



Apache
CouchDB

Relax

“Ground Computing”

@jhuggins



Offline by Default





Data Portability by Default

“Of the Web”

<http://jacobian.org/writing/of-the-web/>

Overview > Test Suite

Run All Reload Custom Test

Note: Each of the tests will block the browser. If the connection to your CouchDB server is slow, running the tests will take some time, and you'll not be able to do much with your browser while a test is being executed.

Name	Status	Elapsed Time	Details
basics	success	1466ms	
all_docs	success	222ms	
attachments	success	3213ms	
attachment_names	success	129ms	
attachment_paths	success	1926ms	
attachment_views	success	144ms	
batch_save	success	2589ms	
bulk_docs	success	329ms	
changes	success	904ms	
compact	success	845ms	
config	running...		
conflicts	not run		
content_negotiation	not run		
cookie_auth	not run		
copy_doc	not run		
delayed_commits	not run		



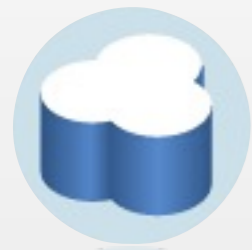
Tools

- Overview
- Configuration
- Replicator
- Status

Test Suite

Recent Databases

- aim-dev
- dri
- sofa
- test_suite_db
- toast



CLOUDANT

THE DATABASE DISTRIBUTORS
THE DATABASE DISTRIBUTORS

Couchio

for a more humane web

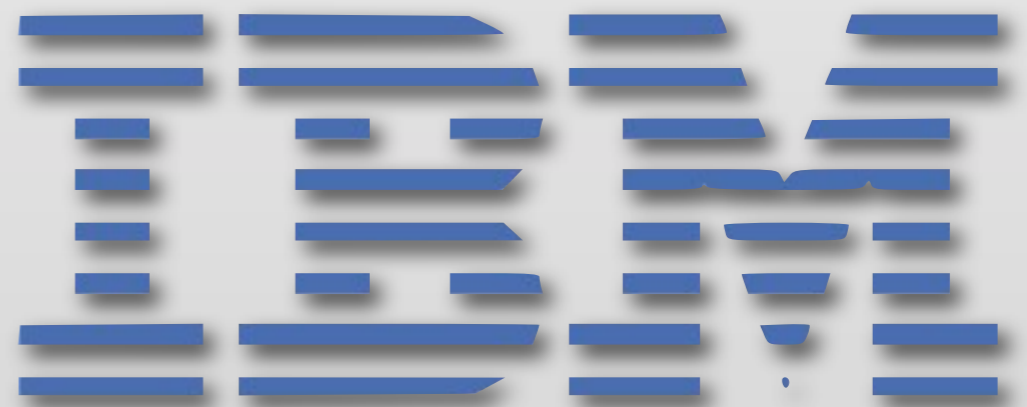


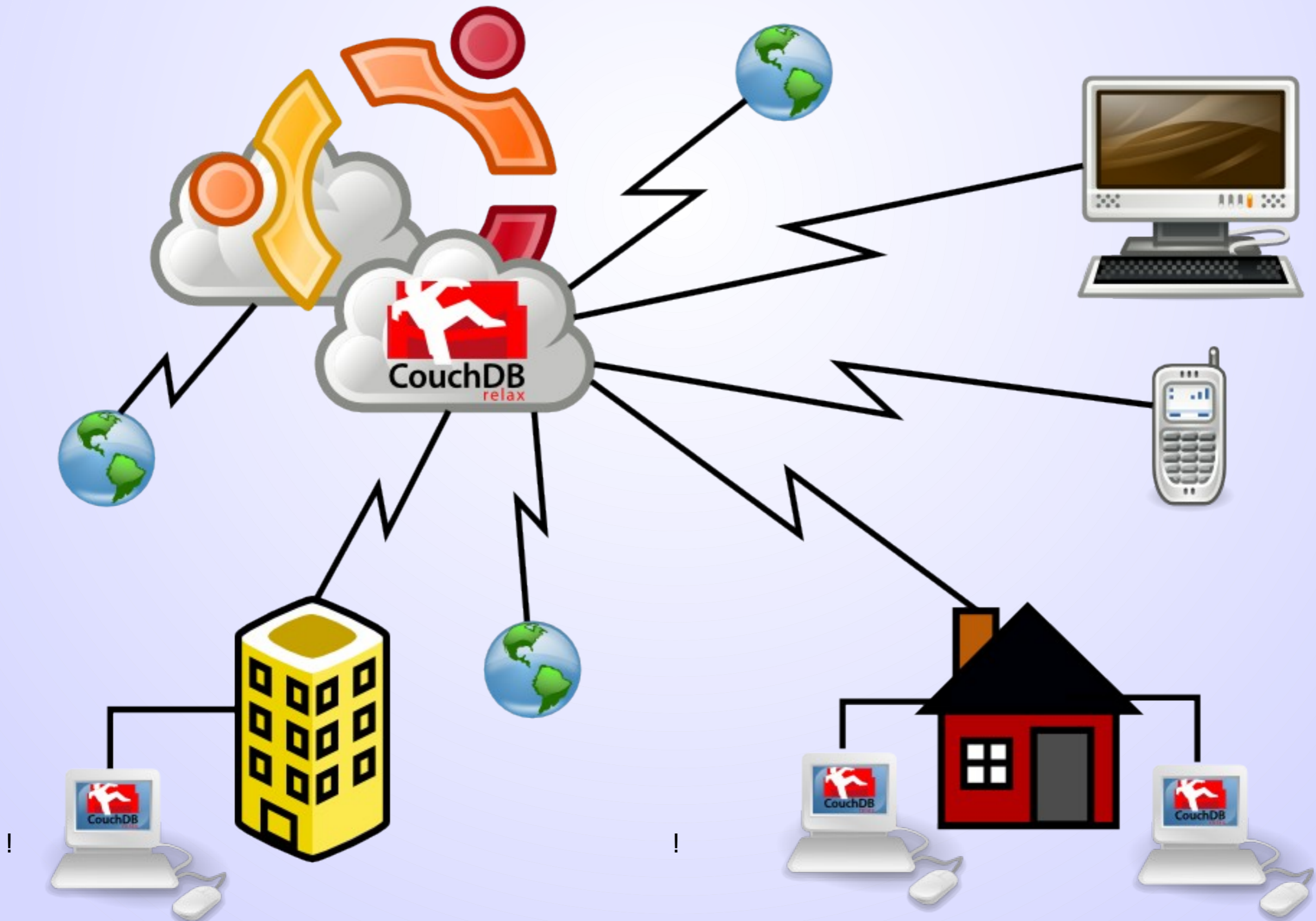
mozilla Labs

Raindrop



CloudSplit





plok light
Hi, this is Jan's Tumble
blog

Great Expectations
3 months ago

Daytime Running Lights

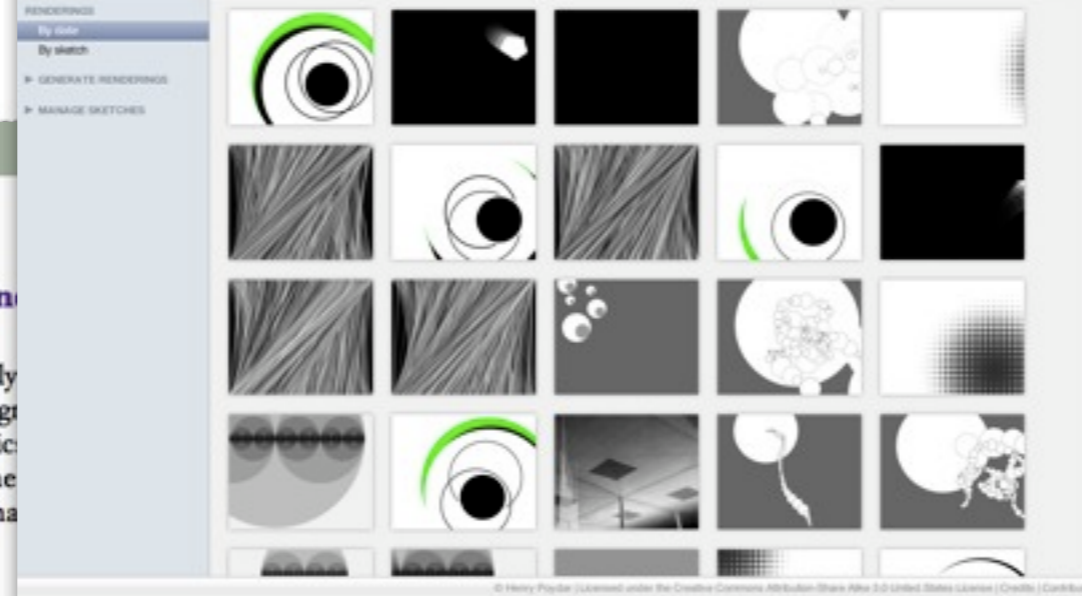
7, web, vinyl, Vistop, upgrade, 7,
travel, tm, talk, 7, sydney, style,
standone, slides, 7, rblog, realtime, 7,
quote, podac, pin glass, photo, pap, ocon,
now, MVC, MUSIC, lorem, London,
life, kingofcode, interns, insurance,
implementation, 7, html, home, bello world,
survive, fitness, fire, file-system, erlang
factory, 7, Distributed identity, deck,
CouchRest, couchback, CouchDB,
couchdb, CouchApp, couchapp, Couch,

Recently...

The P2P Web (part one)
3 months ago

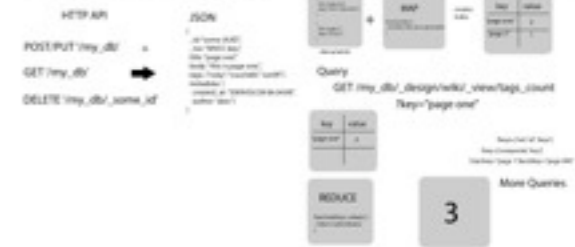
(Part one because this is only
The web was originally design
needed a way to share physics
they were physicists, and the
to entry were low. All you ha

NoSQL Slides
4 months ago



Who am I?

So how does CouchDB work?



