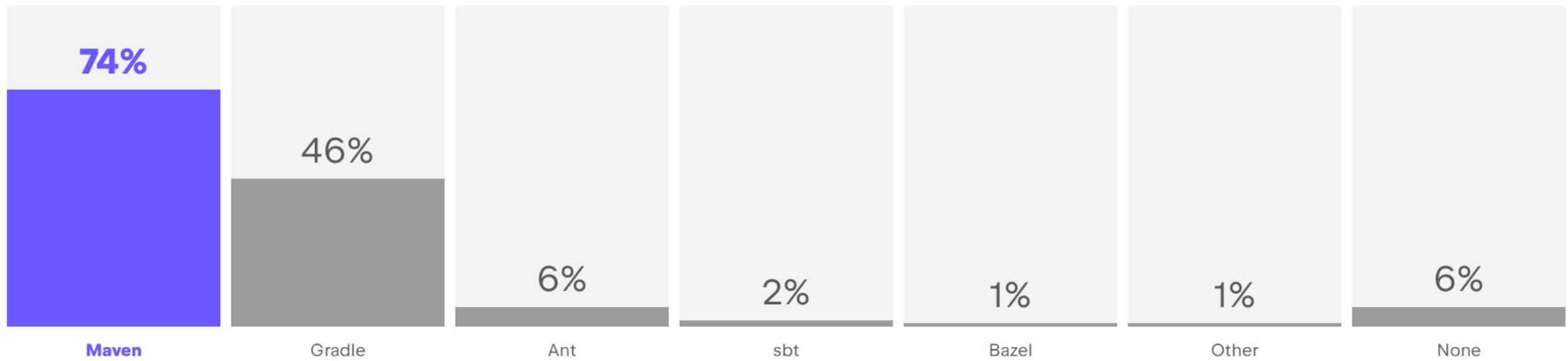
Which unit testing frameworks do you use?



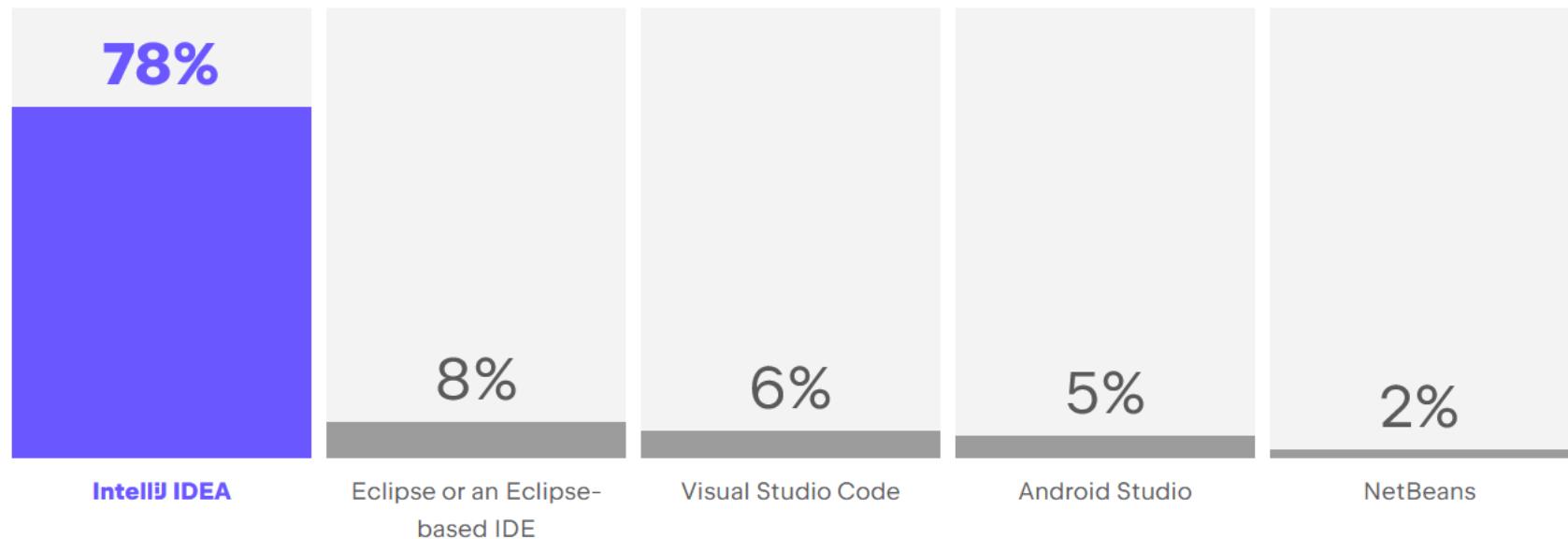
Which web frameworks do you use?



Which build systems do you regularly use?



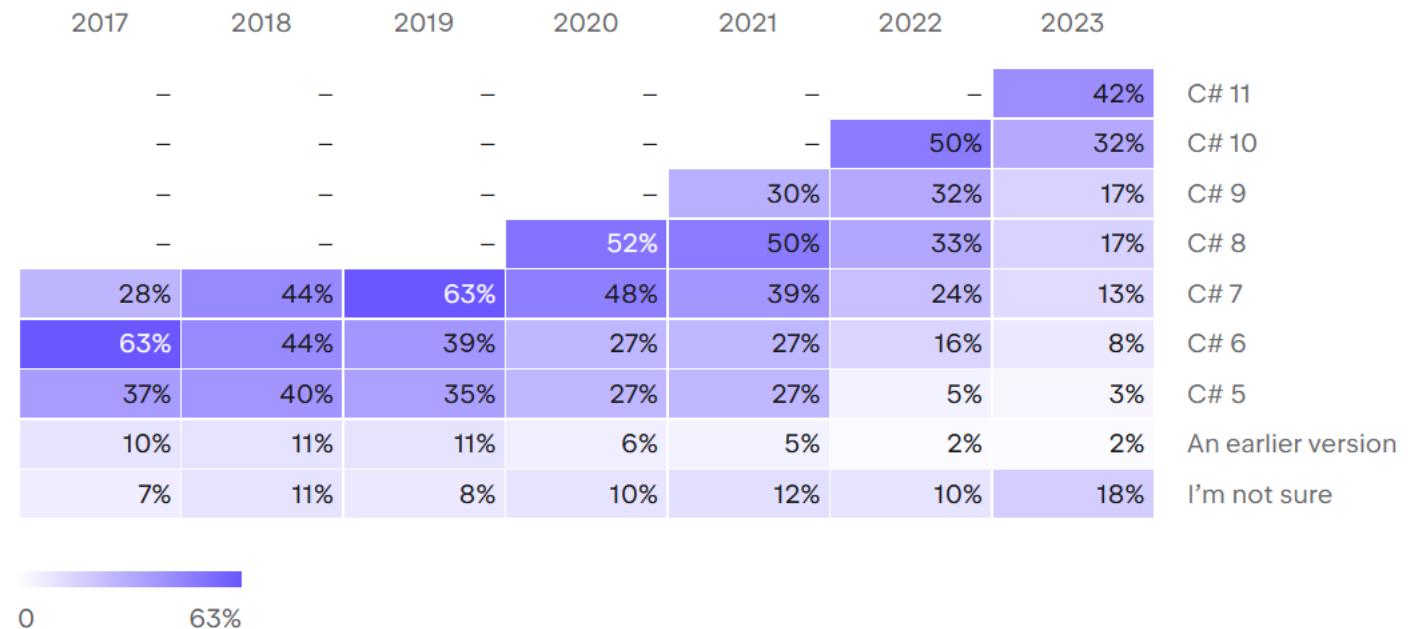
Which IDE / editor do you use the most for Java development?



