Legend:
test
config
db
app
lib
Misc

rmacconnell

root

Jan 17, 2007

Rails in the Large:

Building the Biggest (Enterprise) Rails Application in the World

PAUL GROSS   software developer / consultant

ThoughtWorks

pgross@thoughtworks.com
200 E. Randolph St, 25th Floor, Chicago, IL 60601-6501
pgross@thoughtworks.com
www.pgrs.net
www.thoughtworks.com

NEAL FORD   software architect / meme wrangler

ThoughtWorks

nford@thoughtworks.com
3003 Summit Boulevard, Atlanta, GA 30319
www.nealford.com
www.thoughtworks.com
blog: memeagora.blogspot.com
twitter: neal4d

You are logged in as **demodealer** | ›› Logout   English

ove.com

›› **BUY**   ›› **SELL**   ›› **MY OVE**   ›› **SERVICES & TOOLS**   ›› **Help**

Buy

›› Basic Search   ›› Advanced Search

Type: All Passenger Vehicles
Make: All
Model: All
Trim: All
Years: All – 2010
VIN:
Seller:

☐ Vehicles with Condition Reports

›› Facilitation Location   ›› Vehicle Location

☐ All Locations

——— **United States** ———

☐ All United States Locations

☐ AR - Central Arkansas Auto Auction *(15)*

☐ AZ - Manheim Arizona *(205)*

☐ AZ - Manheim Phoenix *(250)*

☐ AZ - Manheim Tucson *(114)*

☐ AZ - ADESA Phoenix *(0)*

☐ AZ - DAA Southwest *(0)*

›› Sellers by Type   ›› Sellers A to Z

Expand All   Select All
Collapse All   Unselect All

⊞ Captive Finance (Credit Cars)

⊞ Dealer

⊞ Factory

⊞ Fleet/Lease

⊞ Rental

››Search

QUICK LINKS

Make OVE your homepage

Newly Listed!

Expiring Soon!

Fuel Efficient *(4-cylinders)*

Hybrids / Alternative Fuel

In-Service Rentals

Specialty

Salvage

Announcement:

Chrysler Financial has suspended dealer floor plan accounts. Please contact your preferred Facilitation Service Provider to arrange for alternate payment terms.

ONLINE EVENT SALES

BROWSE FOR VEHICLES   − Hide

Vehicle Type

Passenger Vehicles

Car *(16305)*
Truck *(3591)*
Van *(1904)*
SUV *(6285)*

Makes

AM General *(6)*	Flagstaff *(1)*	Monaco *(2)*
Acura *(202)*	Fleetwood *(12)*	Monon *(1)*
Adventure *(1)*	Fontaine *(3)*	Monterey *(1)*
Airstream *(3)*	Ford *(4367)*	Nash *(2)*
Alfa *(5)*	Forest River *(15)*	Nautique *(1)*
Alfa Romeo *(1)*	Formula *(1)*	New Holland *(1)*

Sort By: [MMR Low to High ▼]

Displaying 1 - 50 of 27934 vehicles

1 2 3 4 5 ... 559 Next >

Color Group	Year	Make	Model and Trim	Odometer	MMR ▲	Buy Now	Current Bid	Time Left	Facilitation Location / Vehicle Location	Seller
Blue »Add to Watchlist	2006		Mercedes-Benz R-Class R350 4JGCB65E16A023560 CR Seller Disclosure	29,137	Above: $25,100 Average: $23,100 Below: $21,100	$23,750 »BUY NOW		3d 17hr 56m	FL - Manheim Central Florida At Dealership CFP MOTORS LTD FL - FORT PIERCE	Cfp Motors Ltd
Yellow »Add to Watchlist	2004		Ford E-250 1FTNE24W94HB24289 CR	119,919	Above: $3,725 Average: $2,900 Below: $2,050	$500 »BUY NOW		2d 19hr 11m	PA - Manheim Pennsylvania At Auction Manheim Pennsylvania PA - MANHEIM	Manheim Pennsylvania
»Add to Watchlist	2003		Infiniti G35 Base JNKCV54E73M212262	1 mi	Above: $16,050 Average: $14,550 Below: $13,050	$3,900 »BUY NOW	$2,900 »BID	0d 02hr 26m	UT - Brasher's Salt Lake Auto Auction At Dealership WORLDWIDE AUTO INC UT - SALT LAKE CITY	Worldwide Auto Inc
Gold »Add to Watchlist	2000		Chrysler Cirrus LXi 1C3EJ56H0YN164882	1	Above: $3,775 Average: $3,225 Below: $2,675	$1,000 »BUY NOW		10d 00hr 41m	LA - Manheim New Orleans At Dealership Jimmy Stockstill Motors Inc MS - PICAYUNE	Jimmy Stockstill Motors Inc
	2000		Oldsmobile Alero GX	84,140	Above: $3,450 Average: $2,550	$900	$400	0d 15hr 11m	NJ - Manheim New Jersey	Fleet Street Remarketing Llc

Vehicle Details

» Dealer View   » Retail View

‹‹ Back to Search Results

1 of 17

‹‹ Previous   Next ››

» View Larger Photos

REPORTS

View the full Condition Report for additional details.

For more info, view the Vehicle History Report

ANNOUNCEMENTS

Title Status: Title Present
Titled In: PA

2004 Ford E-250

» Add to Watchlist

1FTNE24W94HB24289

CR

PRICING

Buy Now Price: $500   »BUY NOW

Time Left: 2d 19hr 09m
End Date: 05/07/2009 12:00PM ET
Views: 27

View Fees

Facilitated by: Manheim Pennsylvania
Vehicle Location: At Auction MANHEIM, PA, US

MMR	Black Book
Above: $3,725	Extra Clean: $8,550
Average: $2,900	Clean: $5,125
Below: $2,050	Average: $4,075
View Details	Rough: $2,400
	+ Show Adds/Deducts

VEHICLE SPECIFICATIONS

VIN: 1FTNE24W94HB24289
Odometer: 119,919
Transmission: Automatic
Engine Cylinders: 8 Cylinder
Drive Train: Not Specified
Fuel Used: Not Specified
Exterior Color: Yellow
Interior Color: GRY
Interior Type: Vinyl
Body Style: Van
Doors: Not Specified
Audio: AM/FM
Top Style: Hard Top

