



Learning Rust By Building CLI Tools

by Jim Lynch





About Me

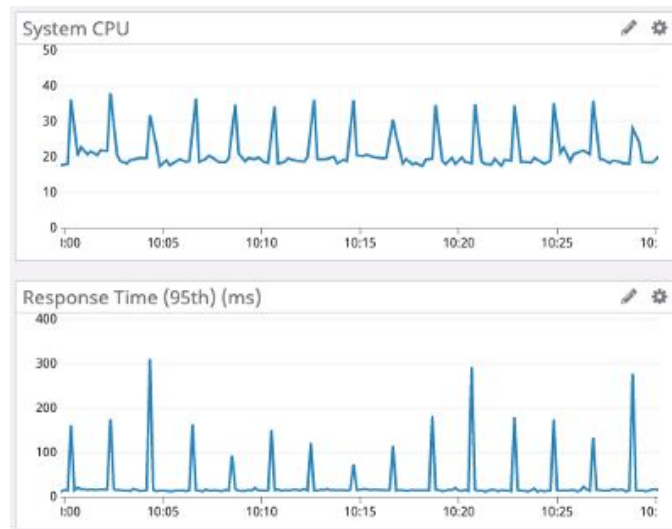


- Thinker, builder, athlete, chef, mathematician, teacher, student, musician, comedian...
- Software engineer for ~10 years
- Note: Still kind of a Rust noob 😅
- Progression of my fav programming languages:
As3 / Java / VBA -> TypeScript -> Clojure -> Rust

@JimLynchCodes
NJ / NYC

Why People Come To Rust

-  Faster than what you were using before.
-  Safer than C / C++
(much less painful/dangerous)
- No GC / VM



Stats from the server originally written in Go... 

<https://discord.com/blog/why-discord-is-switching-from-go-to-rust>

Why People Fall In Love With Rust

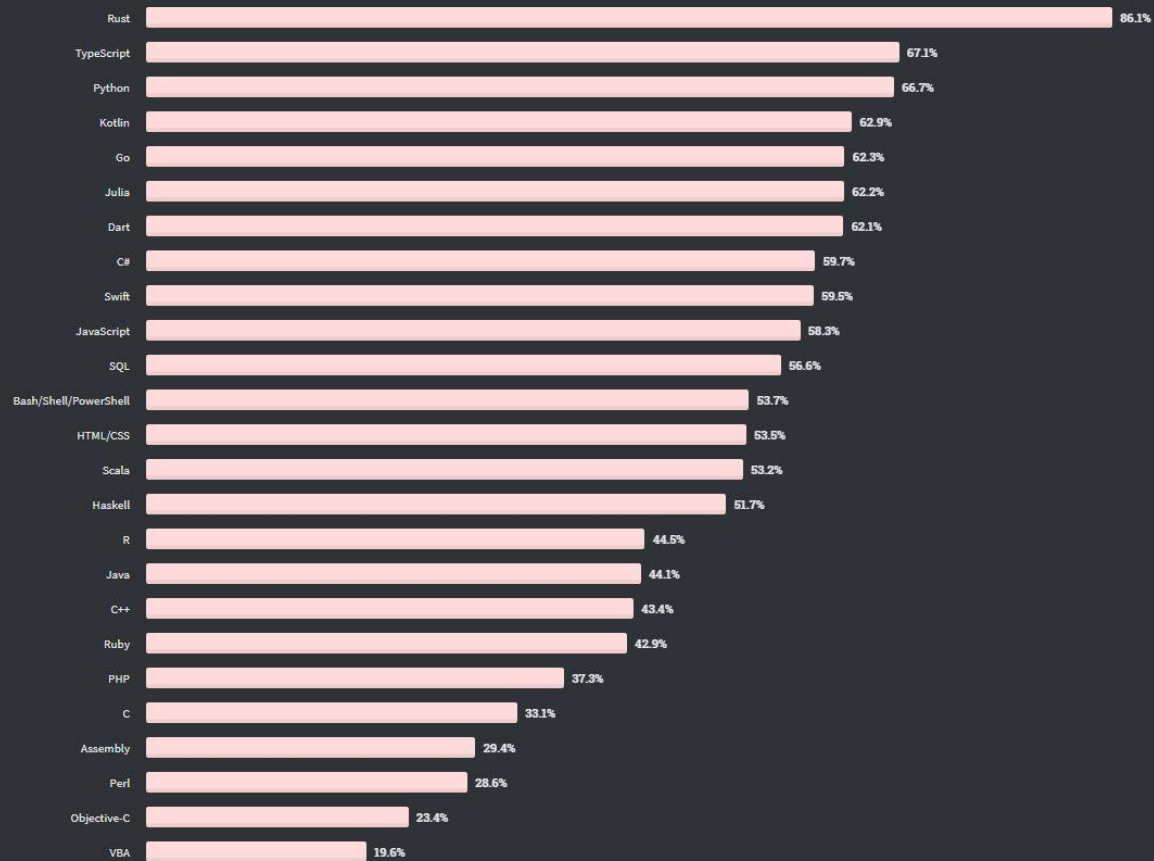
- Super elegant syntax
- Variables can never have a “null” value...
- Explicit syntax for *all* mutability, field visibility, heap vs stack allocation...
- Functional-ish (eg. *match* syntax and *if* as an expression)