July 2009

Sun	Mon	Tue	Wed	Thu	Fri
28 3a Amsterdam,ib	29 11p hello	30 12a Kingsofcode	1 12a Kingsofcode 3a SysMap	2 6a Add new calendar item 9p Armageddon Day	3 6a
5	6	7 11a ruleza	8	9	10
12 1a Adam	13 6a Hacker days	14	15	16 1a 42	17 3p test 10a asad
19 3p test	20 10p Nothing	21 9p Super 64 Tournament, Yea	22	23	24 1a Co 9p To
26 9p Super 64 Tournament	27 6a pizza party 2p pizza time	28	29	30	31
2 9p Super 64 Tournament	3	4	5 1a Kings Of Code	6	7



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- Anointing Oil
- Apparel
- Books & Bibles
- Candlesticks
- Edom Dead Sea Products
- Flags
- Hanukkah
- Jewellery
- Kiddush Cups
- Kippot
- Menorahs
- Mezuzahs
- Music



Acrylic Power Band Blue Kippah with White White Kippah with Black White Kippah

Location: São Carlos, SP, Brazil
Blas remember sammy jenkins
Web: http://identi.co/br
Followers: 238

[pt-br]

que #brhackday08 nao sao

COM uma thanks @fzero ainda estou hoje tem para carlos fazer pro #debate08 dos esta freebase por sem vou mais uns amazing @oriadas hora mais paulo sim telefonica tanto telefonica internet zero heary hack blog need @carbe @elbragon @mispast @rtpo algum brasil tao mas monhas ning perit pessoal paulo quem rebalting sei ser ver era na picture screen youtube I've will ...and (old) @brhackday @fzorybe @dud_inh @mehraga #1000 @mehraga #pare #rodinha 2002 acho que apre ago algum americano amigo que assisti last week auto-complete foto teve case cinema confirma depois depois da esse within sections

Warner Vogel
This soundtrack qualifies for last music of the night ... http://twurl.nl/04hswb

David Stone
About a hour ago I found out my left shoe is no longer waterproof. Wet & not happy.

JASON DAVIES &

HOME PHOTOS PROGRAMME

Married on the 26th

Welcome! Please ensure you reply to your invitation by the first numbers with New Hall College. So far, 200 people have confirme

lings will begin with the wedding ceremony at 2 o'clock reception and photographs in the Scholar's Garden. Ple about the day.

avelling from London or elsewhere outside Cambridge ng to buy us gifts should refer to the Gift List for ideas

any other questions, please get in touch.

important date: Saturday, the twenty-sixth of July, MMVIII at two o'clock

on Saturday, the twenty-sixth of July, MMVIII at two o'clock

About Nymphormation
Nymphormation is a Couchapp that allow people to share links. You can find code on bitbucket.

Software Copyright © 2009 benoit chesneau.
Design by edna piranha

NYMPHORMATION.01

Latest links

some pics by daskill www.flickr.com
by daskill Wed Jul 29 15:57:08 2009 0 comments 1 vote

benoitc.im benoitc
by benoitc Mon Jul 20 0

deepmix deepmix
by benoitc Sat Jul 11 22

swedish software www.techcrunch.com
by benoitc Fri Jul 3 17 2

news about couch
by benoitc Tue Jun 30 2

cgsociety - artist
by cypherpunk Sat Jun

latest
comments
add

Swinger New Play Export

Create a swingin' presentation

Go!

This is a presentation

Sammy.js
Simple Structure for your Sites (and how!)
Aaron Quint, Quirky NYC, LLC
jQueryConf 2009, Sept 14 Boston MA

Welcome to Swinger

Ely Service
Specialists in Classic Rovers
We specialise in classic Rovers (P4, P5 and P6 models) as well as cars ranging from a 1937 Austin 10 Cambridge through the decades to modern-day
Classic Car Services
Basic servicing
M.O.T.
complete restoration, including:
mechanical work
bodywork
paintwork
interior trim
rechroming
supply and fitting of correct tyres for your classic
Read more...



Repositories — bitbucket.org

http://bitbucket.org/repo/all/?name=couchdb

bitbucket

Home Plans & Signup Repositories News

Repositories

- benoitc / py-simplecouchdb
Clone URL : http://
- benoitc / couchdb
Trying to improve...
Google group : http://...
Clone URL : http://
- jokull / relaxlog
A very (very) simple...
Clone URL : http://
- benoitc / django-couchdb
helper to easily integrate...
Clone URL : http://
- metalelf0 / Sose
A project management...
Clone URL : http://
- zerok / bcklutra
A sample application...
Clone URL : http://
- benoitc / couchdb-hg
Unofficial hg mirror...
Clone URL : http://
- metalelf0 / address-book-writer
one URL : http://
- benoitc / rubrication
one URL : http://
- benoitc / couchdb-personal-fork
personal fork of the...
one URL : http://

Search: couchdb - GitHub

github SOCIAL CODING

Browse | Guides | Advanced

Repository

http://code.google.com/search/#q=couchdb

Google code couchdb

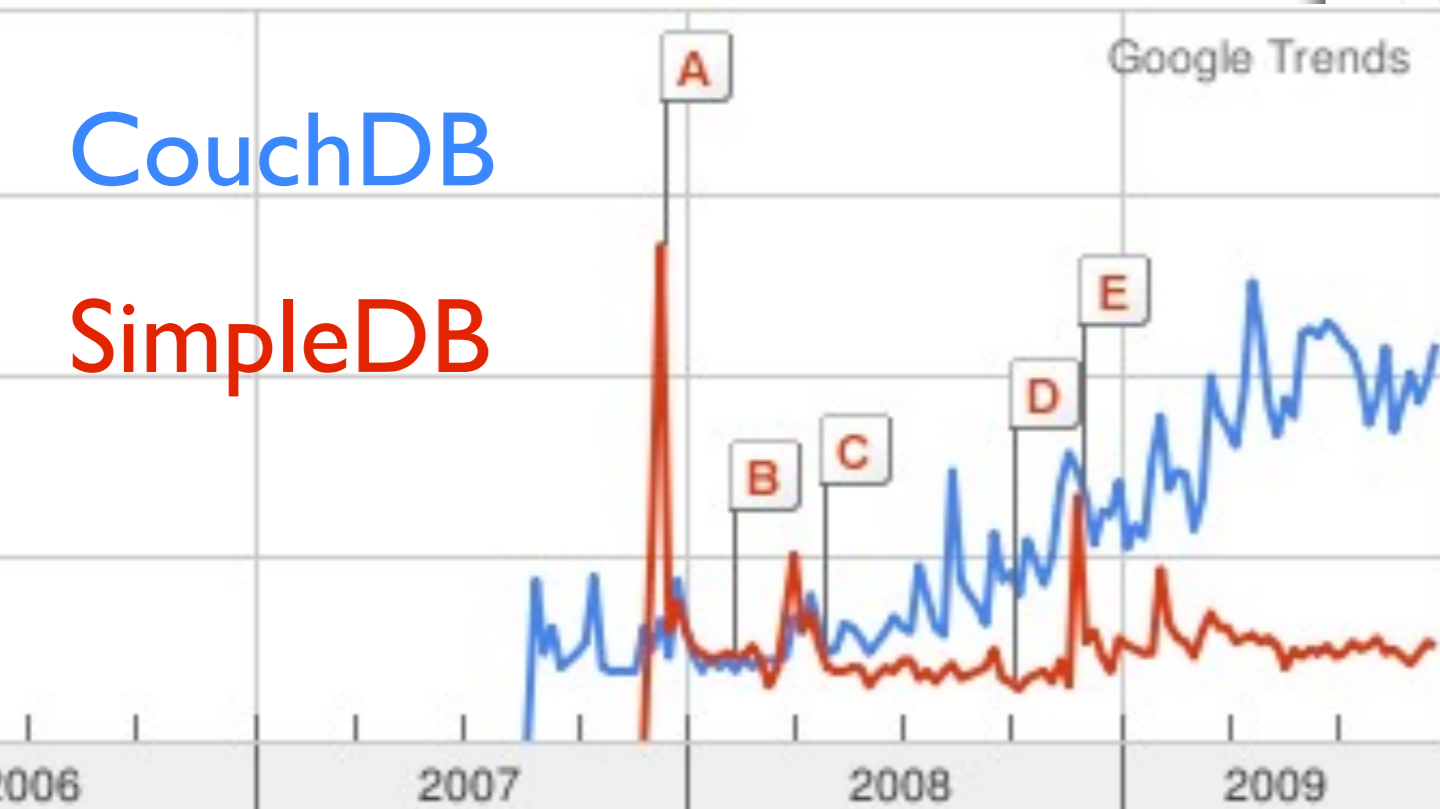
e.g. "ajax apis" or "open source"

Repository

- [couchdb-python - Google Code](#)
couchdb.client: the basic client library; couchdb.schema: a higher-level API...
http://couchdb-python.googlecode.com/svn/trunk/#egg=CouchDB-dev ...
code.google.com/p/couchdb-python/
- [couchdb-lounge - Google Code](#)
The Lounge is a proxy-based partitioning/clustering framework for CouchDB, by Kevin Ferguson, Vijay Rangunathan and Shaun Lindsay at ...
code.google.com/p/couchdb-lounge/
- [couchdb-fuse - Google Code](#)
couchdb-fuse · CouchDB FUSE File System ... A FUSE interface to CouchDB...
blog post: Use Cases. If you've read My Couch or Yours? ...
code.google.com/p/couchdb-fuse/
- [couchdb-django - Google Code](#)
Auth backend & user management in couchdb; remove httplib2 dependency...
Creation of form from schema, similar to ModelForm object ...
code.google.com/p/couchdb-django/
- [Issue 68 - couchdb-python - "socket.error: \[Errno 32\] Broken pipe"](#)
Mar 20, 2009 ... This is occurring using: CouchDB-Python SVN r138 CouchDB...
(both latest at time of writing) I can only seem to reproduce this when ...
code.google.com/p/couchdb-python/issues/detail?id=68
- [couchdb-relax - Google Code](#)
CouchDB is a free software, distributed, fault-tolerant and schema-free document database designed for extreme scalability. ...
code.google.com/p/couchdb-relax/
- [couchdb-bugs - Google Code](#)
CouchDB Bugs is a small little web service that tracks test cases against CouchDB...
meant to be used from Futon, the CouchDB admin interface. ...
code.google.com/p/couchdb-bugs/
- [Issue 58 - couchdb-python - couchdb-dump fails if size of dump is too large](#)
What do you see instead? a successful couchdb-dump dburl, instead it will fail with a memory error. This is a result of trying to dump the entire db to a ...
code.google.com/p/couchdb-python/issues/detail?id=58