EQUIPMENT

the pursuit

Go for the one that'll beat the one that'll beat the one you last did
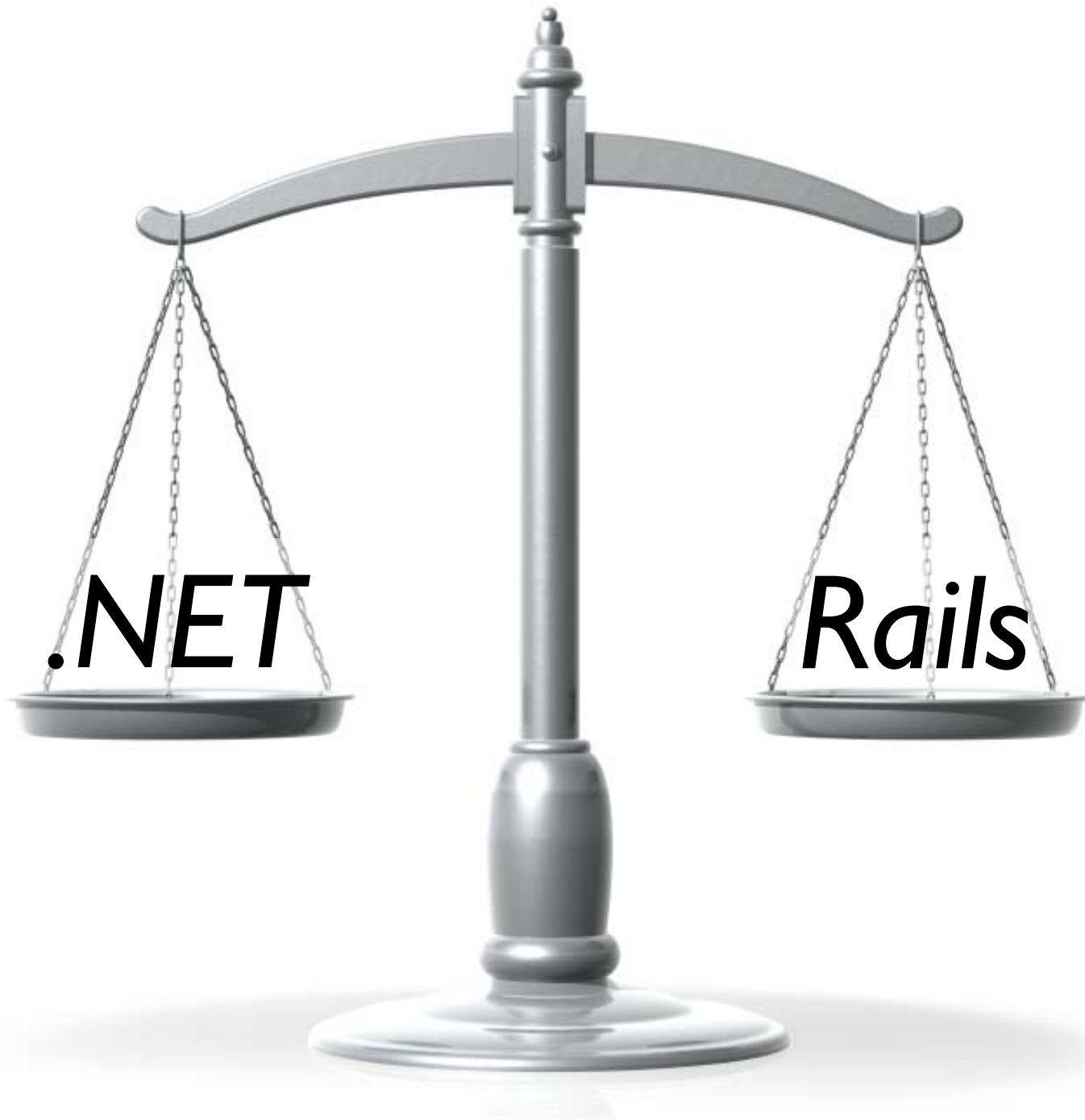
quick start: october 2006
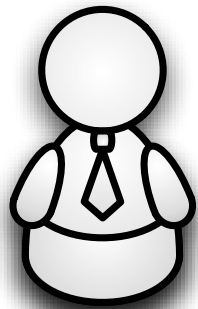
Project manager
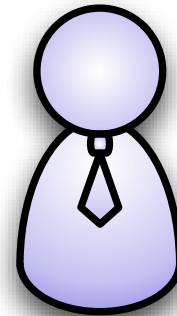
Business Analyst
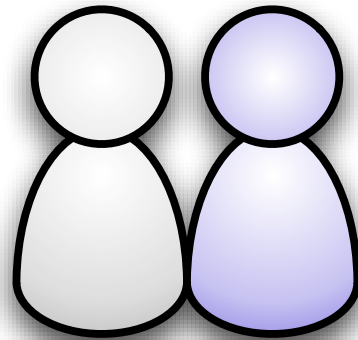
Tech Lead

Developer

inception: Jan 17, 2007
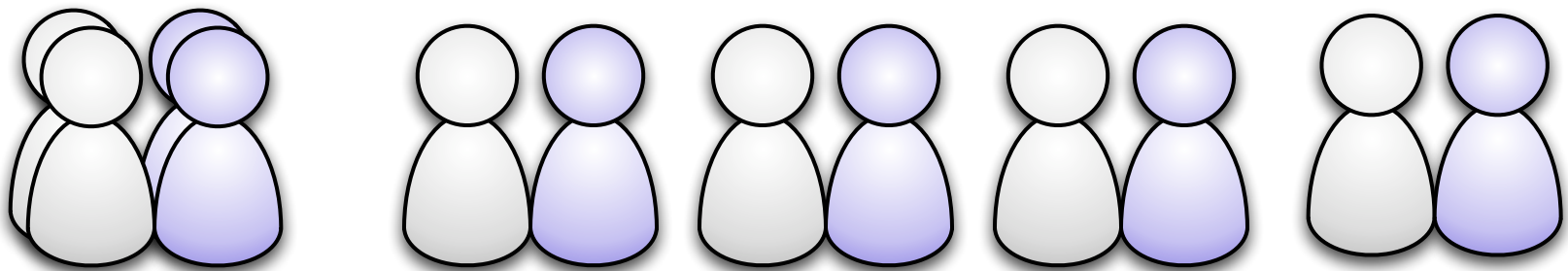
Started with 2 pairs

Added one pair every 2 weeks
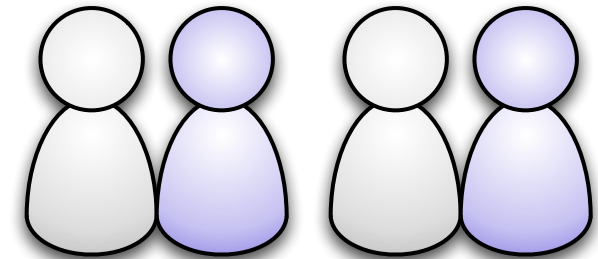
8 or 9 pairs by July

now
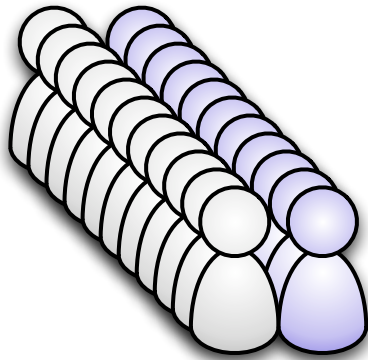
11 pairs of developers
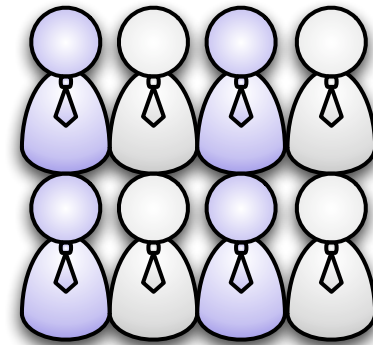
8 business analysts
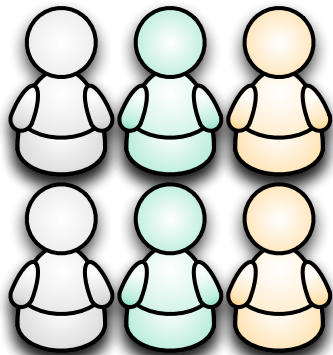
iteration manager

client principle

6 quality assurance

project manager
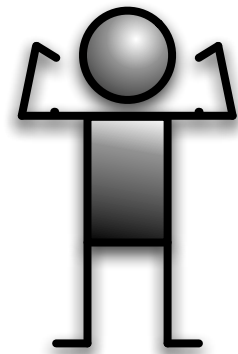
lessons learned

technology isn't as important as responsiveness to business needs

don't try to convince too early

spikes are your friends!

