

Say Hello To Offline First

How to build applications for
the real world

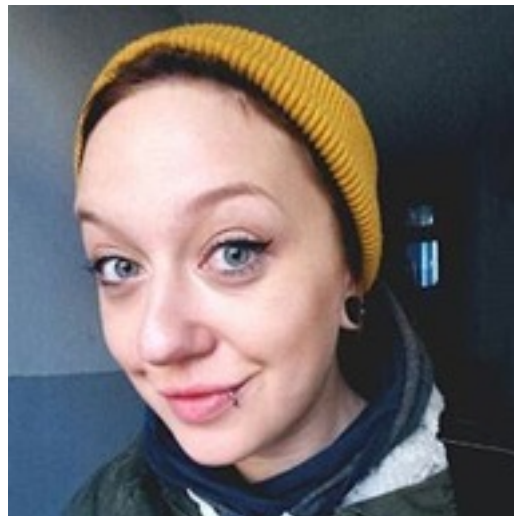
we <3 AYB

Ola Gasidlo

- Javascript for +10 years, full stack
- Core Member of Hood.ie
- Organizer of OpenTechSchool Dortmund

twitter@misprintedtype

github@zoepage



Agenda

1. What & why?
2. Problems
3. New approach
4. Implementation

What & why?





The internet turned **25** this year!

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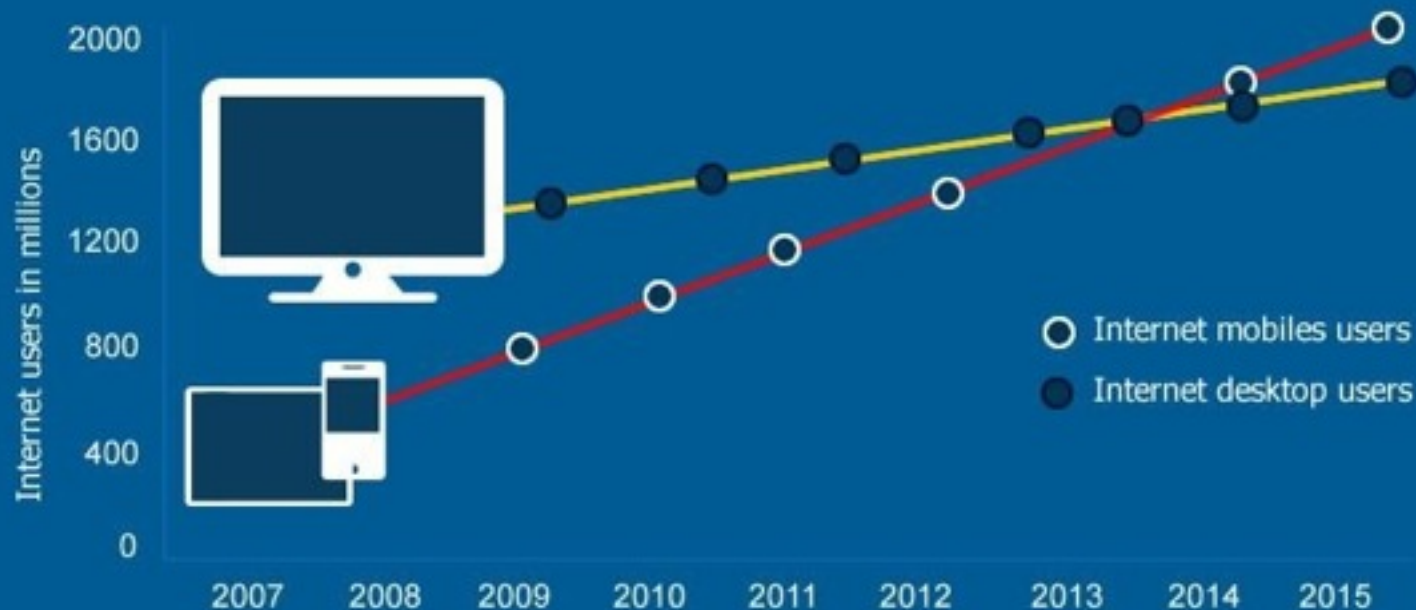


We grew up.

@misprintedtype

Internet usage - Mobiles VS. Ordinateurs

The projection of global internet users conducted by Morgan Stanley Research: Mobiles VS. Computers from 2007 to 2015.



HOW HAS MOBILE INTERNET GONE GLOBAL?

Mobile web traffic stands at 7.96% in the USA, that number is much larger in places like Africa and Asia.



these numbers are up **192.5%** since 2010

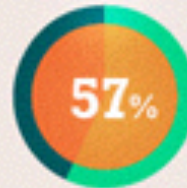
MOBILE-ONLY WEB USERS



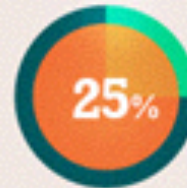
EGYPT



INDIA



S. AFRICA



USA

MOBILE-ONLY WEB USERS

amount of mobile-only web users is out of reach

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Tell me...



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**Cannot Connect to
Server**

Ugh! Not this screen again.

Retry



*"WE CAN'T KEEP BUILDING APPS WITH THE
DESKTOP MINDSET OF PERMANENT, FAST
CONNECTIVITY, WHERE A TEMPORARY
DISCONNECTION OR SLOW SERVICE IS
REGARDED AS A PROBLEM AND
COMMUNICATED AS AN ERROR."*

Get Inspired, Create Lists.

