

Rust
Selected Topic in Computer Engineering
LV 7281
Summer 2024

Lab #03

1 rustlings

Continue the `rustling` exercises from the last lab session. Solve the following exercises:

- `07_structs`, `14_generics`, `15_traits`

Develop a Rust application that implements various data structures using the concepts of Traits, generic types, and structs. Your application should meet the following requirements:

2 Generic Data Structure

- Implement a generic data structure called `Stack<T>`, representing a simple stack structure. The stack should support basic operations such as `new`, `push`, `pop`, and `top`¹.
- Create a `Tree` generic data structure supporting the basic operations typical of those data structures, such as `add_child` and `new`.

3 Traits

- Define a trait named `Drawable` containing a method `draw(&self)` which generates a suitable output of the data via `println!`. Implement this trait for both data structures.
- Implement a method `to_string` into the same trait that returns the data structure into a readable string, allowing you to easily output the contents of the data structure.

You can use `cargo`, or build your code directly with `rustc`.

¹returning the value of the top element in the stack