demonstration over arguments

infrastructure
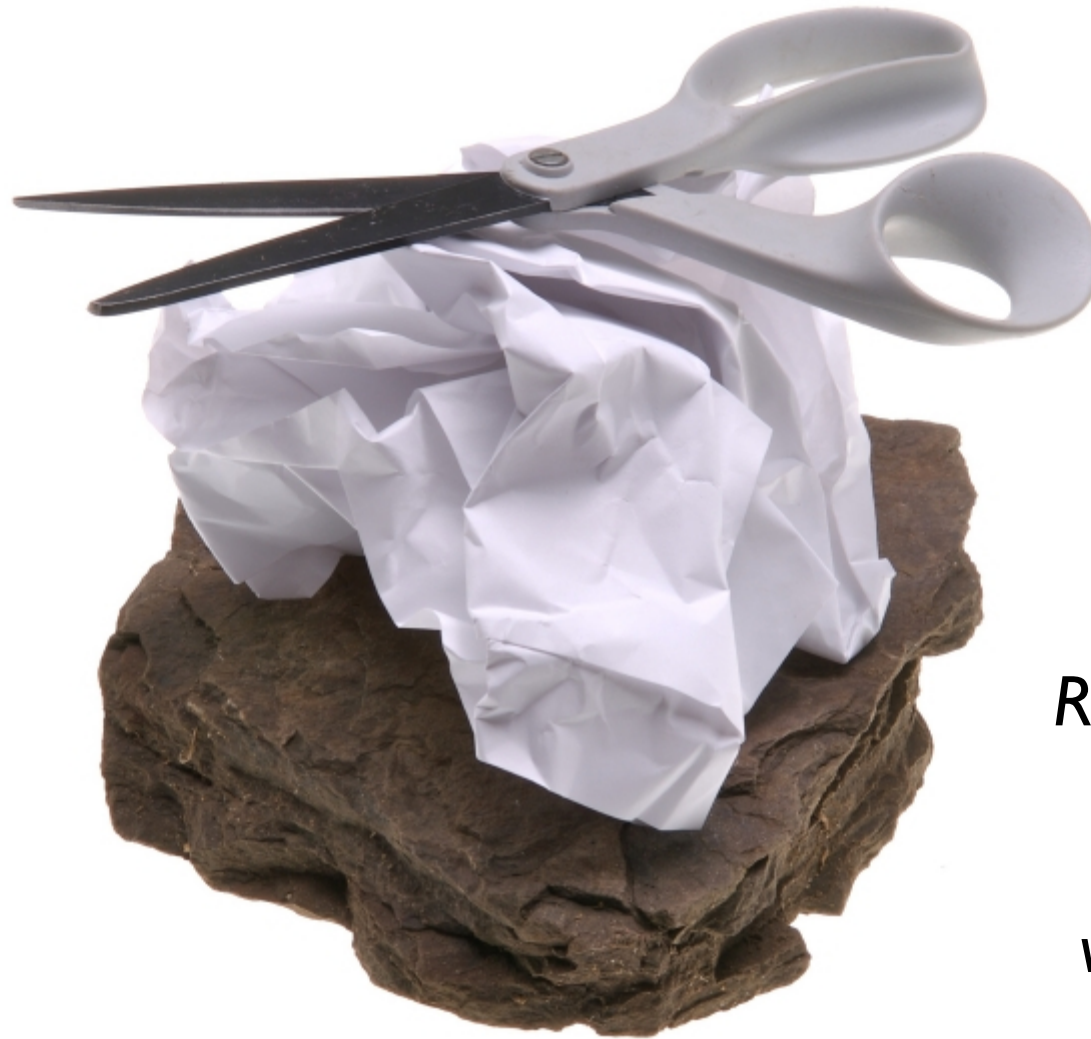
Rock is for Rookies: males have a tendency to lead with Rock on their opening throw

physical infrastructure

pairing workstations

XServe (Selenium Grid)

BA

standalone QA

integrated QA

UAT
(sneak peak)

deployment stack
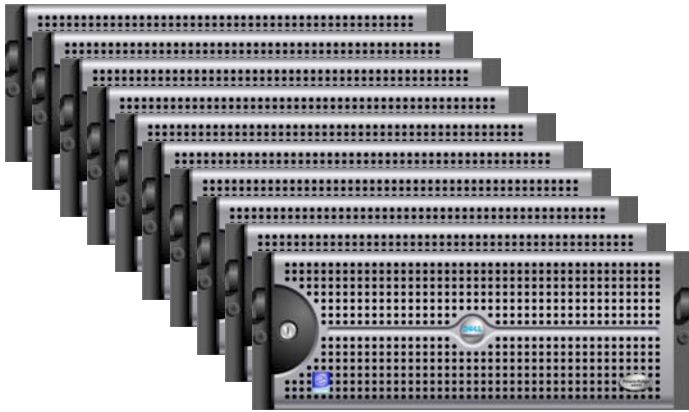
10 web boxes

2 image servers
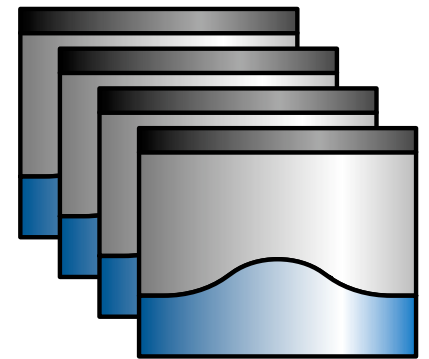
4 database servers

background server

memcache

```
pgmac:~/work/ove-ruby% rake metrics:stats
(in /Users/pgross/work/ove-ruby)
+----------------------+-------+-------+---------+---------+------+-------+
| Name                 | Lines |   LOC | Classes | Methods |  M/C | LOC/M |
+----------------------+-------+-------+---------+---------+------+-------+
| app/controllers      |  4283 |  3483 |      75 |     443 |    5 |     5 |
| app/form_builders    |   102 |    83 |       4 |      16 |    4 |     3 |
| app/handlers         |    98 |    85 |       2 |      10 |    5 |     6 |
| app/helpers          |   871 |   704 |       0 |      95 |    0 |     5 |
| app/models           | 17514 | 14239 |     311 |    1829 |    5 |     5 |
| app/modules          |  1639 |  1340 |       3 |     189 |   63 |     5 |
| app/observers        |     0 |     0 |       0 |       0 |    0 |     0 |
| app/presenters       |  5913 |  4663 |     133 |     907 |    6 |     3 |
| app/services         |  3431 |  2863 |      91 |     278 |    3 |     8 |
| app/utils            |    85 |    72 |       5 |       9 |    1 |     6 |
| app/view_states      |   780 |   624 |      10 |      98 |    9 |     4 |
| app/workers          |  1043 |   867 |      37 |     112 |    3 |     5 |
| extensions           |  2141 |  1743 |      16 |     237 |   14 |     5 |
| lib                  |  1929 |  1613 |      42 |     182 |    4 |     6 |
| test/unit            | 54262 | 44757 |     681 |     150 |    0 |   296 |
| test/functional      | 52858 | 43174 |     293 |      62 |    0 |   694 |
| test/view            | 17056 | 13657 |      72 |      17 |    0 |   801 |
| test/externals       |  1359 |  1063 |      23 |       8 |    0 |   130 |
| test/search          |   598 |   512 |       5 |       2 |    0 |   254 |
| test/vicki           |   295 |   258 |       4 |      11 |    2 |    21 |
+----------------------+-------+-------+---------+---------+------+-------+
| Total                |166257 |135800 |    1807 |    4655 |    2 |    27 |
+----------------------+-------+-------+---------+---------+------+-------+
  Code LOC: 32379      Test LOC: 103421      Code to Test Ratio: 1:3.2
```

lessons learned

scale infrastructure opportunistically...

