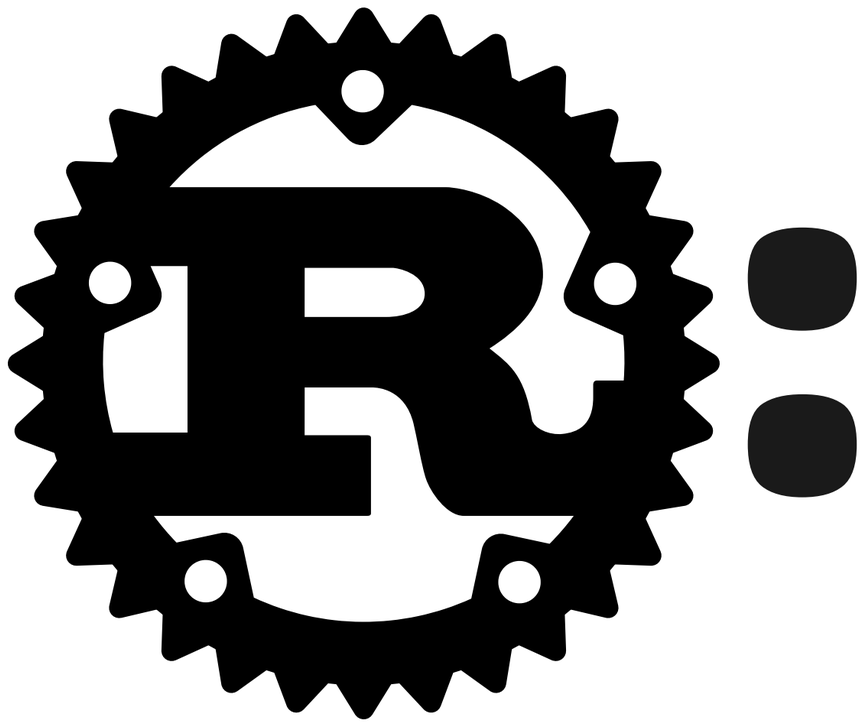


Squeezable, Modern, Helpful, Wide

https://www.linkedin.com/in/mrmikemoran/

https://github.com/mikemoraned/

https://www.houseofmoran.com

@houseofmoran.com

@mike_moran@mastodon.scot

My Rust Story ...

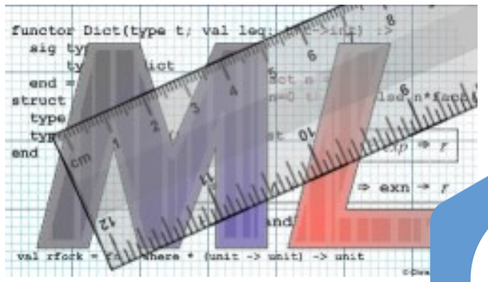
1990's

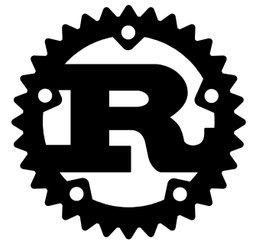
2000's / 2010's

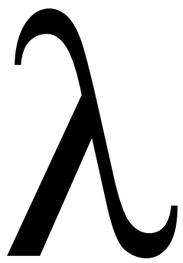
2020-ish

AI/CS Degree → Professional

Multi-paradigm → Main-stream → Something new?

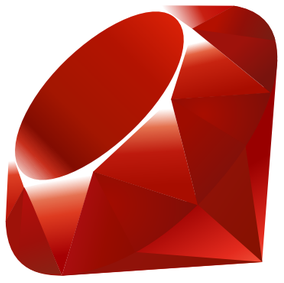


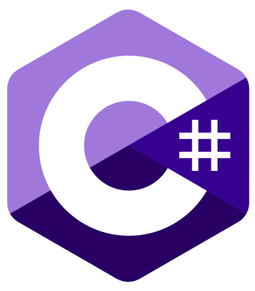




SWI Prolog

Java™





Jul 2018

Bevy segfault

May 2019

QR Code Service

Oct 2019

Filmhouse scraper

mikemoraned/
karl2d

Karl Sims 2d

1 Contributor · 0 Issues · 0 Stars · 0 Forks

github.com

karl2d/bounce2d/src/main at master · mikemoraned/karl2d

Karl Sims 2d. Contribute to mikemoraned/karl2d development by creating an account on GitHub.

mikemoraned/
qrmethis

a repo for helping me learn rust

1 Contributor · 0 Issues · 0 Stars · 0 Forks

github.com

qrmethis/src/main.rs at master · mikemoraned/qrmethis

a repo for helping me learn rust. Contribute to mikemoraned/qrmethis development by creating an account on GitHub.

mikemoraned/
filmhouse_prime

find past filmhouse films on Amazon Prime

1 Contributor · 0 Issues · 0 Stars · 0 Forks

github.com

filmhouse_prime/scraper/s at master · mikemoraned/filmhouse_p

find past filmhouse films on Amazon Prime. Contribute to mikemoraned/filmhouse_prime development by creating an account on GitHub.

