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The Breakfast Club

# A PROGRAMMING LANGUAGE

# The Story So Far...

- Original Plan: Claire
  - Locked Yahoo! Group
  - No Access...

Curt...



- New Plan: APL!
  - Dyalog APL
  - Need to request an educational license

# APL is...

- ⦿ Array-based (1-based)
- ⦿ Functional (Impure)
- ⦿ Modular
- ⦿ Poorly Documented
- ⦿ Lexicographically Intriguing
- ⦿ Code once; Comprehend nowhere
- ⦿ Mental Breakdown-Inducing

# APL “Keywords”

- ⊙ APL does not have keywords. It has symbols.
- ⊙ Assignment:
  - $h \leftarrow 1\ 2\ 3\ 4$
- ⊙ Control Structures:
  - $\rightarrow(L1, L2, L3\dots)[((f) + 1)]$
- ⊙ Reduce:
  - $+/h \rightarrow 10$
  - $\times/h \rightarrow 24$
- ⊙ Expand:
  - $+\backslash h \rightarrow 1\ 3\ 6\ 10$
  - $\times\backslash h \rightarrow 1\ 2\ 6\ 24$

# More Keywords!

## ◎ Range

- $\iota$  10  $\rightarrow$  1 2 3 4 5 6 7 8 9 10

## ◎ Index of

- 'We're all pretty bizarre. Some of us are just better at hiding it, that's all.'  $\iota$  'aeiou'  $\rightarrow$  7 2 19 28 35

## ◎ Take

- $2\uparrow h$   $\rightarrow$  1 2

## ◎ Size/Rank

- $\rho h$   $\rightarrow$  4
- $\rho\rho h$   $\rightarrow$  1

# Examples

## ⊙ Factorial

- $x / \iota n \rightarrow n!$

## ⊙ Fibonacci

- fib

$f \leftarrow 0 \ 1$

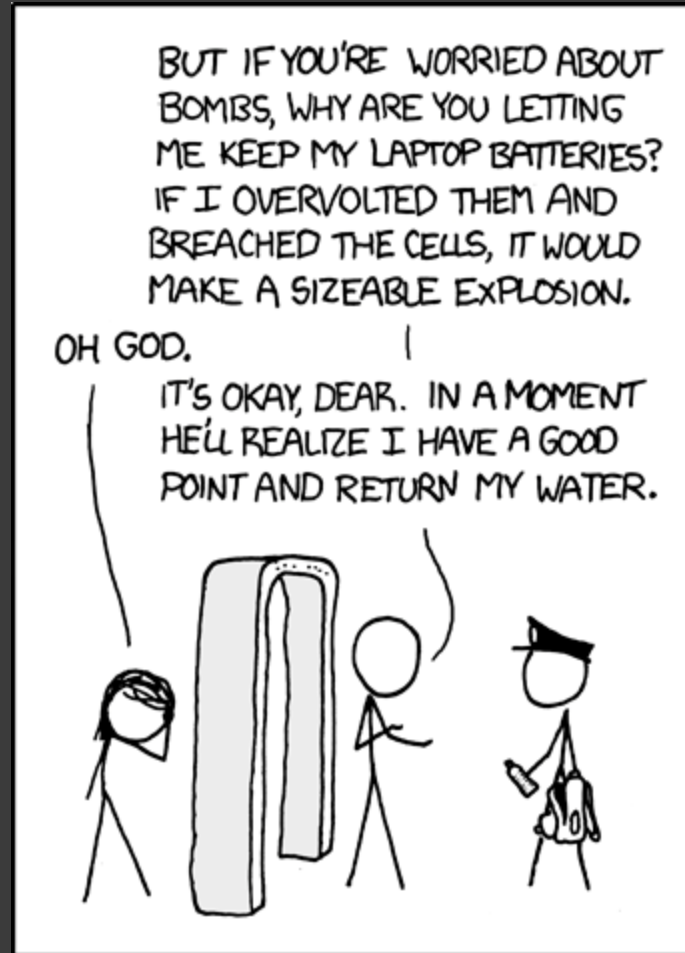
:While ( $\rho f$ ) < n

$f \leftarrow f, (+ / (\bar{2} \uparrow f))$

:EndWhile

$\text{fibn} \leftarrow \bar{1} \uparrow f$

# Cartoon of the Day



A laptop battery contains roughly the stored energy of a hand grenade, and if I shorted it ... hey! You can't arrest me if I prove your rules inconsistent.

Find the Position of a Colon in a string

**Live Demo**



# Project Demonstration

# Video of the Day



- ①  $\rightarrow(\text{other11, num1})[(v/('1234567890+\div*'=1\uparrow(\text{parFInd}\supset\text{parFbody}))) + 1]$
- ②  $\text{colInd} \leftarrow + / ((\text{Expr} = ':') \times \tau(\rho \text{Expr}))$

# APL

## ⊙ Strengths:

- Math
- Matrices
- Fast

## ⊙ Weaknesses:

- Unreadable
- No Documentation
- Strings....