Pages for your projects, and lists for your todos.

**Take notes & share
them right away**

No sign up. Just essence.

Start using [minutes.io](#)

or [Sign In](#)

*↖ the best meeting tool since pen & paper **

Project
Meeting Title
Thursday, 8.5.2014 14:00

I Where

Minute taker

your name and

minutes.io

Linz, Österreich

Linz
Österreich

 [Routenplaner](#)  [Speichern](#)



Die Umgebung erkunden
[In der Nähe suchen](#)



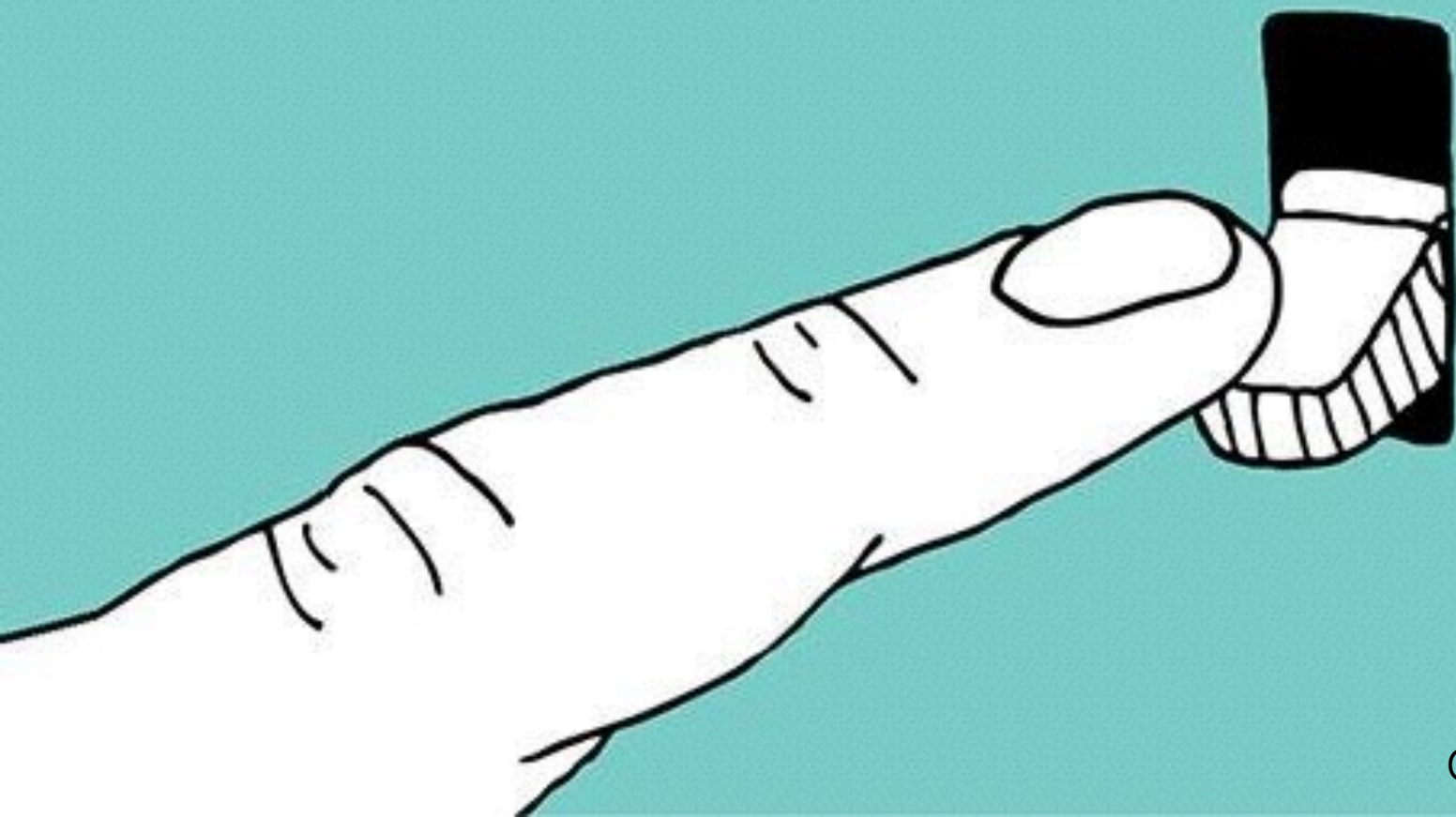
