Carp
A Programming Language for the 21st Century

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Port Zero

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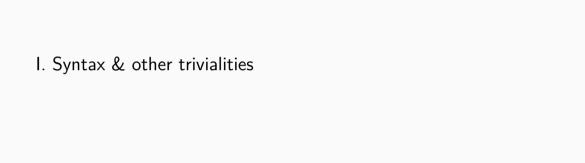Prologue

Obligatory Starter

- ▶ Carp standard library maintainer
- ▶ CTO @ Port Zero
- ▶ Secretly a turtle

Questions & Comments

This is a chess-timer talk. You're welcome to ask questions at any time.

I can't promise that I'll be able to answer all of your questions.
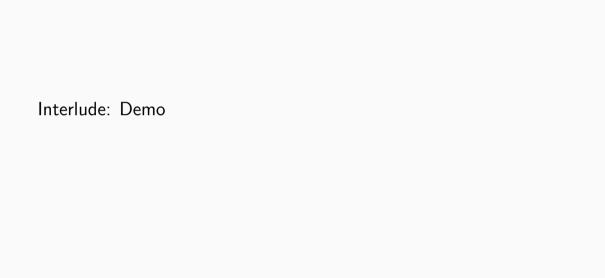
I probably won't get through my material.

I. Syntax & other trivialities

What?

It's a Lisp, despite the parentheses.

Carp code

```
; (type f)
; f : (Fn [(Ref (Array a)), Int, Int] a)
(defn f [x y z]
  @(Array.nth x (* y z)))
```

Listing 1: A silly Carp function

Carp code

```
(deftype (AssocArray a b) [lst (Array (Pair a b))])
```

Listing 2: An associative array type, simplified.
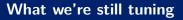
Interlude: Demo

II. Semantics & meaning

The goods

We have (non-hygienic) macros, type inference, and borrow checking.

The emphasis of the design is on simplicity while being pragmatic.

We're working on good autogenerated documentation, dependency management, lifetimes, and, generally, tooling.

There's a vast amount of information flowing through the compiler, most of it implicit.

Reducing cognitive load is useful, but explorability is key.

III. Recap

Caveat

Carp is early stage software.

$\Rightarrow$ Small community, few packages

$\Rightarrow$ We're less than a handful of maintainers

$\Rightarrow$ Insufficient documentation

$\Rightarrow$ May change under your feet

$\Rightarrow$ May blow up in your face!

Our first stable release—0.3.0—was released!

References

- ▶ Github: https://github.com/carp-lang/carp
- ▶ Erik: https://github.com/eriksvedang
- ▶ Chat: https://gitter.im/carp-lang/carp
- ▶ Docs: http://carp-lang.github.io/Carp/core/core_index.html
- ▶ Blogs: https://blog.veitheller.de (sorry about that)
- ▶ Slides: https://github.com/hellerve/carp_talks
- ▶ This talk, but different, shorter, and at clojuTRE:
  https://www.youtube.com/watch?v=BQeG6fXMk28
- ▶ Carp 0.3.0:
  https://github.com/carp-lang/Carp/releases/tag/v0.3.0

Thank you!

Questions?

Slides at `https://github.com/hellerve/carp_talks`