...but don't wait too long

Mac OS X rocks

have fun

testing
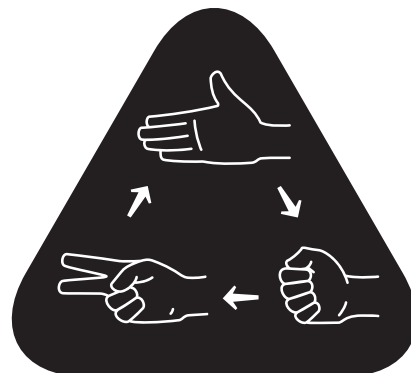
disconnected unit tests

UnitRecord and the evolution of unit tests that don't hit the database

http://github.com/dan-manges/unit-record

```
Terminal — zsh — 104×33

zsh          ruby

...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...............................................................................
...........................................
Finished in 41.353372 seconds.

8996 tests, 12746 assertions, 0 failures, 0 errors
```

the rule:

unit tests don't hit the database

mock everything

```
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··················································································
··············
Finished in 248.573856 seconds.

3964 tests, 8288 assertions, 0 failures, 0 errors
```

no mocking allowed in functional tests

tests that hit the database are slooooow

DeepTest

http://github.com/qxjit/deep-test

```
tworker/work/release_1.31/db/deep_test_schema.sql
[2009-04-28 17:31:19] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_5_pid_13999 < /Users/
tworker/work/release_1.31/db/deep_test_schema.sql
Loaded suite #<DeepTest::Test::SupervisedTestSuite:0x530960c>
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_0_pid_13994_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_6_pid_14000_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_1_pid_13995_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_2_pid_13996_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_5_pid_13999_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_4_pid_13998_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_7_pid_14001_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
[2009-04-28 17:31:25] mysql -u ove -pove -S /tmp/mysql.sock deep_test_worker_3_pid_13997_parking_l
ot < /Users/tworker/work/release_1.31/db/deep_test_schema_parking_lot.sql
..............................................................................................
..............................................................................................
..............................................................................................
..............................................................................................
..............................................................................................
..............................................................................................
..............................................................................................
..............................................................................................
..............................................................................................
..............................................................................................
```

DistributedDeepTest

prefer factories over fixtures

Selenium grid

new instances added
as needed

cc.rb instances

Selenium view builds trunk

Selenium view builds release

core trunk build (commit build)

