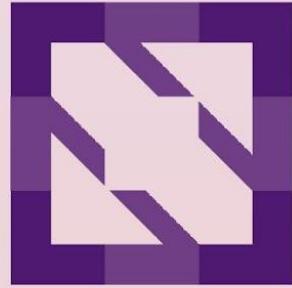


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Phippy's Field Guide to Wasm

Matt Butcher & Karen Chu

About the authors



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Name: Karen Chu
Company: Fermyon
Title: Head of Community
Random camping memory: once brought her sourdough starter camping



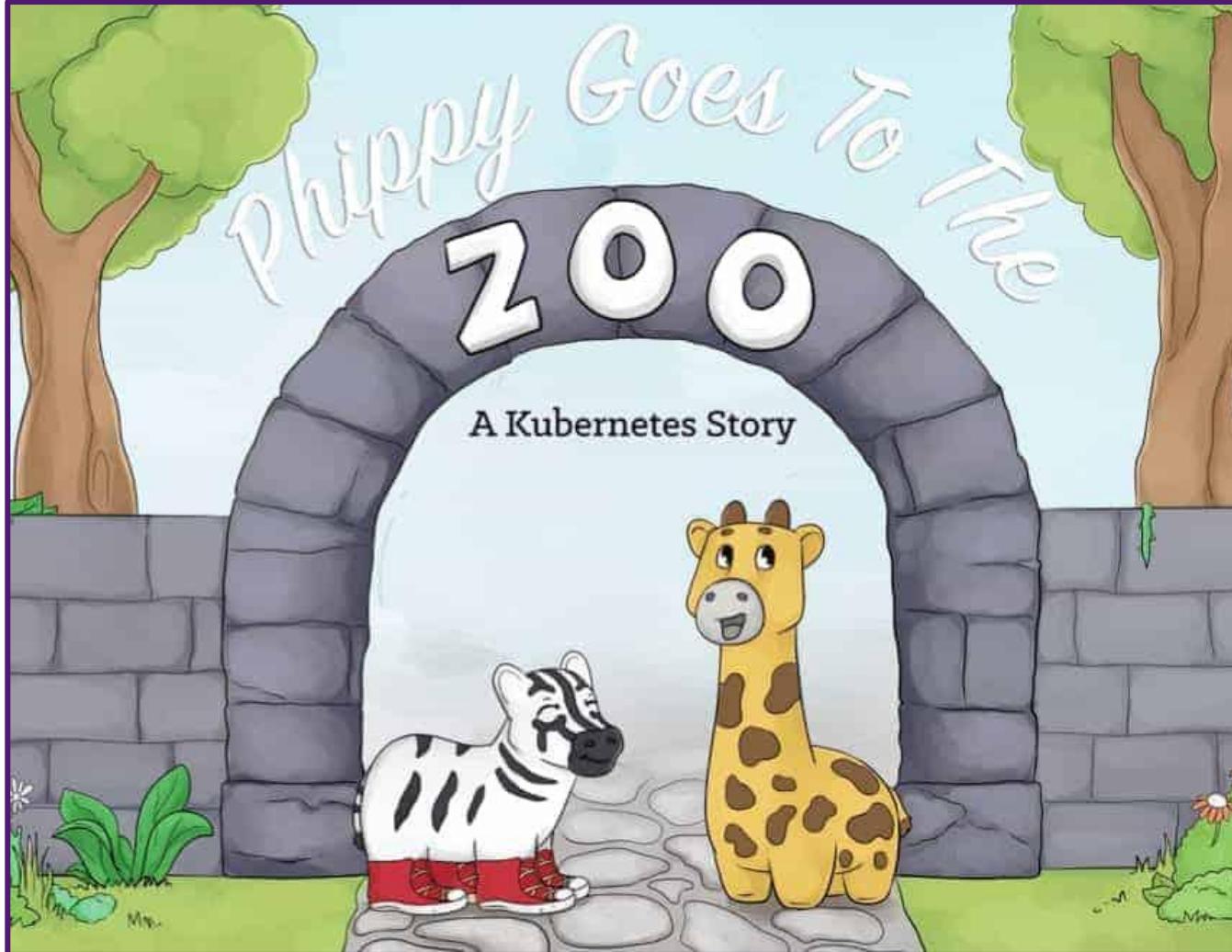
Name: Matt Butcher
Company: Fermyon
Title: CEO
Random camping memory: once had a bear eat all the marshmallows

A Brief History of Phippy



The Illustrated Children's Guide to Kubernetes

A Brief History of Phippy



Phippy Goes to the Zoo

A Brief History of Phippy



From 00-K8s with Love

A Brief History of Phippy

PHIPPY & FRIENDS

Phippy is a simple PHP app, exploring the cloud native world with her friends.



[Phippy.io](https://phippy.io)



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PHIPPY'S FIELD GUIDE TO WASM