State of .NET

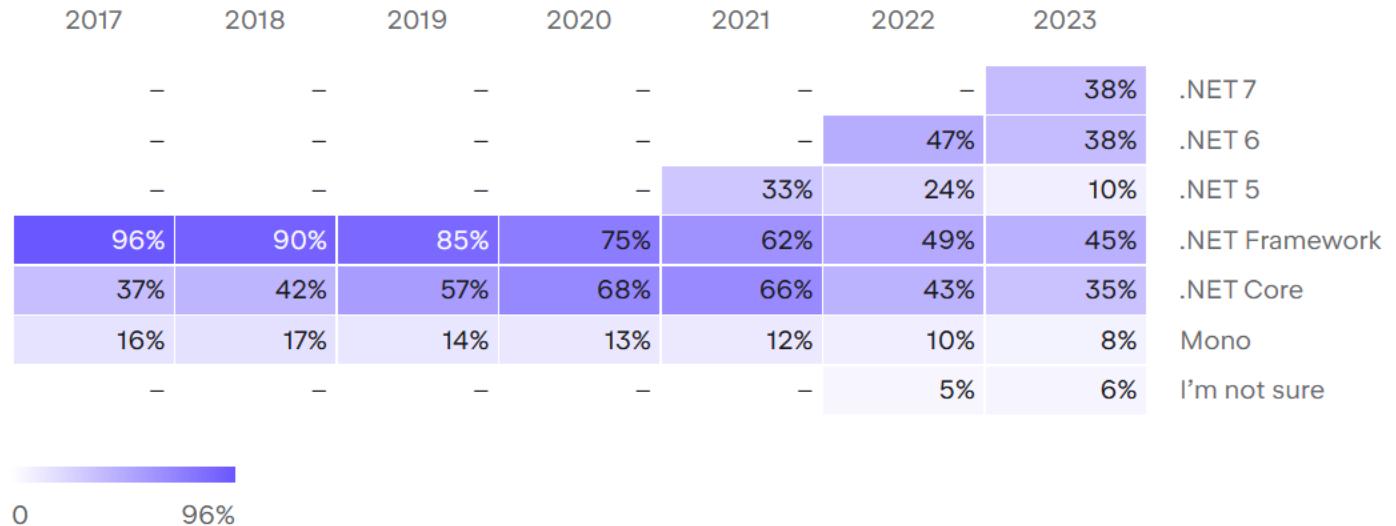
- Eindelijk AOT in .NET 8
- Aspire (maar we hadden toch al Dapr?)

Which versions of C# do you regularly use?



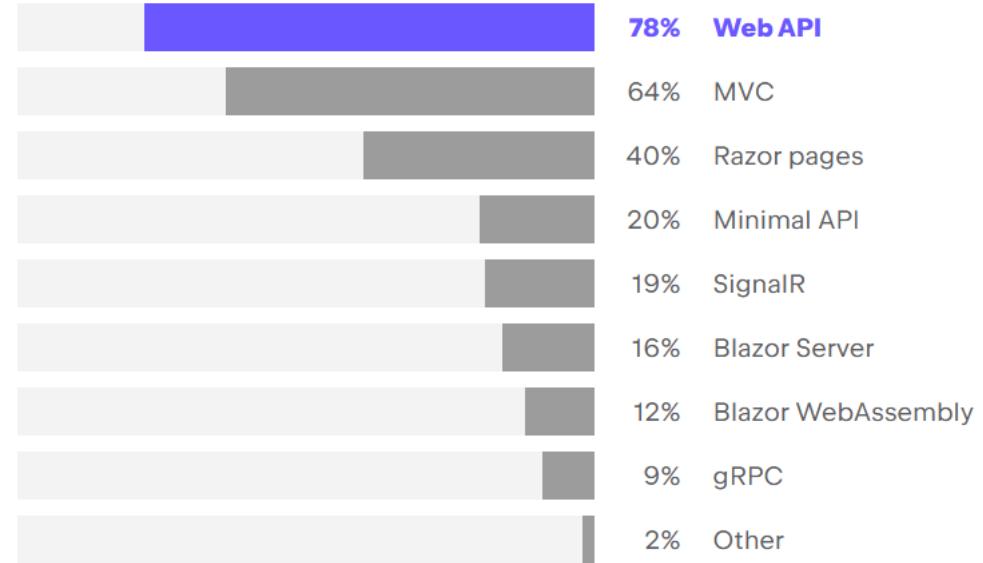
Bron afbeelding: JetBrains Ecosystem Report 2023

Which runtimes do you regularly use?



Which ASP.NET Core technologies do you use?

This question was shown only to respondents who reported using ASP.NET Core.



Which IDE / editor do you mostly use for C# development?

2020 2021 2022 2023

| | | | | |
|-----|-----|-----|-----|-----------------------|
| 65% | 62% | 54% | 48% | Visual Studio |
| 20% | 27% | 33% | 32% | JetBrains Rider |
| 11% | 9% | 10% | 14% | Visual Studio Code |
| 2% | 2% | 2% | 3% | Visual Studio for Mac |
| 0% | 0% | – | 1% | MonoDevelop |
| 0% | 0% | 0% | 1% | Vim |
| 0% | 0% | 0% | 1% | Other |

0% 65%

Why .NET Aspire?

.NET Aspire is designed to improve the experience of building .NET cloud-native apps. It provides a consistent, opinionated set of tools and patterns that help you build and run distributed apps. .NET Aspire is designed to help you with:

- **Orchestration:** .NET Aspire provides features for running and connecting multi-project applications and their dependencies.
- **Components:** .NET Aspire components are NuGet packages for commonly used services, such as Redis or Postgres, with standardized interfaces ensuring they connect consistently and seamlessly with your app.
- **Tooling:** .NET Aspire comes with project templates and tooling experiences for Visual Studio and the [dotnet CLI](#) help you create and interact with .NET Aspire apps.

