



# Eliminando Gargalos de Processamento Utilizando Rust

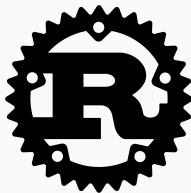
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Johnathan Fercher

1. Introdução
2. Quem usa? E para que?
3. Melhores regras do Velocity
4. Material de estudo

# Introdução

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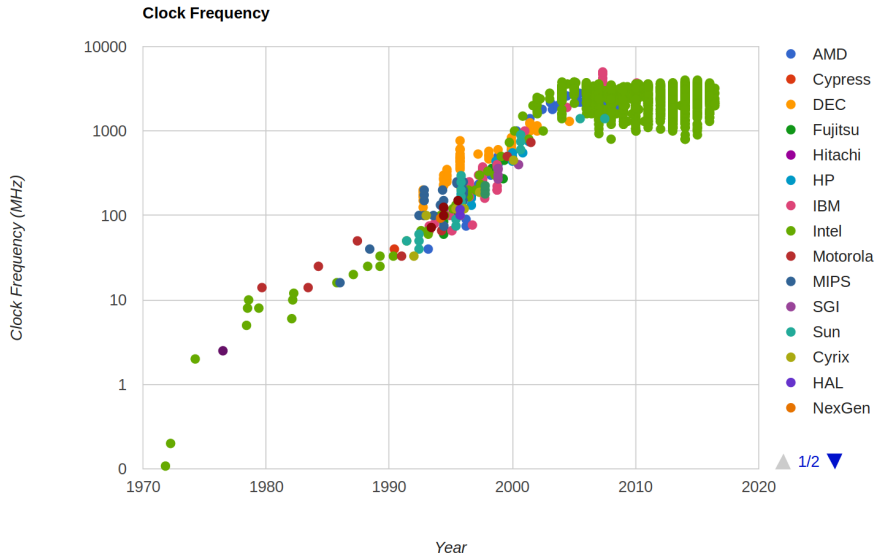


Uma linguagem de programação de sistemas que roda incrivelmente rápido, previne falhas de segmentação, e garante segurança entre threads.

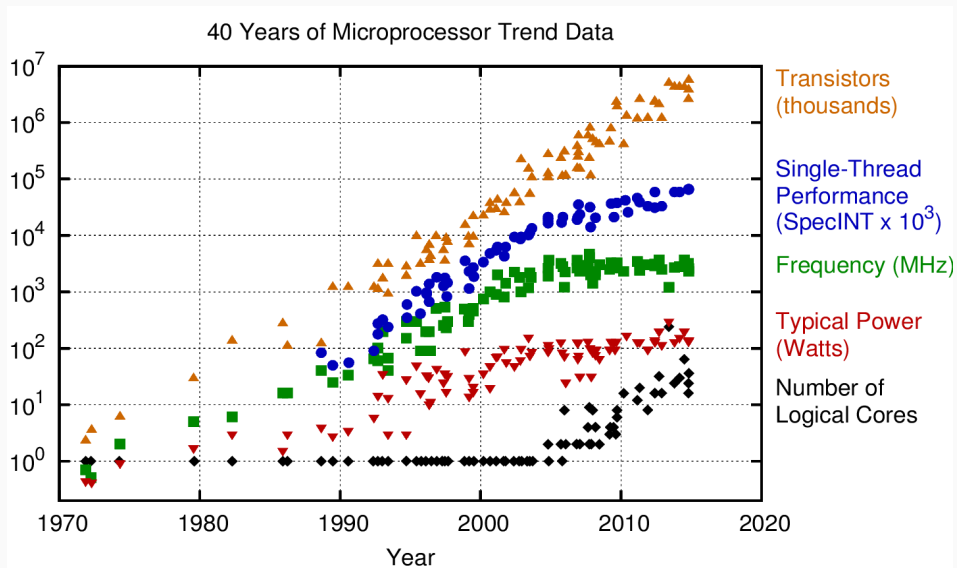
*"O poder de processamento dobra a cada 18 meses."*

*Lei de Moore, 1965.*

# Motivação



# Motivação

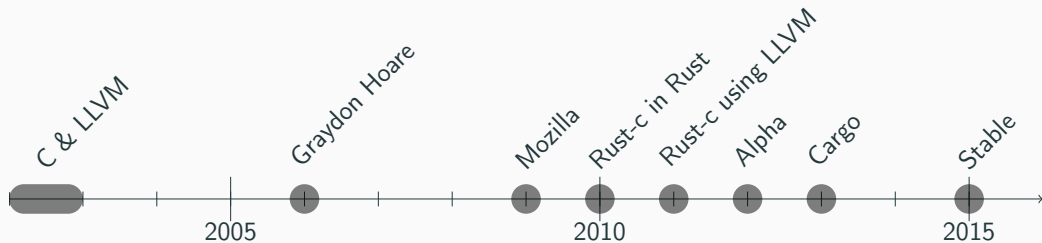


*"The way the processor industry is going, is to add more and more cores, but nobody knows how to program those things. I mean, two, yeah; four, not really; eight, forget it."*

*Steve Jobs, Apple.*



# História



- Licença MIT no Github;
- Duas versões: Stable e Nightly;
- Processo de RFC;
- Quando uma RFC é aprovada ela é adicionada na versão Nightly;
- Após algum tempo em Nightly, ela pode ser adicionada na versão Stable, deixada de lado ou alterada;

Quem usa? E para que?

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Quem usa? E para que?



"Optimizing cloud file-storage."

CANONICAL

"Everything from server monitoring to middleware!"



"Developing memory-safe embedded applications on our SmartThings Hub and supporting services in the cloud."