TQRCG

Jul 2022

Sep 2022

Sep 2024

Browser Physics → Aranet Sensor ⋯▶ Geo Stuff

mikemoraned/
physics

playing with physics stuff

1 Contributor · 0 Issues · 0 Stars · 0 Forks

github.com

GitHub - mikemoraned/physics: playing with physics stuff

playing with physics stuff. Contribute to mikemoraned/physics development by creating an account on GitHub.

mikemoraned/
aranet4

Things related to Aranet4 CO2 Sensor

1 Contributor · 0 Issues · 0 Stars · 0 Forks

github.com

GitHub - mikemoraned/aranet4: Things related to Aranet4 CO2 Sensor

Things related to Aranet4 CO2 Sensor. Contribute to mikemoraned/aranet4 development by creating an account on GitHub.

mikemoraned/**geo**

umbrella monorepo for geo projects

2 Contributors · 0 Issues · 0 Stars · 0 Forks

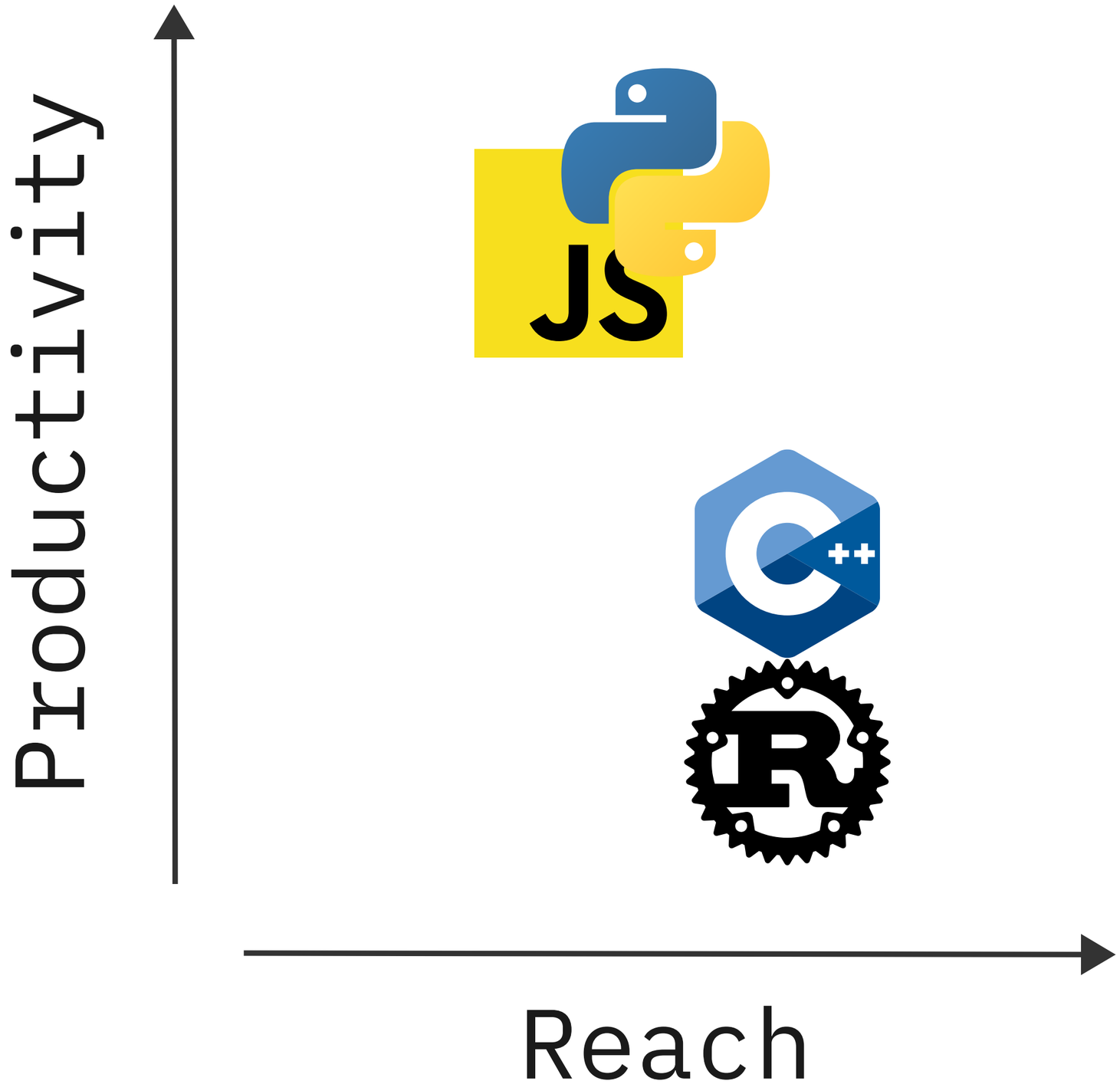
github.com

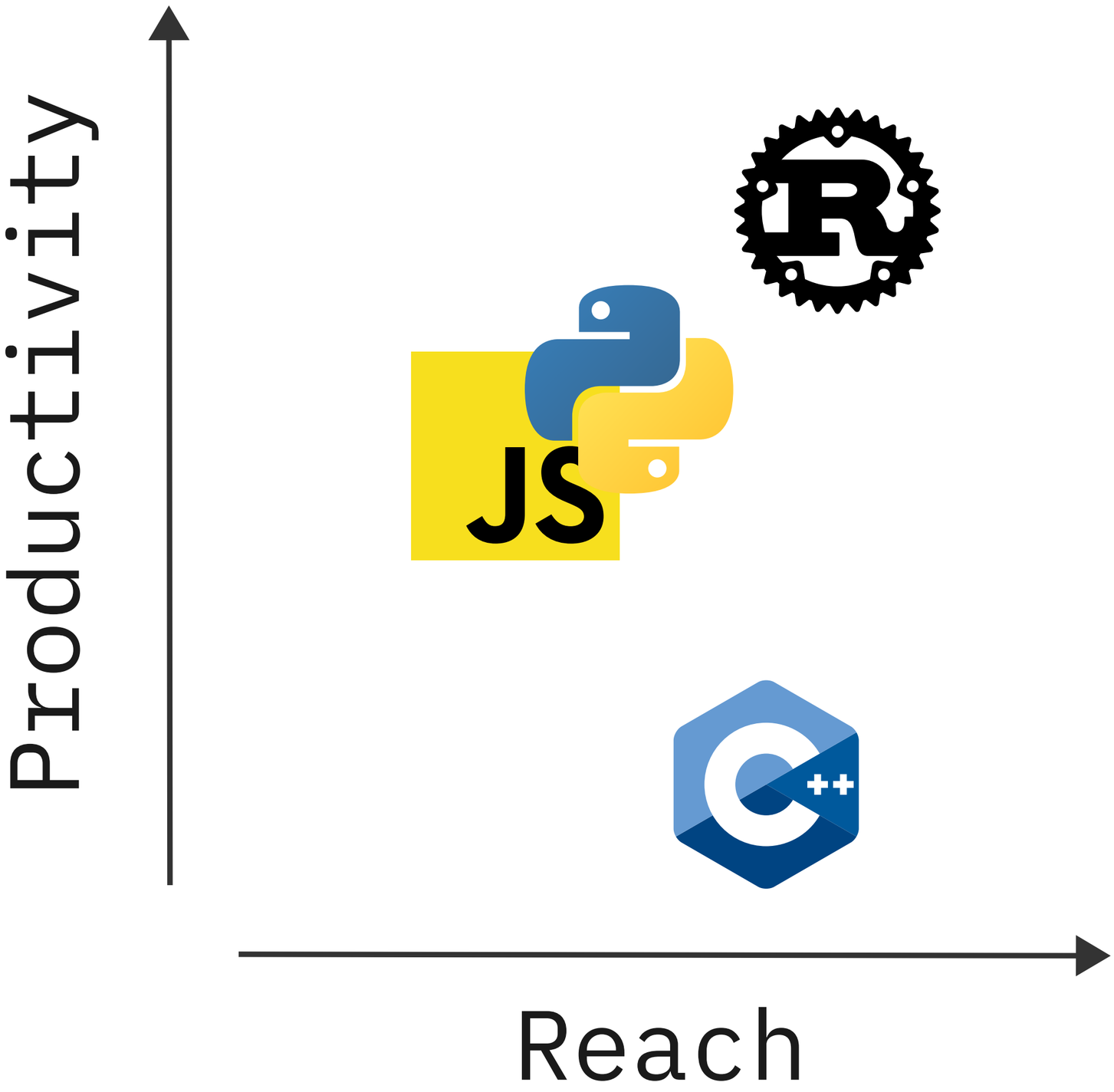
GitHub - mikemoraned/geo: umbrella monorepo for geo projects

umbrella monorepo for geo projects. Contribute to mikemoraned/geo development by creating an account on GitHub.

Productivity vs Reach

In the Beginning...





...but when sustained?

Productivity = Modern + Helpful

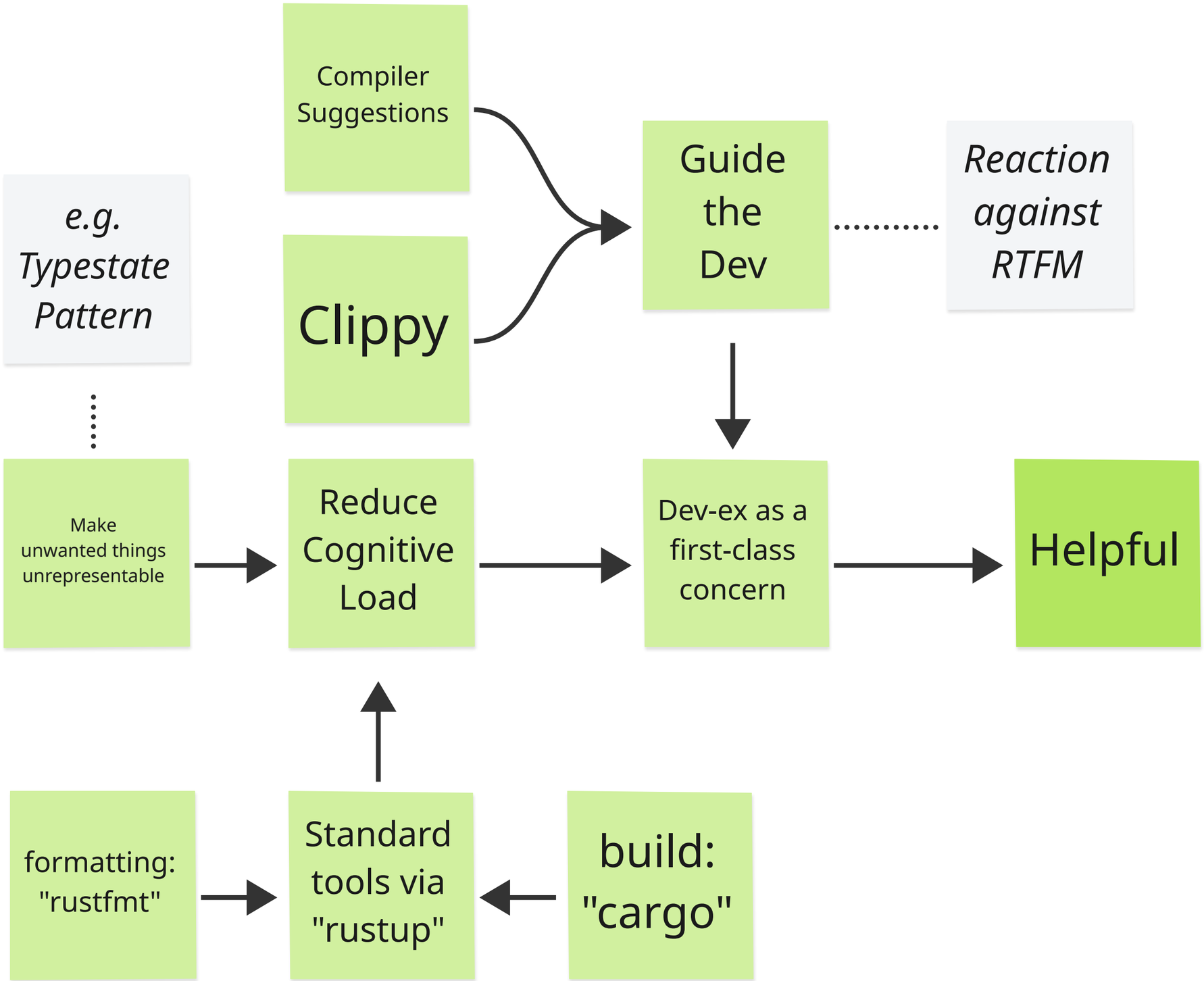
Hard to add later on e.g. Java ..... Optionality instead of Nullability