CouchDB

SimpleDB



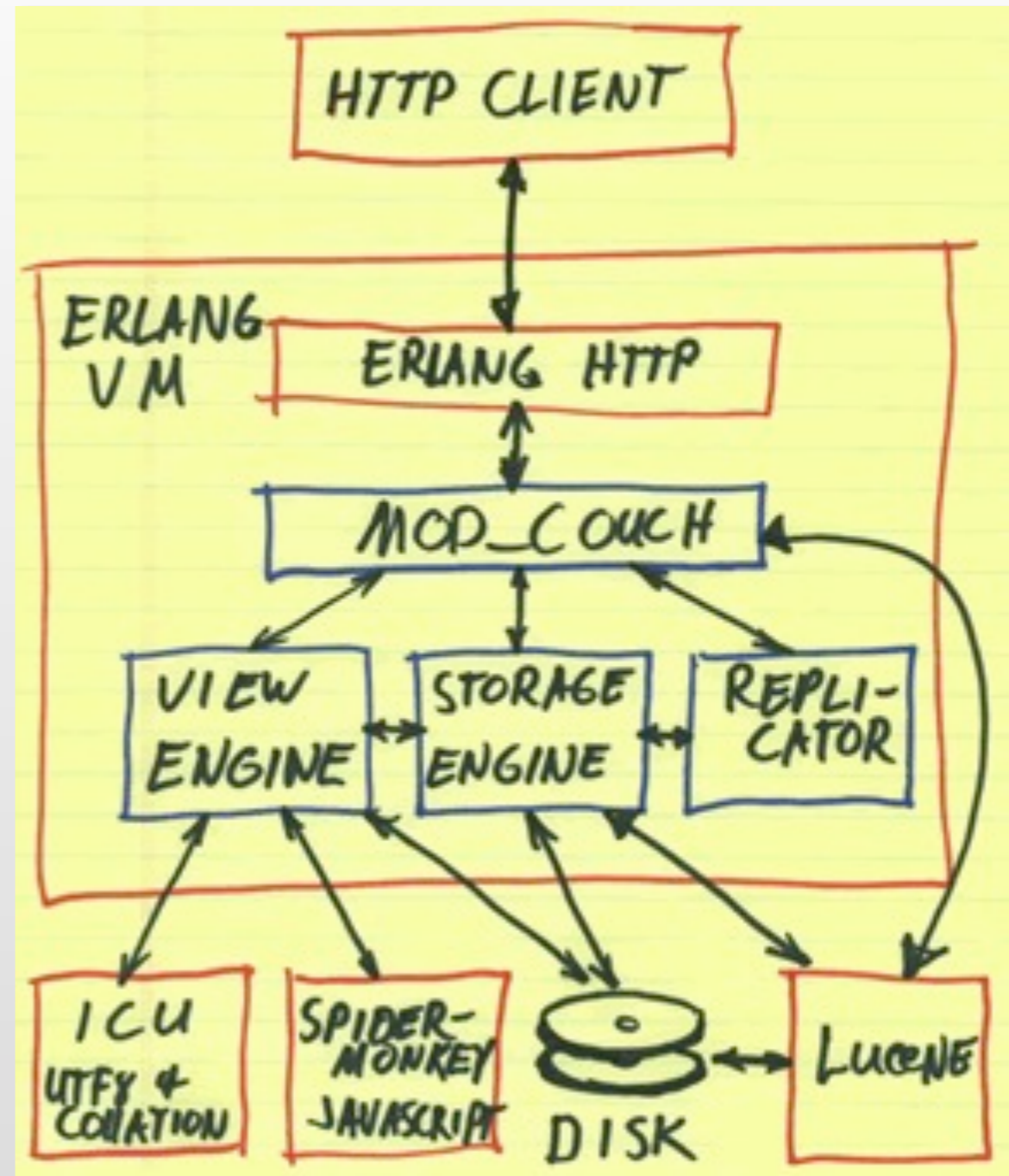
Robust

Replication

JSON

Map Reduce

HTTP

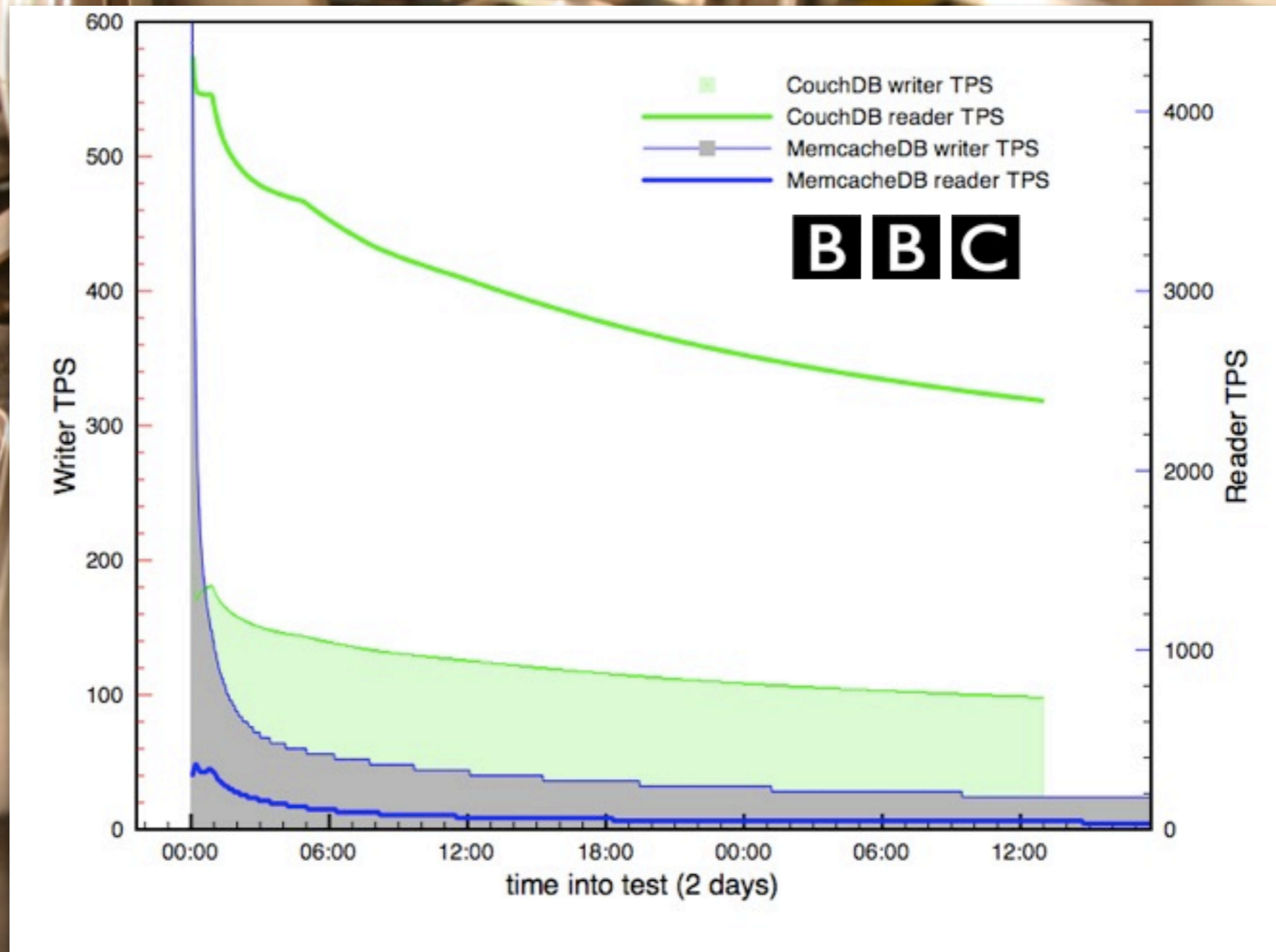


Storage Engine



**Append-Only
Reliable & Concurrent
Hot Backups
Compaction**

Storage Engine



Replication



```
curl -X POST  
http://127.0.0.1:5984/_replicate
```

```
-d
```



```
{
```

```
"source":
```

```
"http://couch.example.com:5984/remote-db",
```

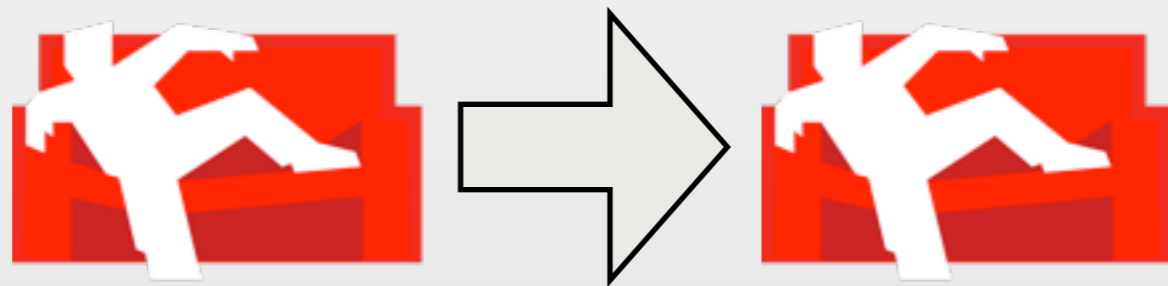
```
"target":
```

```
"local-db"
```

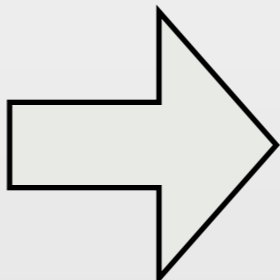
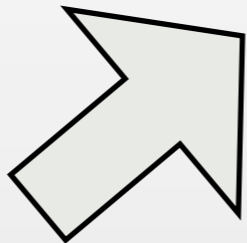
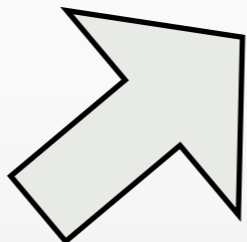
```
}'
```

