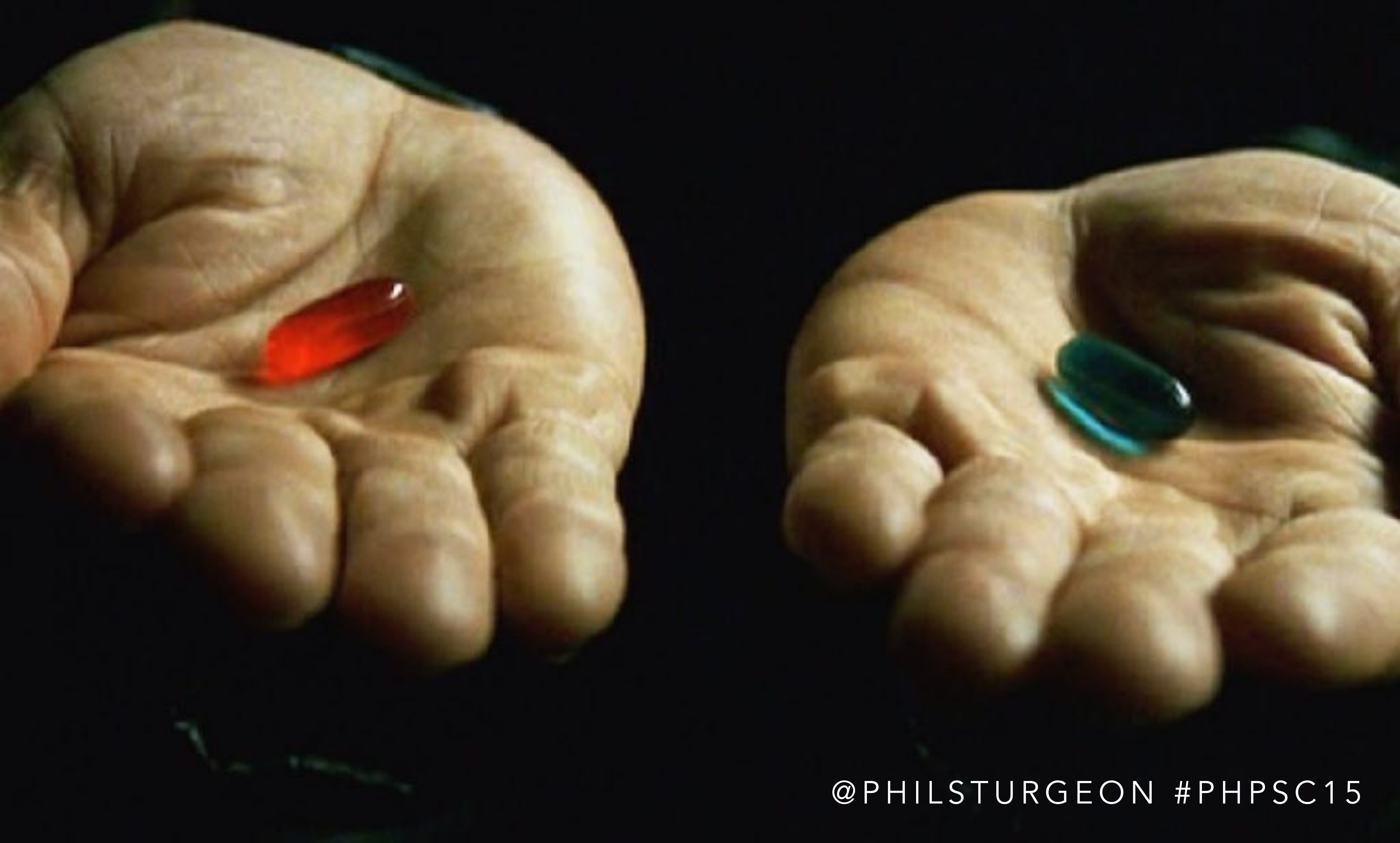