trunk + search infrastructure

core-release, externals, web services, datasets

VMware
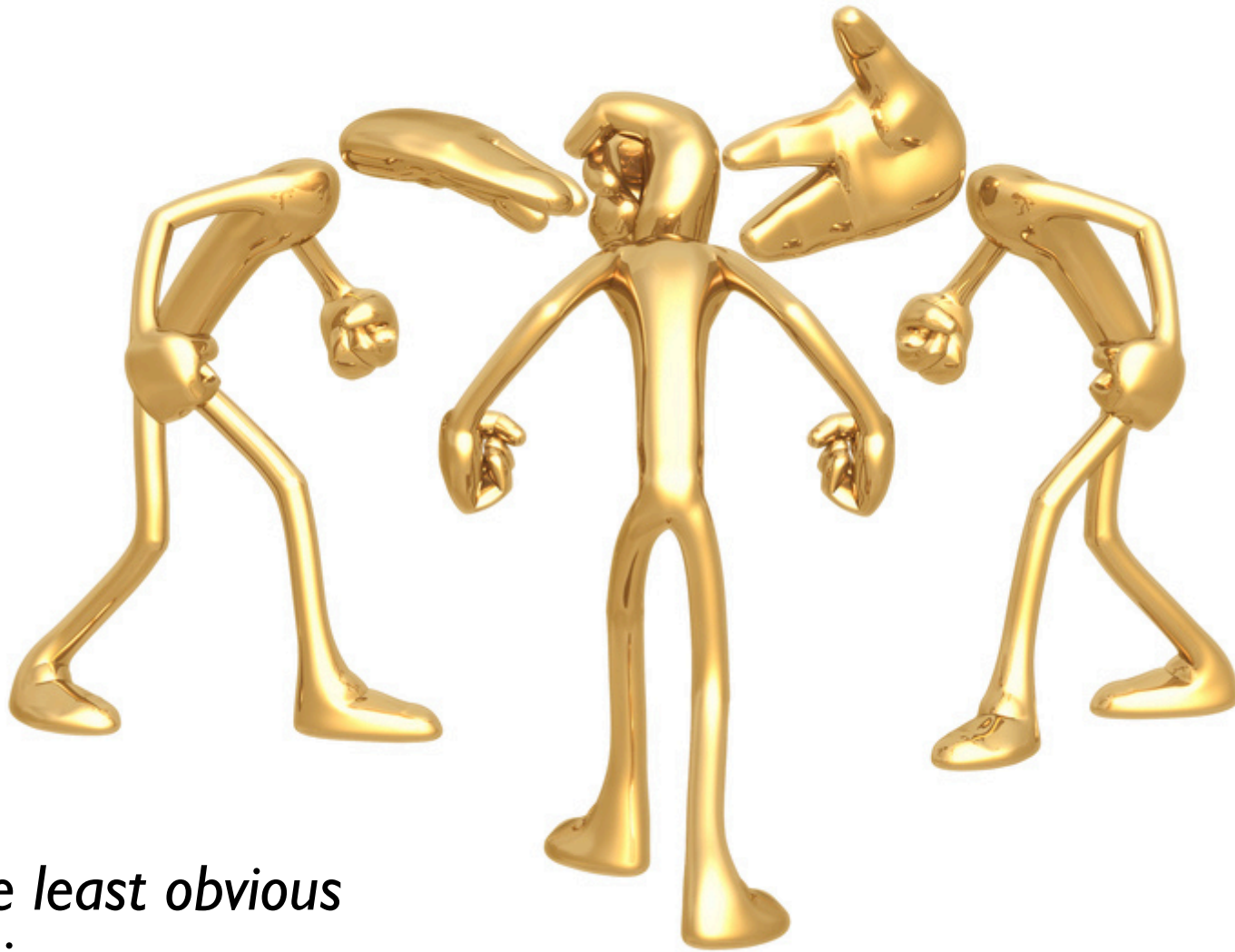Fusion

deployment & testing

lessons learned

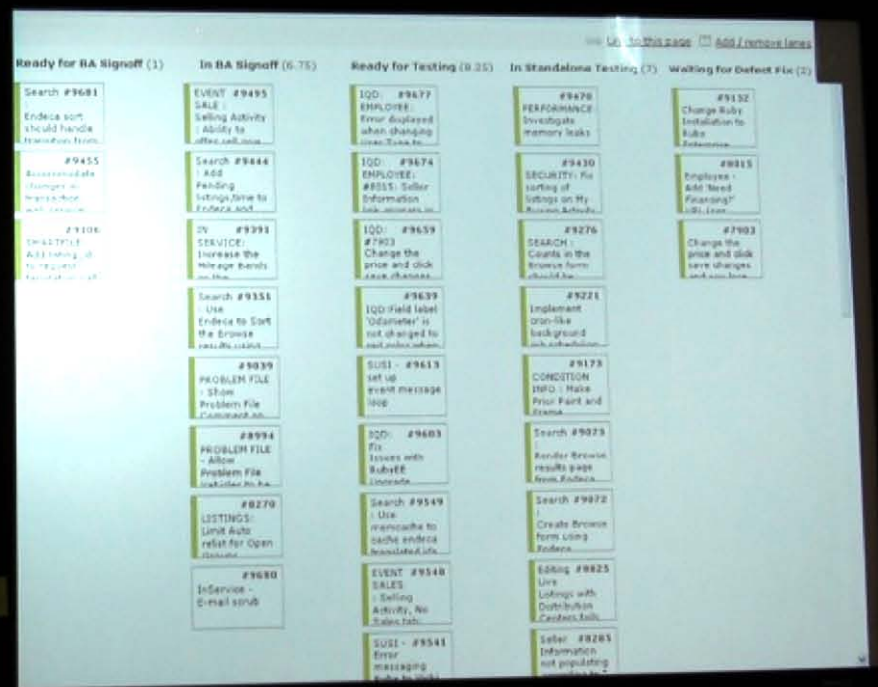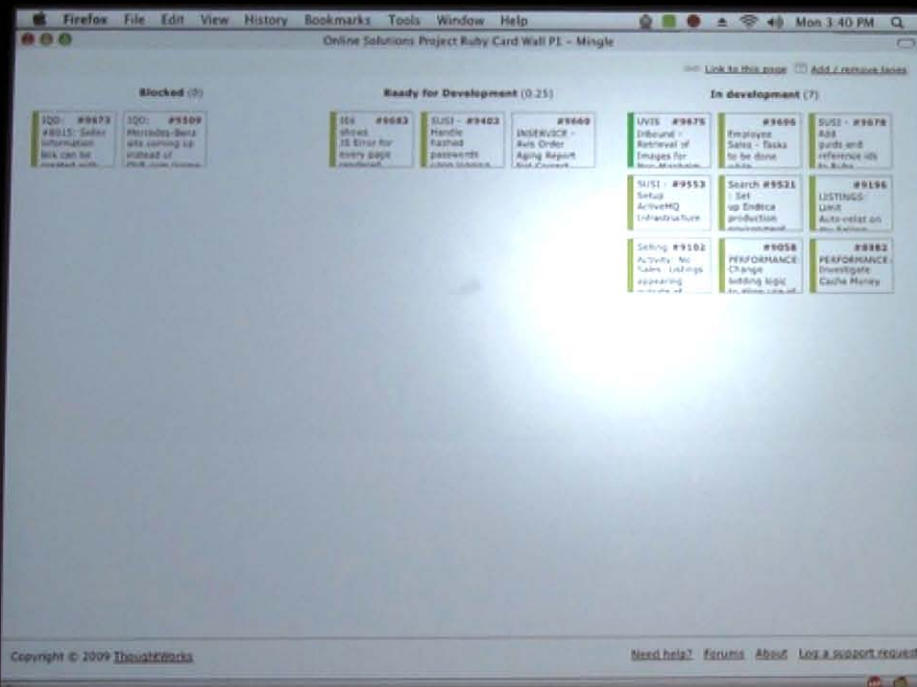fight the battle to keep tests fast

invent stuff if you have to

write smart tests

scale development infrastructure just like production infrastructure

knowledge transfer

*Paper is the least obvious
of opening moves.*

cc_board

01_trunk_commit	02_trunk_acceptance	03_trunk_apache
04_trunk_externals	05_trunk_metrics	07_trunk_qa_tests
11_release_commit	12_release_acceptance	13_release_apache
14_release_externals	17_release_qa_tests	97_deploy_ba
98_deploy_staging	99_spider_production	ove-search-infrastructure
in-service ove-core-trunk	ove-core-release	ove-datasets
ove-externals ove-externals-trunk	ove-query-counts	
webservices-core z-deploy-ba-trunk	z-deploy-endeca-ba-trunk	
z-deploy-iqa-release z-deploy-sqa-trunk	*ove-view-trunk*	
ove-view-release-branch		

http://github.com/qxjit/cc_board/

play a song when a build breaks

play theme song upon successful checkin

jukebox.rb

currently in alpha
http://subversion.hammersforge.com/
jukebox.rb/trunk/

pairing stations

adium

no email

internal Jabber server chat rooms

devs
BAs
QAs
shared buddy list

automatically set pair name

adium

Mingle card (upon commit)

lessons learned

software is more about communication than technology

use information radiators

co-location rocks

pairing really rocks

have fun

automate everything

When playing with someone who is not experienced at the RPS, look out for double runs or, in other words, the same throw twice.

1-click deploy to any environment

using cc.rb as easy deployment tool

rake commit

run all unit tests

run all functional tests

verification (language keys)

commit

http://github.com/pgr0ss/rake_commit_tasks

canonical pairing station maintenance

`cap pairing_stations`

radmind

http://rsug.itd.umich.edu/software/radmind/

Server

Clients
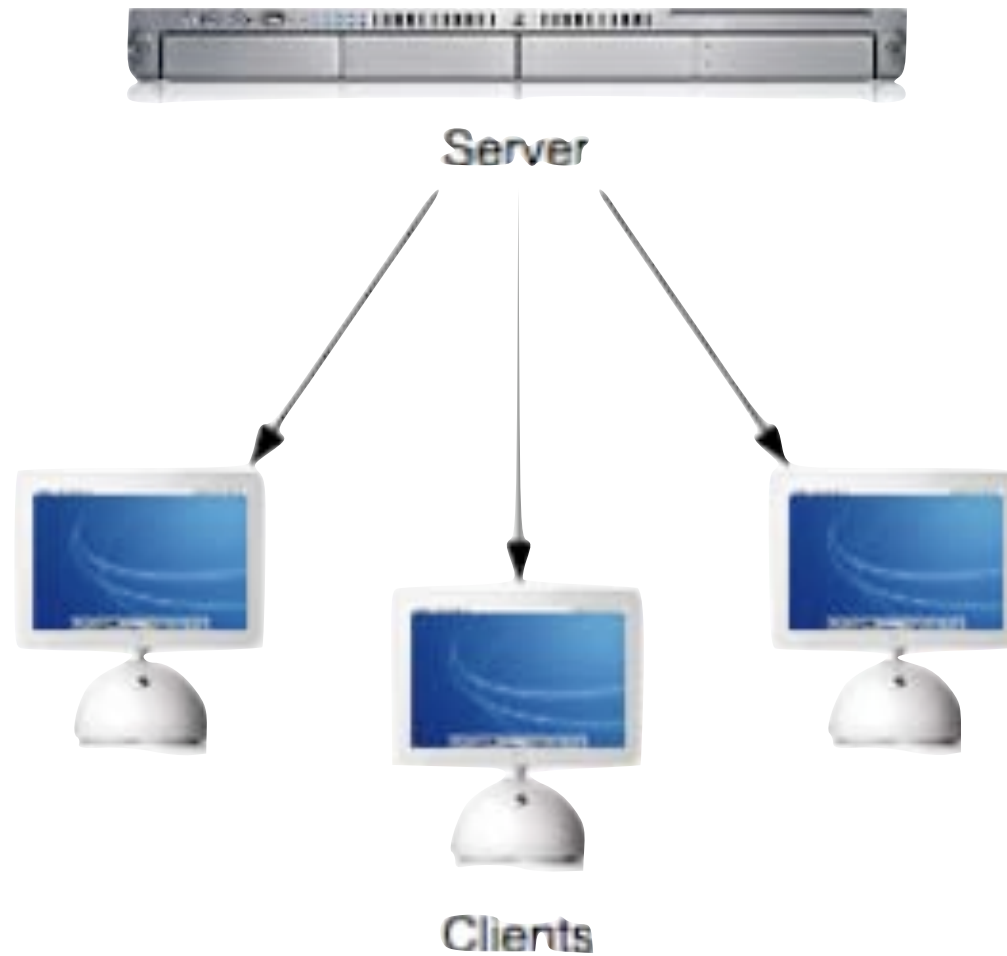
strict rules for advanced language features

Rock beats scissors.

