

Rust

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Rust



“

A language empowering everyone
to build reliable and efficient software.

”

<https://www.rust-lang.org/>

Olá!

```
fn main() {  
    let pessoa = "Cássio";  
    println!("Olá {pessoa}!");  
}
```

Prós

- expressividade
- controle sobre recursos
- ferramentas modernas
- tipagem

Contras

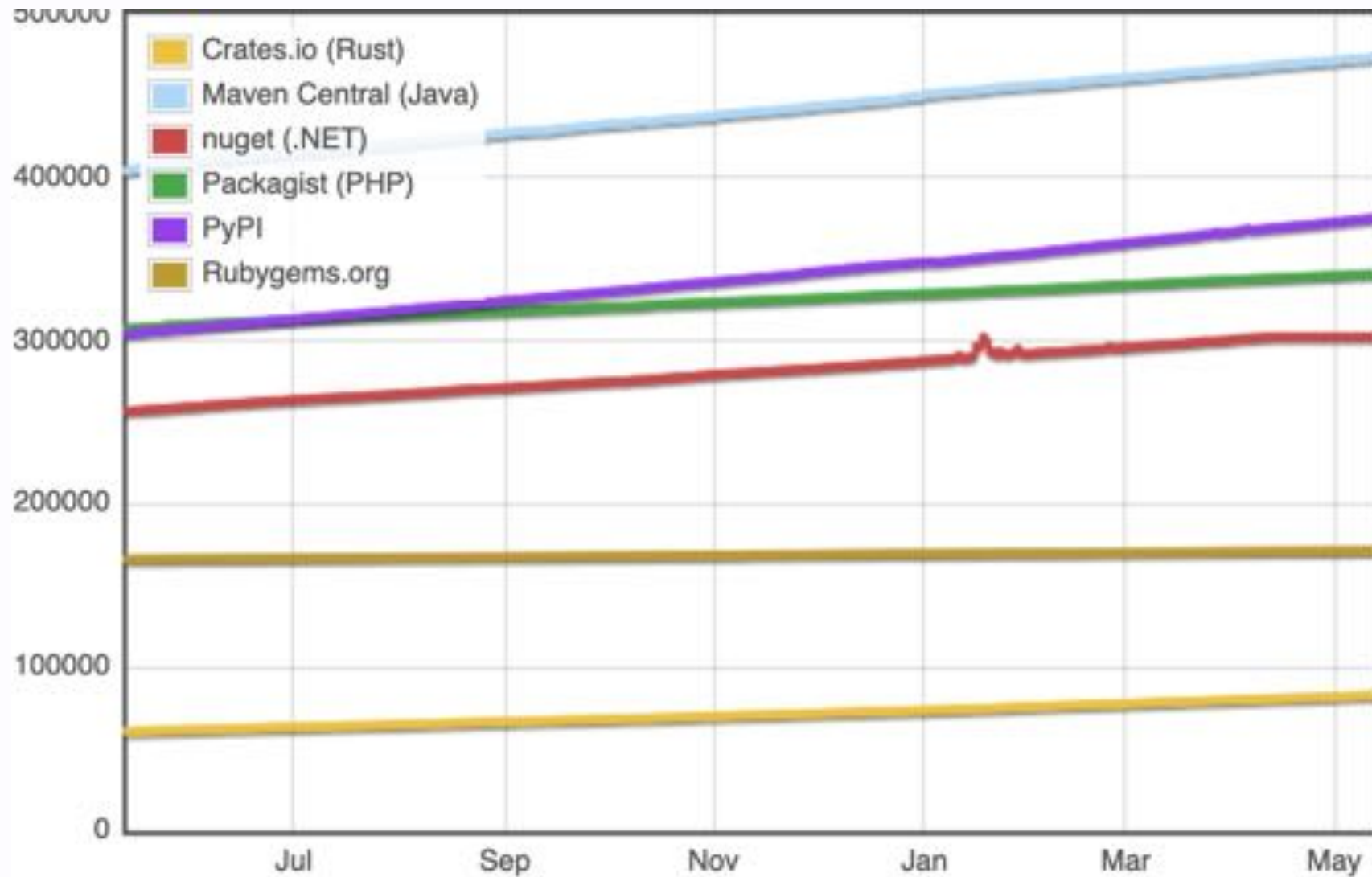
- curva de aprendizado
- tipagem



Tools

- cargo build
- cargo test
- cargo fmt
- cargo clippy
- crates.io

crates.io





Embarcados

- Arduino
- Raspberry Pi
- Relógios
- Foguetes
- ...

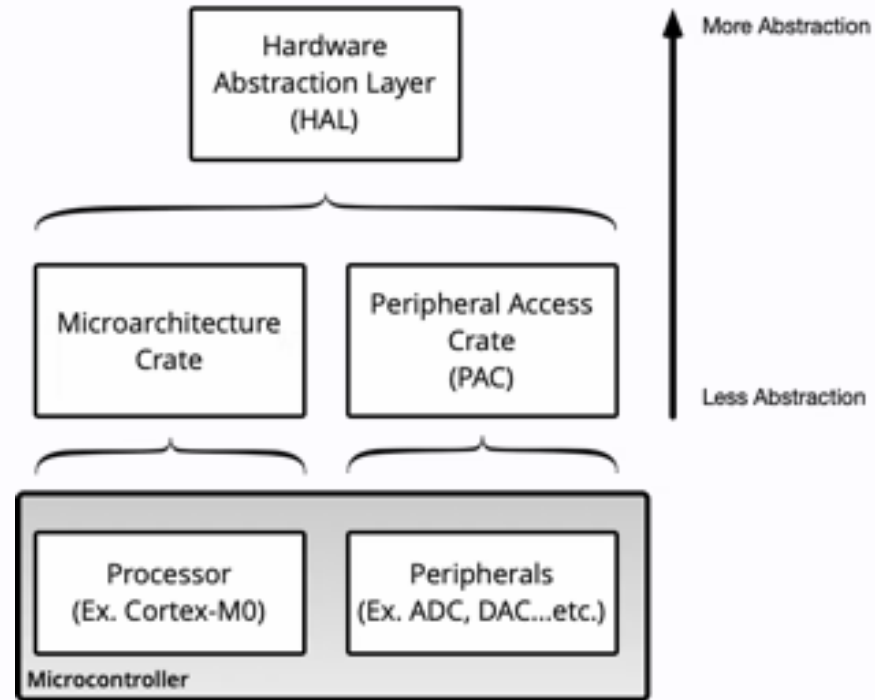
Embarcados

“ Qualquer sistema onde haja restrições de recursos computacionais, de memória ou ambos. ”

