



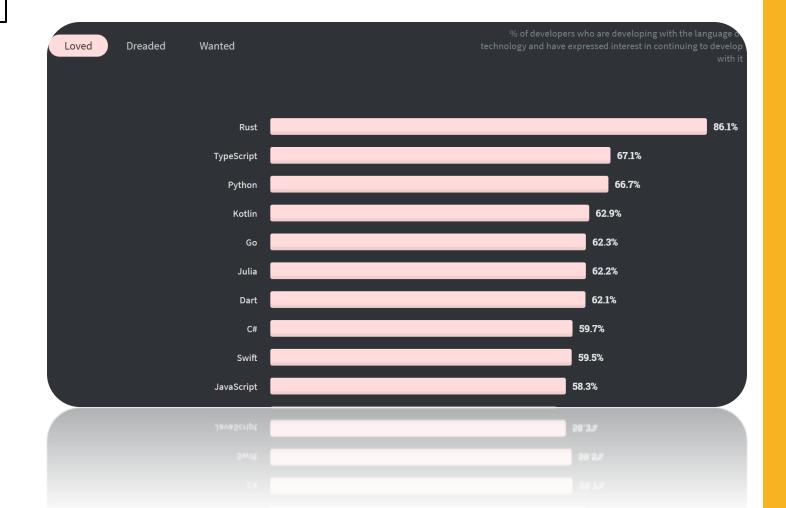
COMPLEMENTOS SOBRE LINGUAGENS DE PROGRAMAÇÃO

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# WHY DID I CHOOSE RUST?

- Has been growing in popularity
- Stack Overflow's most loved language for <u>5 years in a row</u>, since it's 1.0 official release

#### **2020 Top 10 Most Loved Programming Languages**



#### HISTORY OF RUST

- Started independent development in 2006
- Mozilla later created a team to continue development
- Compiler rustc first written in OCaml, later migrated to Rust
- Open Source

### WHERE IS RUST USED?

#### Rust can be used to develop:

- Network services
- Command-line apps
- WebAssembly
- Embedded devices



#### Rust was used to develop:

- Firefox
- Dropbox
- Servo (Rendering Engine)
- Discord (Recently began migration from Go to Rust)



#### WHY USE RUST?

- Targeted at "frustrated C++ developers"
- No garbage collector so it performs better at runtime (con?)
- Memory safety at compile time
- Compiles to native code, so it's a very fast language, like C and C++
- Has a compiler with a built-in package builder and manager, test system and documentation generator
- Concurrency without data races

### WHY NOT TO USE RUST?

- Strict compiler regarding memory addresses (pro?)
- Relatively new so doesn't have many available libraries
- Not an OOP language
- Comparatively difficult to learn (subjective)

### INSTALLATION AND CODE EXECUTION

#### • Install Rustup

- 1. curl --proto '=https' --tlsv1.2 https://sh.rustup.rs -sSf | sh
- 2. source \$HOME/.cargo/env
- 3. Rustup update

#### Compile a program

1. rustc <file\_path>

## SYNTAX DEMO

- Variable declarations
- Structures
- Loops
- Functions
- Macros
- Ownership
- Borrowing
- Traits

# RUST MODULES

- Crates (= libraries?)
- Modules
- Cargo
  - 1. cargo new hello\_world
  - 2. cd hello\_world
  - 3. cargo build
  - 4. cargo run

#### REFERENCES

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