Paper beats rock.

Scissors beats paper.

Tell your opponent what you are going to throw and then actually throw what you said.

monkey patches all live in extensions folder

modularize extensions

extend (or include)
into real class
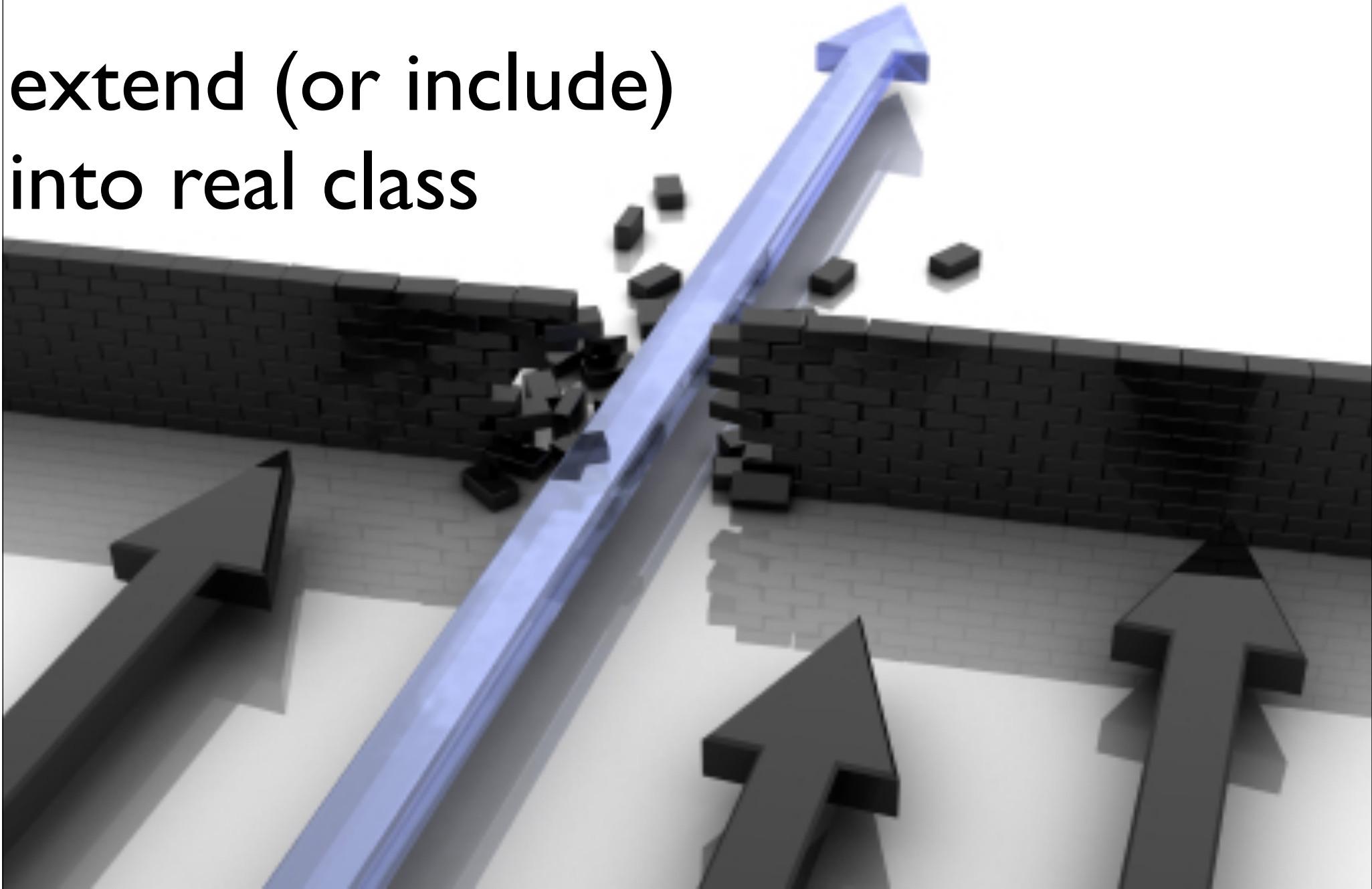
ancestors

```
>> String.ancestors
=> [String, StringExtension,
     ActiveSupport::CoreExtensions::String::Multibyte,
     ActiveSupport::CoreExtensions::String::Behavior,
     ActiveSupport::CoreExtensions::String::Filters,
     ActiveSupport::CoreExtensions::String::Conversions,
     ActiveSupport::CoreExtensions::String::Access,
     ActiveSupport::CoreExtensions::String::Inflections,
     Enumerable, Comparable, Object, InstanceExecHelper,
     Mixology, ActiveSupport::Dependencies::Loadable,
     Base64::Deprecated, Base64, LocalMethods,
     Wirble::Shortcuts, PP::ObjectMixin, Kernel]
```

where did you come from again?

```
"".method :md5sum
#<Method: String(StringExtension)#md5sum>
```

test the extensions

duh!