State of Quality Assurance

- Het gebruik van Design Systems neemt toe
- Beslissingen worden steeds vaker vastgelegd

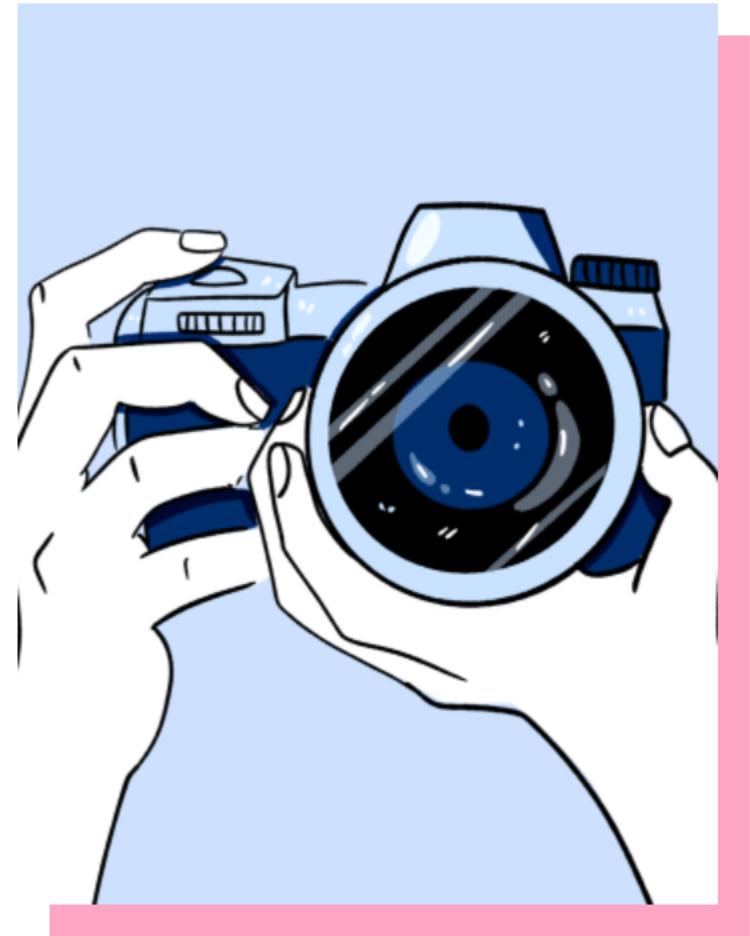
Capturing your design system decisions



Dan Donald, Design Advocate
February 10, 2023

Design Systems

Tooling & Process



Example Design System Decision Record

Title: This decision defines our use of design tokens

Status: Accepted

Date: 3rd February 2023

Author: Dan Donald

Context

So far, the process between design and development has involved developers needing to select values from our design files. We need a better way of ensuring the values are easy to find and to keep consistent.

Decision

We'll start with foundational tokens for colors and typography, as these are our current pain points. We'll implement these with Tokens Studio and sync them with our GitHub repo.

Consequences

Positive:

- Tokens will ensure that design decisions are stored in an interchangeable format and used by everyone

Hey dat ken ik ergens van!

- <https://adr.github.io/madr/>

🔗 Full template

The current development version renders as follows:

```
---
```

Configuration for the Jekyll template "Just the Docs"

parent: Decisions

nav_order: 100

title: ADR Template

These are optional elements. Feel free to remove any of them.

status: {proposed | rejected | accepted | deprecated | ... | superseded by [ADR-0005](0005-example.md)}

date: {YYYY-MM-DD when the decision was last updated}

deciders: {list everyone involved in the decision}

consulted: {list everyone whose opinions are sought (typically subject-matter experts); and with whom there}

informed: {list everyone who is kept up-to-date on progress; and with whom there is a one-way communication}

```
---
```

<!-- we need to disable MD025, because we use the different heading "ADR Template" in the homepage (see above)

<!-- markdownlint-disable-next-line MD025 -->

{short title of solved problem and solution}

Context and Problem Statement

{Describe the context and problem statement, e.g., in free form using two to three sentences or in the form of

You may want to articulate the problem in form of a question and add links to collaboration boards or issue n

Playwright enables reliable end-to-end testing for modern web apps.

[GET STARTED](#)



State of Software Architecture

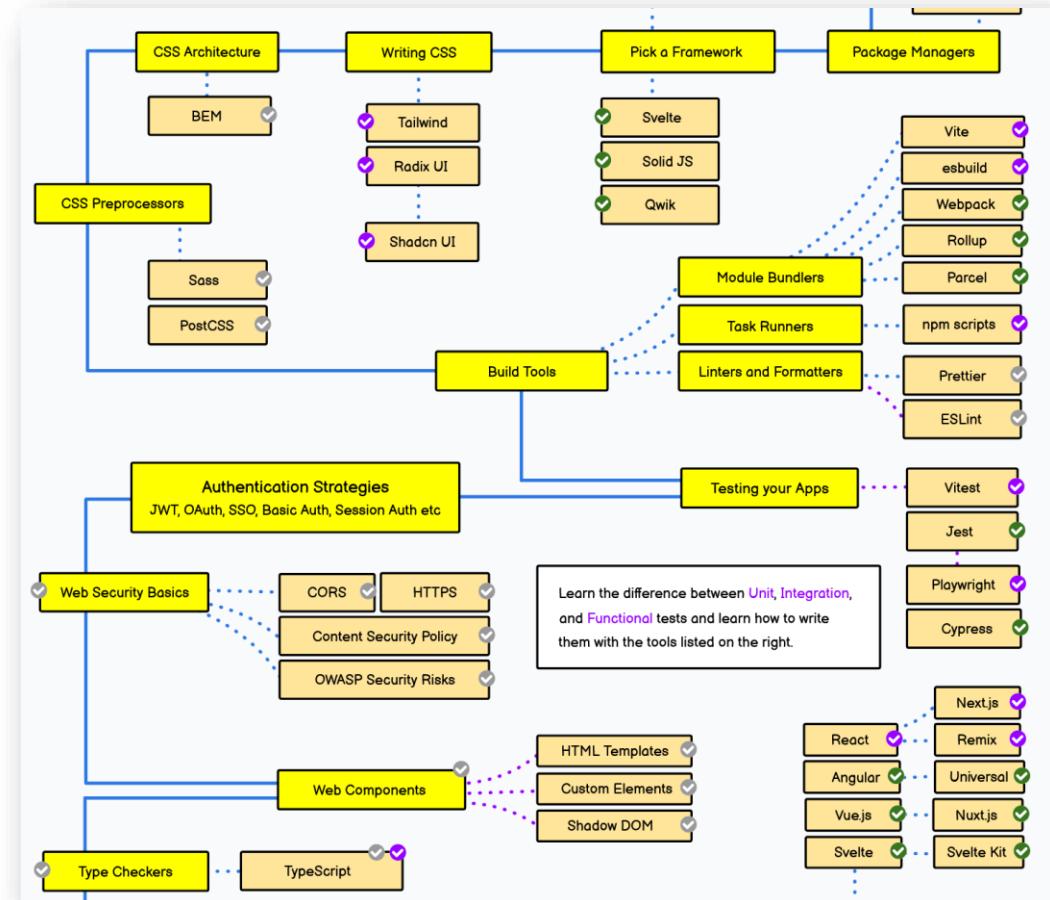
- Certificeringen



Bron afbeelding: Togaf

Frontend & Mobile Trends

- <https://roadmap.sh/frontend>



Angular Renaissance!