C++ RAII → Bake in Idioms / Features from popular languages ← Single-writer, multiple-reader

Break things in a backwards-compatible way and incrementally

vs C++: "yes to all" → Editions as a way to add/remove features → Lessons from other languages → Modern

"technology from the past come to save the future from itself." ..... *Popularise features from niche/academic languages*


Compiler Suggestions
Clippy
Guide the Dev
Reaction against RTFM
e.g. Typestate Pattern
Make unwanted things unrepresentable
Reduce Cognitive Load
Dev-ex as a first-class concern
Helpful
formatting: "rustfmt"
Standard tools via "rustup"
build: "cargo"

```
bash-3.2$ cargo clippy
    Checking clippy v0.1.0 (/Users/caleb/Garbage/rust/clippy)
error: this `if` has identical blocks
 --> src/main.rs:2:13
  |
2 |         if true {
  |  _____________^
3 | |           println!("Hello, world!");
4 | |       } else {
  | |_____^
  |
  = note: `#[deny(clippy::if_same_then_else)]` on by default
note: same as this
 --> src/main.rs:4:12
  |
4 |       } else {
  |  ____________^
5 | |           println!("Hello, world!");
6 | |       }
  | |_____^
  = help: for further information visit https://rust-lang.github
.io/rust-clippy/master/index.html#if_same_then_else

error: could not compile `clippy` due to previous error
bash-3.2$
```

```
   Compiling scraper v0.1.0 (/Users/mxm/Code/mine/filmhouse_prime/scraper)
warning: unused import: `ParseError`
 --> src/bin/amazon_searcher.rs:4:11
  |
4 | use url::{ParseError, Url};
  |           ^^^^^^^^^^
  |
  = note: `#[warn(unused_imports)]` on by default

error[E0277]: cannot add `time::Duration` to `chrono::NaiveDate`
  --> src/bin/filmhouse_scraper.rs:53:31
   |
53 |         let date = start_date + Duration::days(day_offset);
   |                               ^ no implementation for `chrono::NaiveDate + time::Duration`
   |
   = help: the trait `Add<time::Duration>` is not implemented for `chrono::NaiveDate`
   = help: the following other types implement trait `Add<Rhs>`:
             `chrono::NaiveDate` implements `Add<Days>`
             `chrono::NaiveDate` implements `Add<Months>`
             `chrono::NaiveDate` implements `Add<TimeDelta>`

For more information about this error, try `rustc --explain E0277`.
error: could not compile `scraper` (bin "filmhouse_scraper") due to 1 previous error
warning: build failed, waiting for other jobs to finish...
warning: `scraper` (bin "amazon_searcher") generated 1 warning (run `cargo fix --bin "amazon_searcher"` to apply 1 suggestion)
mxm@lima-default:/Users/mxm/Code/mine/filmhouse_prime/scraper$
```

zerotomastery.io

How To Use The Typestate Pattern In Rust | Zero To Mastery

Issues with data state changes while coding Rust apps? Don't sweat. In this Rust tutorial, I walk you through 3 ways to solve this issue with typestate pattern.

users.rust-lang....

How to use the typestate pattern for event processing? Is it a good idea?

I've read recently about the typestate pattern and I think that it can be very useful for writing the foundation of my application. As I've included in the example, it's very interesting for writing builders that avoid errors at compile time.