Problems







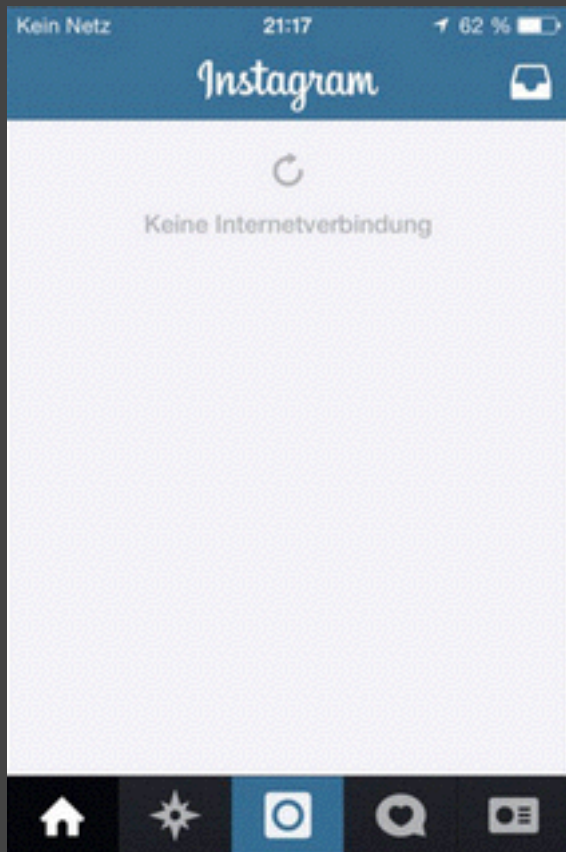
@misprintedtype



@misprintedtype

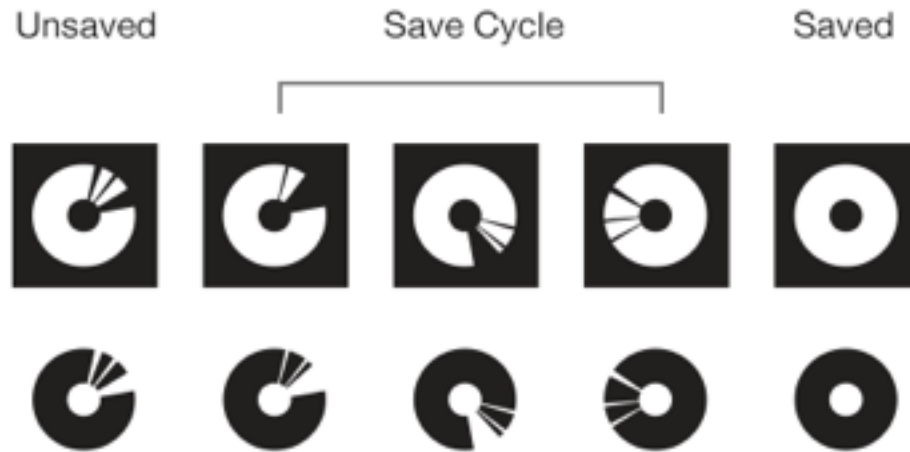
offline > error handling

inform user

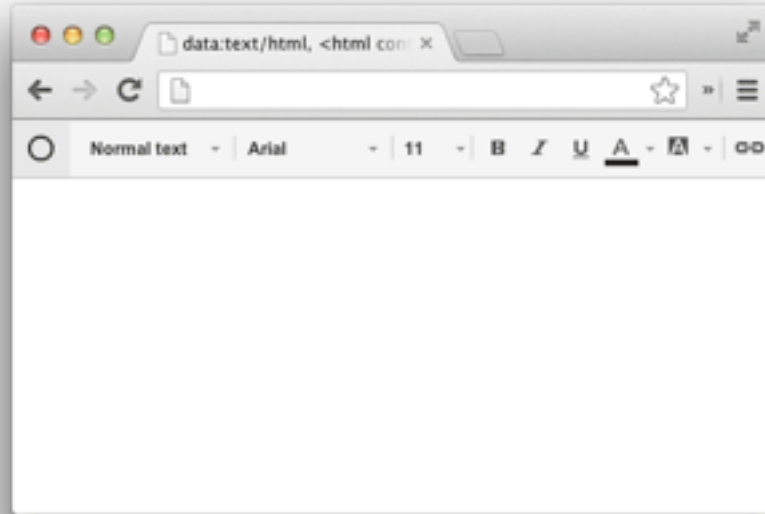


@misprintedtype

build trust



<http://branch.com/b/redesigning-the-save-symbol-let-s-do-this>



<http://branch.com/b/redesigning-the-save-symbol-let-s-do-this>

organise data



Info and Settings



Enhancements



Audio



Annotations

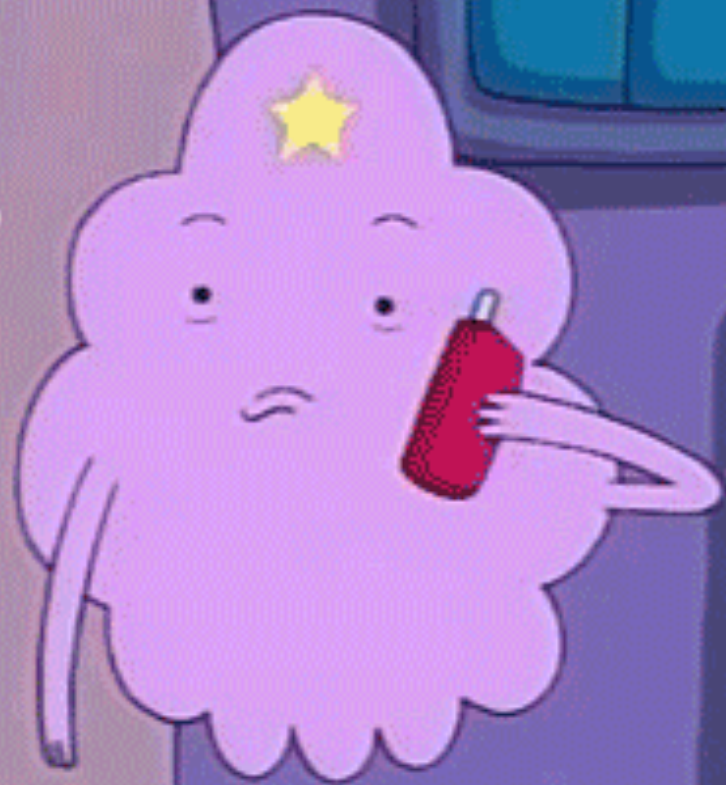