Bron afbeelding: Michelangelo ☺

Angular es-build

- > v17
- Snellere build (veel sneller, incremental builds)
- Server Side Rendering, Pre-rendering
- Betere developer experience (DX)

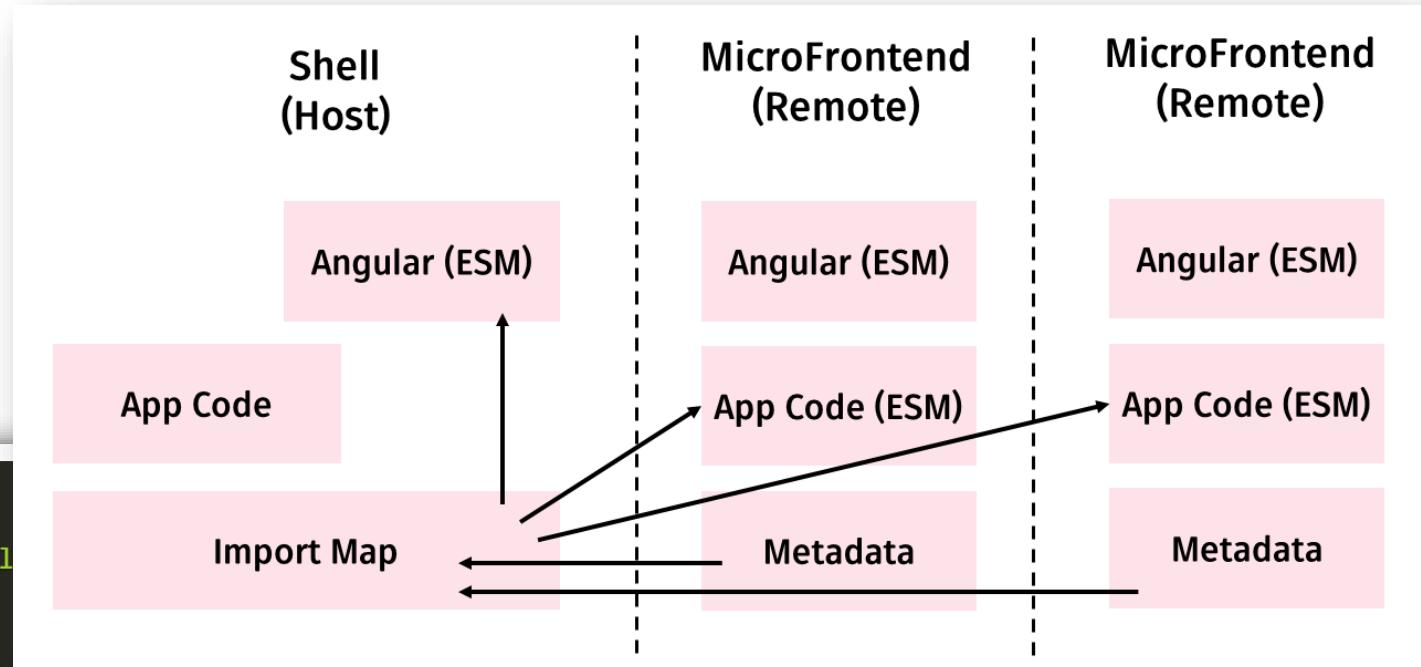
Angular Standalone Components

- No More Modules!
- Web Components?

Micro Frontends

- Angular > 17 heeft geen Webpack als build tool en daarom ook geen Module Federation meer
- Angular >17 gebruikt nu default standalone components, dus geen modules

```
1 | [...]
2 | import { loadRemoteModule } from '@angular/router';
3 |
4 | export const APP_ROUTES: Routes = [
5 |   [...]
6 |
7 |   {
8 |     path: 'flights',
9 |     // loadChildren instead of loadComponent !!!
10 |     loadChildren: () =>
11 |       loadRemoteModule('mfe1', './routes').then((m) => m.APP_ROUTES),
12 |   },
13 |
14 |   [...]
15 | ];
```



JAMSTACK

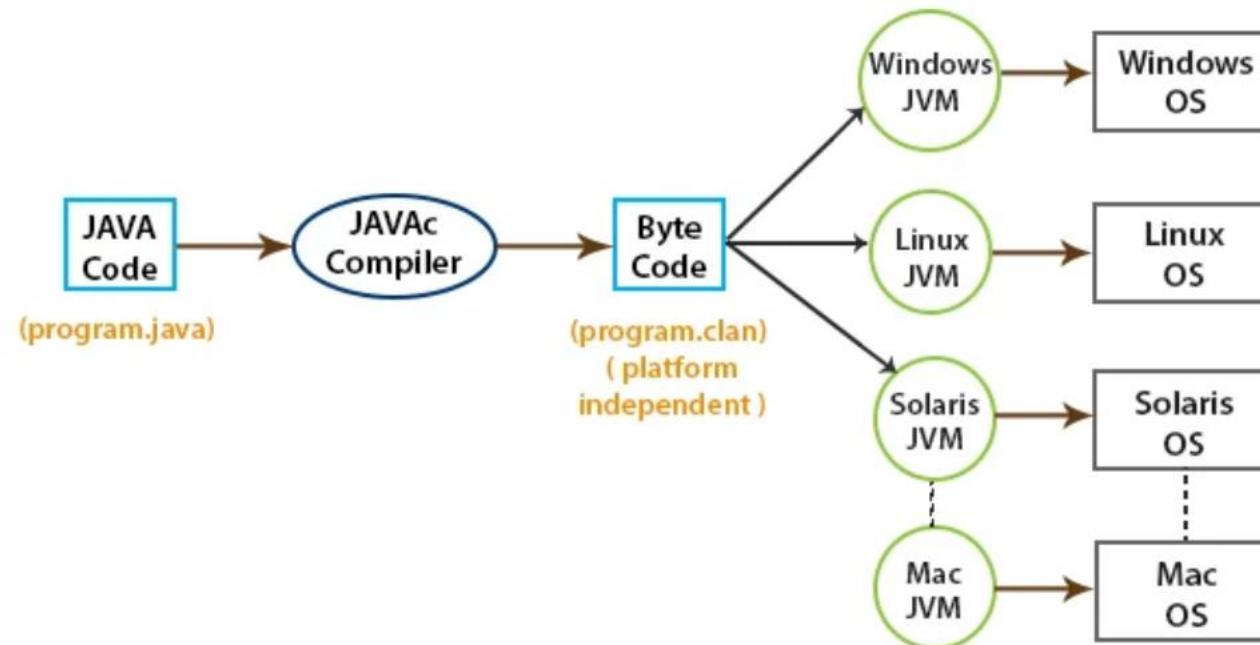
- Javascript, API's & Markup
- Static Site Generators (Gatsby, Hugo)
- Remix, Sveltekit & Astro



