Tin

/tain/

A database engine so tiny,
its name had to be shortened

I'm Tim

I'm Tim

Nice to meet you

GemKitty®
Jewelry designed by you

Free Ground Shipping!

My Account | Sign Out | Shopping Cart

Design Your Own Necklace | The Limited Edition | Photo Gallery

Design: Pendant

Narrow Price: Show all

Length: 16" + 2" extender

How will this fit on me?
Sizing PDF

Frequently Asked Questions
Why is this necklace special?

Pick pendant

Bead

Pendant

(or keep working on this one with the items below)

20mm Smoky Quartz

20mm Goldstone (blue)
Add $2

20mm Amethyst (green)
Add $11

20mm Swarovski Silver Shade
Add $14

20mm Swarovski Golden Shadow
Add $14

20mm Swarovski Sahara (foil back)
Add $14

Your necklace is complete! You can purchase it below!

Add matching earrings for $15

Total
$174
$159 for necklace
+ $15 for earrings
ADD TO CART

Roll over to zoom in.

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Because Geeks have girlfriends too!

</shameless-self-plug>

THIS IS SLIDE 1

THIS IS Hi!. SLIDE 1

THIS IS Hi. SLIDE 1

Hat-tip to @steadicat

Sequential Data (1D)

I.e.

I.e. STOCKS

I.e. stocks
bank trans.

I.e. stocks
bank trans.
sensor data

I.e. stocks
bank trans.
sensor data
twitter feeds

I.e. stocks
bank trans.
sensor data
twitter feeds
facebook walls

SSD DO NOT WANT

I CAN HAZ HDD?

The Origins

Once upon a time, at a major stock exchange

Oracle & SQL Server to the limit

Oracle & SQL Server to the limit

\m/ \m/

And even then

So...

Disk is cheap.

CPU & RAM are costly

(DRUMROLL...)

Text & Filesystem

Where did the hunch come from?

Industrial Research (elsewhere)

→ Stock data in glorified CSVs

\+ Arrays of text files

Text & Filesystem

FORWARD TO THE PAST!!!

1. Output to CSV

0932, GOOG, 750, 698

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2. Upload to S3

```
s3cmd.rb put GOOG-20091029.txt
```

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0932, GOOG, 750, 698

2. Upload to S3

s3cmd.rb put GOOG-20091029.txt

3. Serve over HTTP

http://stocks.com/GOOG-20091029.txt

4. ???

[client: discard lines, replay log, etc.]

4. ???

[client: discard lines, replay log, etc.]

5. Profit!

Pay your AWS charge.
Compare with Oracle costs.
Laugh while you count your bills.

WARNING
WARNING

This is

This is STUPID.

The rest:
A little less so.

The rest:
A little less so.

But still...

So why am I here?

Is anybody else doing this?

