

Clojure programming language & it's ecosystem

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DEVELOPERS
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What is Clojure?

- LISP

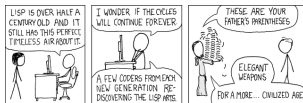


Figure 1: Lisp Cycles, <https://xkcd.com/297/>

- Rich Hickey



Figure 2: Rich Hickey at the first Clojure Conj in 2010, <https://creativecommons.org/licenses/by-sa/2.0/>

What is LISP?

Y (f) ((λ (g) (funcall g g)) (λ (x) (funcall f
(λ (rest a) (apply (funcall x x) a))))))

F (n) (funcall (Y (λ (f) (λ (n a b) (if (< n 1)
a (funcall f (1- n) b (+ a b)))))) n 0 1)

F (n) (funcall (Y (λ (f) (λ (n) (if (zerop n) 1
(× n (funcall f (1- n)))))) n

z (mapcar #'fib '(i ij iij iv v vi vij viij iε))
(i i ij iij v viij xij xxi xxxiv)

z (mapcar #'fac '(i ij iij iv v vi vij viij iε))
(i ij vi xxiiv cxx dccxx vxl xdxccxx xxxviiiiidccclxxx)

Figure 3: Y Combinator Codex by emacsomancer.

What is LISP?

- LISP Processing language
- 2nd oldest High-Level Language after FORTRAN
- 1958 - John McCarthy

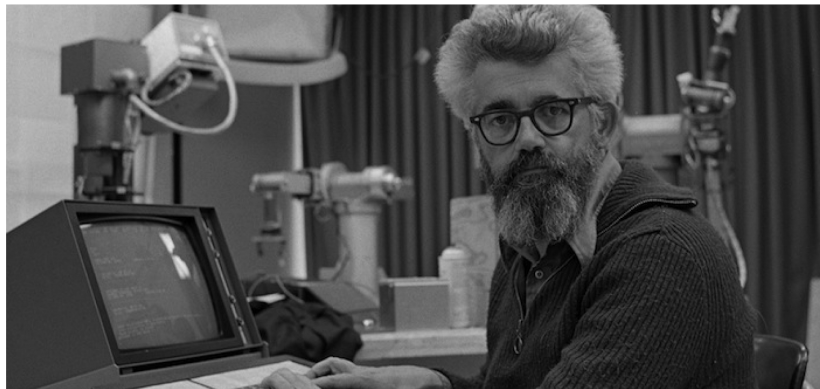


Figure 4: John McCarthy at work in his artificial intelligence laboratory at Stanford

Why Clojure?

- Designed with simplicity
- Functional Programming
- Data Oriented



Figure 5: Code? Data? Code? Data?

Functional Programming

- Immutability
- Referential transparency
- Easy to think about systems
- Parallel and concurrent programming