

The Rust programming language
Summer 2024 / 2025

Exercises

For this exercise sheet, you can “cheat” by copying everything from the slides (or by using an AI). Try not to do it and search how to use “cc” and “bindgen” using a search engine instead.

1 A simple port from C++ to Rust

1. Go to <https://gist.github.com/lrobidou/309bfed97825d77eadb9449e4ee0c771> and download the two files of the overly simple complex number “library” (`this->_r` denotes the real part of a complex number, `this->_i` the imaginary part).
2. Write a Rust project that automatically builds the library and writes bindings.
3. Write unit tests to check that everything is working as intended.
4. The C++ code has multiple functions named the same way. How does that translate to Rust?
5. Write a Rust struct that wraps the C++ class, so that unsafe does not “leak” in your code.
6. Unit test it.
7. (advanced) Linking to a C++ library requires compiling it. Which kind of C++ library cannot be compiled into a standalone object file?