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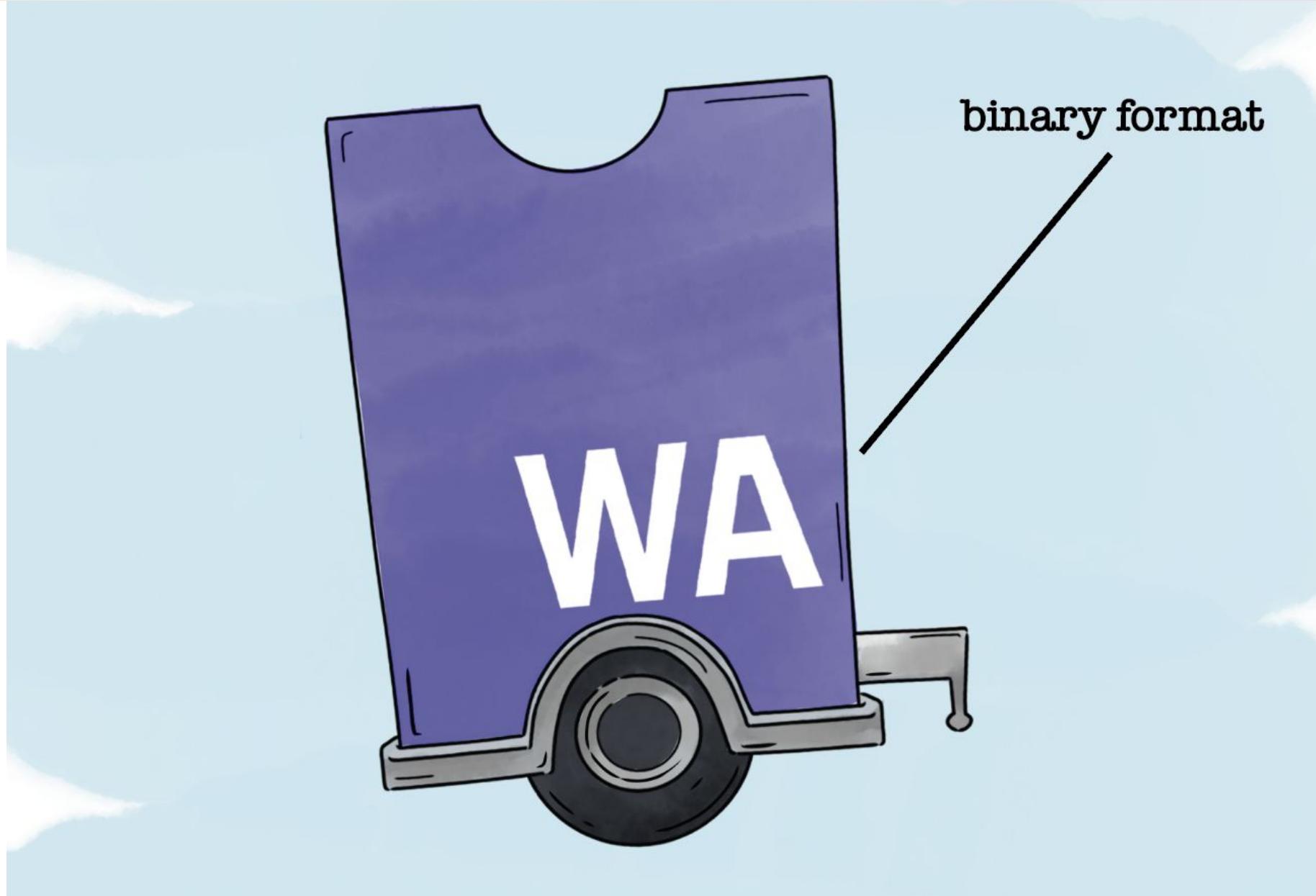


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Camping Trailer





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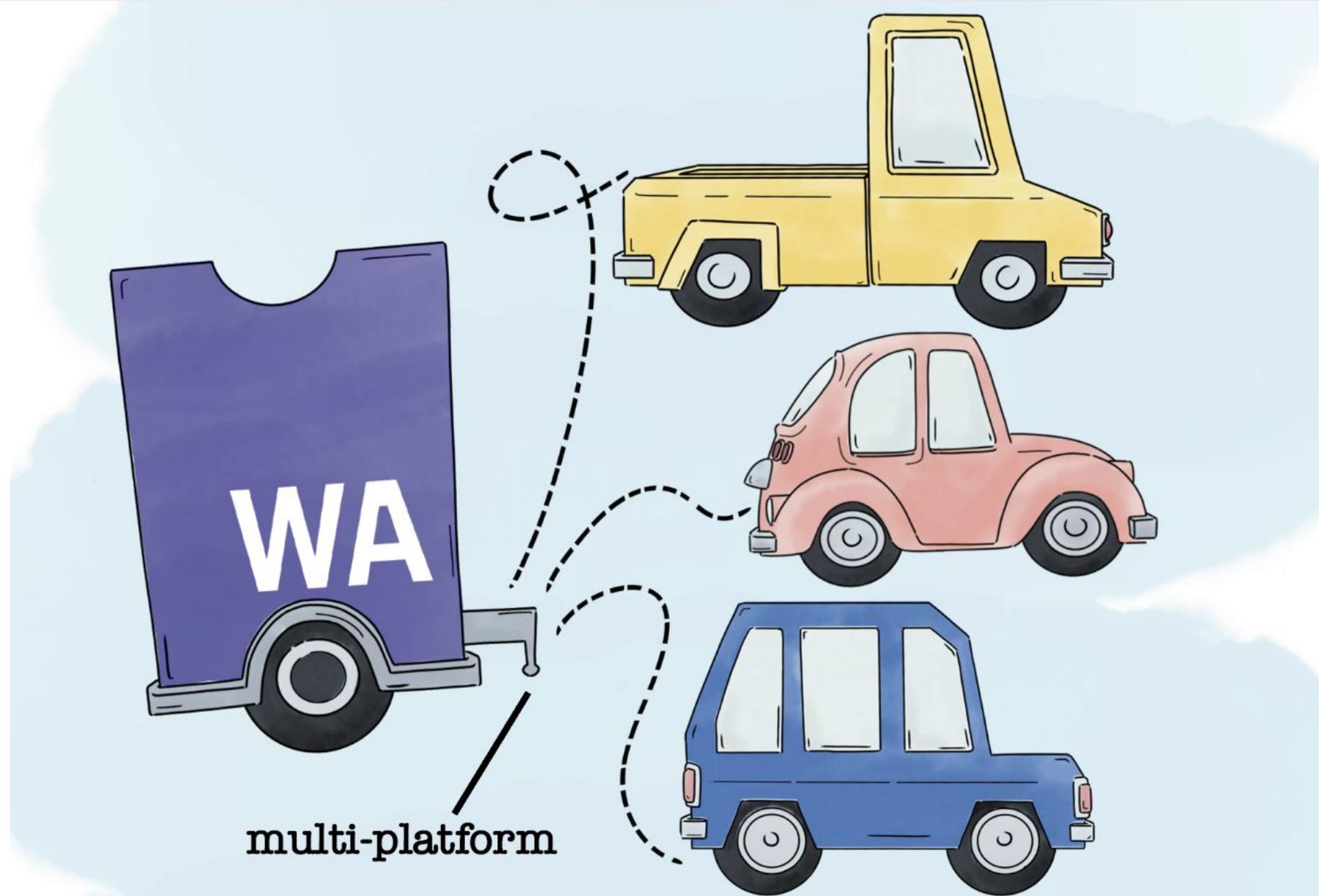