include a version test
to break upon upgrade

use meta-names somewhere

ack is your friend

Try playing the throw that would have lost to your opponents last throw

background

processing

3 kinds

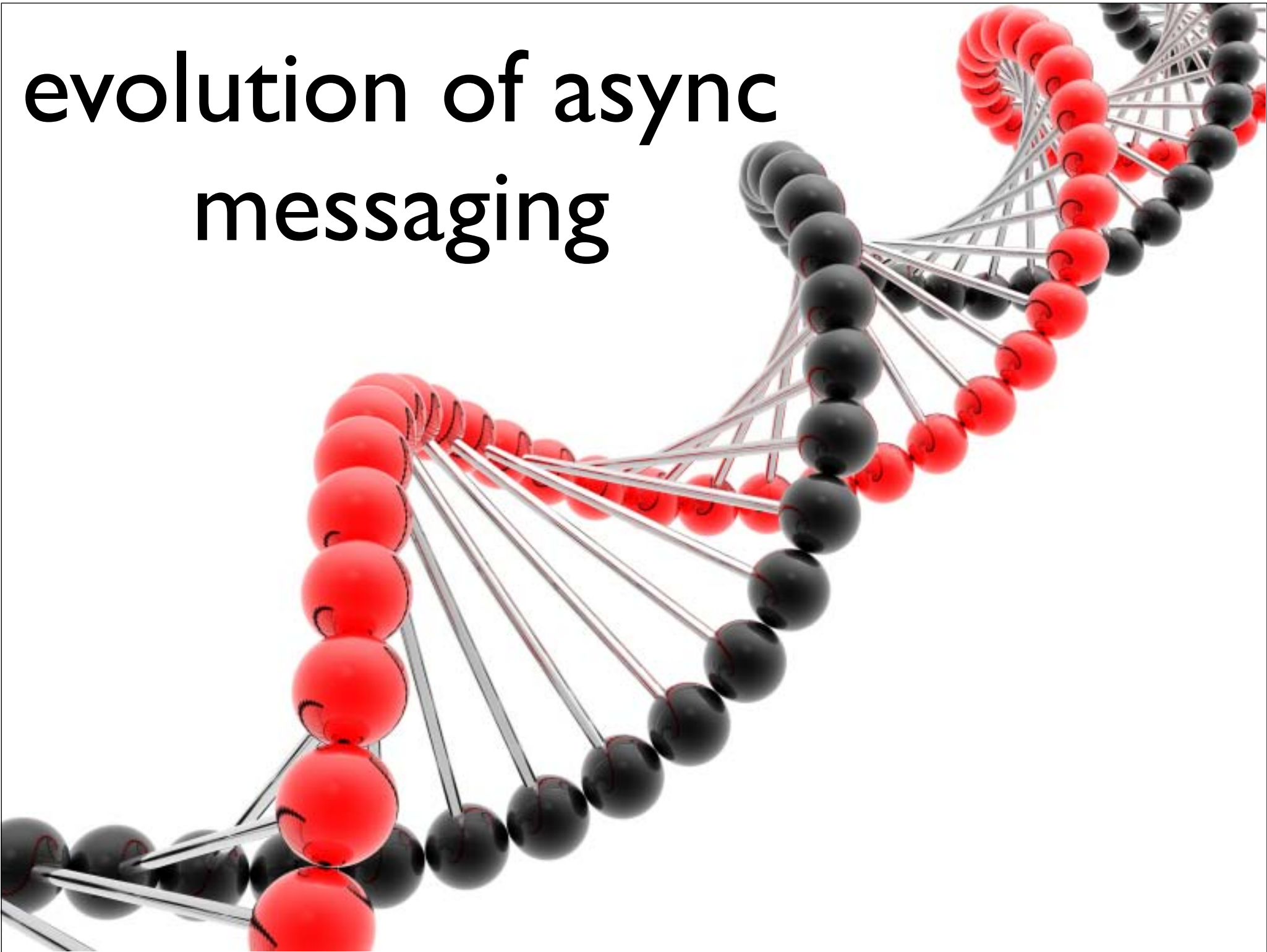**continually run**

    updating cached values

    counts

CRON-like behavior

    run at a certain time

Asynchronous behavior

    progress bars

    image downloading

evolution of async messaging

do work inline

gets slower over time

traffic goes up
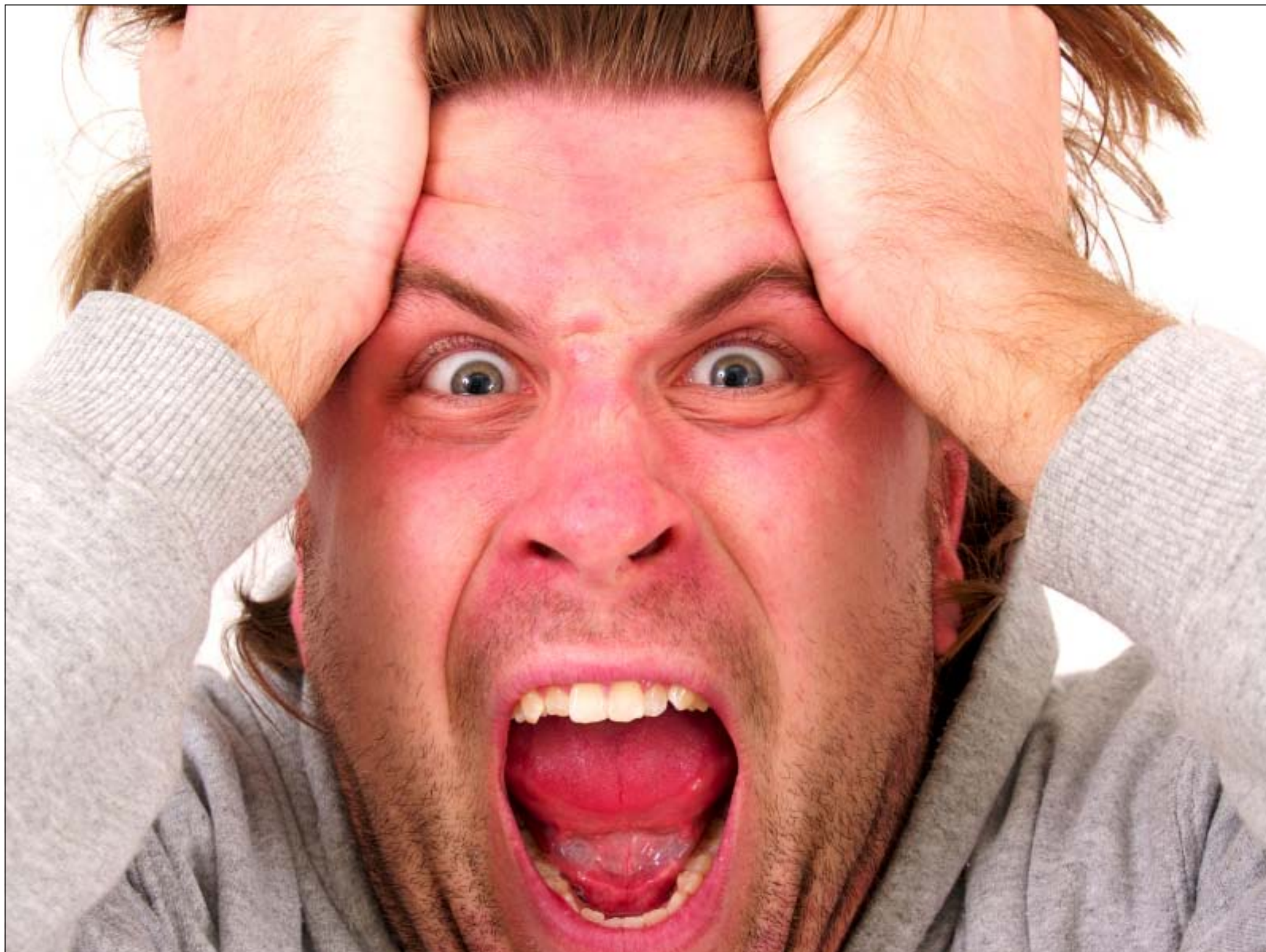
switch to a real
messaging queue
(Starling)

YAGNI

emergent design around async messaging

lessons learned

avoid anticipatory design

gradually add complexity

don't use databases as message queues (for too long anyway)

DBA's can sometimes get grumpy

external dependencies

When playing against someone who asks you to remind them about the rules, take the opportunity to subtly "suggest a throw" as you explain to them by physically showing them the throw you want them to play.

make well defined boundaries

mock and stub boundaries

external builds to test service changes

we often catch bugs & downtime in other services

tests to validate WSDLs haven't changed

tests to call services

check that responses haven't changed

tests to check against content & html editors

non-printable characters

duplicate ids

performance & optimization

When all else fails, go with paper: Statistically, in competition play, it has been observed that scissors is thrown the least often.

not that many page views...