Ahead of Time



Platform Independence in Java



At Compile Time

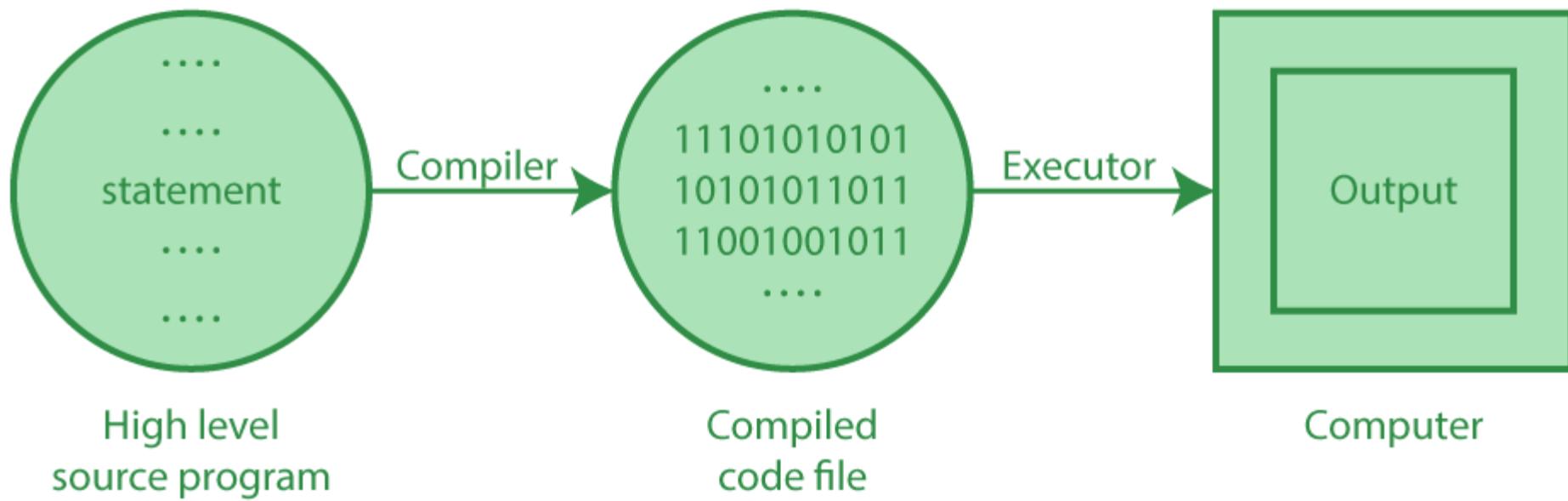
SourceCode.java → Compiler → ByteCode

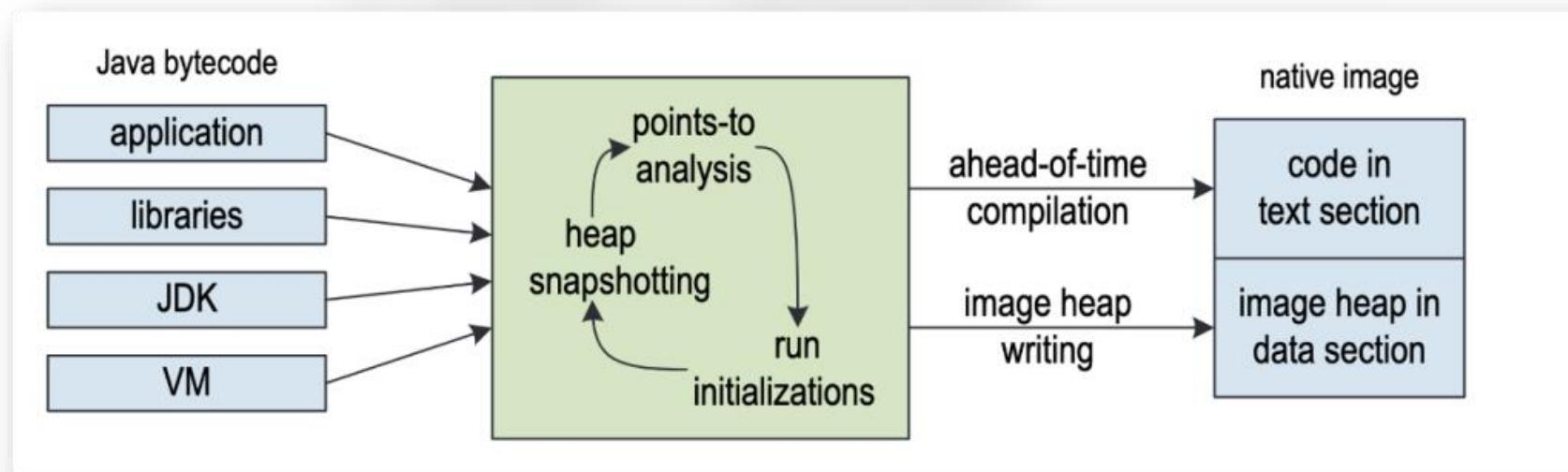
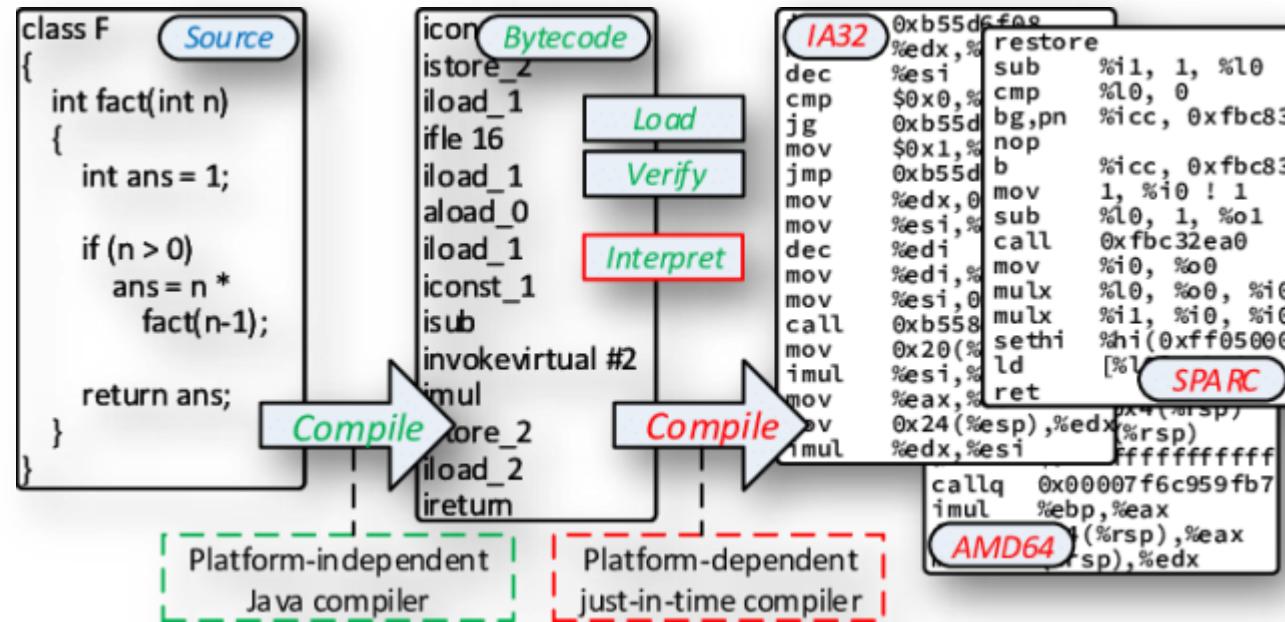
At Run Time

