

Clojure

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What is Clojure?

- Designed by Rich Hickey
- Lisp dialect that runs on JVM
- Designed for concurrency
- Interops well with existing Java libraries

Lisp-like Syntax

- ⊙ `(+ 12 30)`
- ⊙ `(* 6 7)`
- ⊙ `(first '(42 43 44))`
- ⊙ `(first (rest '(41 42 43 44)))`
- ⊙ `(map #(+ % 1) '(41 41 41 41))`
- ⊙ `(- (reduce #(+ %1 %2) (range 10)) 3)`

Java Interoperability

Java:

```
frame.getContentPane().add(new JButton("Click Me!"))
```

Unsugared Clojure:

```
(. (. frame getContentPane) add (new JButton "Click Me!"))
```

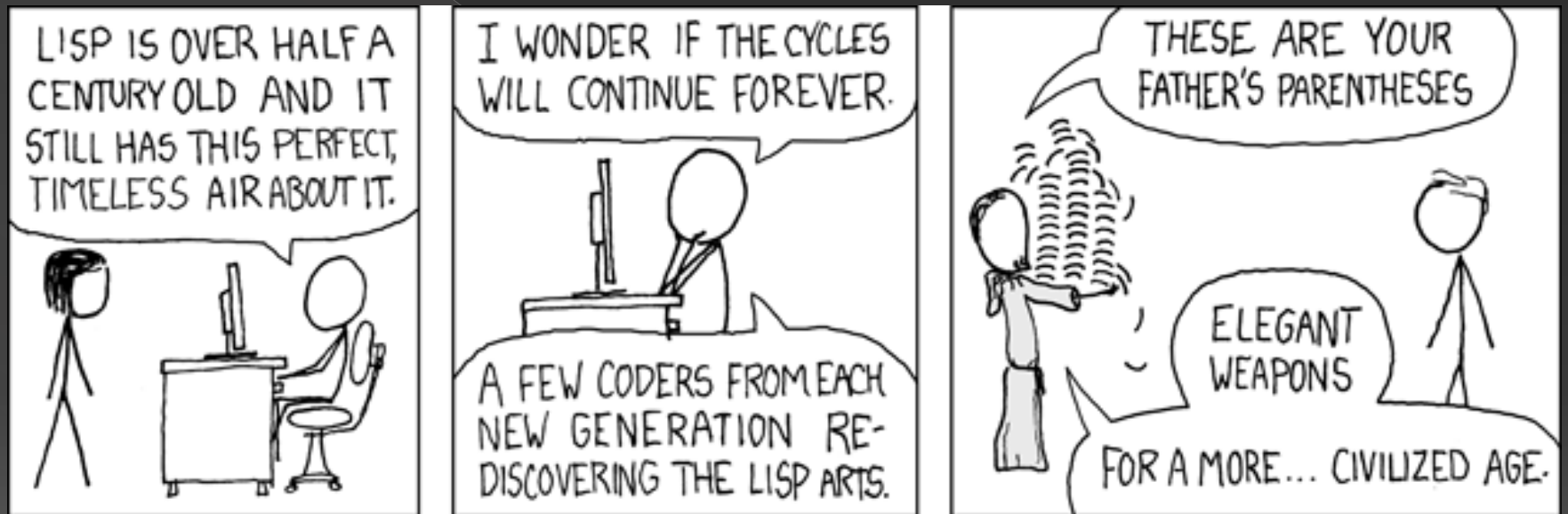
Partially sugared:

```
(.add (.getContentPane frame) (JButton. "Click Me!"))
```

Saccharine:

```
(.. frame getContentPane (add (JButton. "Click Me!")))
```

Cartoon of the Day



I've just received word that the Emperor has dissolved the MIT computer science program permanently. [sic]

Concurrency

- ◎ refs

- > ref-set

- > dosync

- > @ref

- > alter

- > commute

- ◎ future

Strengths

- ◉ Memoize
- ◉ Concurrency
- ◉ Generally works well with Java
- ◉ Platform independent

Weaknesses

- ⦿ Java arrays don't interop well
- ⦿ Not strongly typed, but lazy (debugging difficult)
- ⦿ It's a lisp
 - > Macros are confusing
- ⦿ Eats side effects like println and exception stack traces
- ⦿ Structs are very limited
- ⦿ Depends too much on Java

Judgment



BUT, if you want to find out more, visit <http://clojure.org/>