

These are slides.

Which means they're the visual accompaniment to an actual talk. They contain a fraction of the information I actually talked about, so scrolling through them can really only tell you what the screen behind me looked like. The good news is that PhillyETE recorded the talk, so check their site later for details.

In the meantime, here are some words and phrases.

Coda Hale

4/10 @ Philadelphia, PA

The Programming Ape

The Programming Ape

How people **think**
and why that **matters.**



Coda Hale

@coda

github.com/codahale

yammer™

The enterprise social network.

www.yammer.com

Help businesses
be **better** businesses.

Software
is
people!

We write **software**
to help **people**
do **things.**

We build **tools** which
are **used** by **people**.

What's a **people**?

People are not
computers.

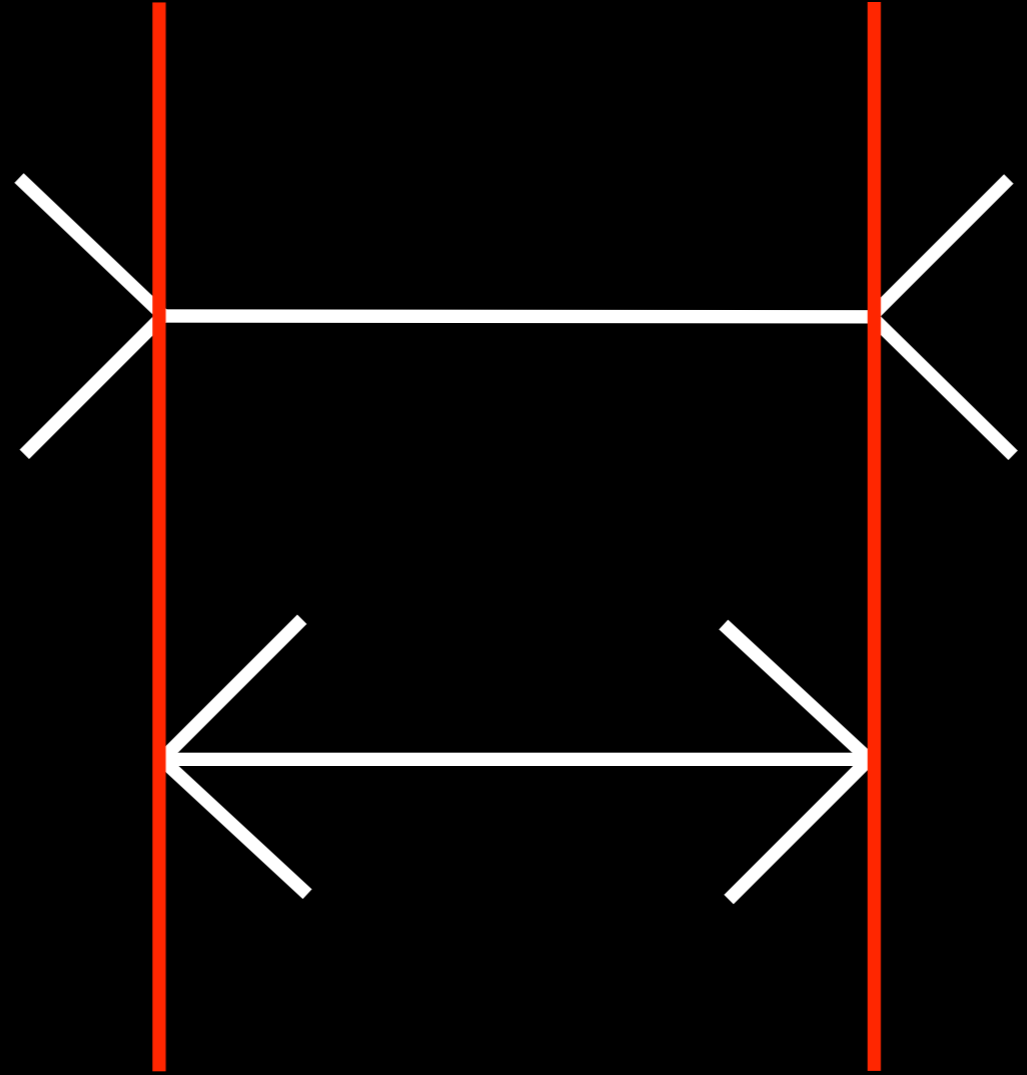
We don't have
unitary **minds.**

We don't have
reliable **minds.**

We don't have
introspectable **minds.**

We have
human **minds.**





Goat

Stay

Change

Goat

Stay

Change

Car

Stay

Change

We care about how
humans **act.**

We can observe
how **humans** **act**.