Native
Machine
Code

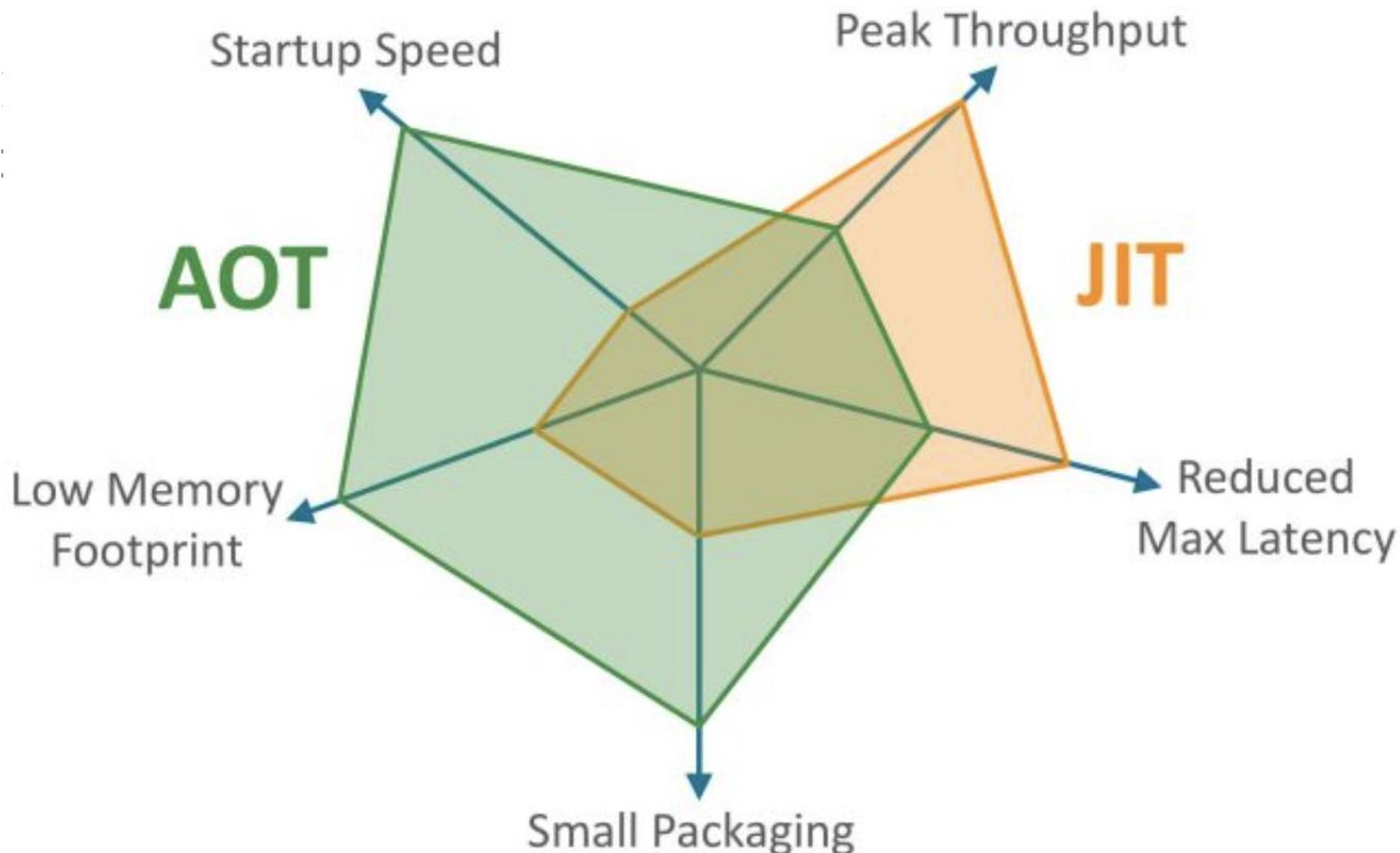
← JIT
Compiler

DEG





| GraalVM (AOT) | JVM (JIT) |
|--------------------------------|---------------------------------------|
| Fast application startup | Low application startup |
| Low memory footprint | Higher memory footprint |
| Lower optimized runtime code | Higher optimized runtime code |
| Non portable code | Portable code |
| More secure code | Less secure code |
| No Dynamic Features by default | There are dynamic features by default |