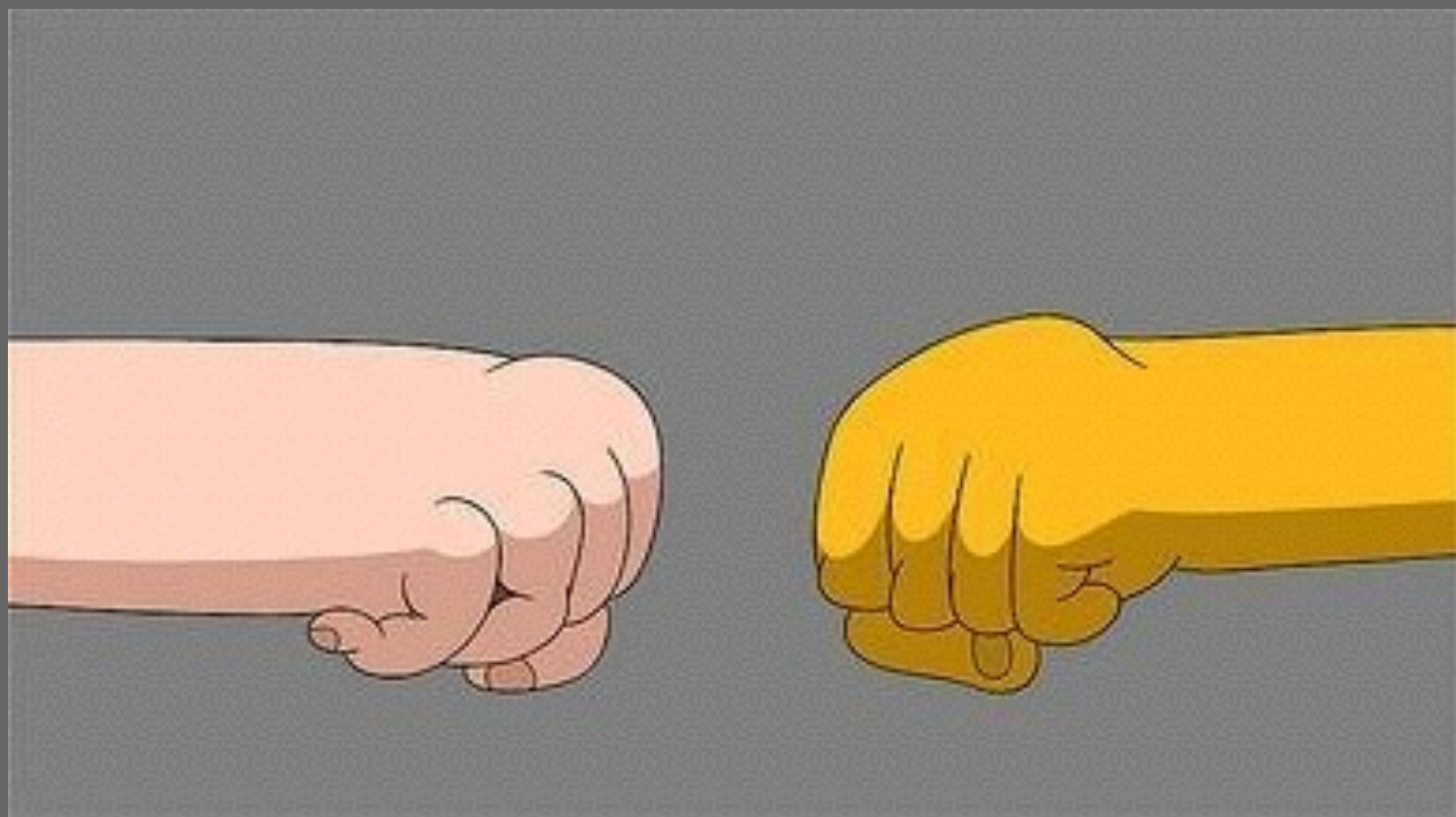
Your settings could not be saved: Invalid request, authentication expired.

decide



OH GLOB.





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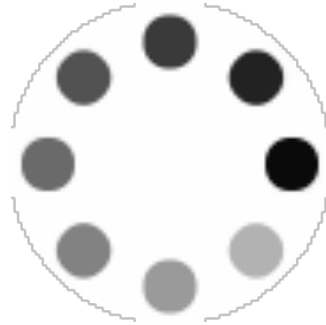




CLIENT



SERVER





2

3

4

5

6

7

8

9

10

QUESTION 1

How satisfied were you with your ability to schedule an appointment in a timely manner?

Still there?

No

Please start a new survey.

Let's keep going.