Loved

Dreaded

Wanted

% of developers who are developing with the language or technology and have expressed interest in continuing to develop with it

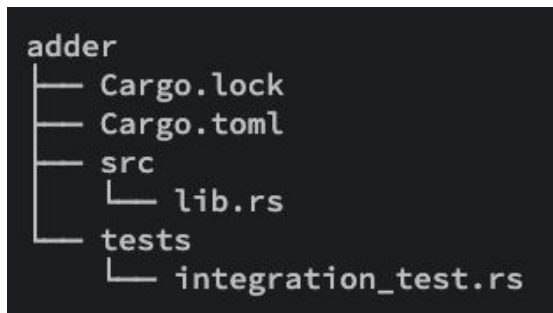


Why CLI Tools?

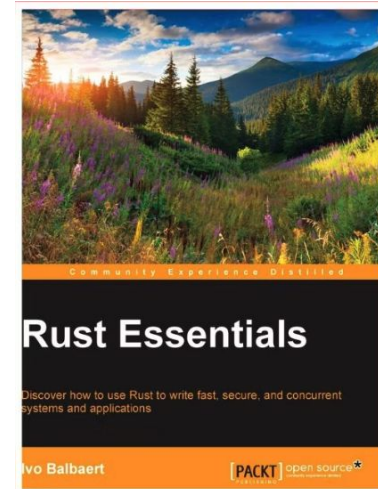
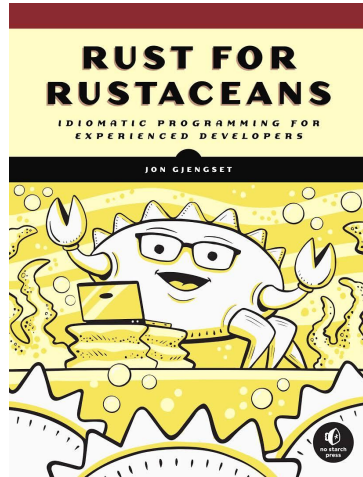
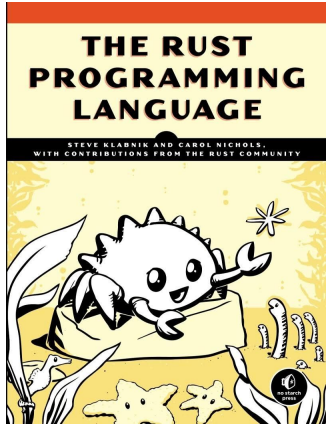
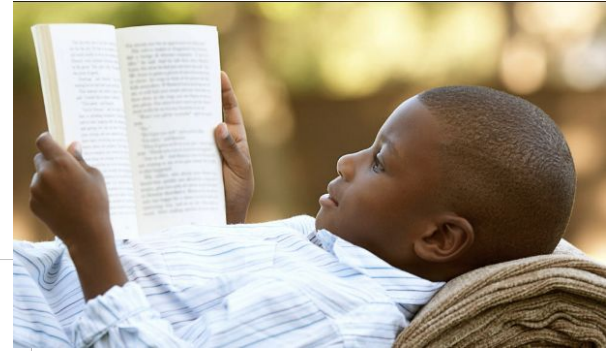
- Default thing created from `cargo new foo`
- Small, isolated projects
- The speed and efficiency of Rust make it a great choice for building a “real” cli tools one day!

But How Do You *KNOW* That It Works? 🤔

- Use these small exercises as a way to practice automated testing and TDD in Rust
- Put your unit and integration tests where cargo is expecting them
- Get familiar with macros for testing like `#[cfg(test)]` and `assert!`



Books Are Nice Too



The Github Repo

<https://github.com/JimLynchCodes/rust-cli-exercises>

Example Solutions Repo

- Reference for if you are really stuck!
- My own personal solutions (but not necessarily the only or best solutions)!

<https://github.com/JimLynchCodes/rust-cli-examples>

Get Setup With Rustup

- <https://rustup.rs>
- One command
- Mac, windows,
And linux

`rustup` is an installer for
the systems programming language **Rust**

Run the following in your terminal, then follow the
onscreen instructions.

```
$ curl --proto '=https' --tlsv1.2 -sSf https://sh.rustup.rs | sh
```



You appear to be running Unix. If not, [display all supported installers](#).



Let's Explore
The Exercises!