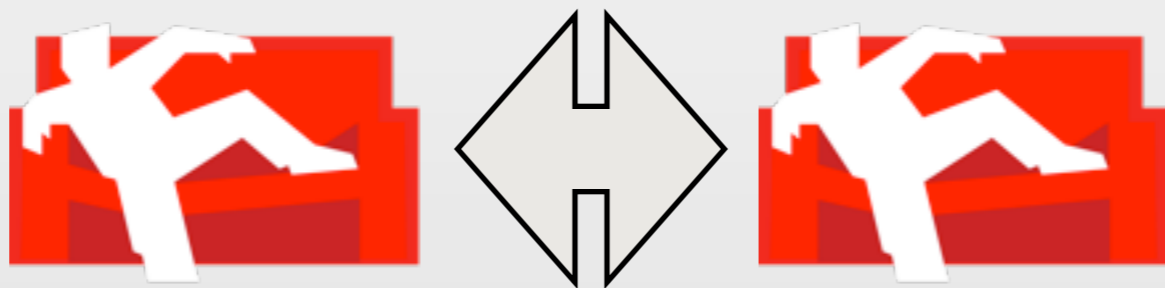


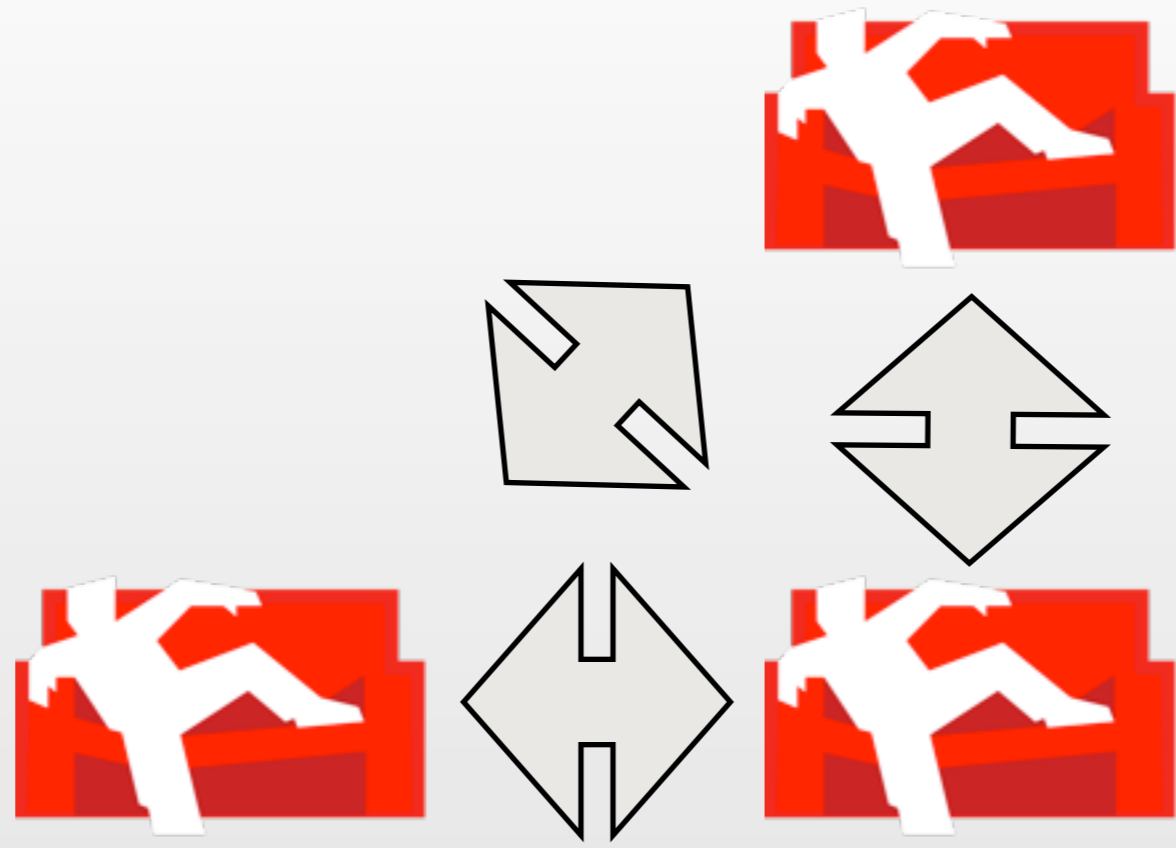
```
curl -X POST
  http://127.0.0.1:5984/_replicate
```

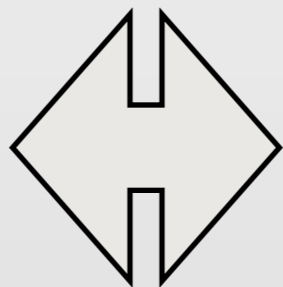
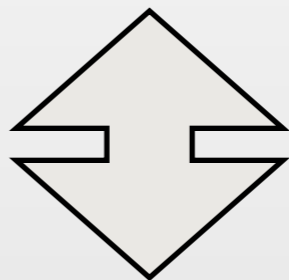
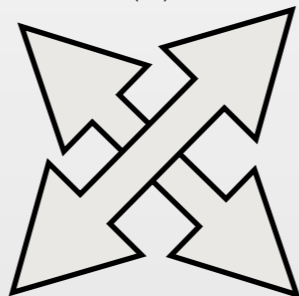
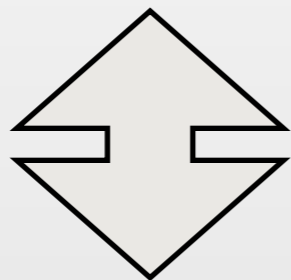
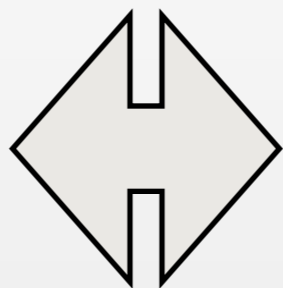


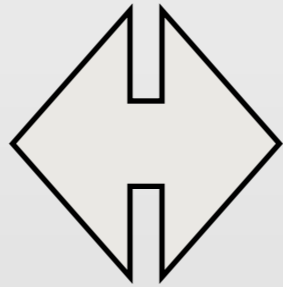
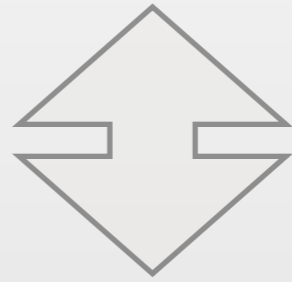
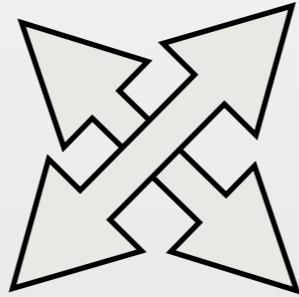
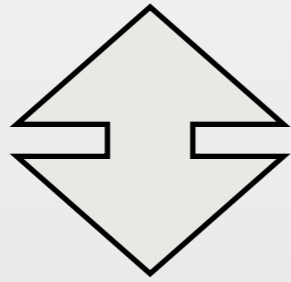
```
-d
' {
"source":
  "http://couch.example.com:5984/remote-db",
"target":
  "local-db"
}'
```

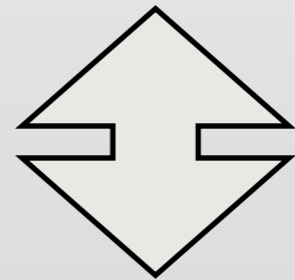
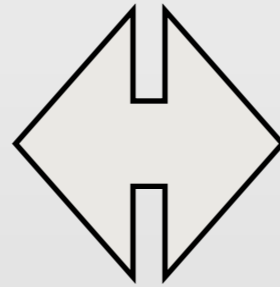
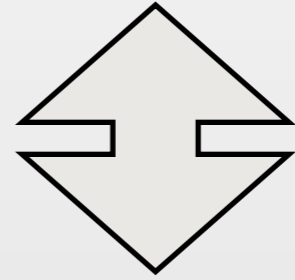
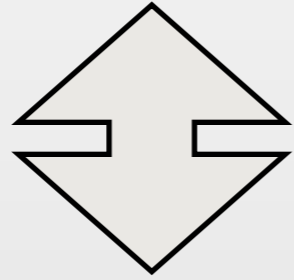
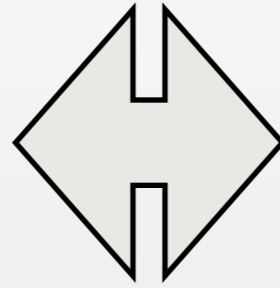
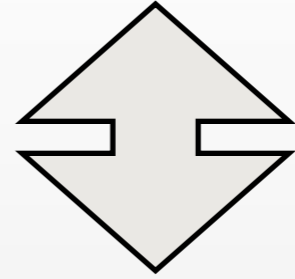


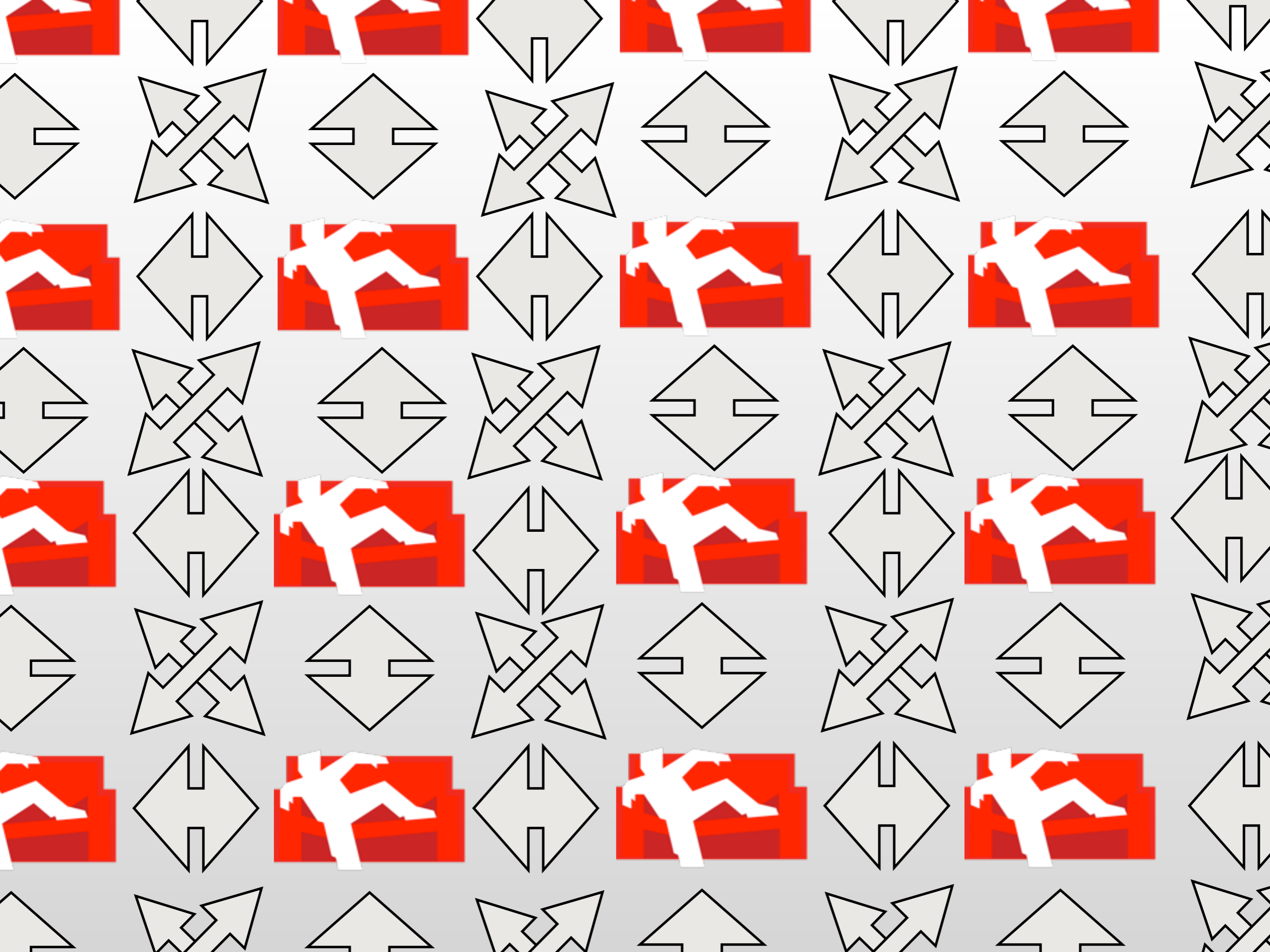













```
{
```

```
  "_ID": "BC4EA69CE1A73AA7021023B698D2210"
```

```
  "REV": "1-967A990FF5E92A0D41819138AEB3"
```