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Trailer Hitch





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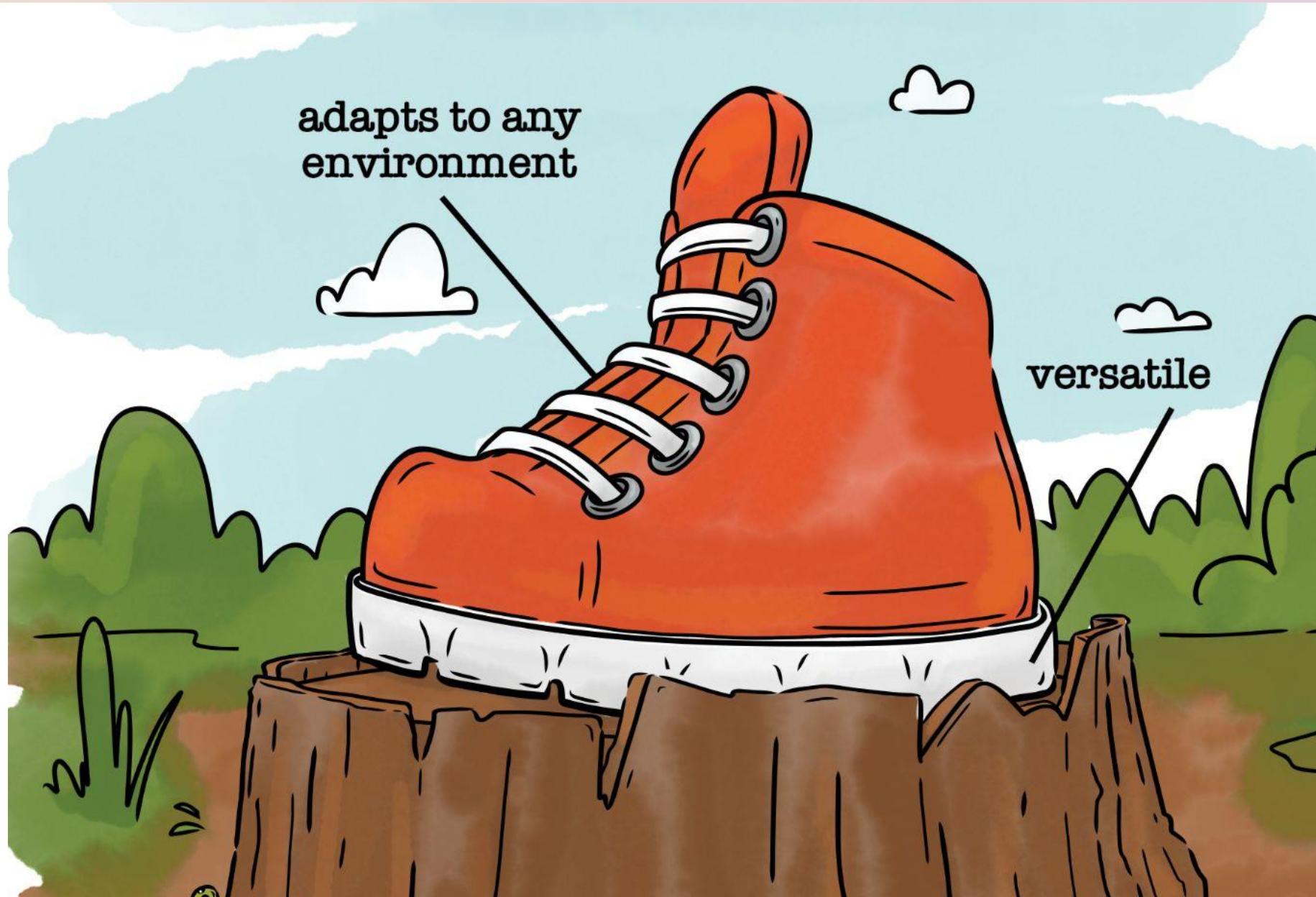


