

Rustc's MIR – LLVM Course

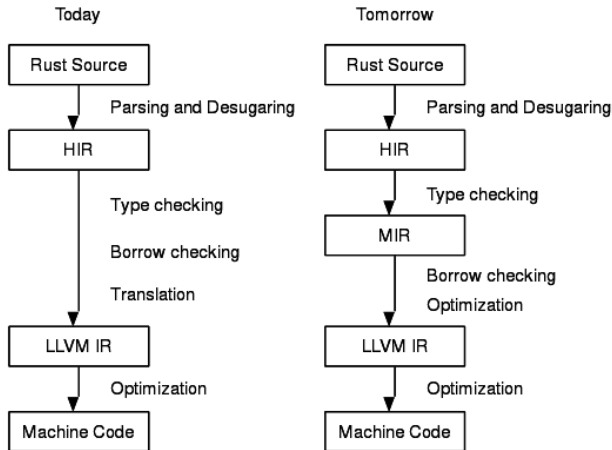
Avi Weinstock

October 31, 2016

What is Rust?

- ▶ Programming language from Mozilla Research
- ▶ Initial prototype in 2009, first stable release in May 2015
- ▶ Feels like a mix of Haskell & C++
- ▶ Uses LLVM for optimization and codegen

Overview of rustc



<https://blog.rust-lang.org/images/2016-04-MIR/flow.svg>

Code pointers

<https://github.com/rust-lang/rust>

- ▶ MIR definition: `src/librustc/mir/mod.rs`
- ▶ Borrowcheck: `src/librustc_borrowck/borrowck/{mod.rs,mir/mod.rs}`
- ▶ Generation of LLVM IR: `src/librustc_trans/{base.rs,builder.rs,mir/mod.rs}`

Resources

- ▶ <https://blog.rust-lang.org/2016/04/19/MIR.html>
- ▶ <https://github.com/rust-lang/rfcs/blob/master/text/1211-mir.md>
- ▶ <https://doc.rust-lang.org/book/references-and-borrowing.html>
- ▶ <http://smallcultfollowing.com/babysteps/blog/2016/04/27/non-lexical-lifetimes-introduction/>