The Specifics

MAIN CONCEPTS

SHARDING

TRIAGE MODE

OFFSETTING

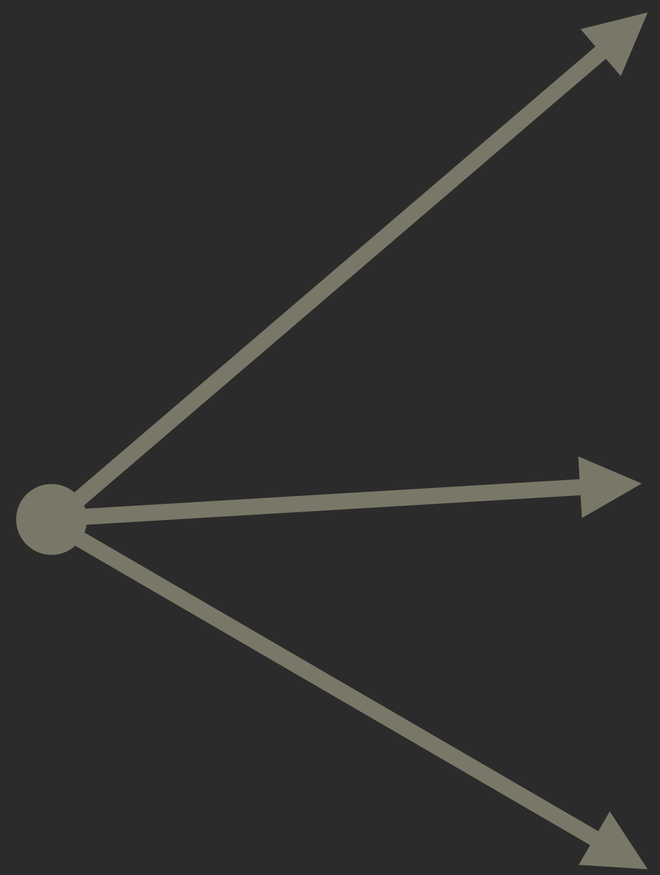
PSEUDO-INDEXES

REDUNDANCY

LOG REPLAY

Sharding

0932, GOOG, 750, 670
0933, AMZN, 240, 230
0939, ADBE, 130, 120
0943, GOOG, 749, 677

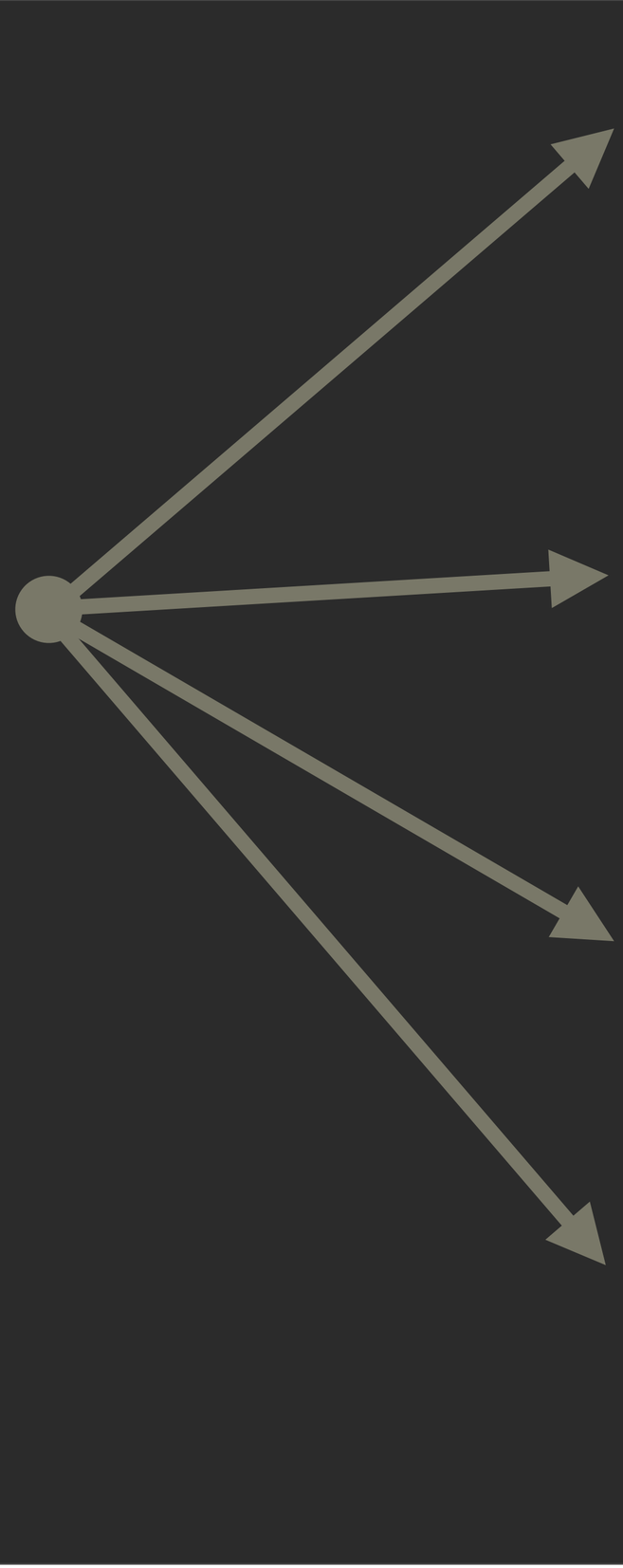


ADBE.txt
0939, ADBE, 130, 120

AMZN.txt
0933, AMZN, 240, 230

GOOG.txt
0932, GOOG, 750, 670
0943, GOOG, 749, 677

0932, GOOG, 750, 670
0933, AMZN, 240, 230
0939, ADBE, 130, 120
0943, GOOG, 749, 677



ADBE-093X.txt
0939, ADBE, 130, 120

AMZN-093X.txt
0933, AMZN, 240, 230

GOOG-093X.txt
0932, GOOG, 750, 670

GOOG-094X.txt
0943, GOOG, 750, 670

Two Laws

Directories are for deletion

Too large a file hinders redundancy

Queries

Skip the middleman

Skip ~~the middleman~~

REST is the interface

Standard URLs

http://stocks.com/GOOG/2009/10/29/094X.txt

Shortcuts

http://stocks.com/GOOG/today(.txt)

http://stocks.com/GOOG/last(.txt)

Ranges

http://stocks.com/GOOG/???????

Use HTTP Headers

HTTP/1.1 206 Partial content
Date: Wed, 15 Nov 1995 06:25:24 GMT
Last-Modified: Wed, 15 Nov 1995 04:58:08 GMT
Content-Range: bytes 21010-47021/47022
Content-Length: 26012
Content-Type: image/gif

Necessitates ASCII or UTF-16 + Padding

rfc 2616
section 3.12

→ Content-Range

Create your own Units

range-unit = day | hour | record

Handling Query Strings

twitter.com/timanglade?type=reply&to=barood

twitter.com/timanglade?to=barood&type=reply

301 redirect

twitter.com/timanglade/cdf83ef5422c3146ebb14dac0aa84f69.txt

Cache everything

Say hello to my little friend the

Triage mode

twitter.com/timanglade#20091029-1520

Serve with 302 redirect

twitter.com/timanglade-20091029.txt

Let the client parse.

Offsetting

People tend to...
request even times

twitter.com/timanglade_0900-0930.txt

vs.

stocks.com/GOOG/..._0900-0930.txt

vs.

stocks.com/GOOG/..._0850-0920.txt

Ops

! REST is not plug & play

XML Parsing Anyone?

what I did initially

```
- origin: "sonde 001"
  value:  <%=   sum = 0
                collection.each {|t| sum += t["reading"].to_i}
                sum/collection.size   %>
```

```
<% collection.each do |temp| %>
- origin: "sonde 001"
  location: <%= temp["place"] %>
  value:  <%= (temp["reading"].to_i - 32)/1.8.floor %>
<% end %>
```

$$\rightarrow bx$$

current state of research

different syntaxes have been proposed
inversion formulae: write once, works both wats

The road ahead

MORE

Lenses

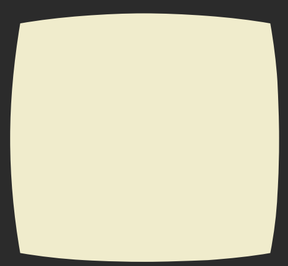
MORE

Code

(hopefully)

Q&A

TimanGlade@gmail.com
twitter.com/TimanGlade
LinkedIn.com/in/TimanGlade
FaceBook.com/TimanGlade

Tim

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