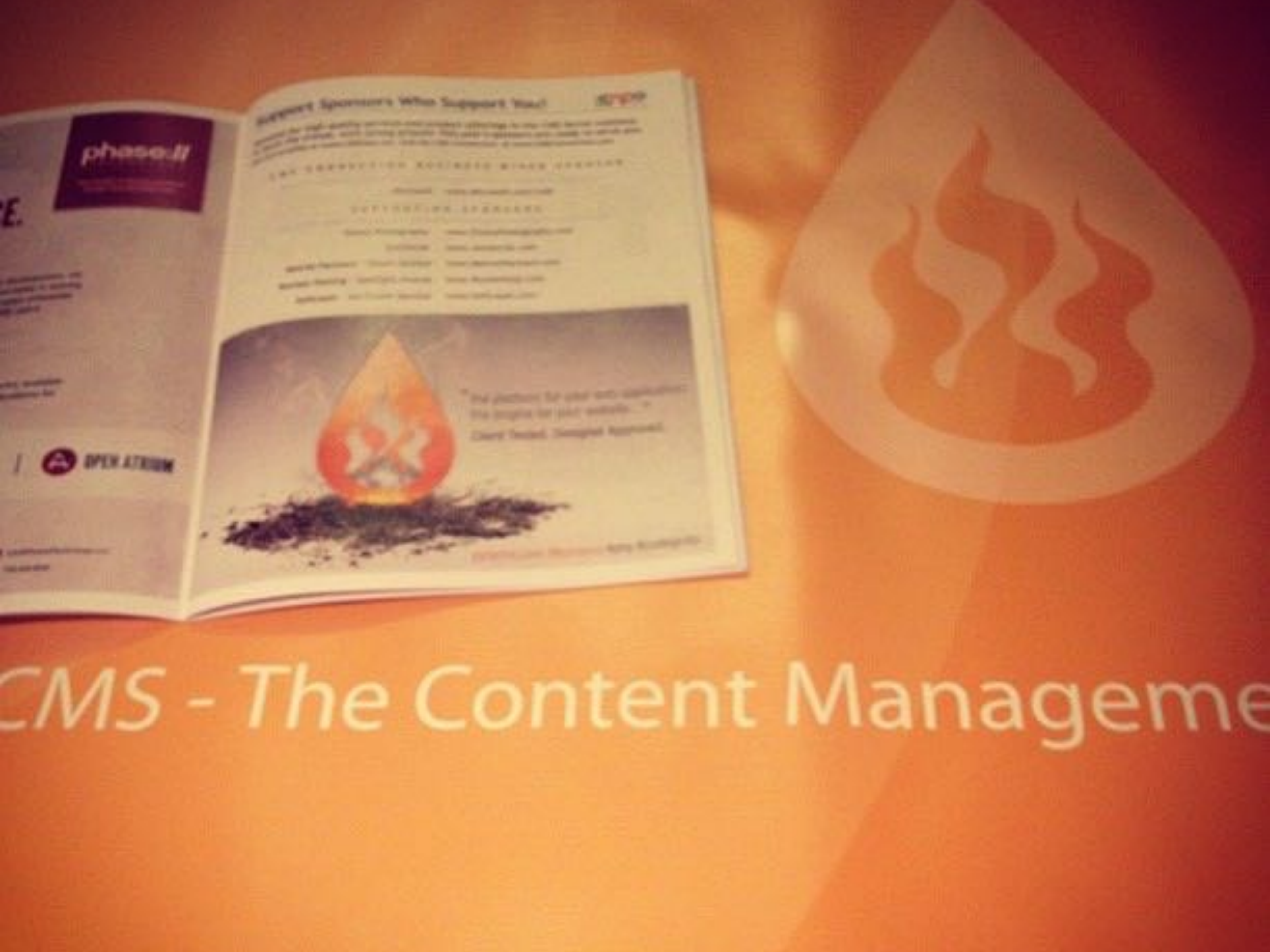
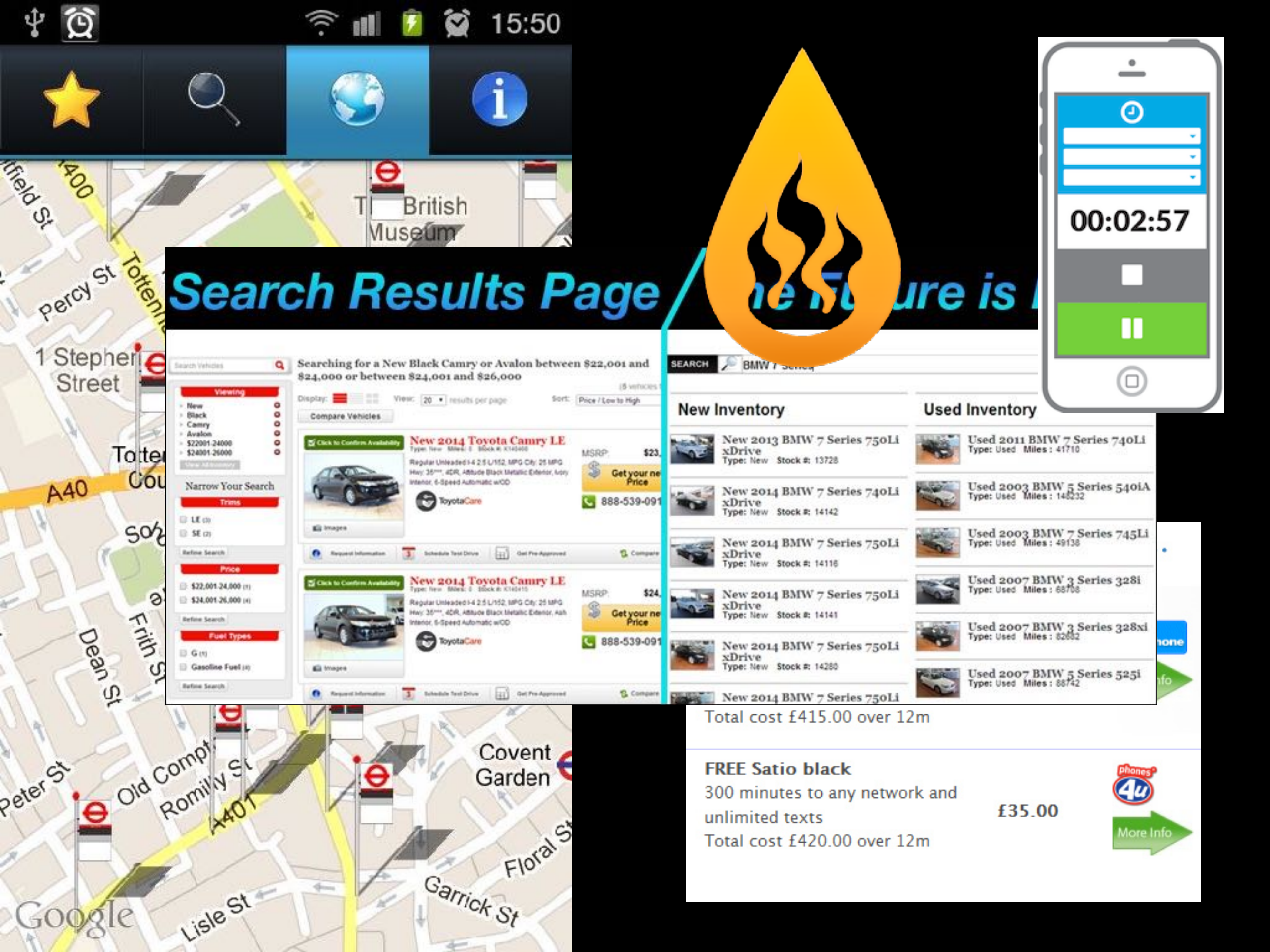
GETTING THINGS WRONG FOR FUN AND PROFIT