Rust Nation UK - Track 3 - Day 2

YouTube

blog.yoshuawuyts.com

State Machines III: Type States

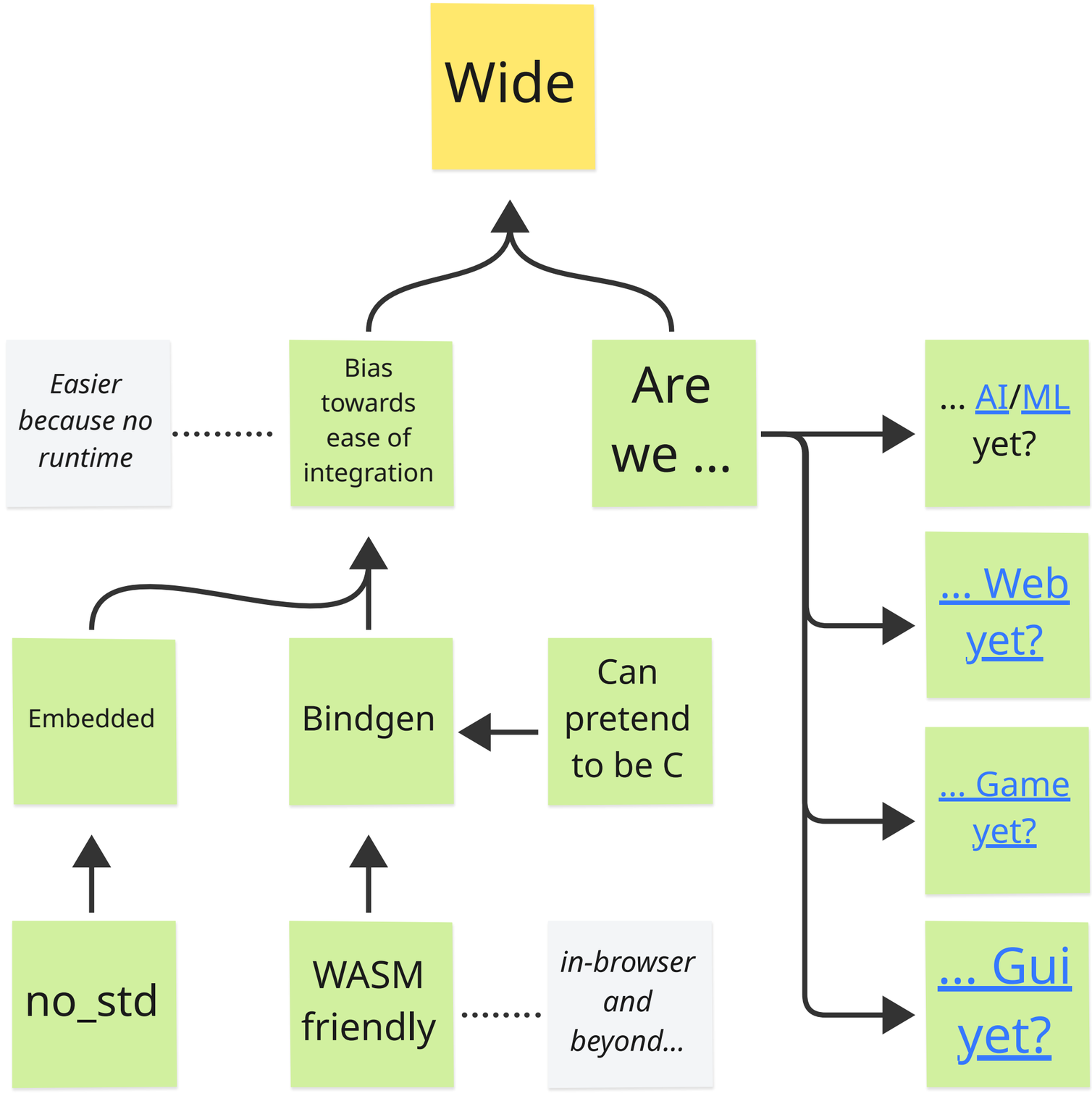
play.rust-lang.org

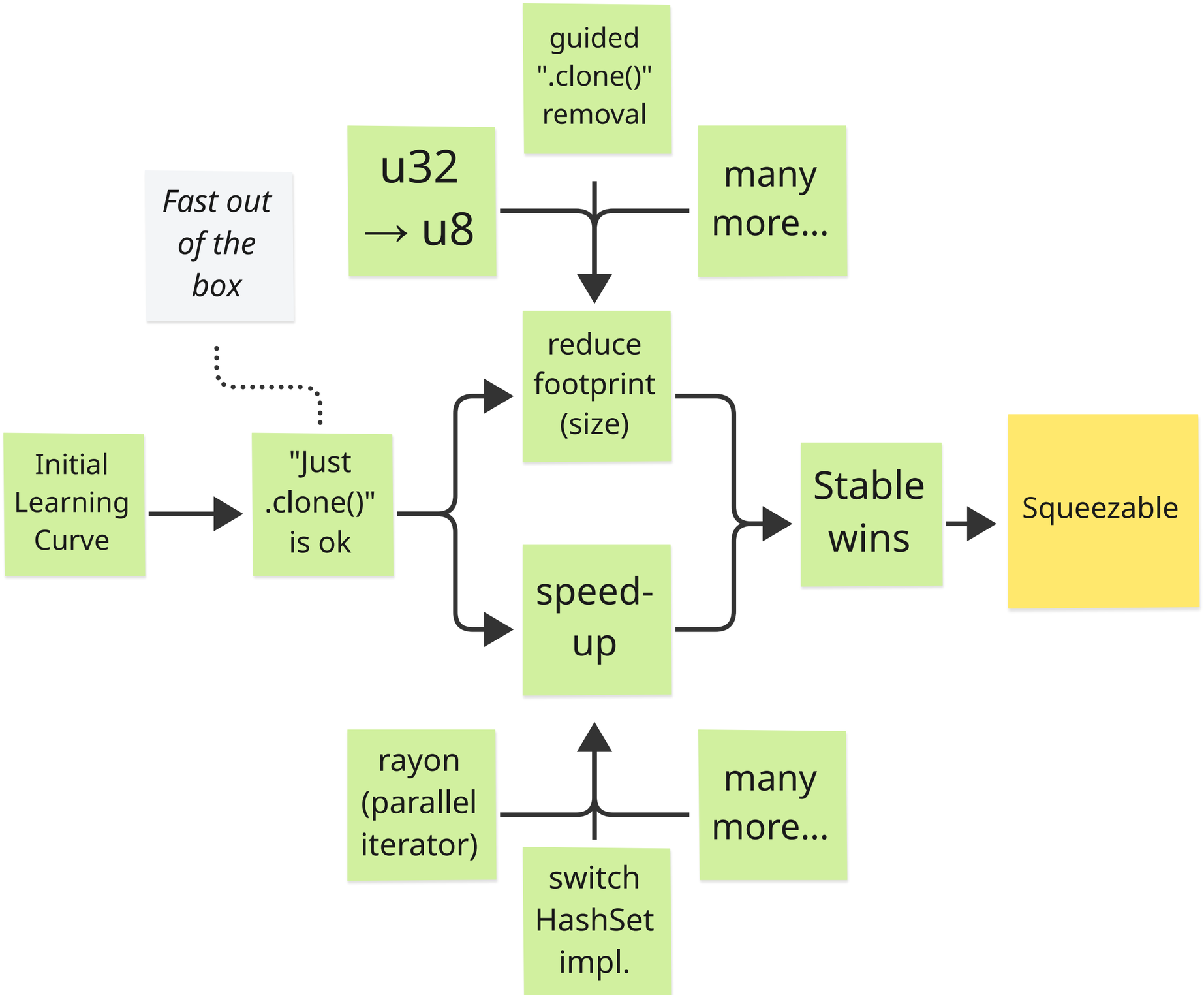
Rust Playground

A browser interface to the Rust compiler to experiment with the language

Reach =

Wide + Squeezable

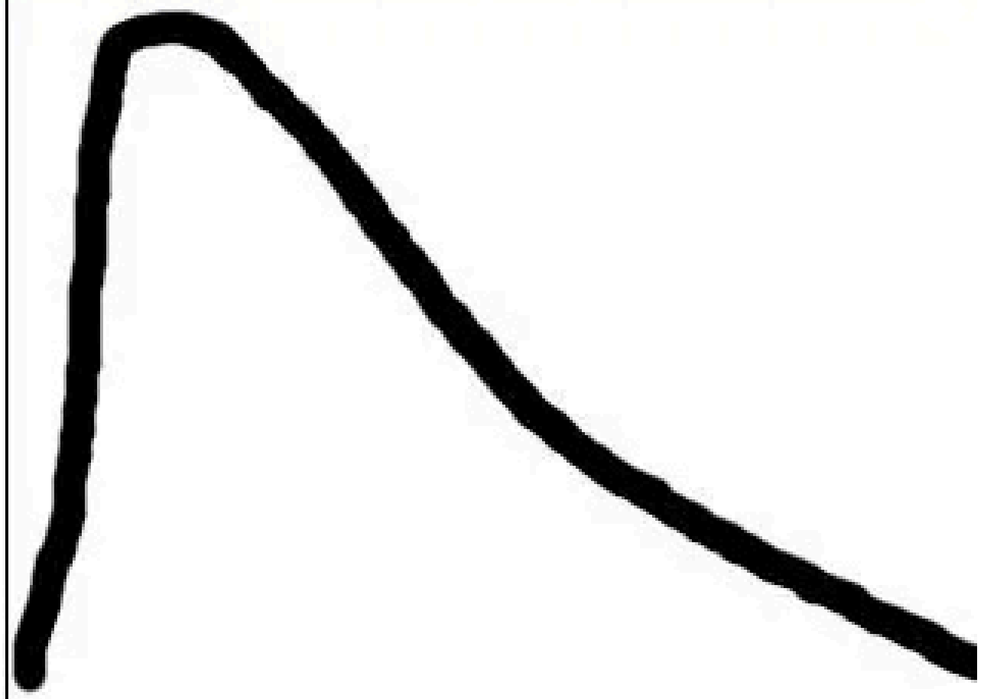

Wide
Easier because no runtime
Bias towards ease of integration
Are we ...
... AI/ML yet?
... Web yet?
... Game yet?
... Gui yet?
Embedded
Bindgen
Can pretend to be C
no_std
WASM friendly
in-browser and beyond...


guided ".clone()" removal
u32 → u8
many more...
Fast out of the box
reduce footprint (size)
Initial Learning Curve
"Just .clone()" is ok
Stable wins
Squeezable
speed-up
rayon (parallel iterator)
many more...
switch HashSet impl.

