Rust Gotchas, Idioms and Tips

20 January 2022

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Disclaimer

This talk is given in a personal capacity. Its contents should not be construed as the official position of TCDI.

Agenda

1. Intro
2. Magical tips
3. Where to find them

1 minute version

- rust-unofficial.github.io/patterns/idioms
- rust-lang.github.io/rust-clippy/stable/index.html
- rust-lang.github.io/api-guidelines
- rust-lang.github.io/unsafe-code-guidelines

Intro

A note on audience

1.

2.

3.

1. Interested
   never written Rust code, here for the vibe

2.

3.

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   Rust is the next programming language
   they're learning, confused and frustrated

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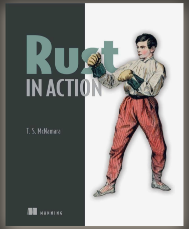
A note on me

About
Tim McNamara (@timClicks)



Rust in Action

Rust Wellington

@timClicks
youtube.com/c/timClicks

Specialist in natural language processing and text mining, subfields of artificial intelligence (AI) and machine learning (ML).

Organiser of Rust Wellington, a meetup group in New Zealand

Regular (live) tutorials on YouTube/Twitch.

The good stuff

Use clippy

It is quite a good Rust programmer.

```
$ cargo clippy
```

Use TryInto

The as keyword can cause lots of insidious bugs. Use x.try_into().

https://play.rust-lang.org/?version=stable&mode=debug&edition=2021&gist=73590b98414191e951df2859cc46ee0f

Single binary executable

Reduce the size of your containers and simplify your operations by compiling your app into a single binary that will work on any Linux system.

```
$ RUSTFLAGS='-C target-feature=+crt-static' \
> cargo run \
>   --release \
>   --target x86_64-unknown-linux-musl
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::default() vs ::new()

Which one is which?

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https://play.rust-lang.org/?version=stable&mode=debug&edition=2021&gist=2e3506695d5a01c2974d1e188b880a19

String concatenation

Use format!()

https://play.rust-lang.org/?version=stable&mode=debug&edition=2021&gist=45d31c76252b18e87d2107cda6700d3d

Accepting any text type

You've heard about generics, but there's more.

https://play.rust-lang.org/?version=stable&mode=debug&edition=2021&gist=92de2819564f83ca310931f72f108332

Learning more

Rust Design Patterns

"A catalogue of Rust design patterns, anti-patterns and idioms"

rust-unofficial.github.io/patterns

Clippy

Read through some of the warn and style lints.

rust-lang.github.io/rust-clippy/stable/index.html

API Guidelines

A well-written collection of conventions for library crates (and other Rust!).

rust-lang.github.io/api-guidelines

Unsafe Code Guidelines

Useful for understanding how Rust looks to the compiler.

rust-lang.github.io/unsafe-code-guidelines/introduction.html

Thanks!

Questions?

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https://twitter.com/timClicks
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