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Hiking Shoes





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Camping Tent



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Fire Pit

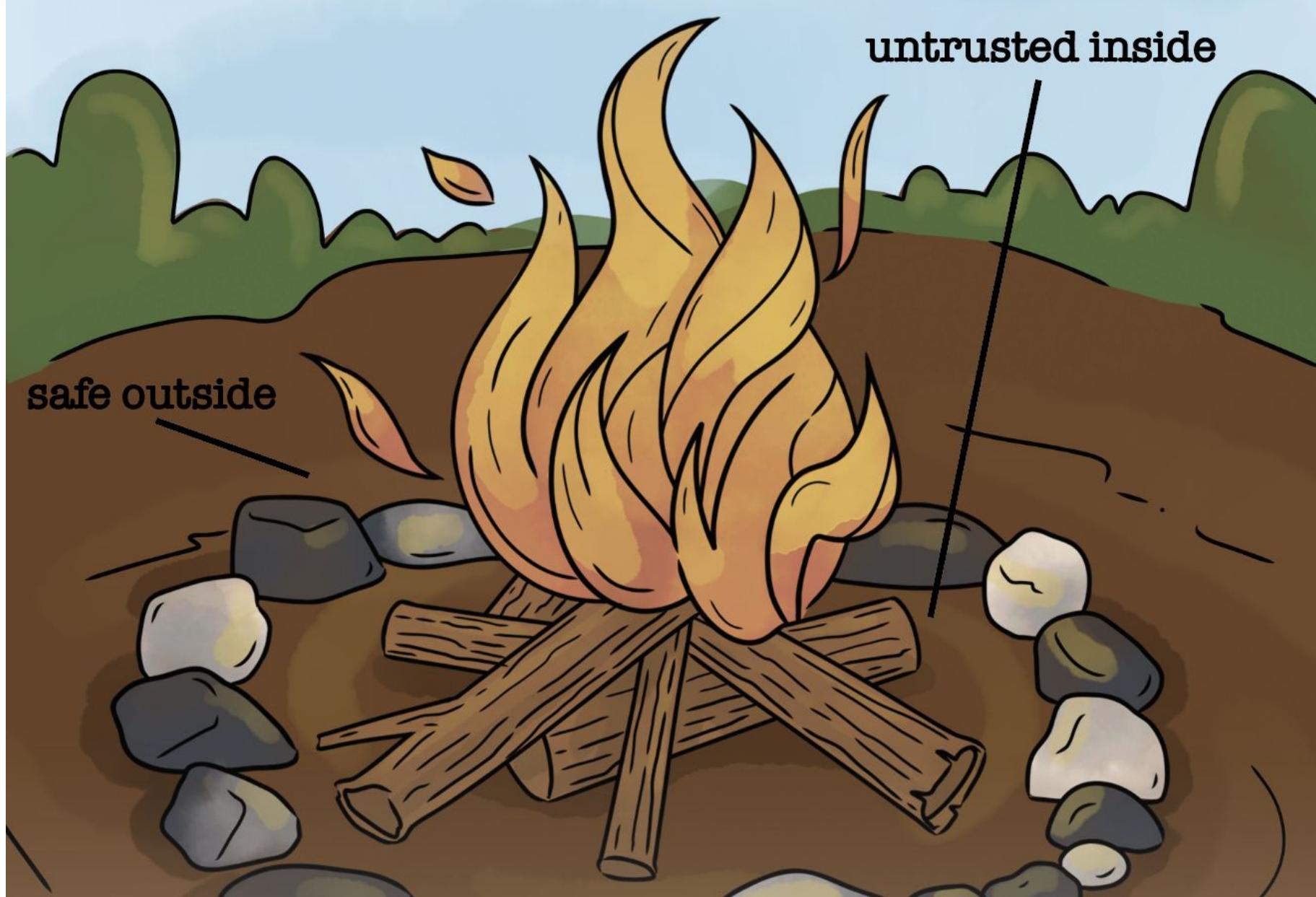


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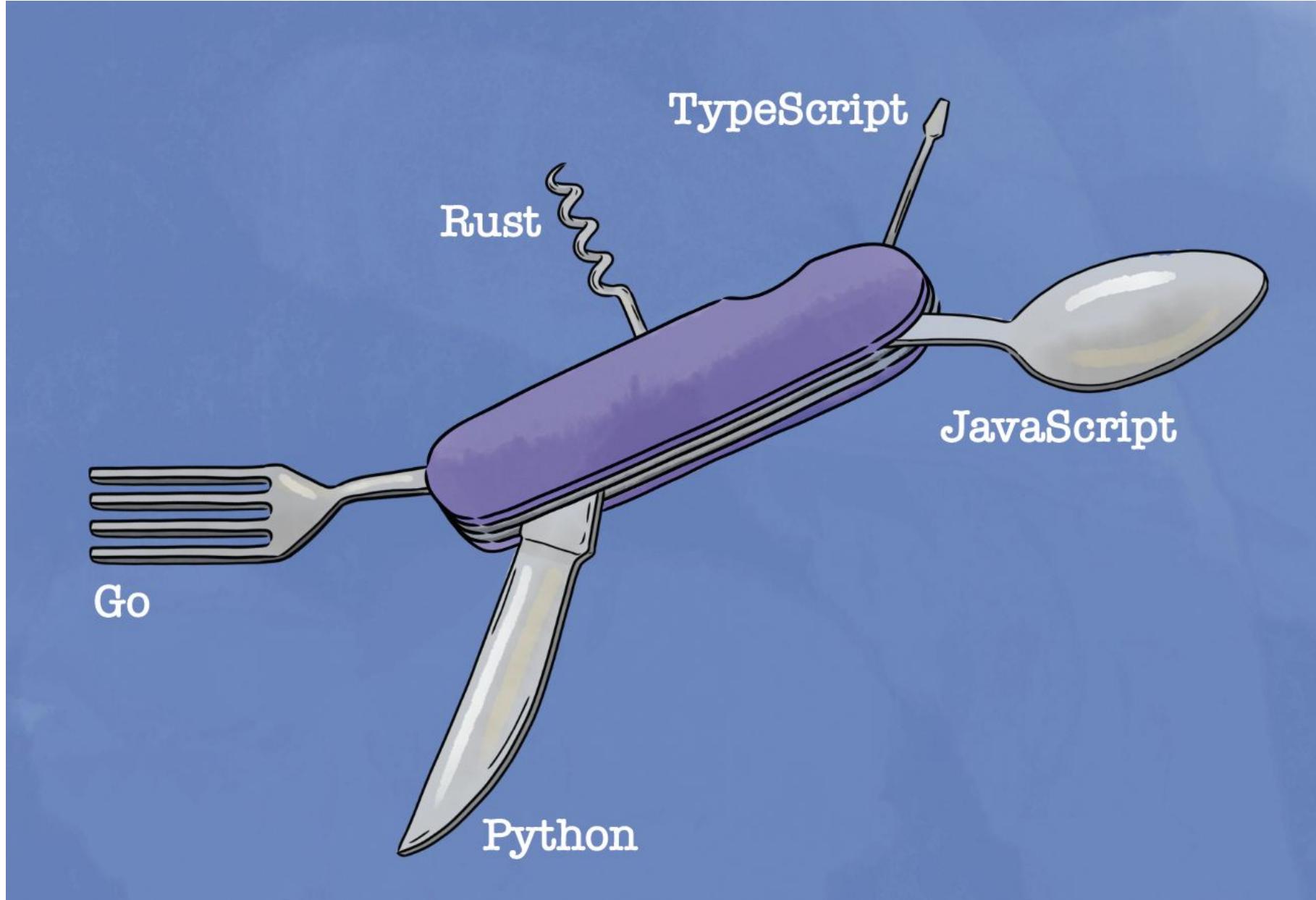