API PAIN-POINTS



@PHILSTURGEON #PHPSC15


phase//
Support Sponsors Who Support You!
OPEN ATRIUM
"The platform for your web application; the engine for your website..."
Client Tested. Designer Approved.
CMS - The Content Manageme



Search Results Page / ne Fu ure is

Search Vehicles

Searching for a New Black Camry or Avalon between $22,001 and $24,000 or between $24,001 and $26,000

(5 vehicles

Viewing
- New
- Black
- Camry
- Avalon
- $22001-24000
- $24001-26000

View All Inventory

Display: View: 20 results per page Sort: Price / Low to High

Compare Vehicles

Click to Confirm Availability

New 2014 Toyota Camry LE
Type: New Miles: 0 Stock #: K140400
Regular Unleaded I-4 2.5 L/152, MPG City: 25 MPG Hwy: 35***, 4DR, Attitude Black Metallic Exterior, Ivory Interior, 6-Speed Automatic w/OD

ToyotaCare

MSRP: $23,

Get your new Price

888-539-091

Images

Request Information | Schedule Test Drive | Get Pre-Approved | Compare

Narrow Your Search

Trims
- □ LE (3)
- □ SE (2)

Refine Search

Price
- □ $22,001-24,000 (1)
- □ $24,001-26,000 (4)

Refine Search

Fuel Types
- □ G (1)
- □ Gasoline Fuel (4)

Refine Search

Click to Confirm Availability

New 2014 Toyota Camry LE
Type: New Miles: 0 Stock #: K140415
Regular Unleaded I-4 2.5 L/152, MPG City: 25 MPG Hwy: 35***, 4DR, Attitude Black Metallic Exterior, Ash Interior, 6-Speed Automatic w/OD

ToyotaCare

MSRP: $24,

Get your new Price

888-539-091

Images

Request Information | Schedule Test Drive | Get Pre-Approved | Compare

SEARCH BMW 7 Series

New Inventory	Used Inventory
New 2013 BMW 7 Series 750Li xDrive Type: New Stock #: 13728	Used 2011 BMW 7 Series 740Li Type: Used Miles: 41710
New 2014 BMW 7 Series 740Li xDrive Type: New Stock #: 14142	Used 2003 BMW 5 Series 540iA Type: Used Miles: 148232
New 2014 BMW 7 Series 750Li xDrive Type: New Stock #: 14116	Used 2003 BMW 7 Series 745Li Type: Used Miles: 49138
New 2014 BMW 7 Series 750Li xDrive Type: New Stock #: 14141	Used 2007 BMW 3 Series 328i Type: Used Miles: 68708
New 2014 BMW 7 Series 750Li xDrive Type: New Stock #: 14280	Used 2007 BMW 3 Series 328xi Type: Used Miles: 82682
New 2014 BMW 7 Series 750Li	Used 2007 BMW 5 Series 525i Type: Used Miles: 88742