JSON Documents

```
  "TYPE": "PERSON",
```

```
  "NAME": "DARTH VADER",
```

```
  "AGE": 63,
```

```
  "HEADWARE":
```

```
    ["HELMET", "SOMBRERO"]
```

```
  "DARK_SIDE": TRUE
```

```
}
```

```
{
```

```
  "_ID": "BC4EA69CE1A73AA7021023B688D2210"
```

```
  "REV": "1-967A990FF5E92ADD41819138ABB3"
```

JSON Documents

```
  "TYPE": "PERSON",
```

```
  "NAME": "DARTH VADER",
```

```
  "AGE": 63,
```

```
  "HEADWARE":
```

```
    ["HELMET", "SOMBRERO"]
```

```
  "DARK_SIDE": TRUE
```

```
}
```

```
{  
  "_ID": "BC4EA69CE1A73AA7021023B6B8D2210  
  "REV": "2-41819138ABB32967A990FF5E92AD
```

JSON Documents

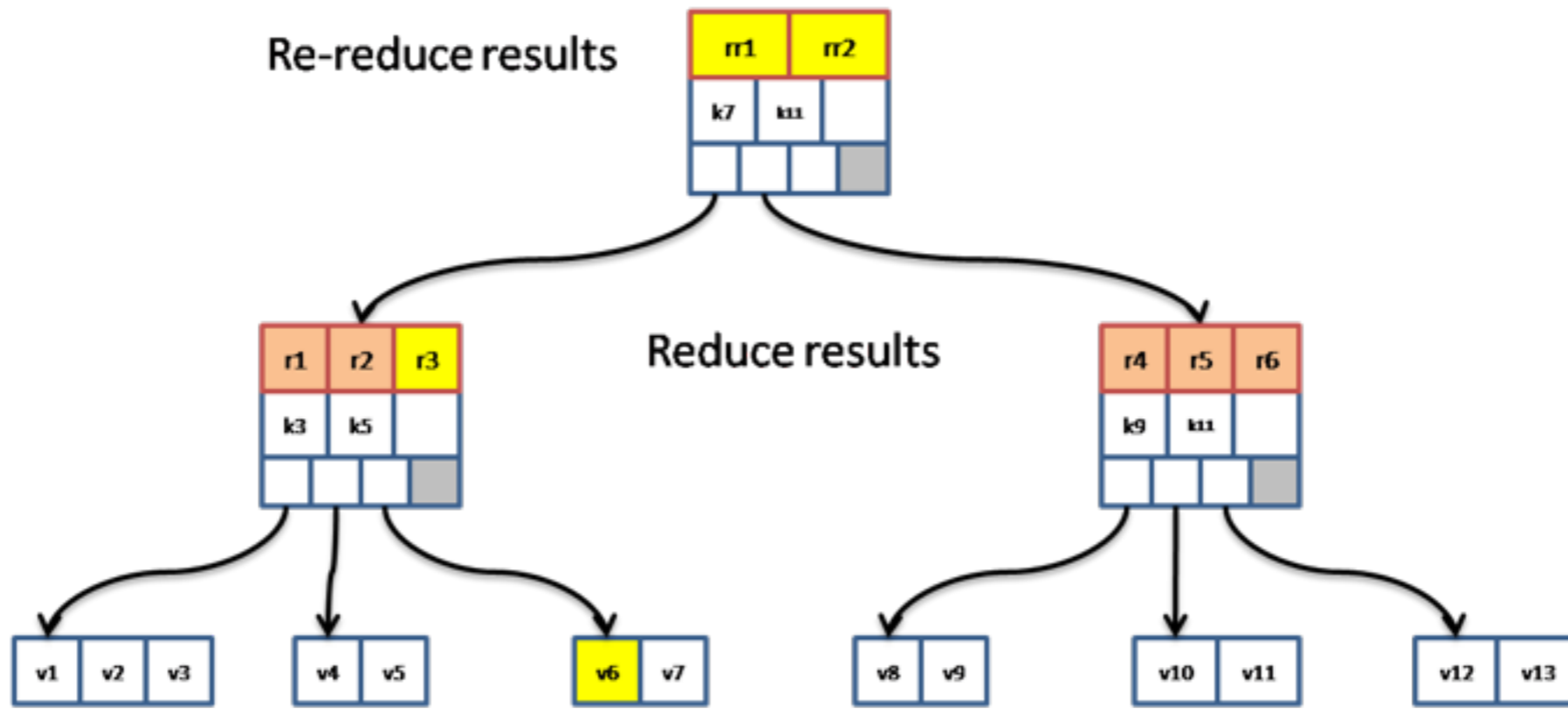
```
"TYPE": "PERSON",  
"NAME": "DARTH VADER",  
"AGE": 63,  
"HEADWARE":  
  ["HELMET", "SOMBRERO"],  
"DARK_SIDE": "MORE COWBELL!"  
}
```


INCREMENTAL

Map Reduce

```
function(doc) {  
  if (doc.type == "post") {  
    var summary = (doc.html.replace(/<(.|\n)*?>/g, ' ').substring(0,350) + '...');  
    emit(doc.created_at, {  
      html : doc.html,  
      summary : summary,  
      title : doc.title,  
      author : doc.author,  
      created_at : doc.created_at  
    });  
  }  
};
```


View Index B+ Tree



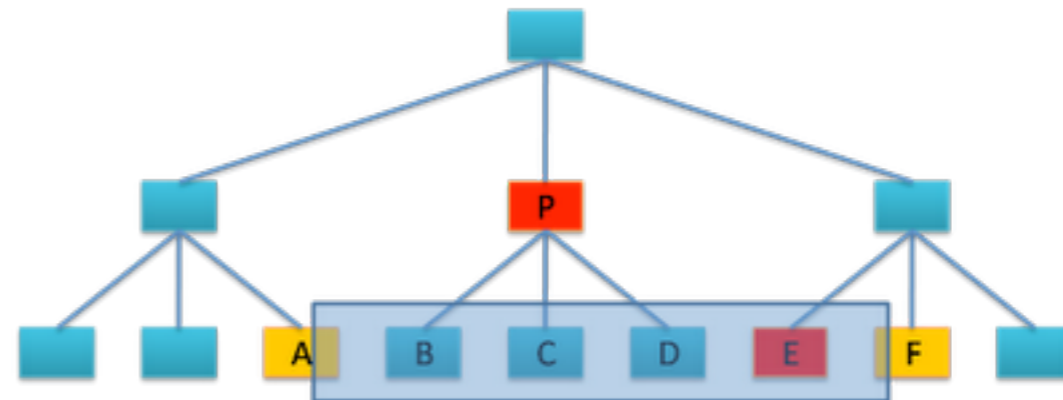
Map results: v8 is map result of k8

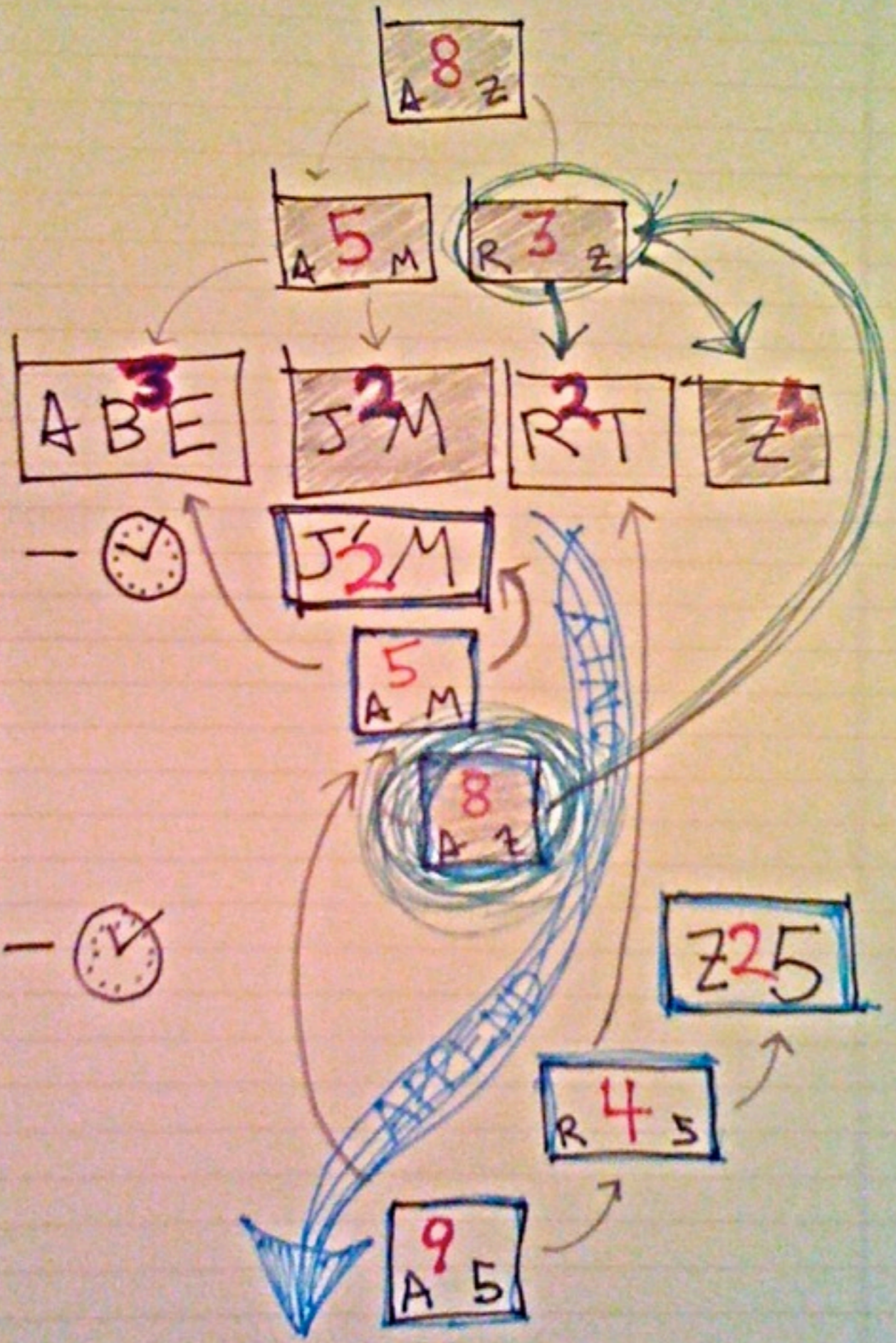
Multiple B+Trees
(one tree per view)

Each B+Tree holds the
results of the map()
execution

Key of B+Tree entry :
[emit_key, doc_id]