Yes



Results for #hoodiehq

Save

Top / All



misprintedtype @misprintedtype · May 2

"Being a committer does not mean you commit code, it means you are committed to the project." blog.hood.ie/2014/05/every-... #TGIF #hoodiehq

Expand

↩ Reply ★ Favorite ... More



Krasimir Tsonev and 9 others follow

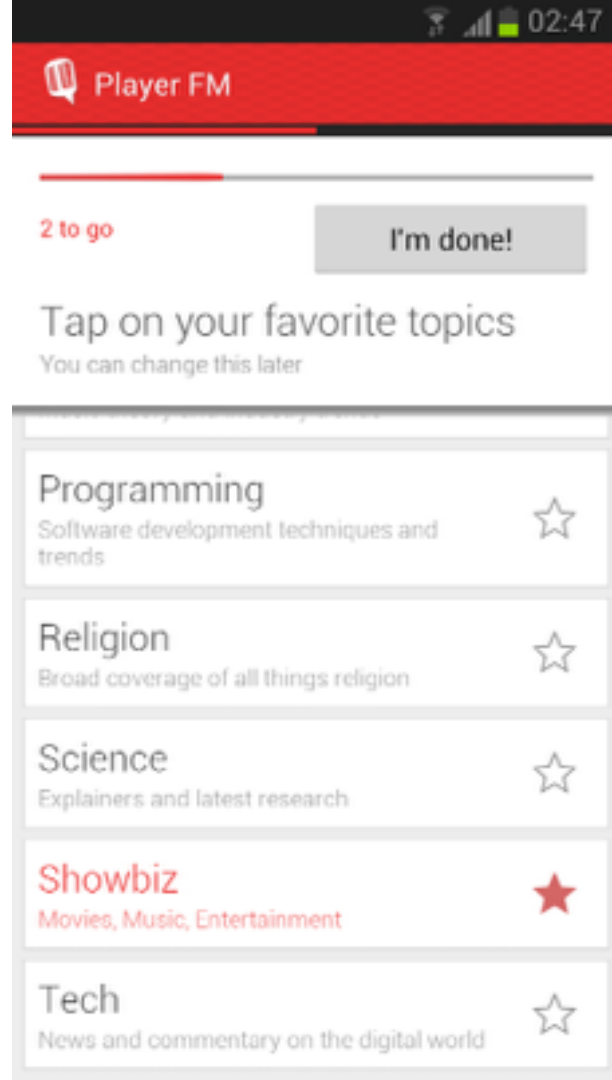
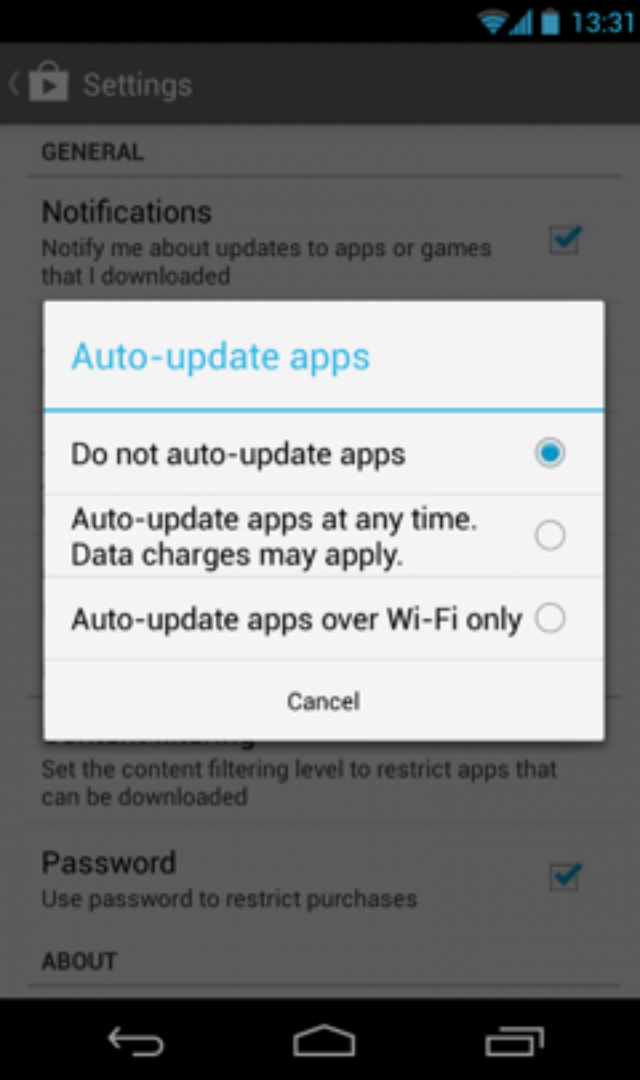


admc @admc · 1 May 2013

I wish I had known about hood.ie about a month ago. Looks really awesome, been doing a lot of that myself. #hoodiehq

Expand

↩ Reply ↻ Retweet ★ Favorite ... More



New Approaches



Rethink!

(but how?)



http://hood.ie

INSTALLATION

Can be found [here](#).

TUTORIALS

Learn in [these tutorials](#) how to install Hoodie and get started.



Hoodie [enables you to express yourself through technology](#) by making web app development very fast, easy and accessible.

It's a complete backend for your apps: develop your frontend code, plug it into our API and your app is ready.

DOCUMENTATION

[Hoodie's Documentation](#)

FAQ

For any questions you may have, check out [our FAQ](#).