Total cost £415.00 over 12m

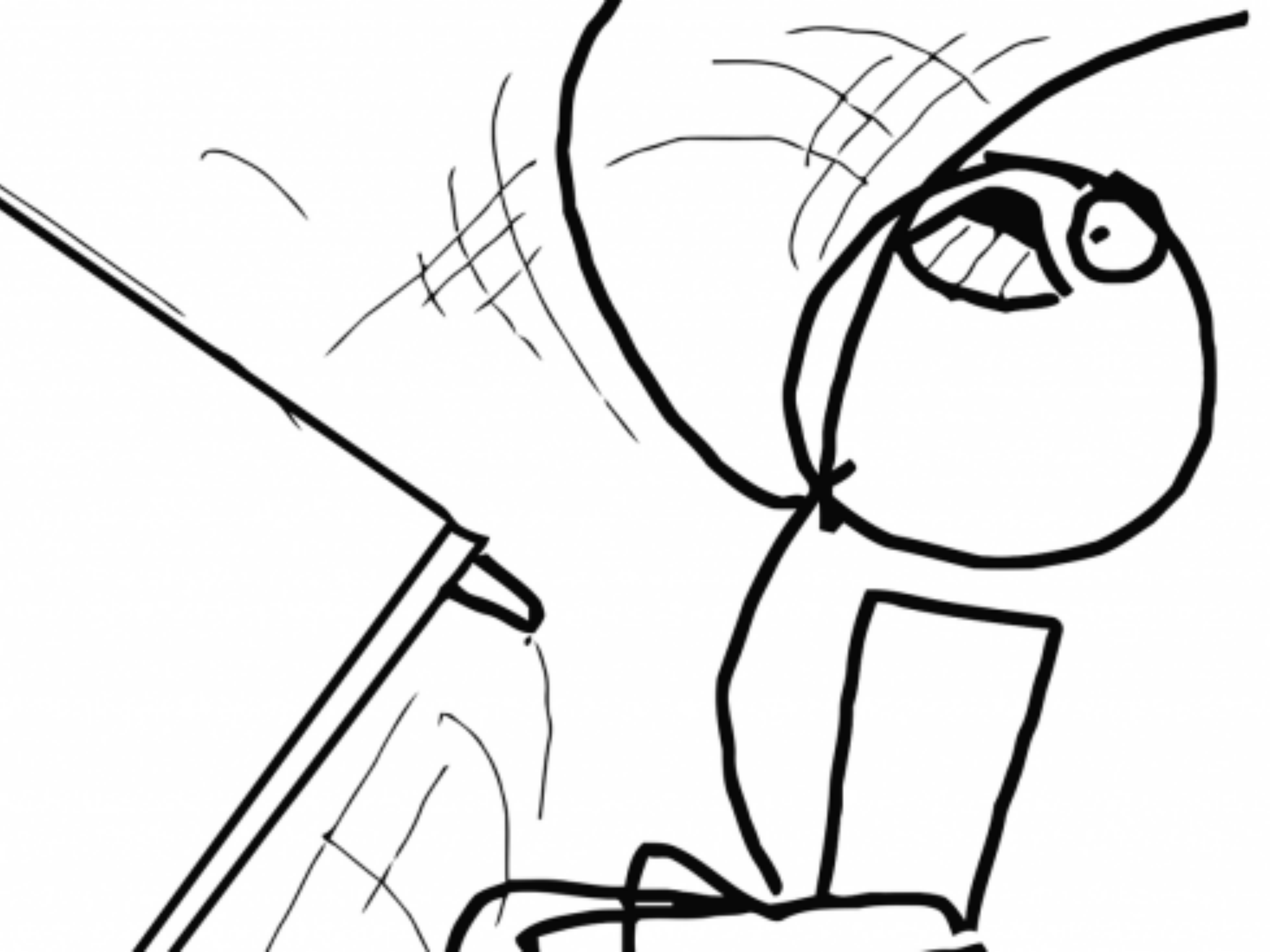
FREE Satio black
300 minutes to any network and unlimited texts
Total cost £420.00 over 12m