Intuition

+

Attention

Intuition

dog

$$2 + 2 = ?$$

Intuition

Involuntary

Fast

Effortless

Invisible

Intuition

Attention

$$21 \times 72 = ?$$

Voluntary

Slow

Difficult

1,512

Perceptible

Attention

Intuition **Attention**

Involuntary **Voluntary**

Fast **Slow**

Effortless **Difficult**

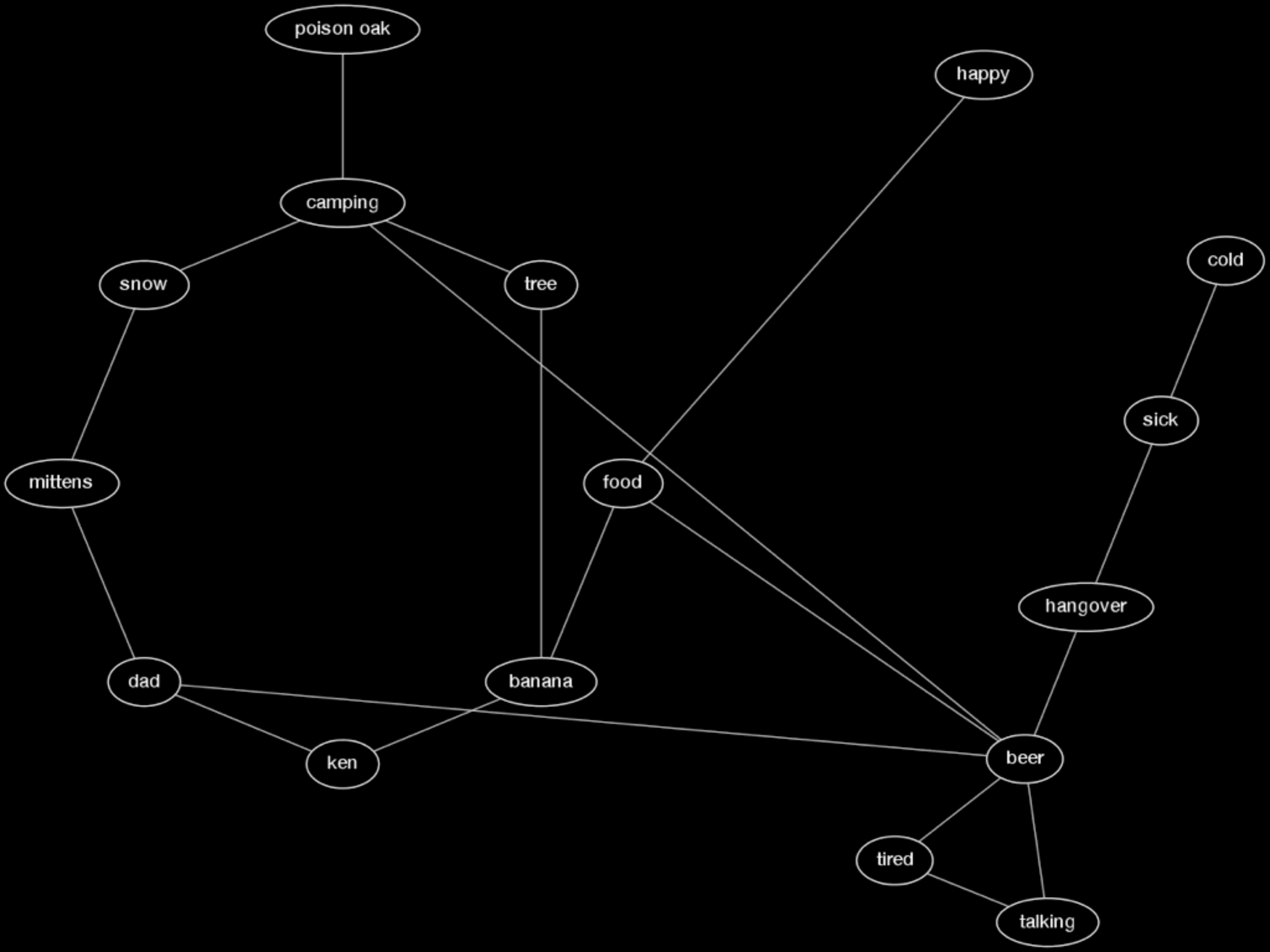
Invisible **Perceptible**

Intuition



Attention

Associative



Parallel

Primed

WASH

S■A■P

SOAP

SLAP

SNAP

SWAP

Primed

Pattern Matching

Coherence

Swimming

Swimming Road Trip

Swimming

Swimming **Potato**

Regulatory

Lazy

If your sandwich costs
\$10 more than your
drink, and you paid \$12
for both, how much did
your drink cost?