A HOODIE FOR YOU

Currently, Hoodie is mainly for frontend developers who want to [build](#)



FRONTEND

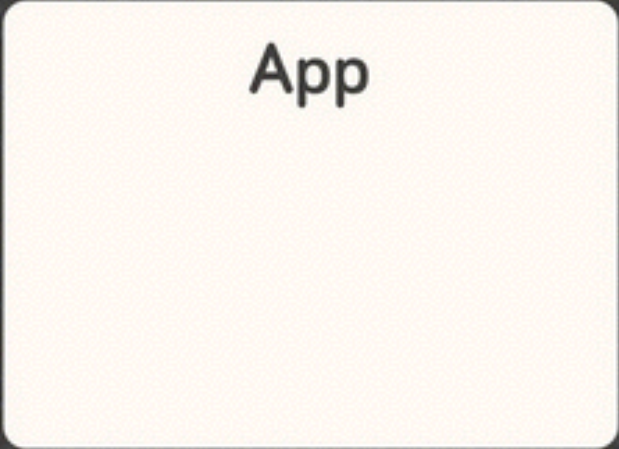
Hoodie Sync

BACKEND

FRONTEND

Hoodie Sync

BACKEND



App

FRONTEND

Hoodie Sync

BACKEND

App

hoodie.store



FRONTEND

Hoodie Sync

BACKEND

App

hoodie.store

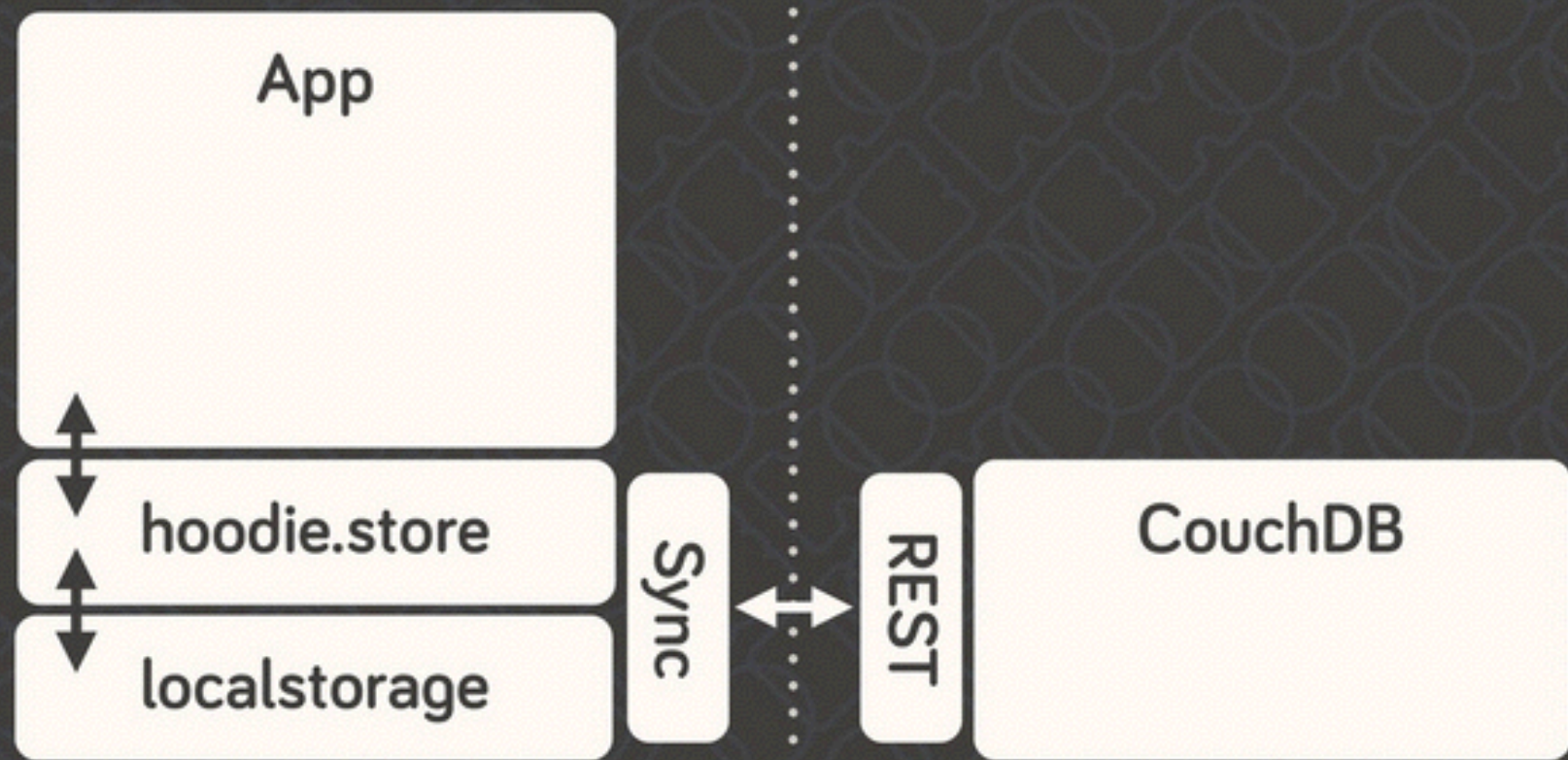
localStorage



FRONTEND

Hoodie Sync

BACKEND



FRONTEND

Hoodie Sync

BACKEND

App

Plugins
(node.js)

