



Hochschule **RheinMain**
University of Applied Sciences
Wiesbaden Rüsselsheim

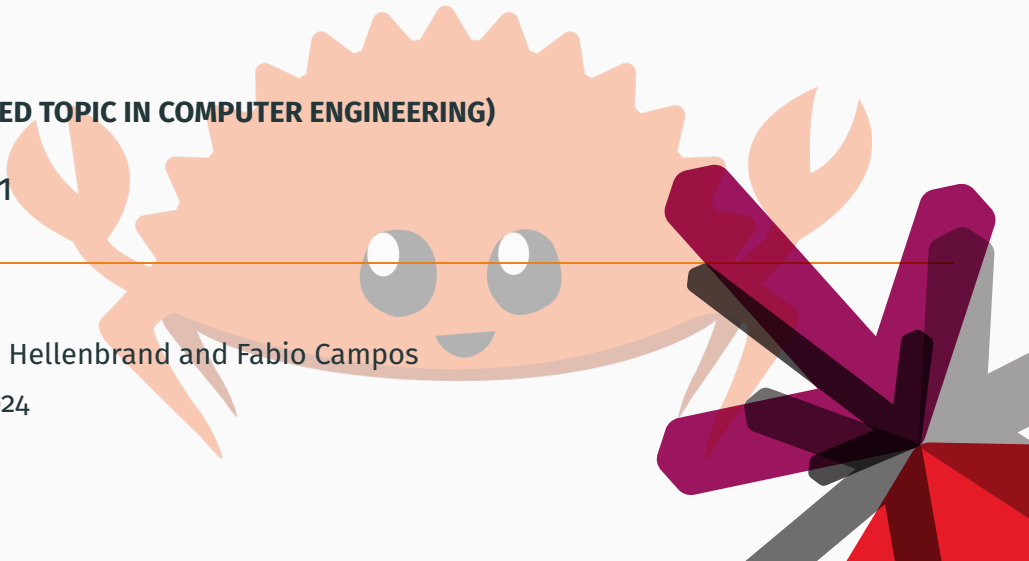
Rust

(SELECTED TOPIC IN COMPUTER ENGINEERING)

LV 7281

Andreas Hellenbrand and Fabio Campos

18.04.2024



- Fabio Campos born in Rio de Janeiro, BR
- Diploma, M.Sc. in computer Science
- 2002-2018: Head of IT/process management
- 2018-2023: Researcher @ HSRM & Max-Planck-Institute
- 2023: PhD @ Radboud University, NL
 - Post-quantum cryptography
- since 2023: Postdoc und temporary professor @ HSRM
- Hobbies: Music, Boardsports (sk8, snow, surf), ...

- Andreas Hellenbrand
- 2012-2016 Azubi @ System automation
- 2023 M.Sc. in computer Science
 - Thesis on PQC with Supersingular Isogenies
- since 2023: WiMi / PhD Student @ HSRM
- Hobbies: Music (E-Bass), Concerts, DnD, ...

Roadmap

Date	Topics	Who?	Lab
18.04.	101, basic concepts	Fabio	–
25.04.	Ownership	Andreas	#01
02.05.	Structs, generic types, traits	Fabio	#02
09.05.	Public holiday	–	–
16.05.	Enums, patterns, crates, collections	Andreas	#03
23.05.	–	–	–
30.05.	Public holiday	–	–
06.06.	Lifetime, error handling	Fabio	#04
13.06.	Tests, iterators, closures	Andreas	#05
20.06.	Smart pointers, concurrency, OOP	Fabio	Project phase ↓
27.06.	Advanced features	Andreas	
04.07.	Buffer	–	
11.07.	Buffer	–	

1st presentation¹ 8 minutes + 2 minutes Q&A ~ 10%

project deadline after the exam period ~ 60%

2nd presentation 15 minutes + 5 minutes Q&A ~ 30%

slides & materials for lab at

<https://github.com/FaCAHell/rusty>

¹during the lab, starting on 02.05.

Literature & online sources

- The Rust Programming Language; Steve Klabnik, Carol Nichols; No Starch Press; ISBN: 9781098156800
- Programming Rust; Jim Blandy, Jason Orendorff, Leonora F . S. Tindall; O'Reilly Media, Inc.; ISBN: 9781492052548
- [*https://doc.rust-lang.org/book/*](https://doc.rust-lang.org/book/)
- [*https://rust-edu.org/resources/*](https://rust-edu.org/resources/)
- beginner friendly discord communities
 - official: [*https://discord.gg/VzqfmRkJ*](https://discord.gg/VzqfmRkJ)
 - community: [*https://discord.gg/rust-lang-community*](https://discord.gg/rust-lang-community)

Topics for the 1st presentation

- Strings in Rust
- C vs Rust
- Macros vs Functions
- Functional programming
 - Lambda calculus
- OOP in Rust
- Unsafe Rust
- Rust with GCC vs. LLVM
- Embedded Rust
- Rust and the Web (Webassembly)
- "Realworld" Rust
 - Where is it already used?
 - Experiences
- ...
- Own ideas?