Header (B+Tree root)
Header Duplicate
B+Tree ViewX nodeA
nodeA's parent node
B+Tree ViewX root
B+Tree ViewY nodeB
nodeB's parent node
B+Tree ViewY root
B+Tree ViewX nodeP
nodeP's parent node
B+Tree ViewX root
B+Tree ViewZ nodeQ
nodeQ's parent node
B+Tree viewZ root





restful http

You Already Know the API
Use Existing Tools
Talk Directly to the Browser

<http://www.flickr.com/photos/calliope/3573471166>



couchdb lounge

<http://code.google.com/p/couchdb-lounge/>

<http://www.flickr.com/photos/aussiegall/658457636>

Scaling Down



"normal"



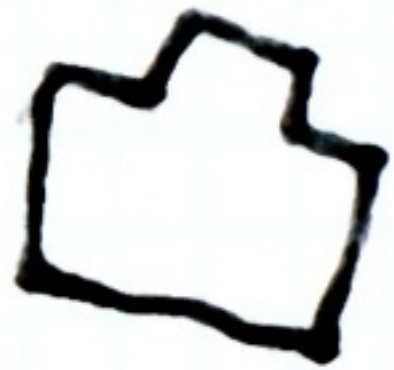
server

offline

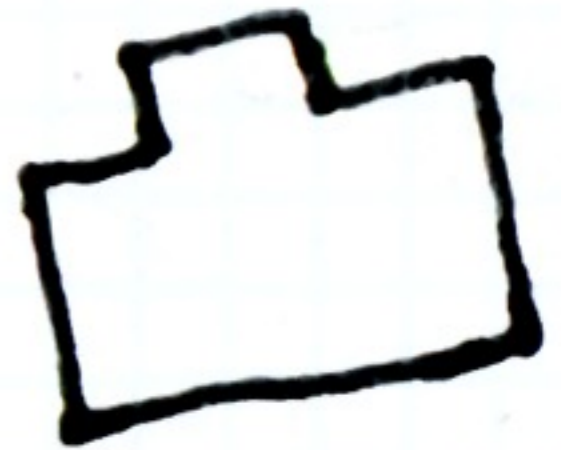
mode

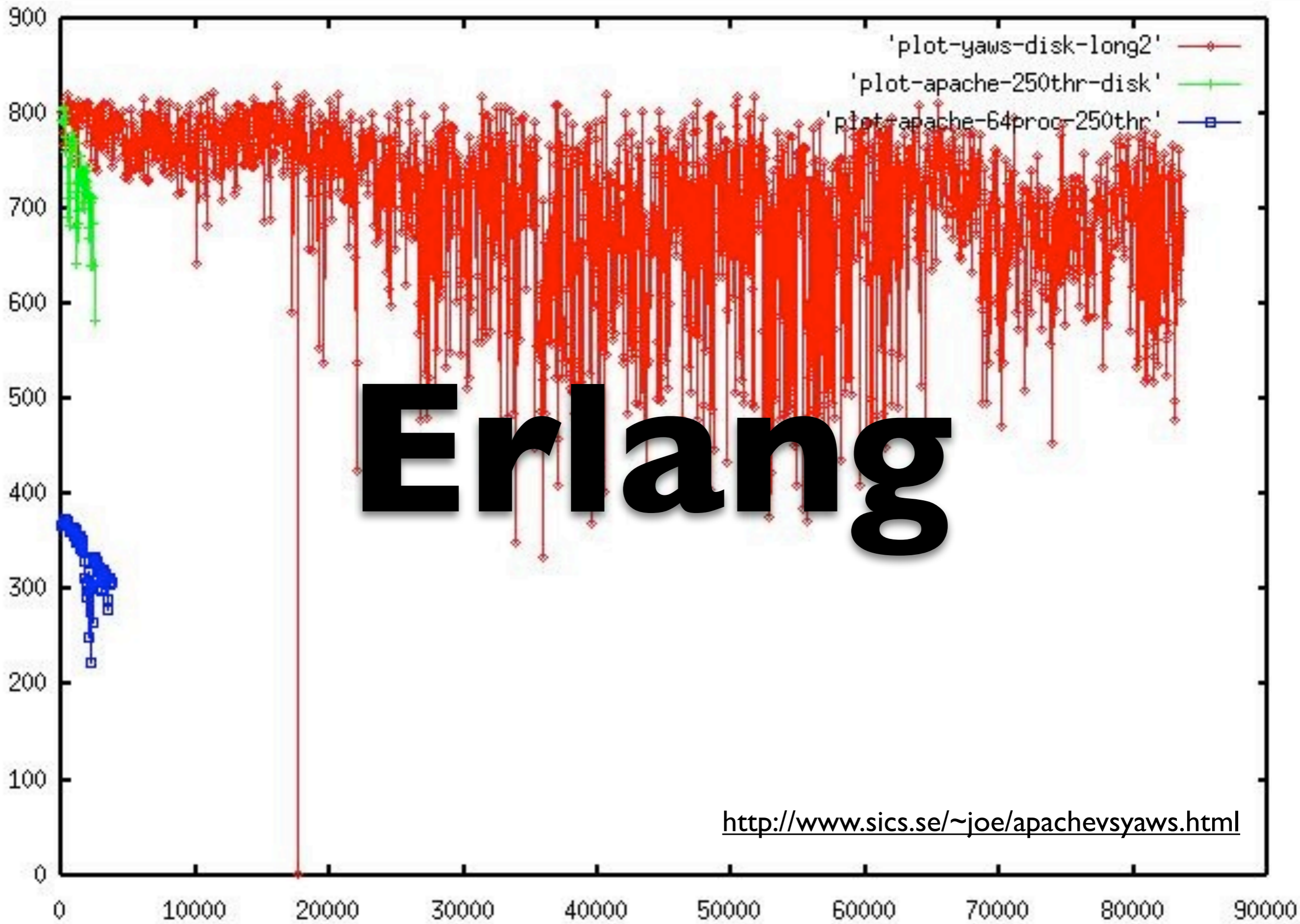


the p2p



web.





Erlang

<http://www.sics.se/~joe/apachevsyaws.html>

BrowserCouch Test Suite

This file contains a simple test runner and suite for BrowserCouch.

The suite can be run [here](#).

The Runner

The `Testing` namespace is a simple test framework that supports the skipping of tests (for when the host system doesn't support required functionality for a test's execution), as well as asynchronous tests.

It doesn't currently have the ability to detect when an asynchronous test has failed, however.

Browser Couch Tests

You can read the source code documentation for these tests [here](#).

```
testDictionary OK
testViewMap_async OK
testViewMapFindRow_async OK
testViewProgress_async OK
testViewMapReduceFindRow_async OK
testViewMapReduceWebWorker_async running
testViewMapReduce_async pending
testLocalStorage_async pending
```

```
resgrosrjzrocebe~wsluc beaqfud
resgDroeknbreqnce~wsluc beaqfud
resgDroeknbreqnce~wsluc beaqfud
resgDroeknbreqnce~wsluc beaqfud
```

The Suite

The `Tests` namespace contains the actual testing suite for BrowserCouch.

Browser Couch

JavaScript port

Uses HTML5 storage

Replicates with CouchDB

<http://hg.toolness.com/browser-couch/>

```
var Testing = {
  function (listener, container, setTimeout) {
    if (!setTimeout)
      setTimeout = window.setTimeout;

    var tests = [];

    for (name in container)
      if (name.indexOf("test") == "0") {
        var test = {
          name: name,
          func: container[name],
          isAsync: name.indexOf("_async") != -1,
          id: tests.length,
          assertEquals: function assertEquals(a, b) {
            if (a != b)
              throw new Error(a + " != " + b);
          }
        };
        tests.push(test);
      }

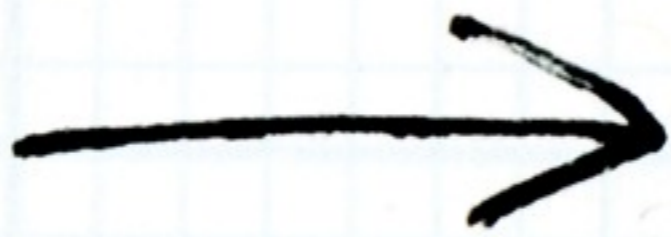
    listener.onReady(tests);
    var nextTest = 0;

    function runNextTest() {
      if (nextTest < tests.length) {
        var test = tests[nextTest];
        listener.onRun(test);
        test.skip = function() {
          listener.onSkip(this);
          setTimeout(runNextTest, 0);
        };
        test.done = function() {
          listener.onFinish(this);
          setTimeout(runNextTest, 0);
        };
        test.func.call(container, test);
        if (!test.isAsync)
          test.done();
        nextTest++;
      }
    }

    runNextTest();
  }
};

var Tests = {
  testDictionary: function(self) {
    var dict = new BrowserCouch._Dictionary();
    dict.set('foo', {a: 'hello'});
    dict.set('bar', {b: 'goodbye'});
    self.assertEqual(dict.get('foo').a, 'hello');
    self.assertEqual(dict.get('bar').b, 'goodbye');
    self.assertEqual(dict.getKeys().length, 2);
    self.assertEqual(dict.has('foo'), true);
    self.assertEqual(dict.has('bar'), true);
    self.assertEqual(dict.has('spatula'), false);
    dict.remove('bar');
    self.assertEqual(dict.getKeys().length, 1);
    self.assertEqual(dict.has('foo'), true);
  },
  _setupTestDb: function(cb) {
    var documents = this._testDbContents;
    BrowserCouch.get(
      "blarg",
      function(db) {
        db.wipe(
          function() {
            db.put(
              documents,
              function() {
                ModuleLoader.require(
                  "JSON",
                  function() { cb(db); }
                );
              }
            );
          }
        );
      }
    );
  },
  new FakeStorage()
};

_testDbContents: [{id: "monkey",
  content: "hello there dude"},
  {id: "chuck",
```