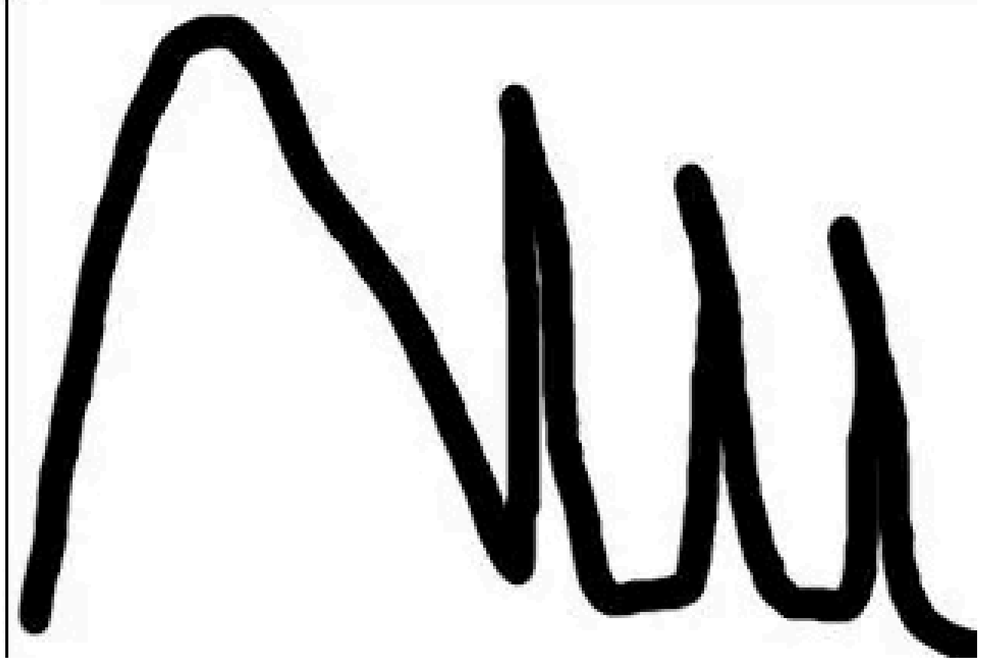
But not *all* rosy

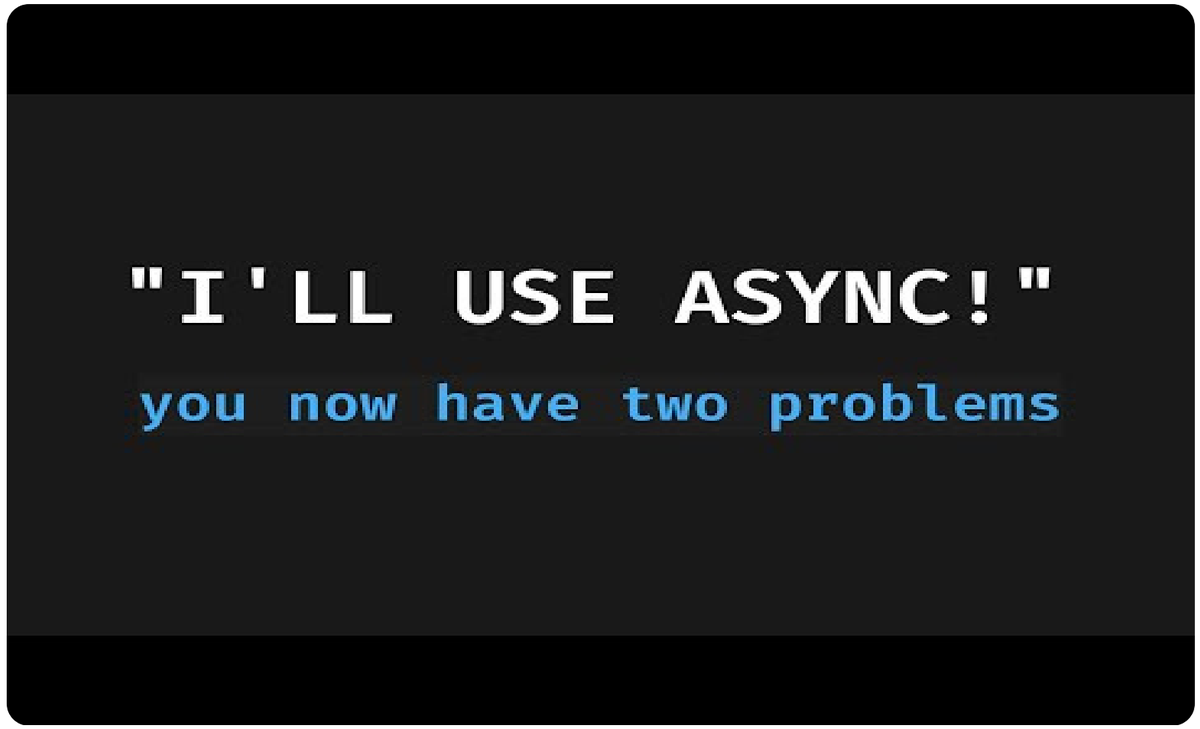
RUST LEARNING CURVE

EXPECTATION



REALITY

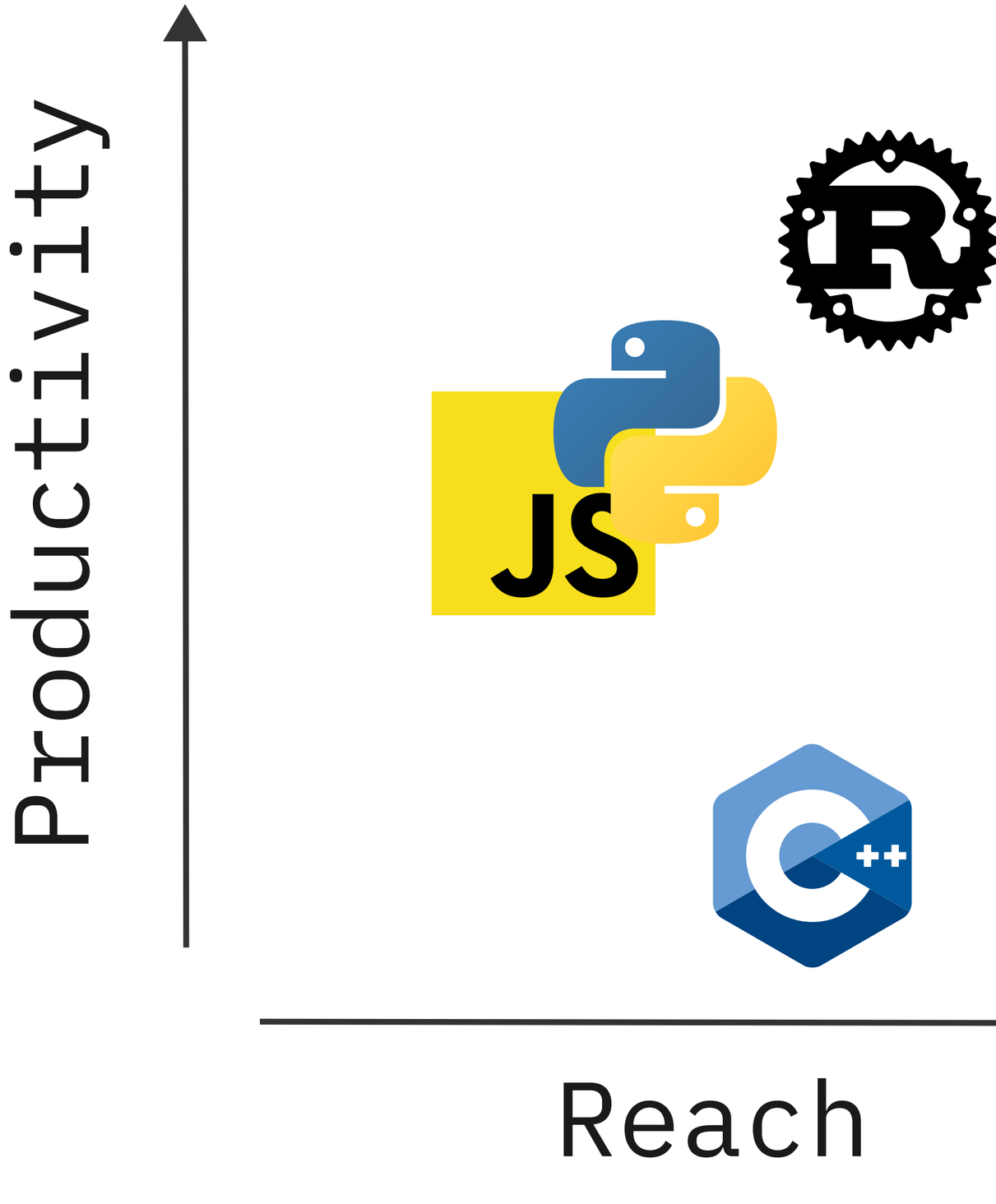




Async Isn't Real & Cannot Hurt You
YouTube

🔗

Conclusions / Next Steps



When you think you broke it while refactoring, but remember it's Rust.

rustandfriends.org

Rust and Friends

Website for the Rust language community in Edinburgh

TQRCG

eurorust.eu

EuroRust 2025 - October 9 & 10, Paris & online

EuroRust is a 2 day conference for the European Rust community - October 9 & 10, 2025 - in Paris & online

corrode.dev

Rust in Production Podcast | corrode Rust Consulting

This is 'Rust in Production', a podcast about companies who use Rust to shape the future of infrastructure. We follow their journey in pursuit of more reliable and efficient software as they solve some of the most challenging technical problems in the w...

smallcultfollowing.com

baby steps

Just yesterday, AWS announced General Availability for a cool new service called Aurora DSQL - from the outside, it looks like a SQL database, but it is fully serverless, meaning that you never have to think about managing database instances, you pay fo...

fasterthanli.me

fasterthanli.me

Hi! I'm Amos, better known as @fasterthanlime. I make articles and videos about how computers work. My content is long-form, didactic and exploratory - and often an excuse to teach Rust! I also co-...

without.boats

Without boats, dreams dry up

To put it quite bluntly: as long as there were no machines, programming was no problem at all; when we had a few weak computers, programming became a mild problem, and now we have gigantic computers, programming has become an equally gigantic problem.

www.rustnationuk.com

Rust Nation UK | Learn Rust

Rust Nation UK is the first conference dedicated to the Rust programming language. It will be held at a London venue on the 18th & 19th February 2026.

oxide-and-friends.transistor.fm

Oxide and Friends

Oxide hosts a weekly Discord show where we discuss a wide range of topics: computer history, startups, Oxide hardware bringup, and other topics du jour. These are the recordings in podcast form. Join us live (usually Mondays at 5pm PT) https://discord.g...

onthemetal.transistor.fm

On The Metal

As a part of starting Oxide Computer Company, Bryan Cantrill and Jess Frazelle decided to also create the podcast that they always wanted. Joined frequently by their boss, Steve Tuck, Bryan and Jess interview incredible guests retelling stories of adven...