It's not \$2.

$$\text{sandwich} = \text{drink} + \$10$$

$$\text{drink} + \text{sandwich} = \$12$$

$$\text{drink} + (\text{drink} + \$10) = \$12$$

$$2 \times \text{drink} + \$10 = \$12$$

$$2 \times \text{drink} = \$2$$

$$\text{drink} = \$1$$

$$\text{sandwich} = \$11$$

Bu blah blurblo blee
\$10 more than blarg
bonk, buh bee burg **\$12**
buh boof, ble blah buh
bluh bwah boo?

$$2 + 10 = 12$$

Bait/Switch

**Too long;
didn't read.**

Too subtle;
didn't notice.

Too busy;
didn't see it.

**Too tired;
didn't care.**

Ego depletion.

Intuition



Attention

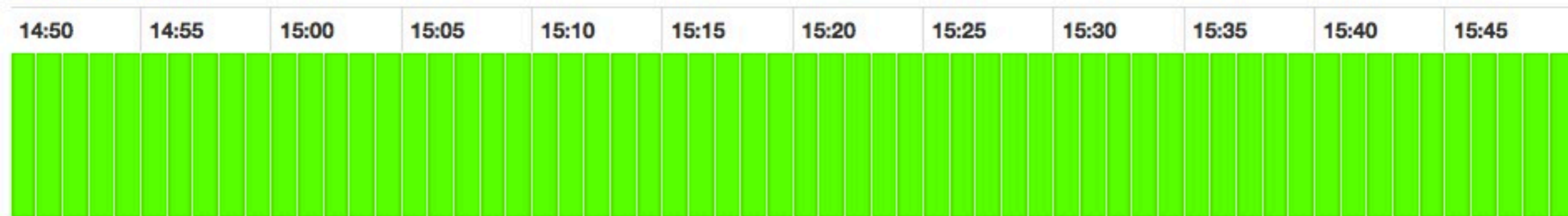
So you're building
tools for **humans**...

Leverage

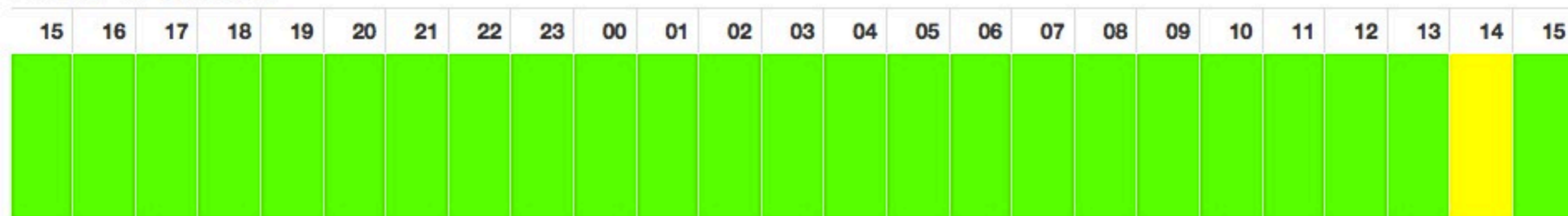
intuition.