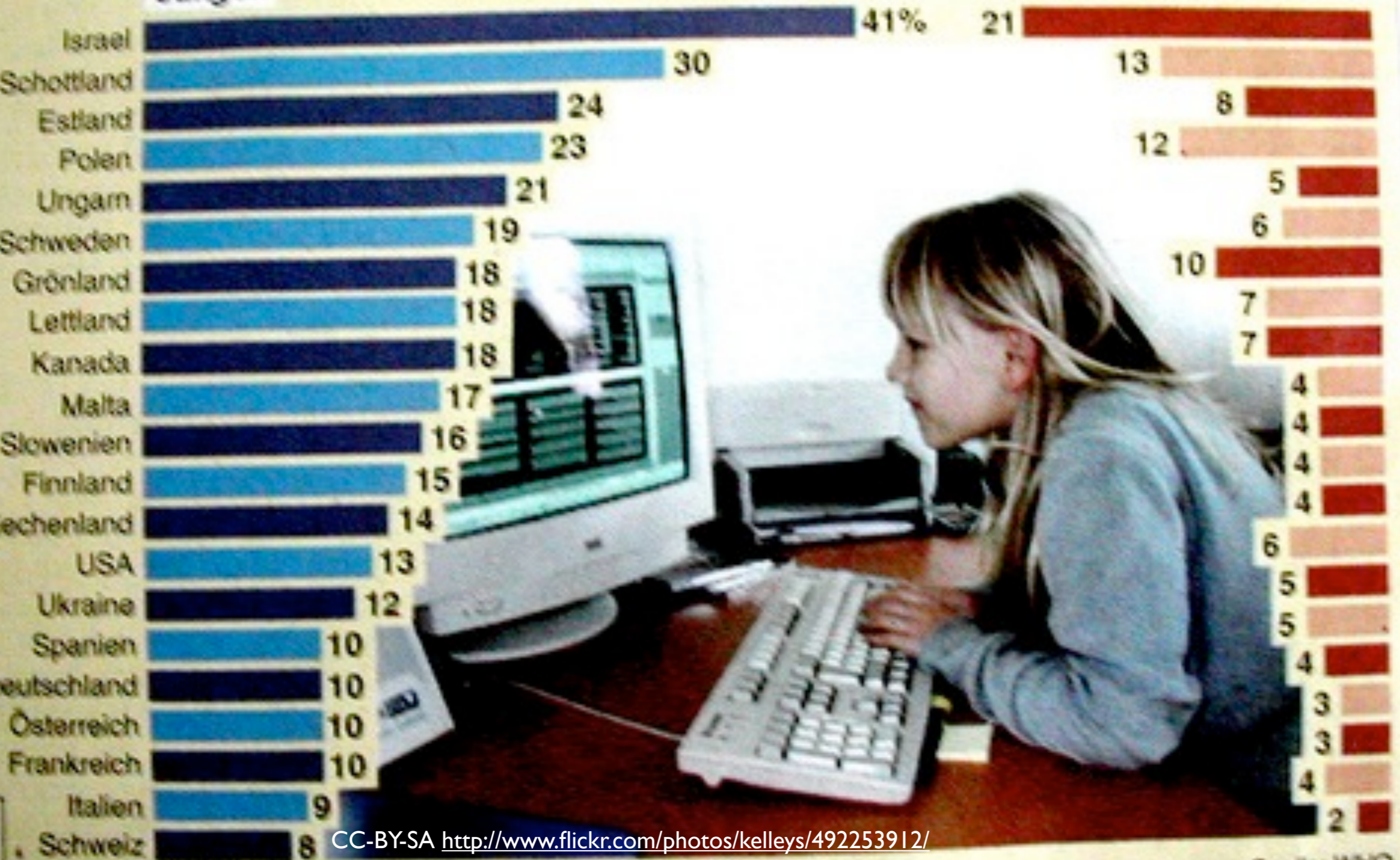



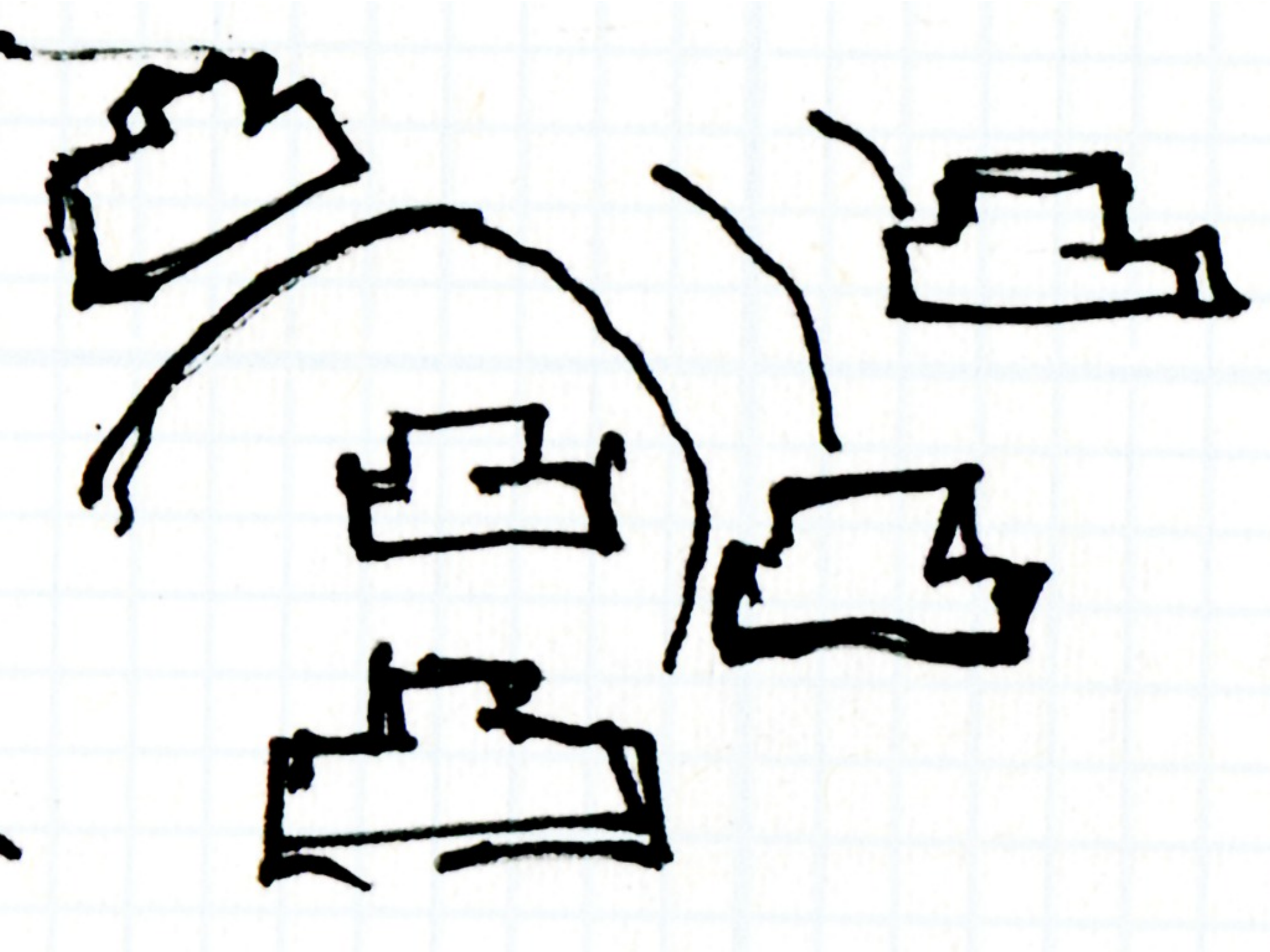
Computerfreaks und Computermuffel

Anteil der 11-Jährigen, die an Wochentagen durchschnittlich drei oder mehr Stunden vorm Computer verbringen

Jungen

Mädchen





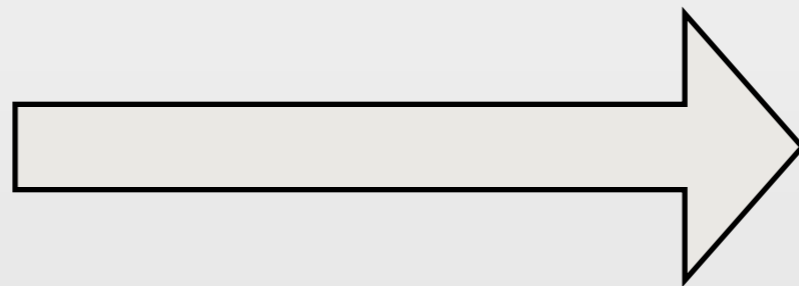
<http://github.com/jchris/taskr/>



Conflict resolution by example



A

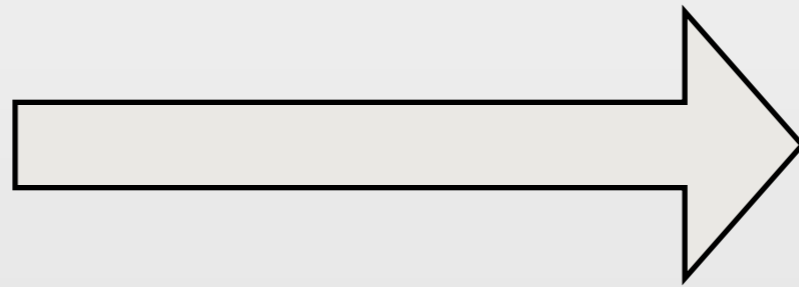


B

Conflict resolution by example



A



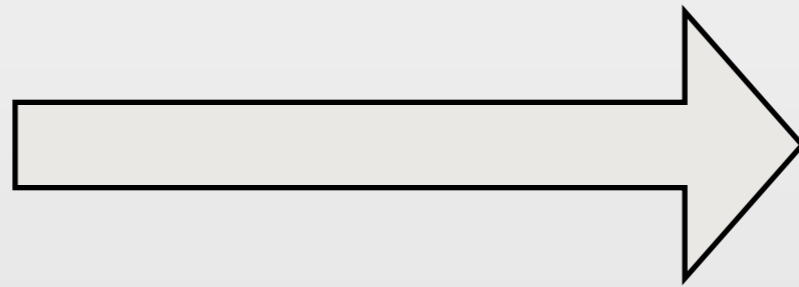
B



Conflict resolution by example



A



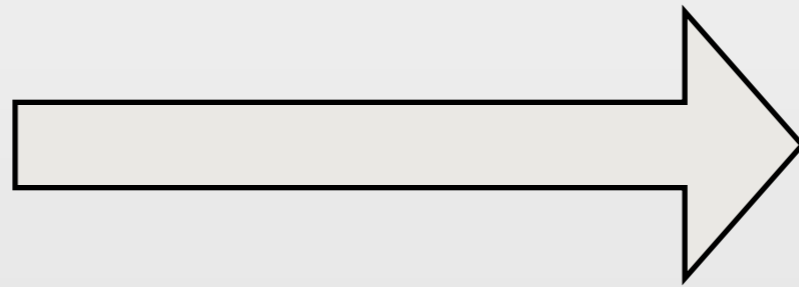
B



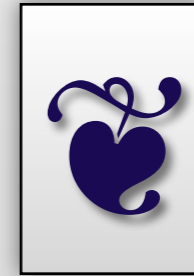
Conflict resolution by example



A



B



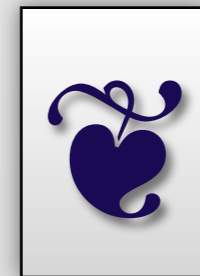
Conflict resolution by example



A



B



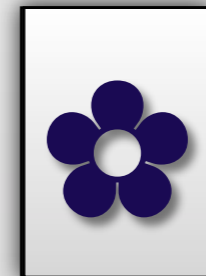
Conflict resolution by example



A



B



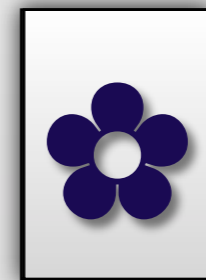
Conflict resolution by example



A



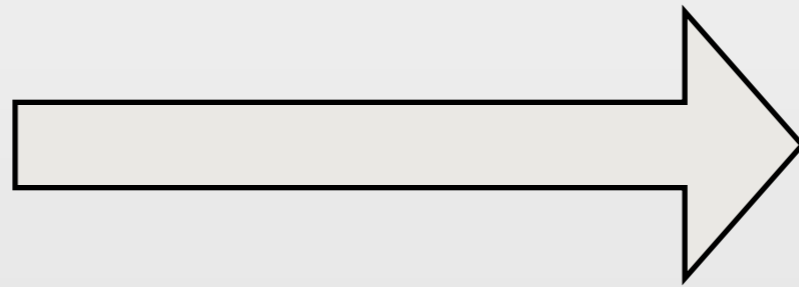
B



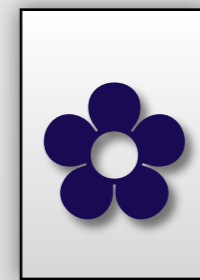
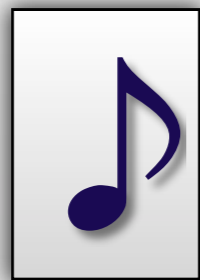
Conflict resolution by example