**moz://a**

"Building the Servo browser engine, integrating into Firefox, other projects."



"Programming Assignments in secured Docker containers."



Quem usa? E para que?



"Letting you develop, deploy and manage infrastructure, run-time environments and applications."



"We use Rust in a service for analyzing petabytes of source code."



"Replacing C and rewriting performance-critical bottlenecks in the registry service architecture."



"Habitat is automation that travels with the app. Rust aid us to remove bottlenecks."

## Quem usa? E para que?

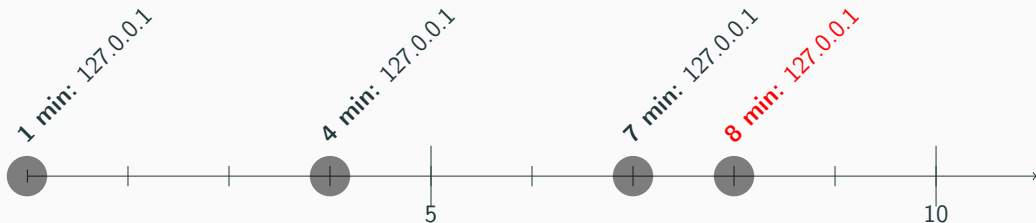
- No site oficial da linguagem há mais 123 empresas que deixaram claro que utilizam Rust;

## Melhores regras do Velocity

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Regras de repetição:

- 5 repetições de um **Cpf** em 10 minutos;
- 10 repetições de um **Cartão** em 2 dias;
- 2 repetições de um **Ip** em 5 minutos;

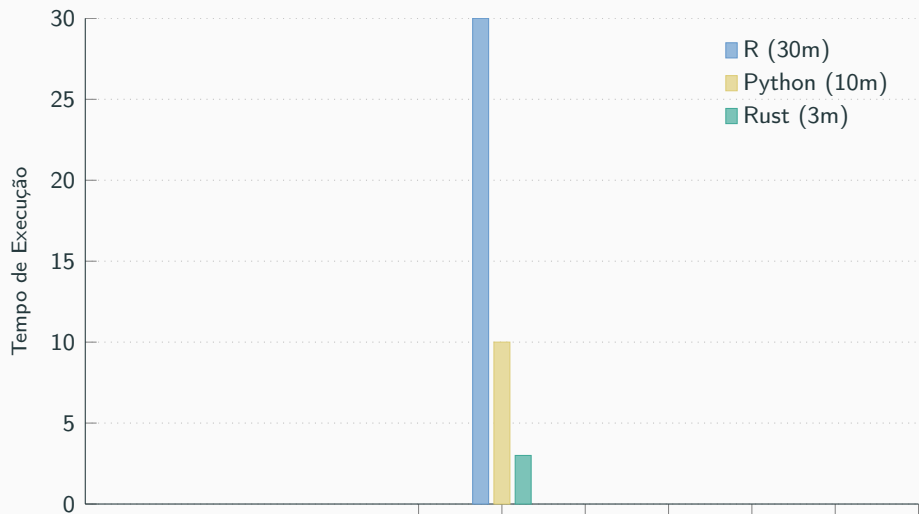


# Algoritmo

```
var transactions = List<Transaction>();  
var quarantine = new DateTime();  
  
for transaction in transactions do  
    if quarantine_is_active(quarantine, transaction) then  
        block(transaction);  
        update(quarantine);  
    else  
        if extrapolate_rule(transaction) then  
            block(transaction);  
            update(quarantine);  
        end  
    end  
end  
end
```



# Benchmark



## Material de estudo

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## Introduction

### 1. Hello World

#### 1.1. Comments

#### 1.2. Formatted print

##### 1.2.1. Debug

##### 1.2.2. Display

##### 1.2.2.1. Testcase: List

##### 1.2.3. Formatting

### 2. Primitives

#### 2.1. Literals and operators

#### 2.2. Tuples

#### 2.3. Arrays and Slices

### 3. Custom Types

#### 3.1. Structures

#### 3.2. Enums

##### 3.2.1. use

##### 3.2.2. C-like

##### 3.2.3. Testcase: linked-list

#### 3.3. constants

### 4. Variable Bindings



Rust By Example

## Rust by Example

[Rust](#) is a modern systems programming language focusing on safety, speed, and concurrency. It accomplishes these goals by being memory safe without using garbage collection.

Rust by Example (RBE) is a collection of runnable examples that illustrate various Rust concepts and standard libraries. To get even more out of these examples, don't forget to [install Rust locally](#) and check out the [official docs](#). Additionally for the curious, you can also [check out the source code for this site](#).

Now let's begin!

- [Hello World](#) - Start with a traditional Hello World program.
- [Primitives](#) - Learn about signed integers, unsigned integers and other primitives.
- [Custom Types](#) - `struct` and `enum`.
- [Variable Bindings](#) - mutable bindings, scope, shadowing.
- [Types](#) - Learn about changing and defining types.



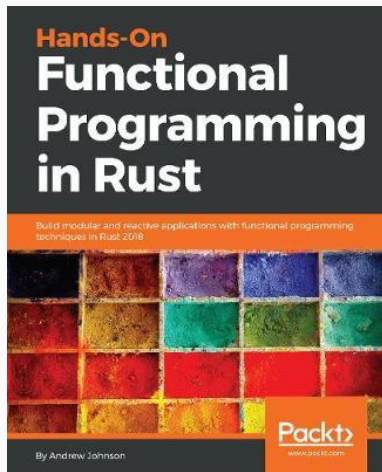
O'REILLY

## Programming Rust

FAST, SAFE SYSTEMS DEVELOPMENT



Jim Blandy & Jason Orendorff



Obrigado