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Multi-Tool





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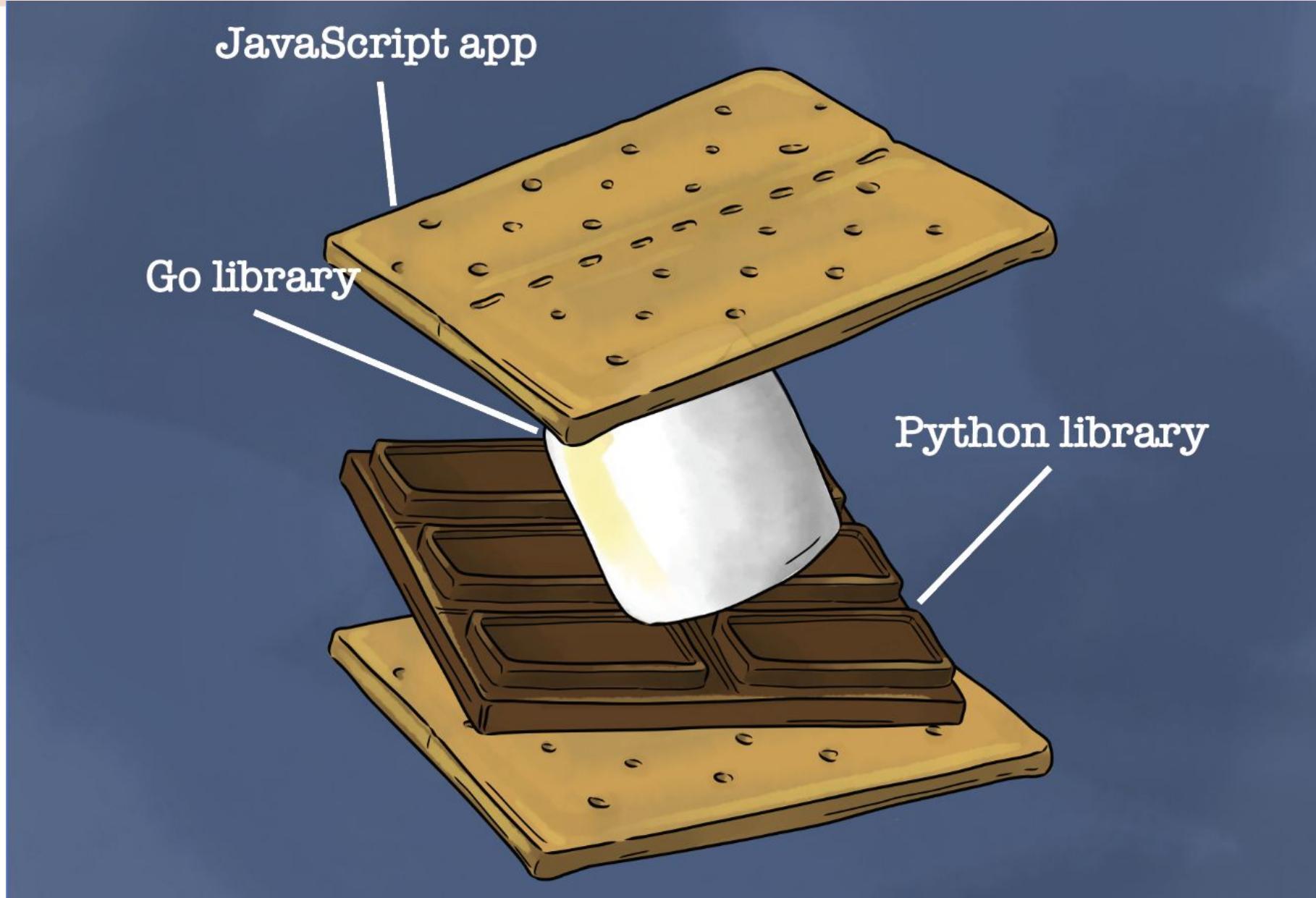