Testcontainers

Desktop

NEW

Cloud

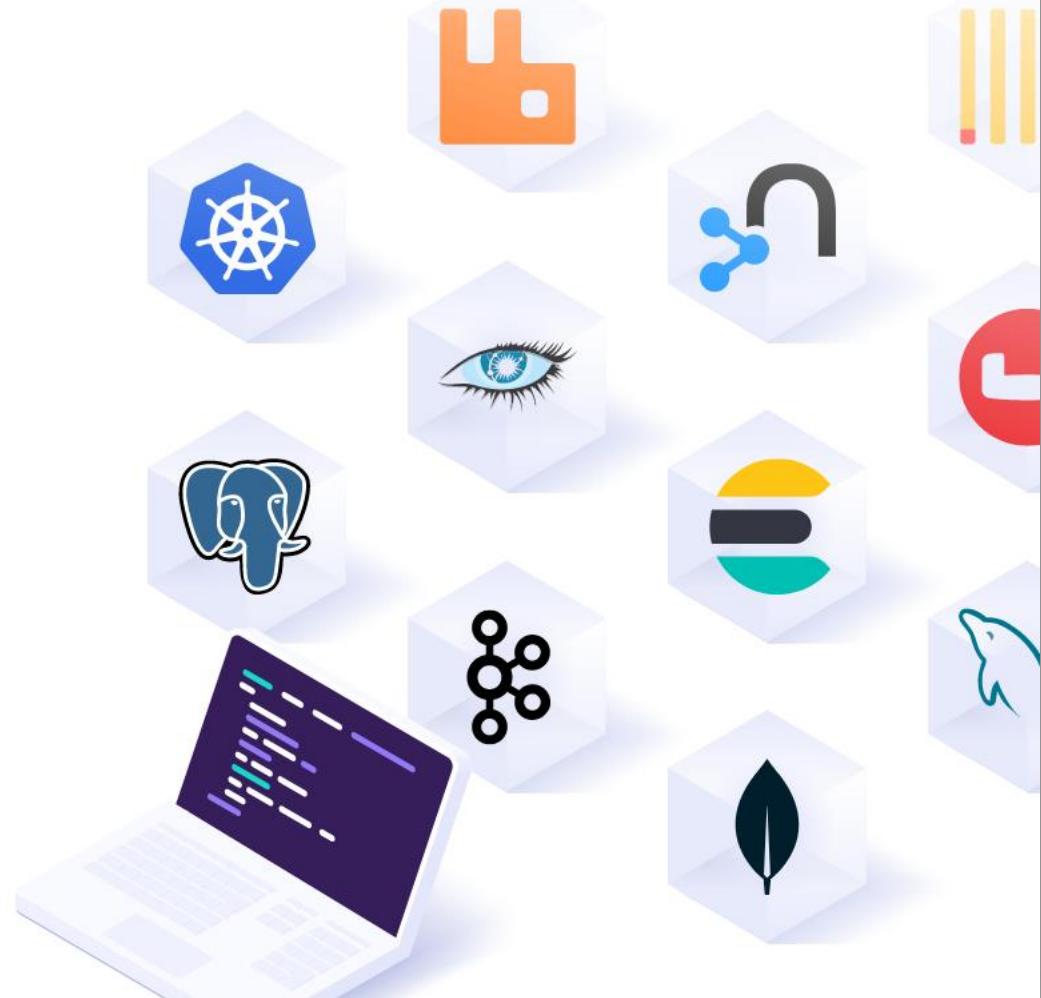
Getting Started

Guides

Modules

Unit tests with real dependencies

Testcontainers is an open source framework for providing throwaway, lightweight instances of databases, message brokers, web browsers, or just about anything that can run in a Docker container.



Workshop

- AOT in Java en .NET
- Testcontainers
- Cloud Native met Aspire

AOT met Quarkus

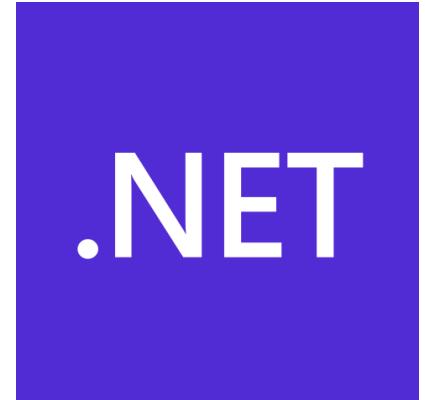
- <https://quarkus.io/get-started/>
- <https://quarkus.io/guides/building-native-image>



QUARKUS

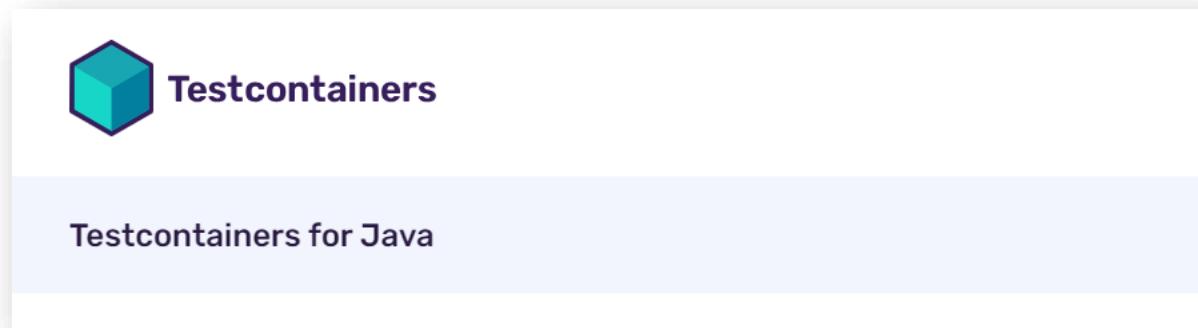
AOT met .NET

- Pre-reqs: <https://learn.microsoft.com/en-us/dotnet/core/deploying/native-aot>
- <https://github.com/dotnet/samples/tree/main/core/nativeaot>Hello World>



Testcontainers met Java

- <https://java.testcontainers.org/examples/>
- 1 testcontainer met Redis



Testcontainers met .NET

- <https://github.com/testcontainers/testcontainers-dotnet/tree/develop/examples/Flyway>
- 2 testcontainers: PostgreSQL en Flyway (een db migration tool)

Cloud Native with .NET Aspire

- <https://learn.microsoft.com/en-us/dotnet/aspire/get-started/build-your-first-aspire-app?tabs=dotnet-cli>



[←](#) 180 NUjij-reacties [🔗](#) [0](#)

NU+

Kunstmatige intelligentie werd groot in 2023, maar dit is slechts het begin

Door Rutger Otto

25 dec 2023 om 13:15 | Update: 20 uur geleden

Het kan snel gaan: begin dit jaar hadden we vaag van ChatGPT gehoord, nu gebruikt iedereen de chatbot. Kunstmatige intelligentie maakt het leven op veel gebieden makkelijker, maar ondertussen wordt stevig gediscussieerd over de

To replace programmers with
robots, clients will have to
accurately describe what
they want.

We're safe.

ChatGPT

- Voorspellingen aan de hand van statistiek op een taalmodel
- Woord voor word (daarom zie je ChatGPT ook genereren)
- Wiskundige berekeningen op basis van waarschijnlijkheid dat (delen van) woorden aan elkaar gerelateerd zijn
- Getraind model (Large Language Model)

Feitelijk (on)juist?

- Feitelijkheid is (voor generatieve AI) niet relevant!
- Mocht je op zoek zijn naar betrouwbaarheid, dan moet je het dus voeden met feitelijke data!

Trainingsdata

- GPT-3 Common Crawl 2016-2019 (en daar ~1% van)
- X00.000.000.000 parameters
- Parameter=elk woord is het volgende woord van het vorige woord.
Hier worden waarden aan toegekend en daar kan het algoritme mee aan de slag.
- En het zijn eigenlijk niet complete woorden, eerder (delen) van lettergrepen.

Dus

- ChatGPT is geen database (gebruikt er ook geen)
- ChatGPT is geen Google (want geen feitelijkheden)
- ChatGPT is zelf geen neuraal netwerk
- De CPU's en GPU's die de training doen, de prompts interpreteren en de "het gesprek" genereren zitten wel in een neuraal netwerk
- ChatGPT begrijpt taal niet en doet slechts voorspellingen weergeven uit wiskundige berekeningen
- ChatGPT heeft wel een grote context, waar het lijkt alsof de machine de taal begrijpt

Positief

- Productiviteit verhogend
- Leren met AI is eenvoudiger (dan met Google, SO, etc.)
- Veel talen worden ondersteund
- Context wordt meegenomen (ChatGPT moet je voeden)
- Minder fouten tijdens het coderen
- Plugins voor de meest gebruikte IDE's

Negatief

- Te veel vertrouwen op gegenereerde code
- Soms is het gewoon niet juist
- Licensing (ugh)
- Lazy Coding (is dat echt wel zo?)
- Nuance verdwijnt (persoonlijke stijl etc.)
- Vertrouwelijkheid

Opgepast!

