Seminar: The Rust Programming Language

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January 31, 2021
fn main() {
    let program = "+ + * - /";
    let mut accumulator = 0;
    for token in program.chars() {
        match token {
            '+' => accumulator += 1,
            '-' => accumulator -= 1,
            // ...
            _ => { /* ignore everything else */ }
        }
    }
    println!("The program "/{}/" calculates the value
           {}, program, accumulator);
"Rust is a systems programming language that runs blazingly fast, prevents segfaults, and guarantees thread safety."

- zero-cost abstractions
- move semantics
- guaranteed memory safety
- threads without data races
- trait-based generics
- pattern matching
- minimal runtime
- efficient C bindings
General:

- Block course intended for 14 attendees
- Latex paper (around 10 pages) is required
- Language (for the talks and the paper) is English

Talks:

- 30 minutes presentation + 15 minutes discussion for each topic
- Talks have to demonstrate a concept using real code
- Working code examples should be presented
- Presence at all the talks is obligatory in order to pass the seminar!
Schedule

- Exact dates to be published by the end of the week on the course page
- Contact me about choosing a topic (from the list or your own) as soon as you enroll
- Schedule weekly 15 min meetings with me to track your progress
- **Start of May** - present me the **first draft of the paper**
- **Start of June** - present me the **first draft of the slides**
- **Talks around end of June**
The course page: https://www.in.tum.de/i02/lehre/sommersemester-21/seminare/rust/

The Moodle page

Weekly meetings

My email: ivana.zuzic@tum.de
1. Comparison of Rust Basic Concepts with C++ and Java
2. IDEs, Tools and Module System for Rust
3. Ownership and Lifetimes
4. Reference Counting and Garbage Collection
5. Polymorphism, Traits, Generic Types
6. Collections (Vec, LinkedList, HashMap...) and Iterators in Rust
7. Functional Programming Concepts in Rust
8. Macros in Rust
9. Concurrency in Rust
10. Rust for Network Servers
11. Rust and WebAssembly for Web Applications
12. Rust for Embedded Programming
13. The Future of Rust
14. Unsafe Rust
Questions? :}