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S'mores





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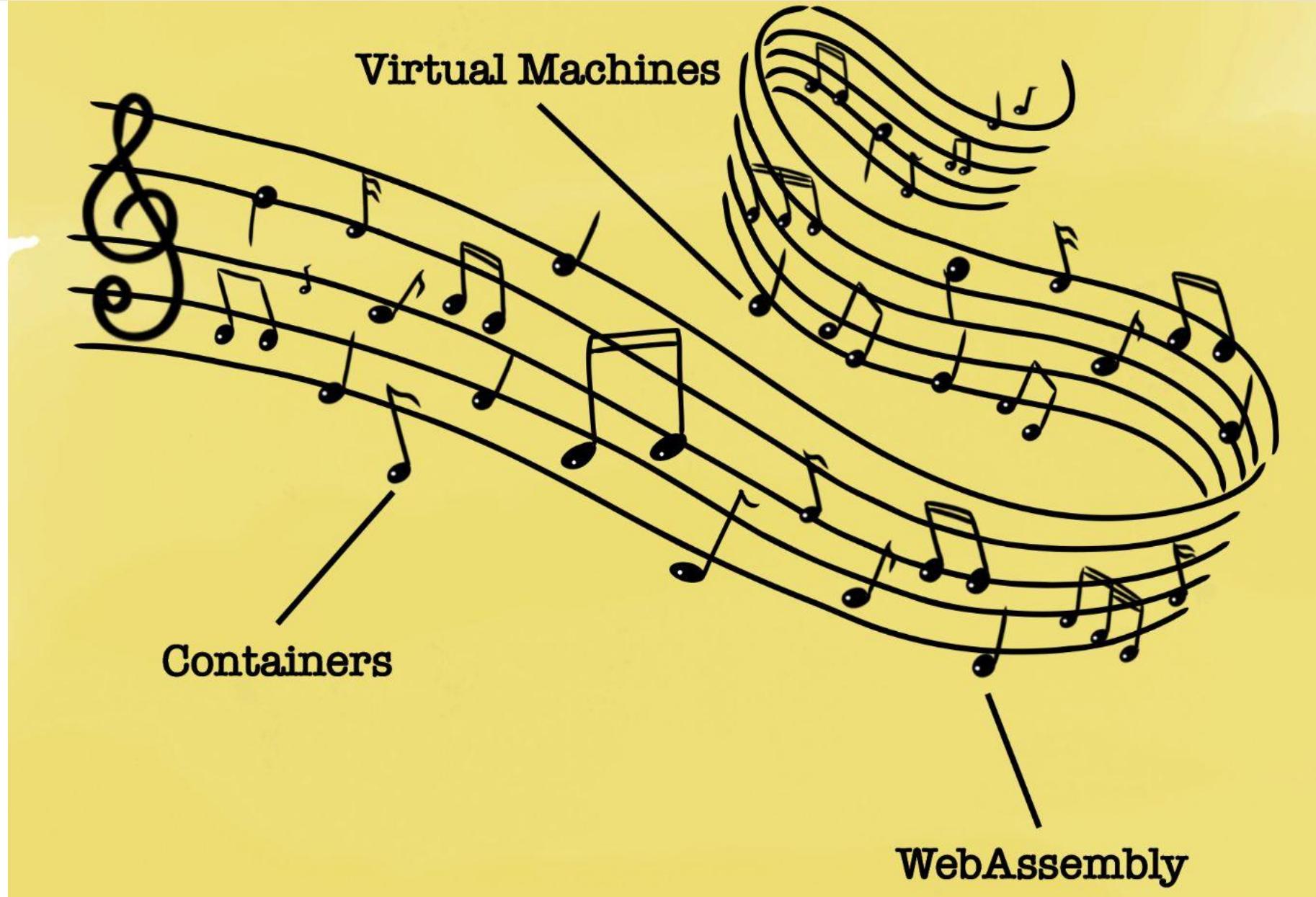


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Campfire Songs



Zzzzz



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The End



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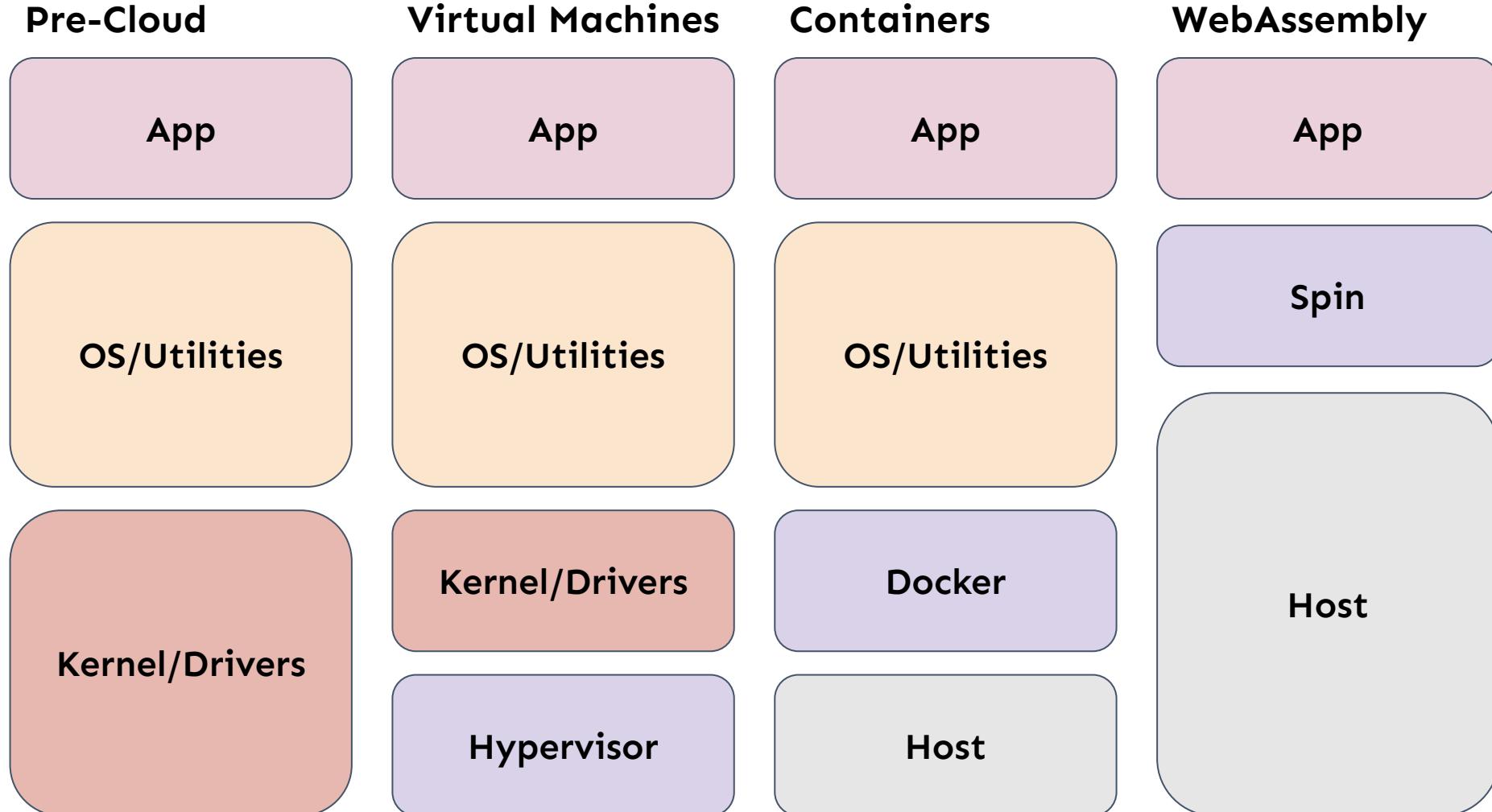


