

LISP IS OVER HALF A CENTURY OLD AND IT STILL HAS THIS PERFECT, TIMELESS AIR ABOUT IT.



I WONDER IF THE CYCLES WILL CONTINUE FOREVER.

A FEW CODERS FROM EACH NEW GENERATION RE-DISCOVERING THE LISP ARTS.



THESE ARE YOUR FATHER'S PARENTHESES

ELEGANT WEAPONS  
FOR A MORE... CIVILIZED AGE.



<http://xkcd.com/297/>

# Lisp is beautiful!

Jfokus 2013  
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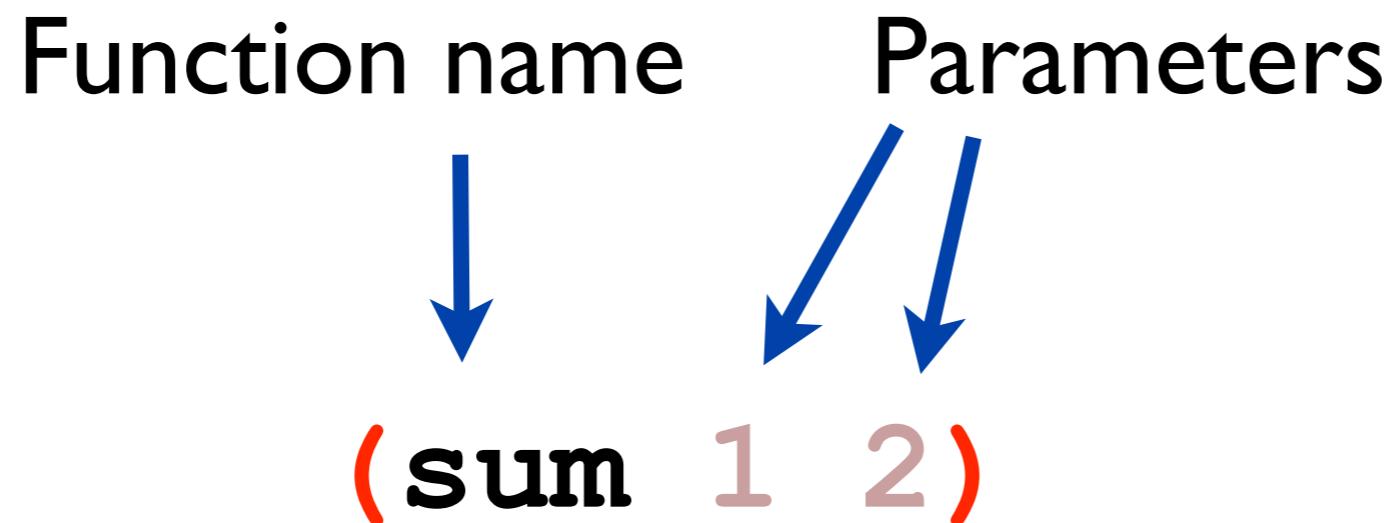
knowit

**sum (1 , 2) ;**

**sum (1 , 2)**

(sum 1 2)