£35.00

phones 4u

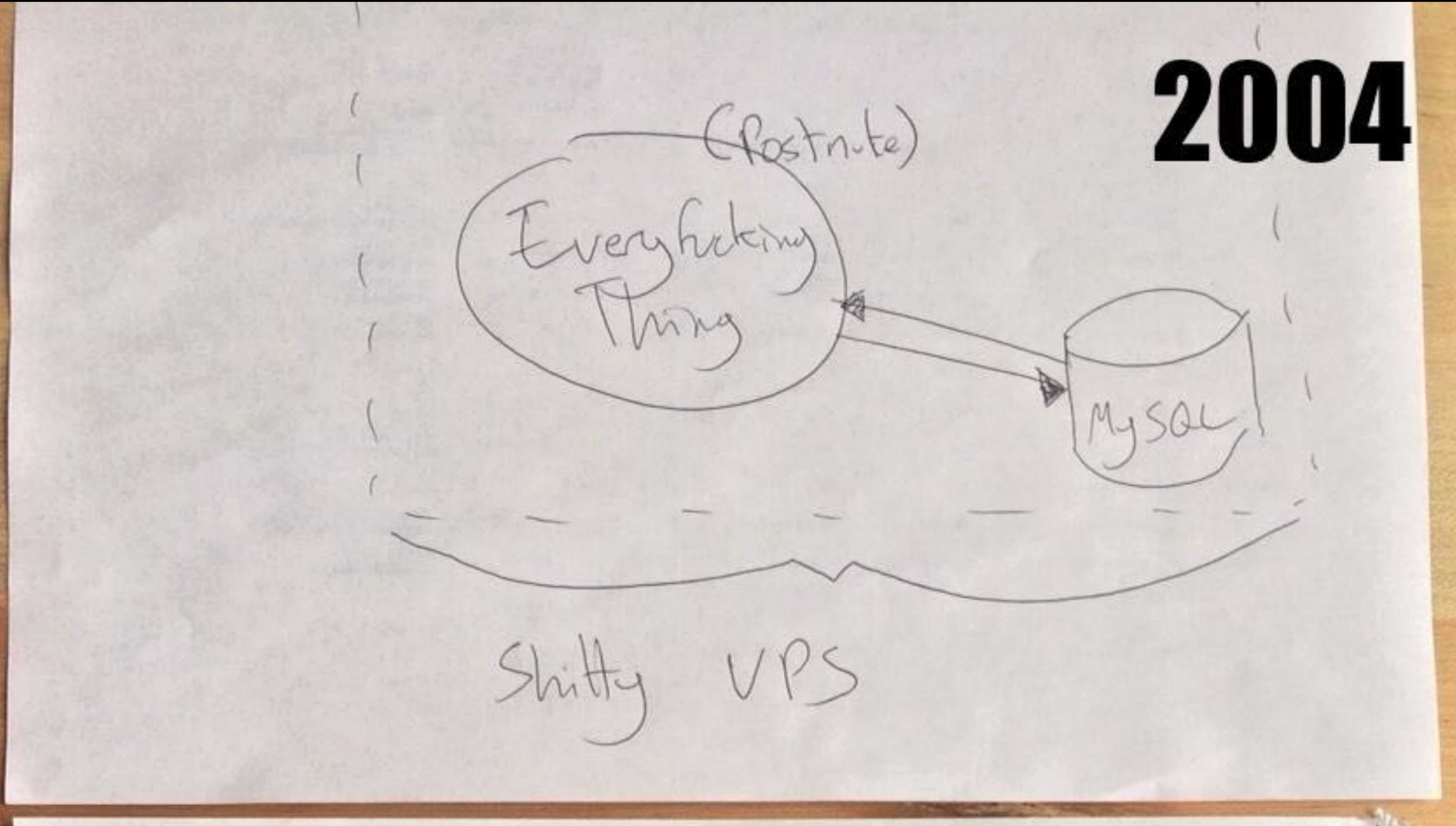
More Info

KAPTURE
BADASS
MOMENTS



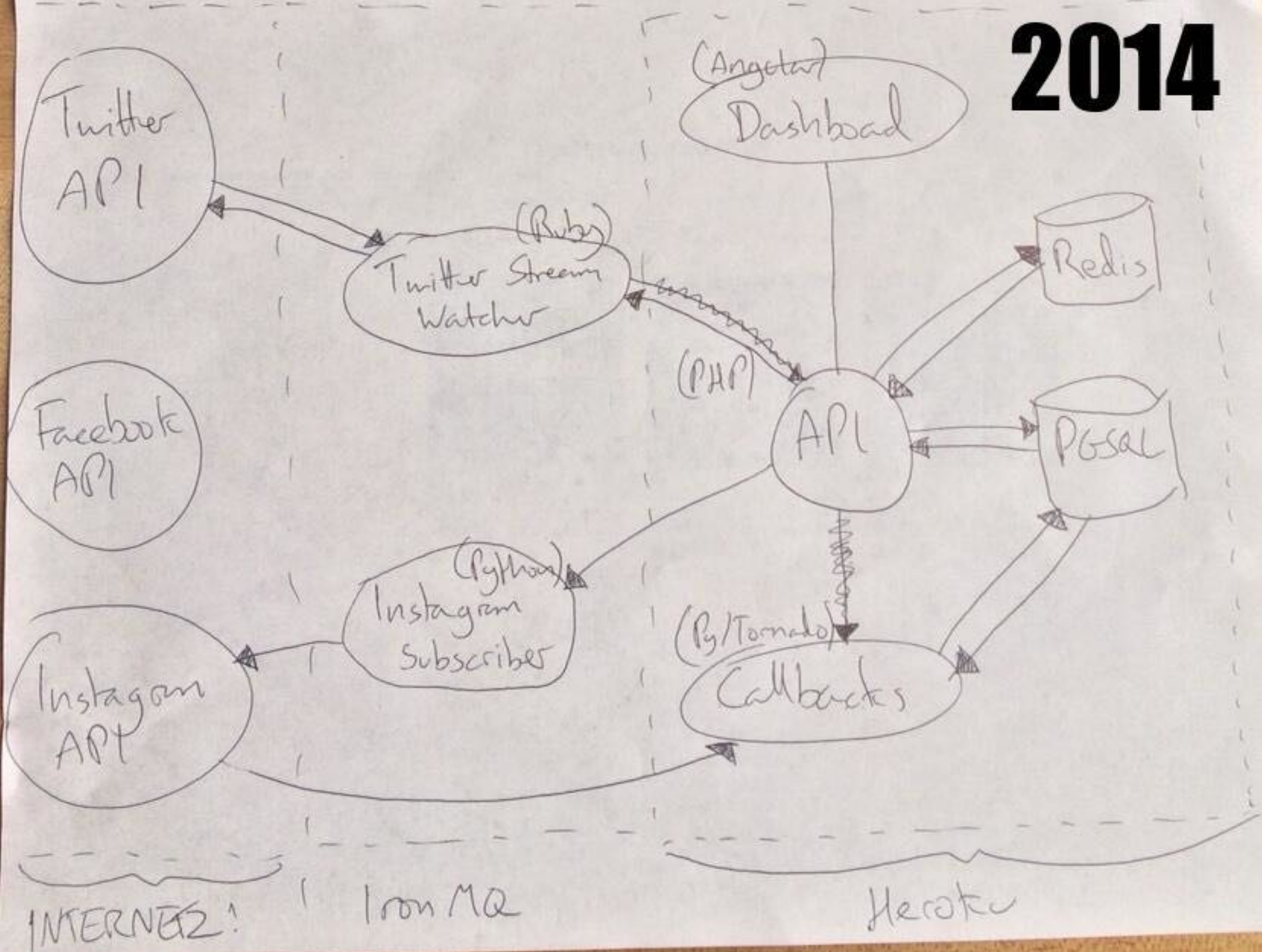
OLD SCHOOL

ARCHITECTURE



2004

2014


Twitter API
(Ruby)
Twitter Stream Watcher
(Angular)
Dashboad
Redis
(PHP)
API
PGSQL
Facebook API
(Python)
Instagram Subscriber
Instagram API
(Py/Tornado)
Callbacks
INTERNETZ!
Iron MQ
Heroku

http://girlsgotsole.com/blog/thankful-thursday-rest-days/

LEAVE YOUR CUSTOMERS ALONE

DATABASE SEEDING

NAMING THINGS IS HARD

ENDPOINT THEORY

CONSISTENCY IS KING

PLURAL V SINGULAR?

/users

/user/23

CONSISTENCY IS KING

PLURAL V SINGULAR?

/opportunities

/opportunity/43

CONSISTENCY IS KING

PLURAL V SINGULAR?

/people

/person/dave

CONSISTENCY IS KING

PLURAL V SINGULAR?

/places

/places/12

/places/12/checkins

/places/12/checkins/34

/checkins/34

QUERY STRINGS ARE FINE

NO NEED FOR SEO

~~/users/active/true~~

/users?active=true

AUTO-INCREMENT = BAD

/checkins/1

/checkins/2

/checkins/3

…

/checkins/2369

CTRL + S YOUR WEBSITE

AUTO-INCREMENT = BAD

```
$tiny = new \ZackKitzmiller\Tiny('lDpuU74QNH6B');

echo $tiny->to(5);
// E

echo $tiny->from('E');
// 5
```

github.com/zackkitzmiller/tiny-php

AUTO-INCREMENT = BAD

```
use Rhumsaa\Uuid\Uuid;
use Rhumsaa\Uuid\Exceptio

$uuid4 = Uuid::uuid4();

echo $uuid4;
// 25769c6c-d34d-4bfe-ba98-e0ee856f3e7a
```

