HÅKAN RÅBERG'S
CLEVER, CLASSLESS AND FREE

ENUMERABLE.JAVA, KUALA LUMPUR

2010

Clever

```
map(xs, λ(x, x.toUpperCase()));
```

```
map(xs, new Fn1<String, String>()
{
    public String call(String x) {
        return x.toUpperCase();
    }
});
```

LAMBDAS FOR JAVA 5

LOAD TIME OR AOT COMPILATION

IMPLEMENTED VIA ASM BYTECODE MACRO

TRIGGERED BY ANNOTATED STATIC METHODS

ANNOTATED STATIC FIELDS "UNQUOTE"

NO JAVA SYNTAX EXTENSION

RUBYSPEC 1.8.7 COMPLIANT

enumerable.org

SHEN.CLJ, LONDON

2012

Classless

MARK TARVER'S

SHEN

PORTABLE VERSION OF QI II

KERNEL LISP (KLAMBDA) — 46 PRIMITIVES

PATTERN MATCHING / PREDICATE DISPATCH

PARTIAL APPLICATION BY DEFAULT

INTEGRATED PROLOG / YACC

OPTIONAL STATIC TYPING

GNU CLISP / STEEL BANK COMMON LISP (Mark Tarver)

JAVASCRIPT (Ramil Farkhshatov)

CHIBI-SCHEME (Bruno Deferrari)

CLOJURE (Me / Dominik Greibl)

HASKELL (Ömer Sinan Ağacan)

JVM (Joel Shellman / Me)

```
(define unique
  {(list A) --> (list A)}
  [] -> []
  [X | Y] -> (unique Y) where (element? X Y)
  [X | Y] -> [X | (unique Y)])
```

BABEL

2013

IDE based on Joel Shellman's JVM port

shenlanguage.org

神

RE CLOJURE
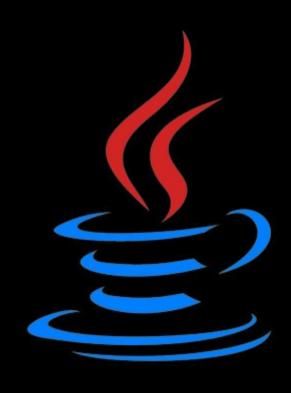CLOJURE CL
OJURE CLOJ
URE CLOJUR

```
$ wc -l *.clj
  117 install.clj
  232 overwrite.clj
  449 primitives.clj
  798 total
```

```
$ wc -l *.shen | tail -n1
 3264 total

$ wc -l *.kl | tail -n1
 10758 total

$ wc -l shen.clj
 19466 shen.clj
```

```
$ cat factorial.shen
(define factorial
  0 -> 1
  X -> (* X (factorial (- X 1))))


$ cat factorial.clj
(defun factorial (V444)
  (cond
    ((= 0 V444) 1)
    (true (* V444 (factorial (- V444 1))))))
```

神

KLAMBDA COMPILER

CANNOT RUN SHEN YET

JDK 8 λ BUILD / INTELLIJ 12 EAP

INVOKEDYNAMIC / ASM4

A WEEK OLD TODAY

java.util.functions

ST LOUIS
NOW
Free

Deleuze & Guattari, those guys are engineers. Not philosophers — engineers of the year 2035.

– MANUEL DE LANDA

...the potential of silicon in third-generation machines...

<p style="text-align: right">— GILLES DELEUZE</p>

Philosophy is the art of forming, inventing and fabricating concepts.

— GILLES DELEUZE & FELIX GUATTARI

We do not lack communication. On the contrary, we have too much of it.

We lack creation. We lack resistance to the present.

The creation of concepts in itself calls for a future form, for a new earth and people that do not yet exist.

– GILLES DELEUZE & FELIX GUATTARI

As software increasingly structures the contemporary world, curiously, it also withdraws, and becomes harder and harder for us to focus on as it is embedded, hidden, off-shored or merely forgotten about.

— DAVID M. BERRY

A working class hero is something to be.

– JOHN LENNON

INSPIRED BY
JOHN {CARPENTER,LENNON}

FIN
DE
CINEMA

;; This buffer is for notes you don't want to save, and for Lisp evaluation.
;; If you want to create a file, visit that file with C-x C-f,
;; then enter the text in that file's own buffer.

DEUCE is (not yet) Emacs under Clojure