Let the **visual cortex**
do the **work.**

Last Hour



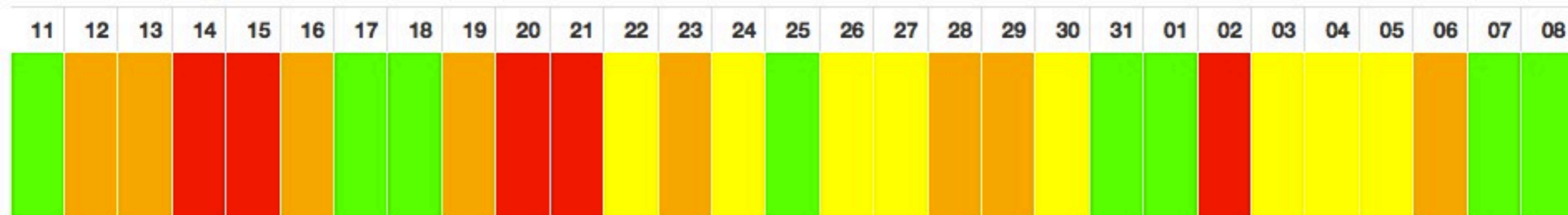
Last 24 Hours



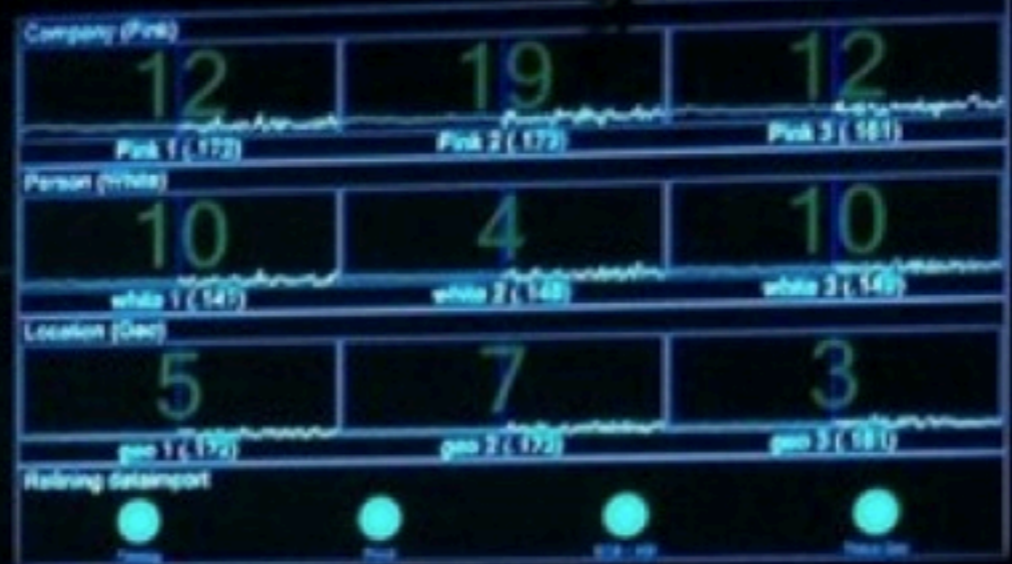
Last 7 Days



Last 30 Days



Build **ambient**
awareness.



A large data table or dashboard on a monitor, displaying multiple columns and rows of data. The content is mostly illegible but appears to be a structured list or table.



Group information
by **context**, not by
means of production.

636.23 +2.55 (0.40%)

After Hours: 635.52 -0.71 (-0.11%)
Apr 9, 7:59PM EDT
NASDAQ real-time data - Disclaimer
Currency in USD

Range 625.30 - 639.84
52 week 310.50 - 639.84
Open 626.13
Vol / Avg. 21.34M/24.70M
Mkt cap 593.20B
P/E 18.12

Div/yield 2.65
EPS 35.11
Shares 932.37M
Beta 1.26
Inst. own 71%

+1 3.4k

Dow Jones 12,929.59 -1.00%
Nasdaq 3,047.08 -1.08%
Technology -0.94%
AAPL 636.23 0.40%

Compare: Add Dow Jones Nasdaq HPQ DELL CCUR DGII [more »](#)



Settings | Plot feeds | Technicals | [Link to this view](#) Volume delayed by 15 mins.

- A** [Apple Analyst: iPhone 5 Launch Will Drive The Stock Closer To \\$1001](#)
ValueWalk - 22 minutes ago
- B** [Clubpennystocks Volume WatchList: AAPL \(Apple Inc\), SNPK \(Sunpeaks Ventures <...\)](#)
MarketWatch - 8 hours ago
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- Mar 19, 2012
Apple Inc. Corporate Conference Call to Announce the Outcome of Company's Discussions Concerning its Cash Balance
- Feb 23, 2012
Apple Inc. Annual Shareholder Meeting
- Jan 24, 2012
Q1 2012 Apple Inc. Earnings Conference Call

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Related companies

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	Company name	Price	Change	Valuation	Chg %	d m y	Mkt Cap
AAPL	Apple Inc.	636.23	+2.55	593.20B	0.40%		593.20B
HPQ	Hewlett-Packard Company	23.14	+0.03	45.76B	0.13%		45.76B
DELL	Dell Inc.	16.22	-0.27	28.58B	-1.64%		28.58B
CCUR	Concurrent Computer Corp.	3.61	0.00	33.22M	0.00%		33.22M
DGII	Digi International Inc.	10.59	-0.22	271.95M	-2.04%		271.95M

Key stats and ratios

	Q4 (Dec '11)	2011
Net profit margin	28.20%	23.95%

**Conserve
attention.**

Make **daily life**
sustainable.

Automate

as much as possible.

Correlate.

Normalize.





Normalize.

**Detect
anomalies.**

Automate

as much as possible.

Create a **moment** of
cognitive strain.

So.

Intuition **Attention**

Involuntary **Voluntary**

Fast **Slow**

Effortless **Difficult**

Invisible **Perceptible**

Intuition



Attention

Leverage **intuition.**
Conserve **attention.**

We build **tools** which
are **used** by **people**.

Help businesses
be **better** businesses.

Help humans
be happier humans.

Thank you.