

FFI in Rust

Lessons from OpenSSL

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December 15, 2016

Basics

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What is FFI?

“A foreign function interface (FFI) is a mechanism by which a program written in one programming language can call routines or make use of services written in another.”

Why FFI?

Lots of code has been written in languages that aren't Rust!

- ▶ Use Rust to accelerate portions of programs written in higher level languages. (jni, neon, ruru)
- ▶ Interact with libraries exposing C APIs. (openssl, curl, rusqlite)
- ▶ Expose a C interface for your Rust library. (regex)

Example

```
struct foo {  
    long a;  
    char *b;  
};  
int fizzbuzz(const struct foo *f);
```

```
#[repr(C)]  
struct foo {  
    a: c_long,  
    b: *mut c_char,  
}  
extern {  
    fn fizzbuzz(f: *const foo) -> c_int;  
}
```