...*really* complex pages!

custom hand-tuned SQL

```ruby
Listing.find(:all,
  :from => "listings USE INDEX (PRIMARY,
            idx_listings_simple_basic_search,
            idx_search_fsp)")


find :all,
  :include => [{:fsp => [:parent_company, :state]},
  :currency, :account, :default_image, :make,
  :model, :trim, :vehicle_type, :exterior_color,
  :high_bid, {:search_postal_code => :state},
  :state, :vehicle_location, :distribution_center,
  {:buyer_group => :owner_group}, :title_status, :event_sale]
```

Memcache sessions & many database lookups

MySQL replication

use separate boxes for ETL schemas
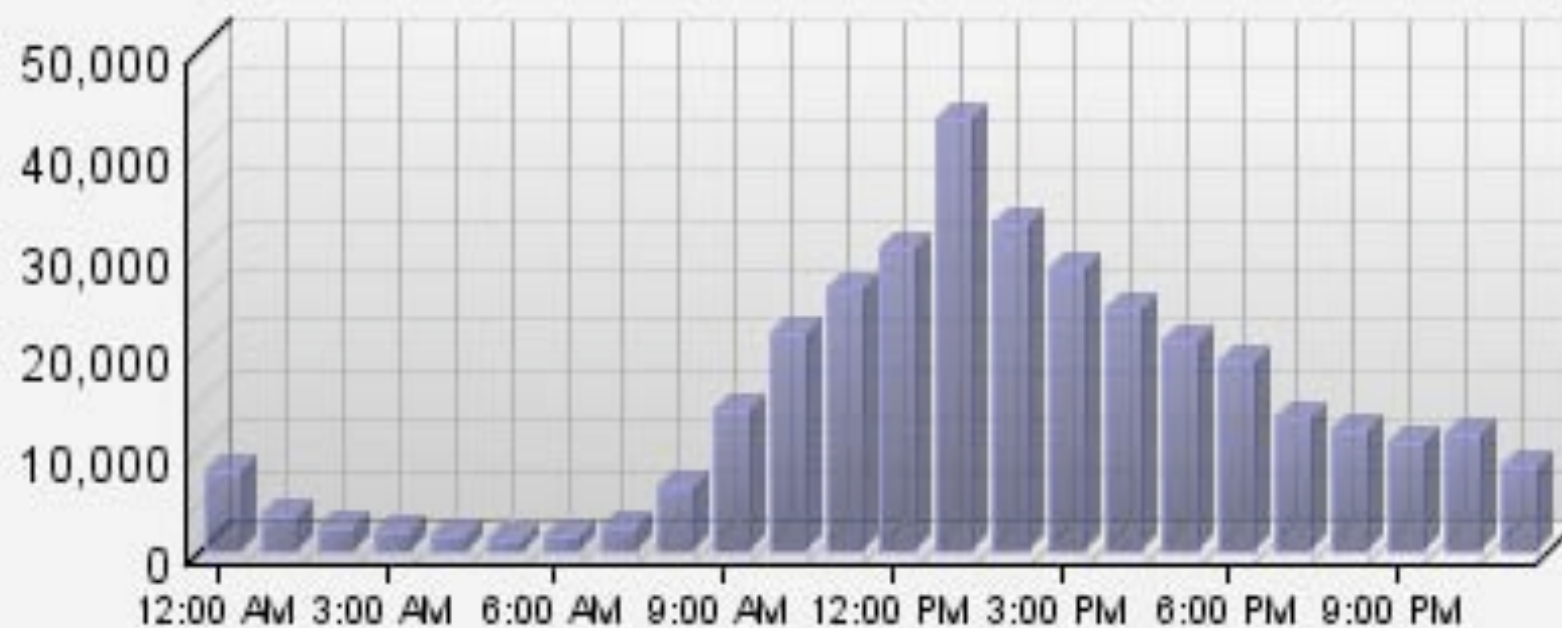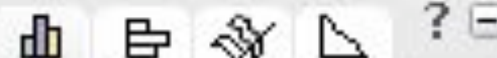
write priority

challenges

For tournament play, learn the Great Eight Gambits.

scaling is hard

## no matter the technology

rails can scale!

Page Views Trend

Legend: ■ Page Views

X-axis labels: 12:00 AM, 3:00 AM, 6:00 AM, 9:00 AM, 12:00 PM, 3:00 PM, 6:00 PM, 9:00 PM

Y-axis labels: 0, 10,000, 20,000, 30,000, 40,000, 50,000

Page View Summary

Page View Summary	
Page Views	346,265
Average per Day	346,265
Average Page Views per Visit	17.07

Visits Trend

Visits

30,000	
20,000	
10,000	
0	

04/01 04/04 04/07 04/10 04/13 04/16 04/19 04/22 04/25 04/28
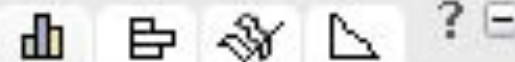
■ Visits

Page View Summary

Page Views	7,160,586
Average per Day	238,686
Average Page Views per Visit	14.76

upgrading is hard

1 pair => 6 weeks to upgrade from 1.2.3 to 2.2

back port fixes & improvements

rails

other plugins

we did not replicate a freakin' type system!

of is_a?, kind_of? instance_of? / Total LoC

32/32379 => code (0.09%)
60/103421 => tests (0.06%)

why all the
rochambeau stuff?

view builds are fragile =>

separate cc.rb build =>

view builds are slow =>
1 pair assigned as view masters

worst...job...ever

today's view master
assigned by
yesterday's...

...or play RPS

WORLD RPS SOCIETY
Serving the needs of decision makers since 1918

▸ About Us ▸ RPS Online Museum ▸ Contact Us ▸ Bullboard ▸ RPS Store ▸ Why attend the World RPS Championships?

BUY TICKETS NOW

BUY TICKETS NOW

THE ART OF RPS

- PURCHASE RPS POSTERS AND PRINTS
- PRICES START AT $12.74
- 8 DESIGNS TO CHOOSE FROM
- AVAILABLE IN VARIOUS SIZES AS LARGE AS 5 FEET
- OPTIONAL FRAMING AND MOUNTNG

THE ART OF RPS
DECORATE YOUR HOME WITH THE ART OF RPS

Subscribe to the World RPS News Feed

search...
[search]

Home
Game Basics
Forum
Gambit Play
Advanced RPS
FAQs
Photo Gallery
Think Three Blog
Video
Links

Polls

What do you think of Rock?

○ Most overrated throw in the game
○ Solid throw, I use it often
○ Only when backed into a corner
○ Rock is for rookies

[Vote] [Results]

Worldrps T-shirts available here

sponsored links

Framed Art
NBA Basketball Tickets

Aussie and Kiwi Championships

User Rating: ●●●●● / 1

There was one error opening the page. For more information, choose Activity from the Window menu.

http://www.worldrps.com/

would we do it again?

hell yeah!

?'s

PAUL GROSS software developer / consultant

ThoughtWorks

pgross@thoughtworks.com
200 E. Randolph St, 25th Floor, Chicago, IL 60601-6501
pgross@thoughtworks.com
www.pgrs.net
www.thoughtworks.com

NEAL FORD software architect / meme wrangler

ThoughtWorks

nford@thoughtworks.com
3003 Summit Boulevard, Atlanta, GA 30319
www.nealford.com
www.thoughtworks.com
blog: memeagora.blogspot.com
twitter: neal4d