# Prefix notation



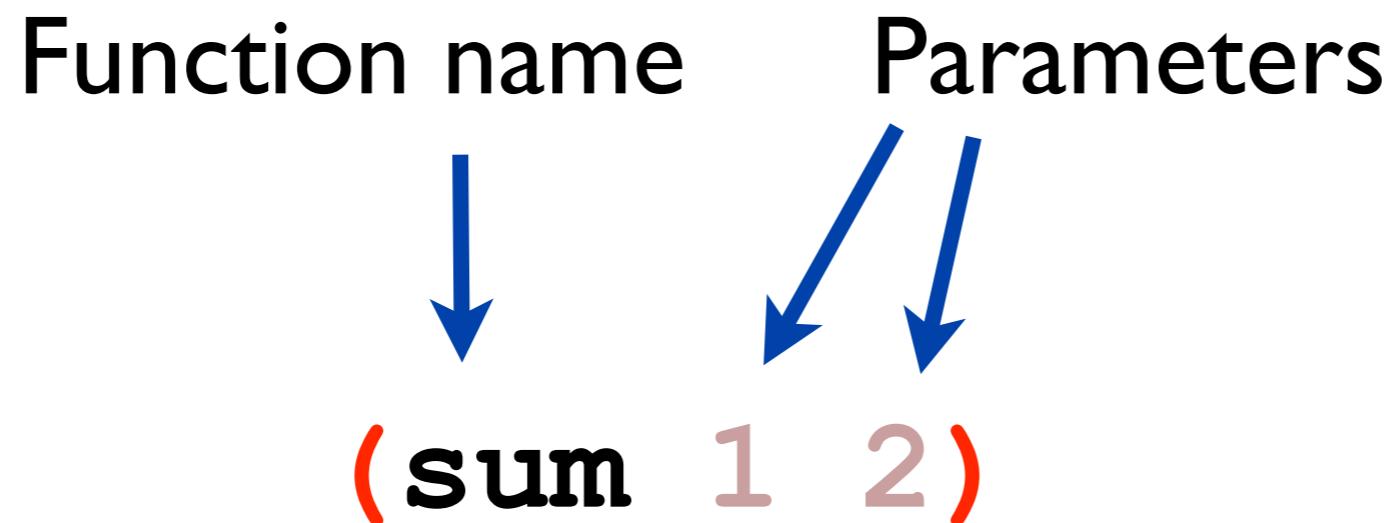
```
Methods.callStatic();  
methods.callInstance();
```

```
callStatic();  
callInstance();
```

```
this.callInstance();  
methods.callStatic();
```

```
Methods.this.callInstance();  
Methods.this.callStatic();
```

# Prefix notation



(**sum** 1 2)

;=> 3

(**sum** 1 2 3)

;=> 6

(**sum**)

;=> 0

(+ 1 2)

1 + 2

;=> 3

(+ 1 2 3)

1 + 2 + 3

;=> 6

(+)

;=> 0

**1 + (2 \* 3)**

**1 + (2 \* 3)**

(**+ 1 (\* 2 3)**)

**1 + (2 \* 3) / 2 - 4**

**(- (+ 1 (/ (\* 2 3) 2)) 4)**

```
((1 + ((2 * 3) / 2)) - 4)
```

# Lists

```
' (3 2 1)  
; => (3 2 1)
```

```
(+ 3 2 1)  
; => 6
```

```
(defn iterate  
[f x] (cons x (lazy-seq (iterate f (f x)))))
```

# Lists

```
' (3 2 1)  
; => (3 2 1)
```

```
(+ 3 2 1)  
; => 6  
(iterate inc 0)
```

```
(defn iterate  
  [f x] (cons x (lazy-seq (iterate f (f x))))))
```

# Lists

```
' (3 2 1)  
; => (3 2 1)
```

```
(+ 3 2 1)  
; => 6
```

```
(defn iterate  
[f x] (cons x (lazy-seq (iterate f (f x)))))
```

# Macros

```
(infix (1 + 2))  
; => 3
```

```
(defmacro infix [form]  
` (~ (second form) ~ (first form) ~@ (nnext form) ))
```

# Macros

```
(macroexpand '(infix (1 + 2)))
; => (+ 1 2)
```

```
(defmacro infix [form]
` (~ (second form) ~ (first form) ~@ (nnext form) ))
```

```
(defn iterate
  [f x] (cons x (lazy-seq (iterate f (f x))))))
```

# Abstract syntax tree

```
(defn iterate
  [f x]
    (cons x
      (lazy-seq
        (iterate f
          (f x)))))))
```

# Clojure



Q & A

aks@knowit.no

@5tyle

LAST NIGHT I DRIFTED OFF  
WHILE READING A LISP BOOK.

HUH?

SUDDENLY, I WAS BATHED  
IN A SUFFUSION OF BLUE.

AT ONCE, JUST LIKE THEY SAID, I FELT A  
GREAT ENLIGHTENMENT. I SAW THE NAKED  
STRUCTURE OF LISP CODE UNFOLD BEFORE ME.



THE PATTERNS AND META-PATTERNS DANCED.  
SYNTAX FADED, AND I SWAM IN THE PURITY OF  
QUANTIFIED CONCEPTION. OF IDEAS MANIFEST.

TRULY, THIS WAS  
THE LANGUAGE  
FROM WHICH THE  
GODS WROUGHT  
THE UNIVERSE.



NO, IT'S NOT.

IT'S NOT?



I MEAN, OSTENSIBLY, YES.  
HONESTLY, WE HACKED MOST  
OF IT TOGETHER WITH PERL.

<http://xkcd.com/224/>