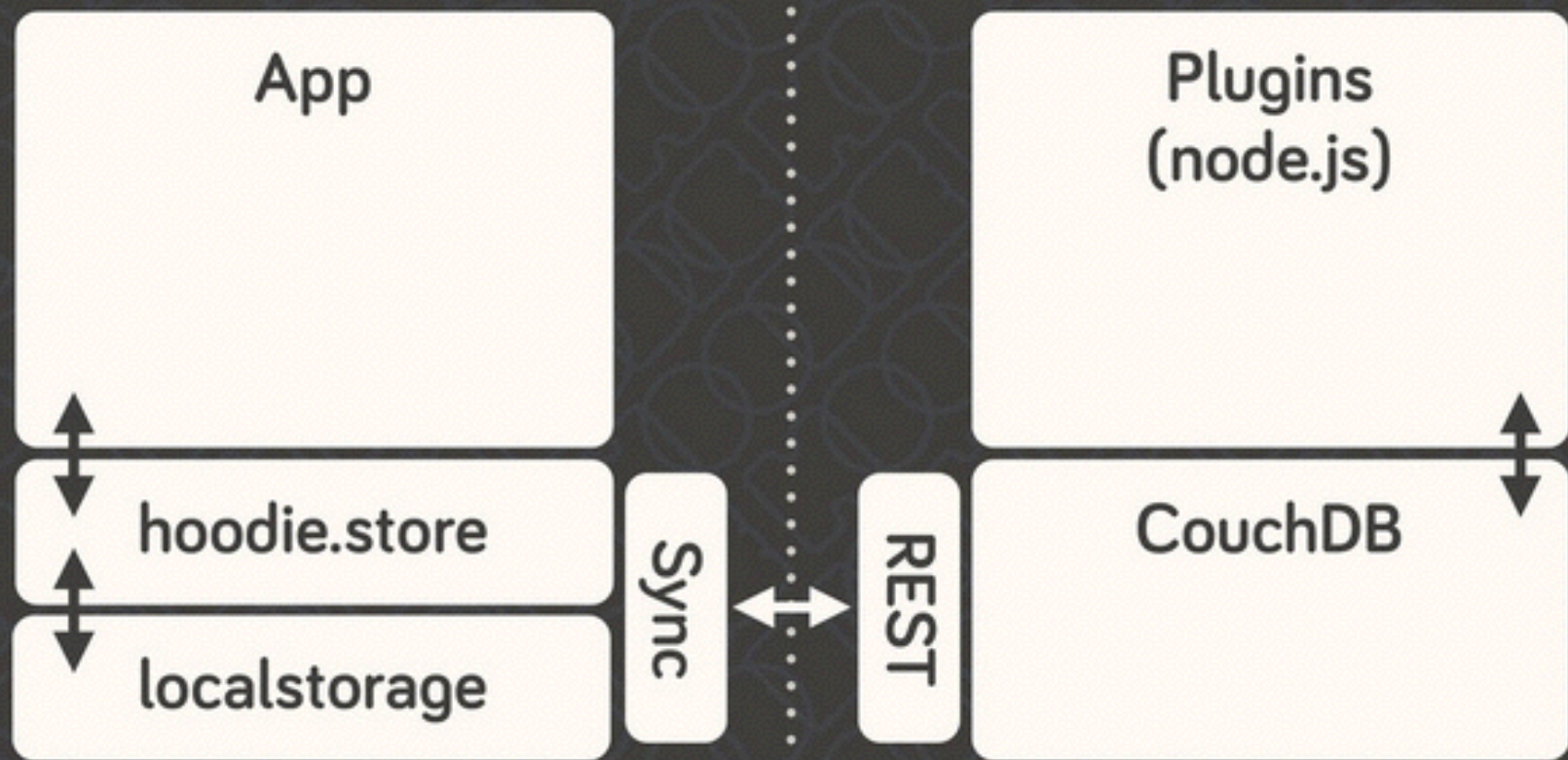
hoodie.store

localStorage

Sync

REST

CouchDB



FRONTEND

Hoodie Sync

BACKEND

App

Out for lunch,
BRB

hoodie.store

localStorage

Sync

Anyone home?

FRONTEND

Hoodie Sync

BACKEND

App

Plugins
(node.js)