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Advances in Cloud Computing



Strengths of WebAssembly

Good for the browser, great for serverless

- Security Sandbox
- Cross-platform, cross-architecture
(And not just Windows or Linux)
- Fast startup and execution
- Ideally, any programming language
is supported



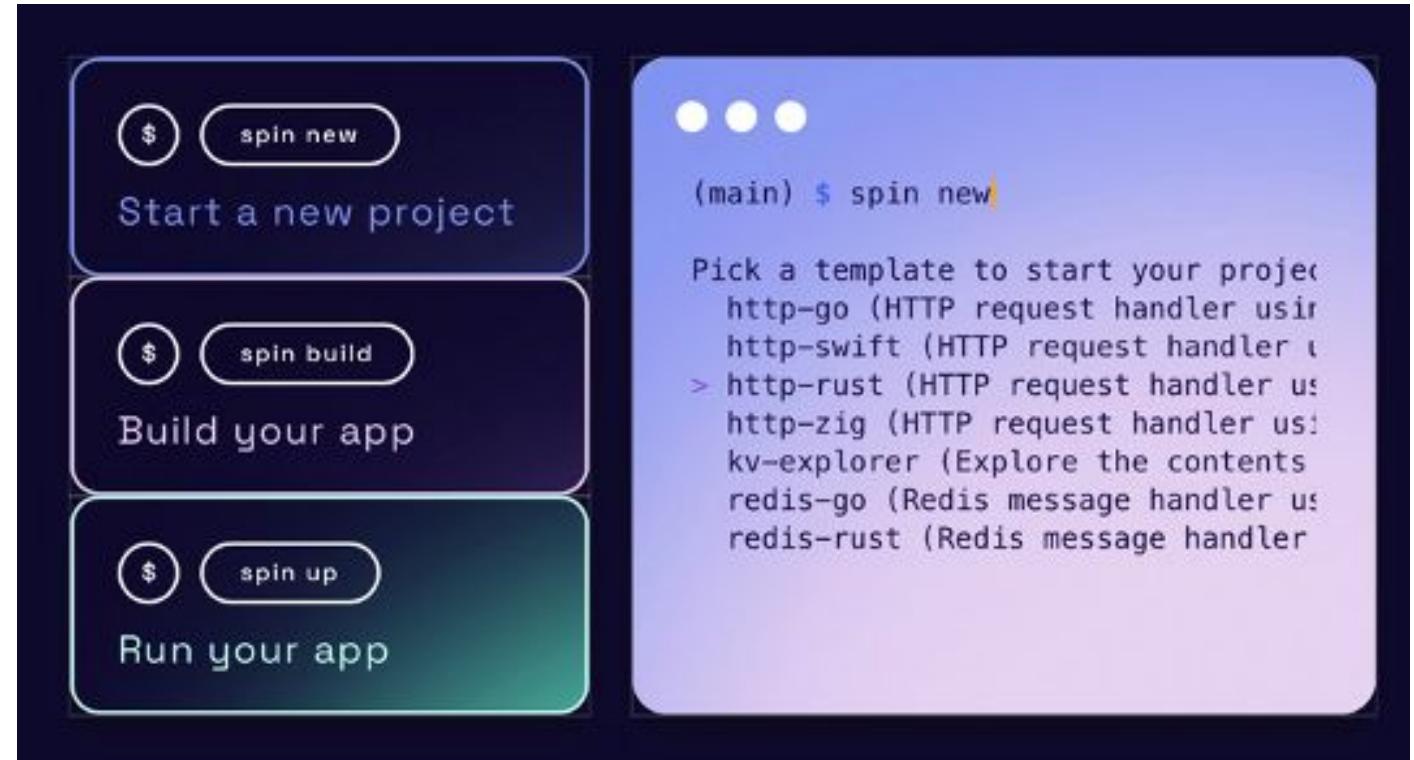
WEBASSEMBLY

Spin 2.0

Spin is the open source developer tool for creating serverless applications.