- Toestemming van de opdrachtgever?
 - Wat kan wel, wat kan niet
 - Practises
-
- <https://docs.github.com/en/site-policy/privacy-policies/github-copilot-business-privacy-statement>



ChatGPT



GitHub
Copilot

@JetBrains AI

Demo ChatGPT

- Conversie
- Optimalisatie
- Open vragen (How would I do ...?)

GitHub CoPilot

- Ook een LLM
- De programmeertalen vergelijkbaar met spreek talen
- Code in GitHub is op zn minst zuiverder te noemen dan de 1% Common Crawl
- Want: OSS en het build! (nou ja, meestal dan)

Demo GitHub CoPilot

- Code Completion on steroids
- Generate Code based on comments
- Generate Boilerplate code

@JetBrains AI

Supercharge your tools.
Embrace new freedom.



JetBrains AI

- Powered by OpenAI en bij eigen modellen
- Google LLM coming soon
- Andere partners kunnen aansluiten, maar JetBrains controleert de veiligheid van de gegevens

Demo JetBrains AI

- AI Chat
- Refactoring
- Code Completion
- Writing Documentation
- Generate Commit Messages
- Explain this code (...this PR)

IDE's en Tools

- Visual Studio
- Visual Studio Code
- IntelliJ
- Rider
- WebStorm
- Writerside
- Fleet
- Colima
- Podman

Writerside Demo

- Writerside is a JetBrains IDE based on the IntelliJ platform. Use it to author, build, test, and publish technical documentation.
- Is er ook als plugin voor de JetBrains IDE's
- Markdown support (natuurlijk)

Colima



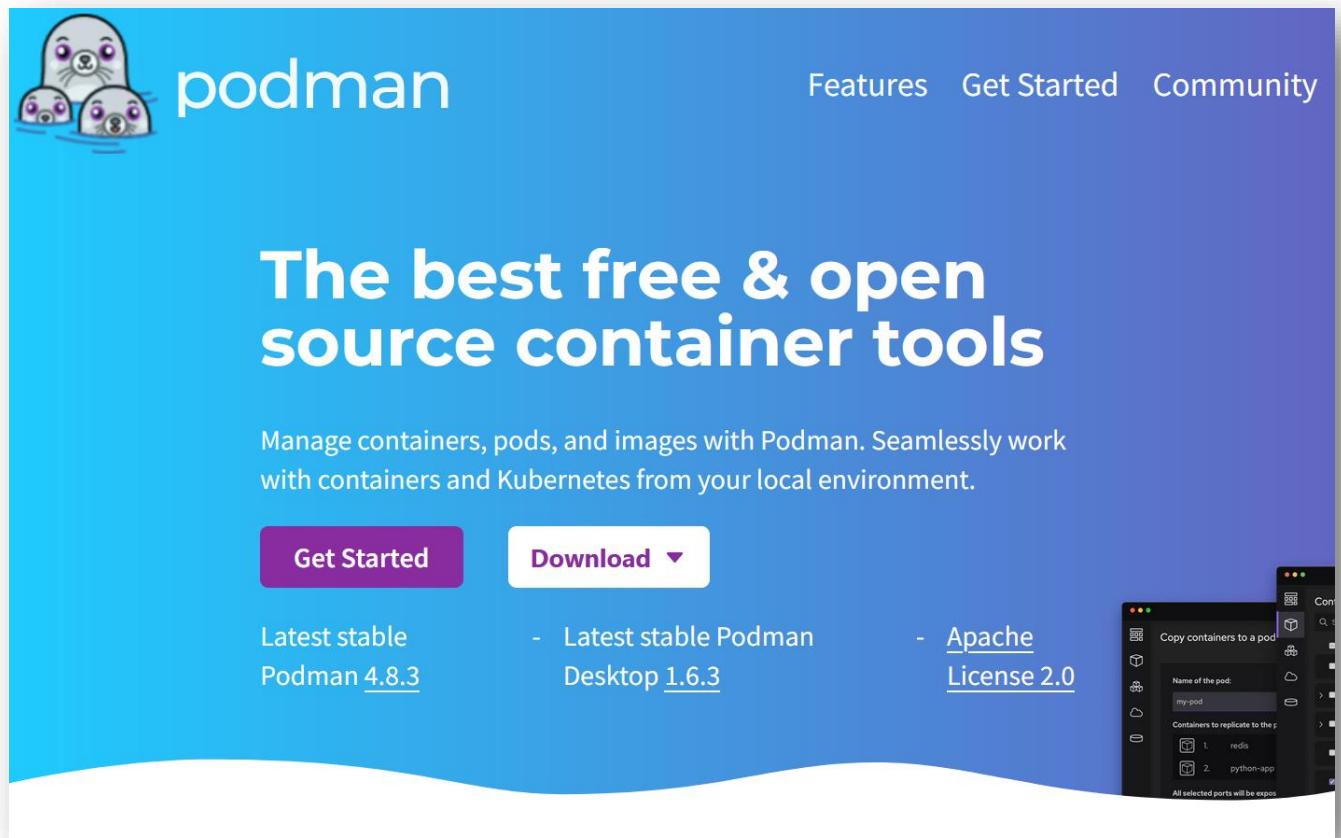
Colima - container runtimes on macOS (and Linux) with minimal setup.

Go passing Integration passing

```
~$ docker ps
Cannot connect to the Docker daemon at unix:///var/run/docker.sock. Is the docker daemon running?

~$ colima start
INFO[0000] using docker runtime
INFO[0000] starting colima
INFO[0000] starting ... context=vm
> msg="Using the existing instance \"colima\""
> msg="[hostagent] Starting QEMU (hint: to watch the boot progress, see \"/Users
> msg="SSH Local Port: 41122"
> msg="[hostagent] Waiting for the essential requirement 1 of 4: \"ssh\""
```

Podman!



The screenshot shows the official Podman website homepage. At the top left is the Podman logo featuring three cartoon seals. To the right of the logo are three navigation links: "Features", "Get Started", and "Community". The main title "podman" is centered above a large, bold, white text that reads "The best free & open source container tools". Below this title is a descriptive paragraph: "Manage containers, pods, and images with Podman. Seamlessly work with containers and Kubernetes from your local environment." Two prominent buttons are located below the paragraph: a purple "Get Started" button and a white "Download" button with a dropdown arrow. At the bottom of the page, there are three sections: "Latest stable Podman 4.8.3", "Latest stable Podman Desktop 1.6.3", and a link to the "Apache License 2.0". On the far right, a small screenshot of the Podman desktop application interface is visible.

podman

Features Get Started Community

The best free & open source container tools

Manage containers, pods, and images with Podman. Seamlessly work with containers and Kubernetes from your local environment.

[Get Started](#) [Download ▾](#)

Latest stable
Podman [4.8.3](#)

- Latest stable Podman
Desktop [1.6.3](#)

- [Apache License 2.0](#)