Rust Embedded WG

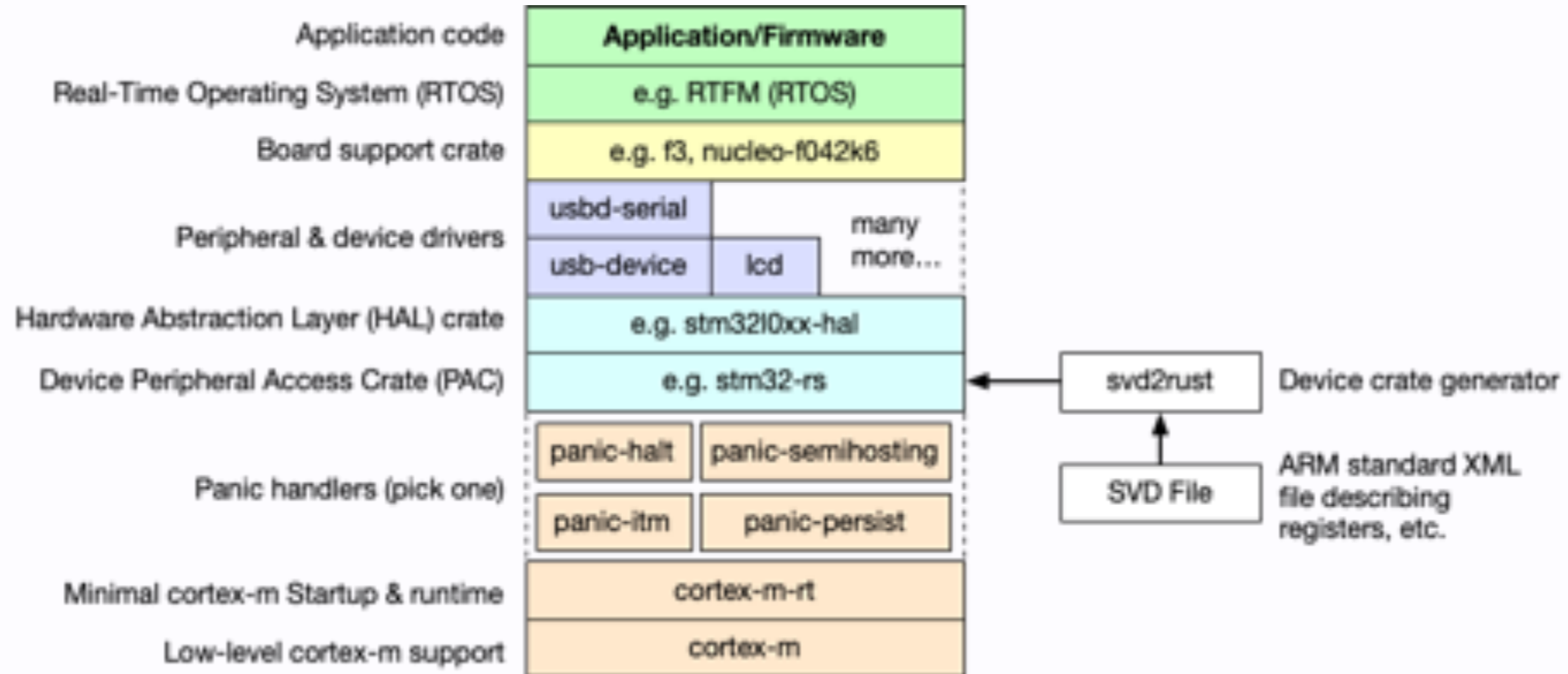
- SVD
- PAC
- HAL
- embedded-hal
- knurling
 - defmt
- probe-rs

Ecosystema



<https://craigjb.com/2019/12/31/stm32l0-rust/>

Ecosystem



<https://craigjb.com/2019/12/31/stm32l0-rust/>

blink

<https://github.com/rp-rs/rp2040-project-template>

```
## cargo-generate
```

```
cargo generate --git https://github.com/rp-rs/rp2040-project-template \
  --branch main --name blink
```

```
## toolchain
```

```
rustup target install thumbv6m-none-eabi
cargo install flip-link
cargo install elf2uf2-rs --locked
```

```
cd blink && cargo run
```

A night landscape featuring a glowing red path that curves through a dark, rocky terrain. The path is illuminated with a bright red light, creating a strong contrast with the dark surroundings. In the background, the Milky Way galaxy is visible in the dark blue night sky, with numerous stars and nebulae. The overall scene has a surreal and ethereal quality.

FIM

Links

- <https://doc.rust-lang.org/book/>
- <https://github.com/rust-embedded/wg>
- <https://github.com/rust-embedded/awesome-embedded-rust>
- <https://rtic.rs>
- <https://embassy.dev/>

Arduino

```
void setup() {  
    pinMode(LED_BUILTIN, OUTPUT);  
}  
  
void loop() {  
    digitalWrite(LED_BUILTIN, HIGH);  
    delay(1000);  
    digitalWrite(LED_BUILTIN, LOW);  
    delay(1000);  
}
```