With just a few commands you can compose a new serverless app. Comes with built-in:

- Key Value Store
- SQL Database
- Serverless AI inferencing
- Secure config storage
- SDKs for your favorite languages



<https://fermyon.com/spin>
<https://github.com/fermyon/spin>

Where to Run Spin Apps

Spin apps can run in a variety of environments:

- In Spin itself (for local testing)
- On Fermyon Cloud (and in Nomad)
- On almost all Kubernetes, from OpenShift to AKS
- Inside Docker Desktop
- And now in NGINX Unit

Example Serverless Function

```
1 import { Llm, InferencingModels, HandleRequest, HttpRequest, HttpResponseMessage } from "@fermyon/spin-sdk"
2
3 const model = InferencingModels.Llama2Chat
4
5 export const handleRequest: HandleRequest = async function (request: HttpRequest): Promise<HttpResponse> {
6     const prompt = "As a monty python character explain how to walk. Limit to 3 sentences."
7     const out = Llm.infer(model, prompt, { maxTokens: 200 })
8     return {
9         status: 200,
10        body: out.text
11    }
12 }
```

Wasm languages supported by Spin

WASI Only

CGI-like programming with
file system, env vars, etc.
Many languages.

- Swift
- C/C++
- .NET
- PHP
- Ruby
- Others...

Spin SDK

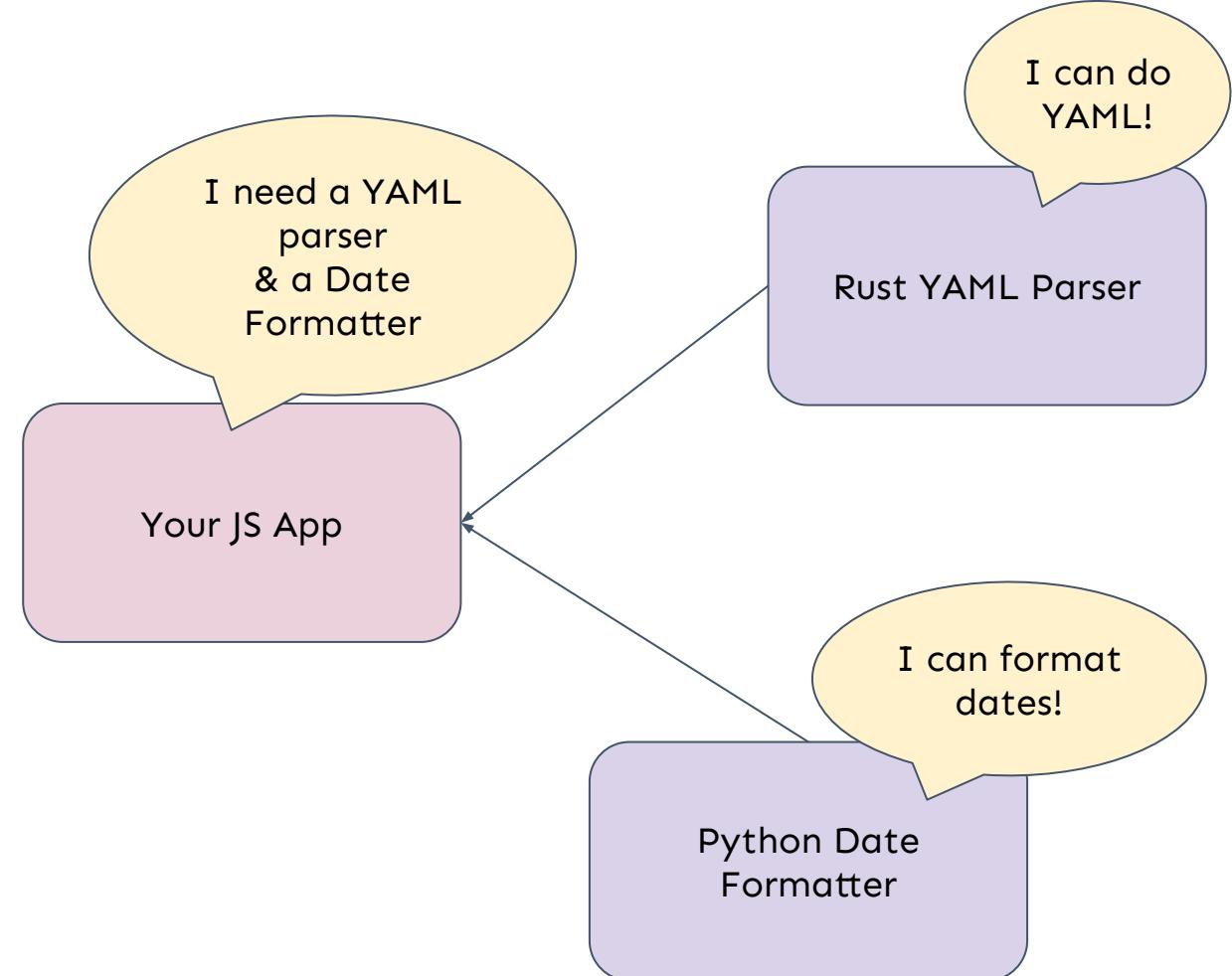
Lots of additional features
like SQL, HTTP, Key/Value,
AI.

- Rust
- JavaScript/TypeScript
- Go
- Python

Component Model

Imagine being able to write code in whatever language you want, and use libraries from all over without even knowing what language they were written in!

The component model provides a way for your app to declare what it needs as well as what it provides, and then Wasm will take care of the rest.



WebAssembly Ecosystem

WASM community spaces:

- World Wide Web Consortium (W3C)
- Bytecode Alliance (BA)
- Cloud Native Computing Foundation (CNCF)

Other Cloud Native companies invested in cloud native Wasm:

- Microsoft
- Red Hat
- F5 (Nginx)
- Fastly
- VMware
- Docker
- & more

Staying connected

- Get Started with WebAssembly and Spin



<https://developer.fermyon.com/spin>

- Chat with us in Discord – <https://fermyon.com/discord>

Staying connected

- **Phippy's Field Guide to Wasm book signing**
 - Fermyon booth (K10) on Thur Nov 9 @ 10:30 - 11:00 AM
- **Read the book online**
 - <https://www.fermyon.com/phippy>



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Thank you!

Matt Butcher (@technosophos)

Karen Chu (@karenhchu)



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