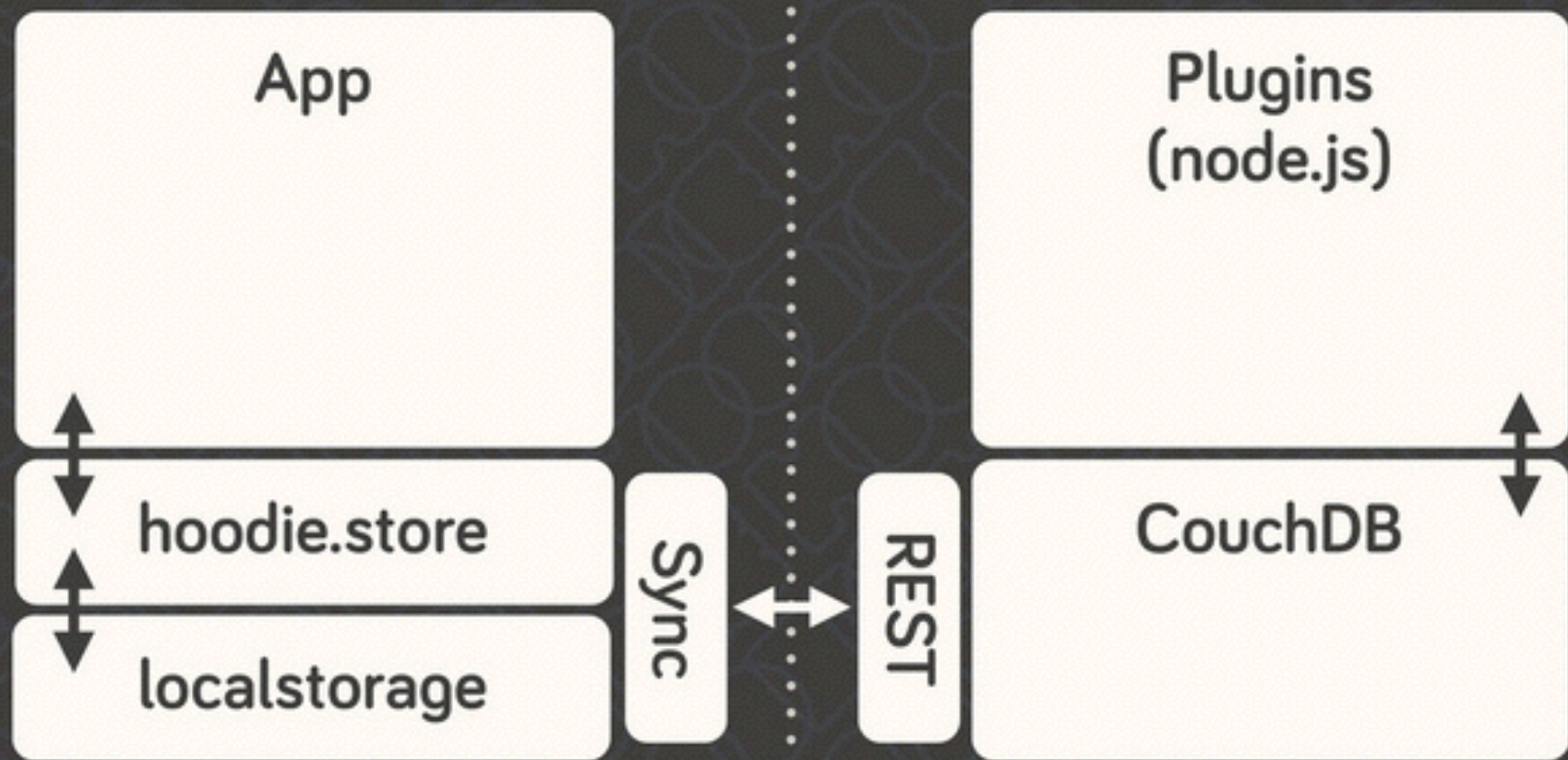
hoodie.store

localStorage

Sync

REST

CouchDB



Implementation





files



data





files



data



Manifest

Manifest

++ offline app usage

++ fast loading

++ full experience for users

Manifest

```
<html manifest="example.appcache">
```

```
  ...  
</html>
```

IE8+ / FF 3.5+ / Chrome 4.0+ / Safari 4.0+ / Opera 10.5+ / iPhone 2.0+ / Android 2.0+

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Manifest

AddType text/cache-manifest .appcache

Manifest

CACHE MANIFEST
2013-11-13:v3

CACHE
index.html

NETWORK:
*

FALLBACK:
/online.html /offline.html

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App Cache

`chrome://appcache-internals/`

App Cache is a douchebag!

<http://alistapart.com/article/application-cache-is-a-douchebag>

App Manifest

1. Files always come from the cache
(also if you are online!)

App Manifest

2. App Cache only updates if manifest changed

App Manifest

3. App Cache is an additional cache

App Manifest

4. Never change the manifest URL

App Manifest

5. Non-cached resources will not load

App Cache nanny

<https://www.npmjs.org/package/appcache-nanny>

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Service Worker

- Additional cache
- Deals with all requests
- offline first, push notifications, background sync, performance

Service Worker

<https://github.com/slightlyoff/ServiceWorker>

<https://jakearchibald.github.io/isserviceworkerready/>

https://www.youtube.com/watch?v=SmZ9XcTpMS4&list=PL37ZVnwpeshGPw2RfUGNQbPsU_WGpi05J

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files



data



files



data

Do not harm humans!

(first law of robotics)

Do not lose data!

(first law of offline first)



PouchDB + CouchDB = <3

Apache CouchDB

couchdb.apache.org

About



Apache
CouchDB
relax



Apache CouchDB™ is a database
that uses **JSON** for documents,
JavaScript for **MapReduce** indexes,
and regular **HTTP** for its **API**

DOWNLOAD
Version 1.5.1





A Database for the Web



The Database that Syncs!

PouchDB is an open-source JavaScript database inspired by **Apache CouchDB** that is designed to run well within the browser.

PouchDB was created to help web developers build applications that work as well offline as they do online.

It enables applications to store data locally while offline, then synchronize it with CouchDB and compatible servers when the application is back online, keeping the user's data in sync no matter where they next login.

[Learn more](#)

```
var db = new PouchDB('dbname');

db.put({
  _id: 'dave@gmail.com',
  name: 'David',
  age: 67
});

db.changes({
  onChange: function() {
    console.log('Ch-Ch-Changes');
  }
});

db.replicate.to('http://example.com/mydb');
```

CouchDB



@misprintedtype

Ruth's data
(share with John)



Ruth's partial data
(replicated)



John's data



PouchDB



PouchDB



browser	storage	limitation	confirm
Firefox	IndexedDB	unlimited	y
Chrome / Opera / Android 4.4+	IndexedDB	% of storage	y
IE 10+	SQLite	250MB	n
Mobile Safari	WebSQL	50MB	n
Safari	WebSQL	5MB -> 500MB	y
Android 4.3 and lower	IndexedDB	200MB	n



Trust pound!

hoodie <3 *you*

@misprintedtype / @hoodiehq