F# |> I ♥

Róbert Fuszenecker, 2016

About F#

- Functional first programming language
  - Also supports object-oriented and imperative programming

- Full citizen .NET language
  - Can be comiled to i.e. JavaScript

- Strongly typed with type inference

About F# 2

- For application development and scripting (tooling)
  - Desktop and mobile, web and cloud
  - FAKE

- Support exists for VS, VS Code, Atom and Xamarin Studio

- Open-sourced ab ovo: Microsoft's first OSS project

History

- From engineering side

    Machine Code → Assembly → C → C++ → Java → C#

- From scientific side

    λ-calculus → IPL → LISP → ML → SML → Caml → OCaml → F#

Functional programming

- Originates from lambda calculus (Alonzo Church, 1930s)

- Functions are first-class citizens
- Data is immutable by default
- The application evaluates expressions and returns the result
- Information can come from data sources or event sources

- Ideal for scientific and GPU computations

Don Syme's recommendation

- If you don't need mutable values (state), use FP

- If you need to store mutable values, use OOP

Demo