A



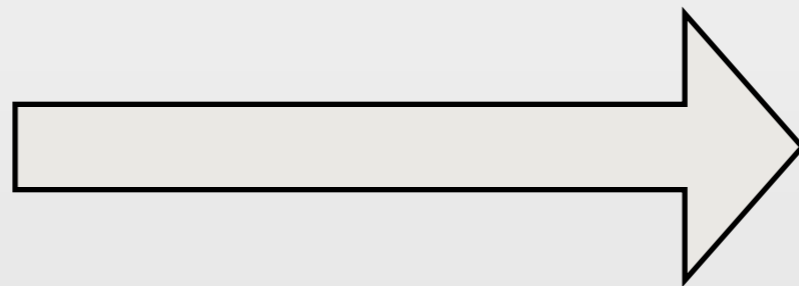
B



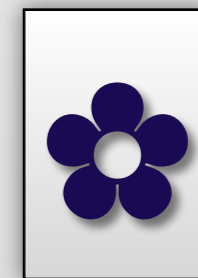
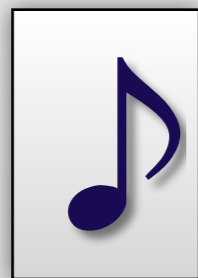
Conflict resolution by example



A



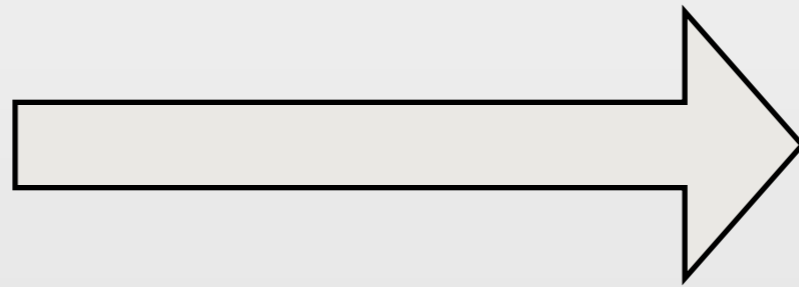
B



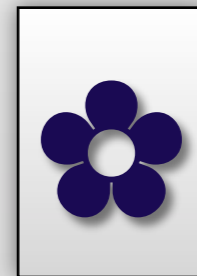
Conflict resolution by example



A



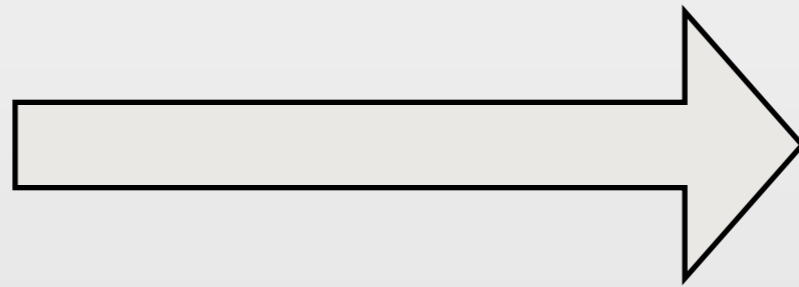
B



Conflict resolution by example



A



B



Thanks!

Resources

@CouchDB

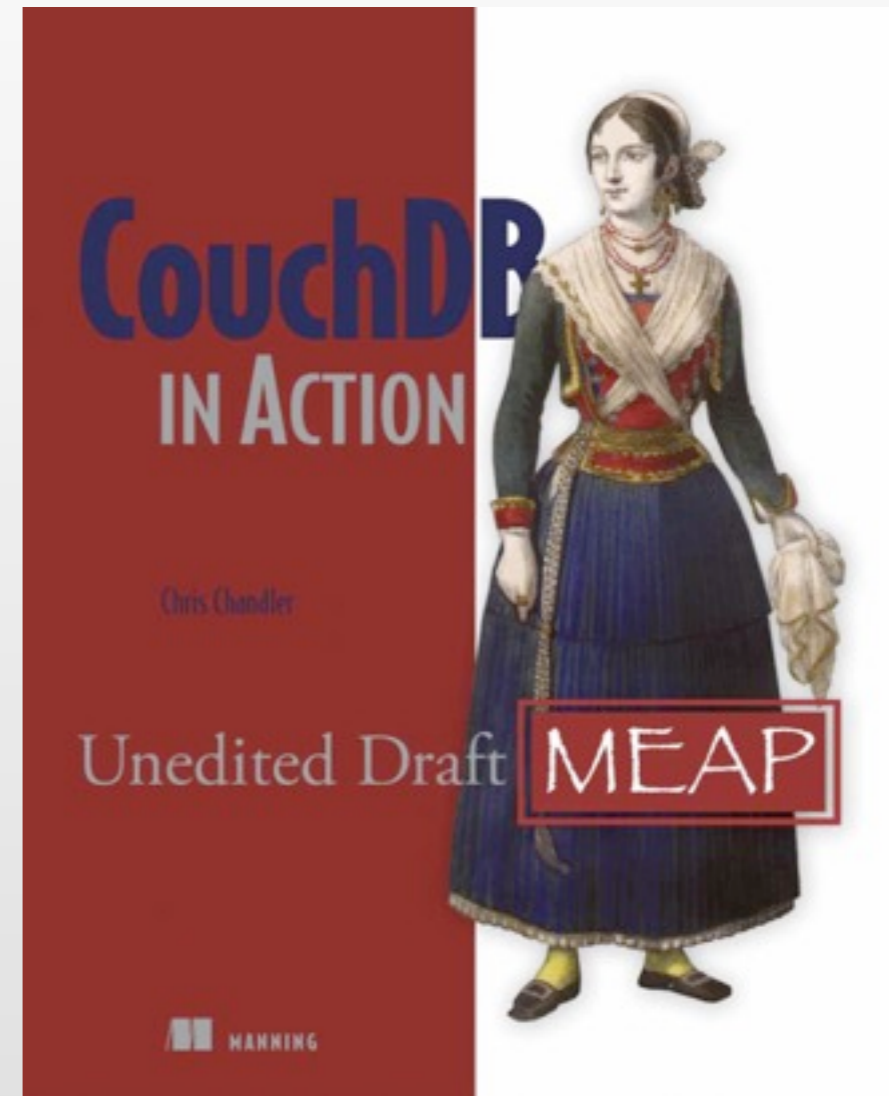
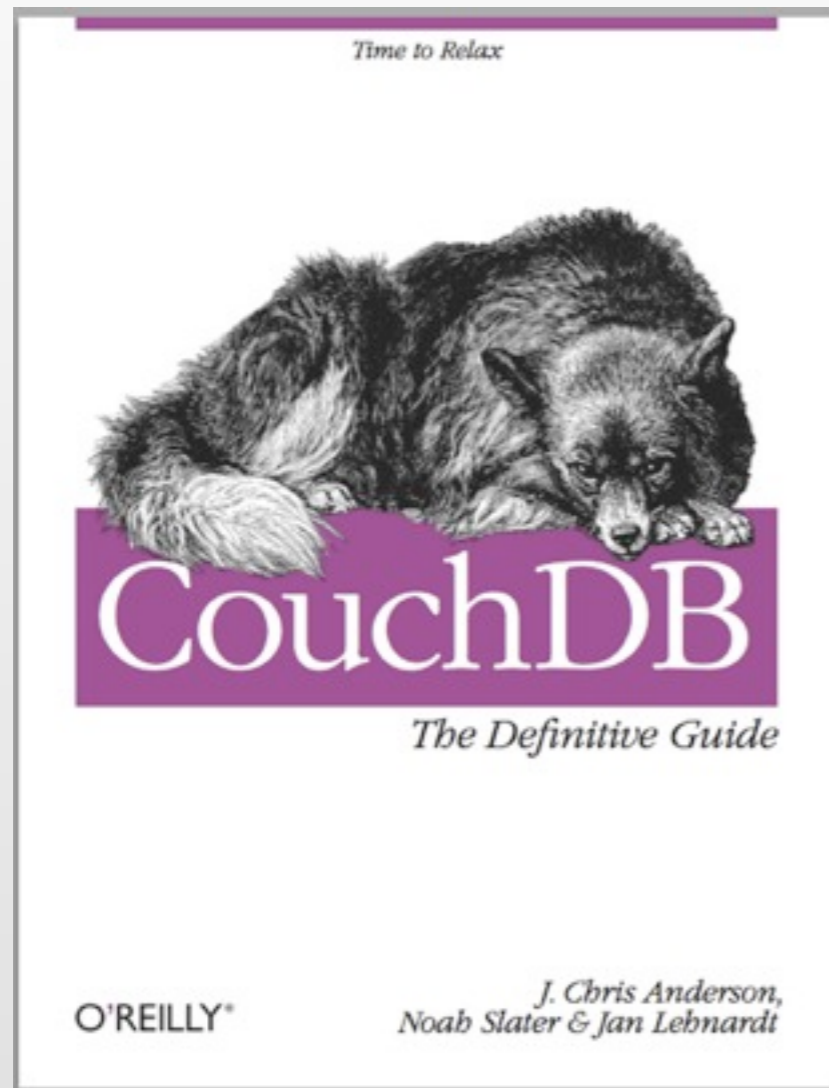
<http://couchdb.apache.org/>

Dress like a Couch: <http://shop.couchdb.com>

<http://planet.couchdb.org/>

<https://peepcode.com/products/couchdb-with-rails>

@couchdbinaction



<http://books.couchdb.org/relax>