github.com/ramsey/uuid

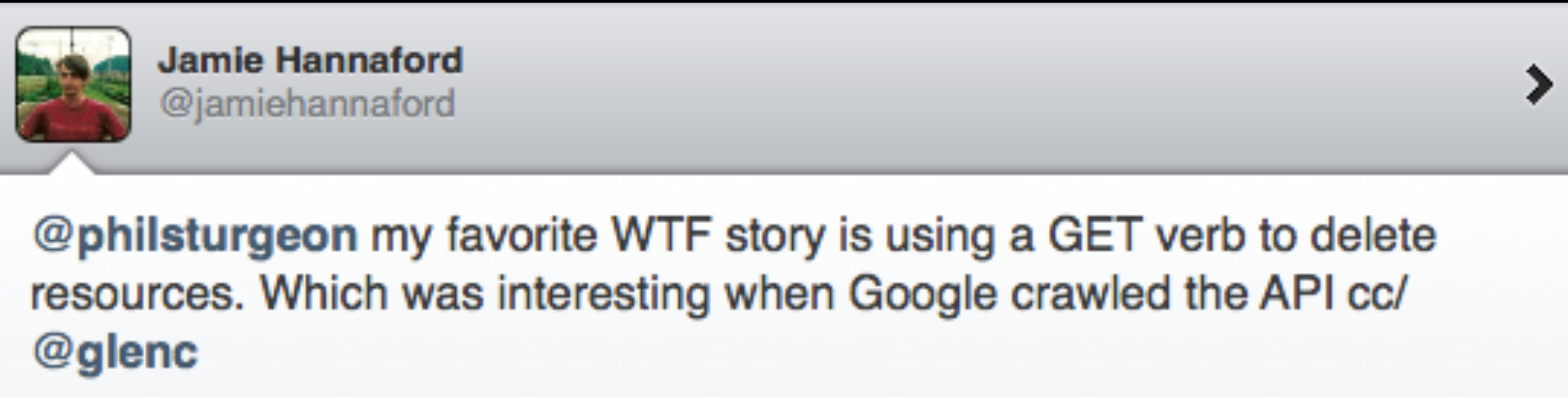
VERB SOUP

WHICH METHODS

List	GET	/users
Read	GET	/users/X
Update	PUT	/users/X
Update	*PATCH*	*/users/X*
Create	POST	/users
Delete	DELETE	/users/X
Image	PUT	/users/X/image
Images	*POST*	*/users/X/images*
Favourites	GET	/users/X/images

HONESTLY

HTTP VERBS MATTER



Jamie Hannaford
@jamiehannaford

@philsturgeon my favorite WTF story is using a GET verb to delete resources. Which was interesting when Google crawled the API cc/ @glenc

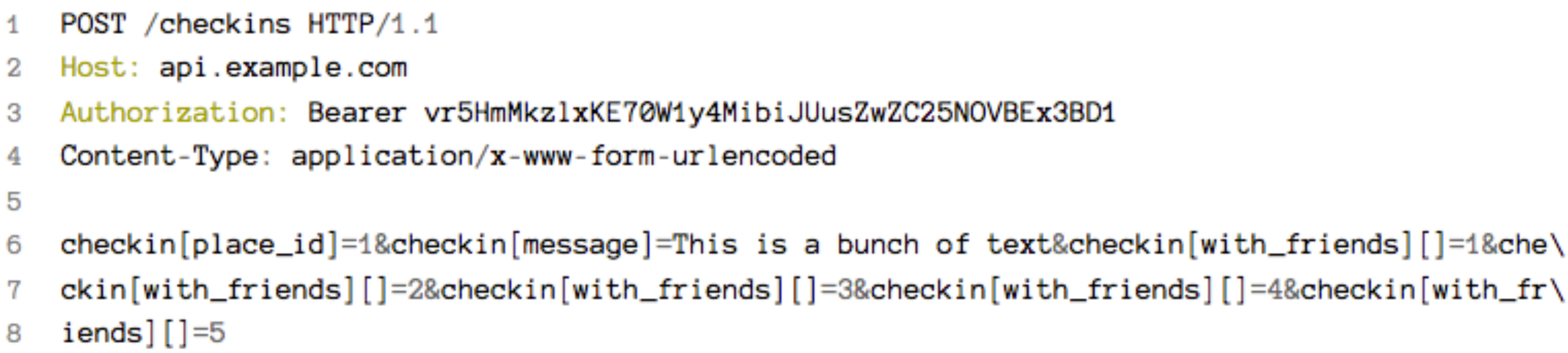
Dont be @jamiehannaford.
That sounds like a bad day.

BEFORE YOU SET OUT

PICK THE RIGHT FORMAT

JUST SEND JSON

FORM PAYLOADS



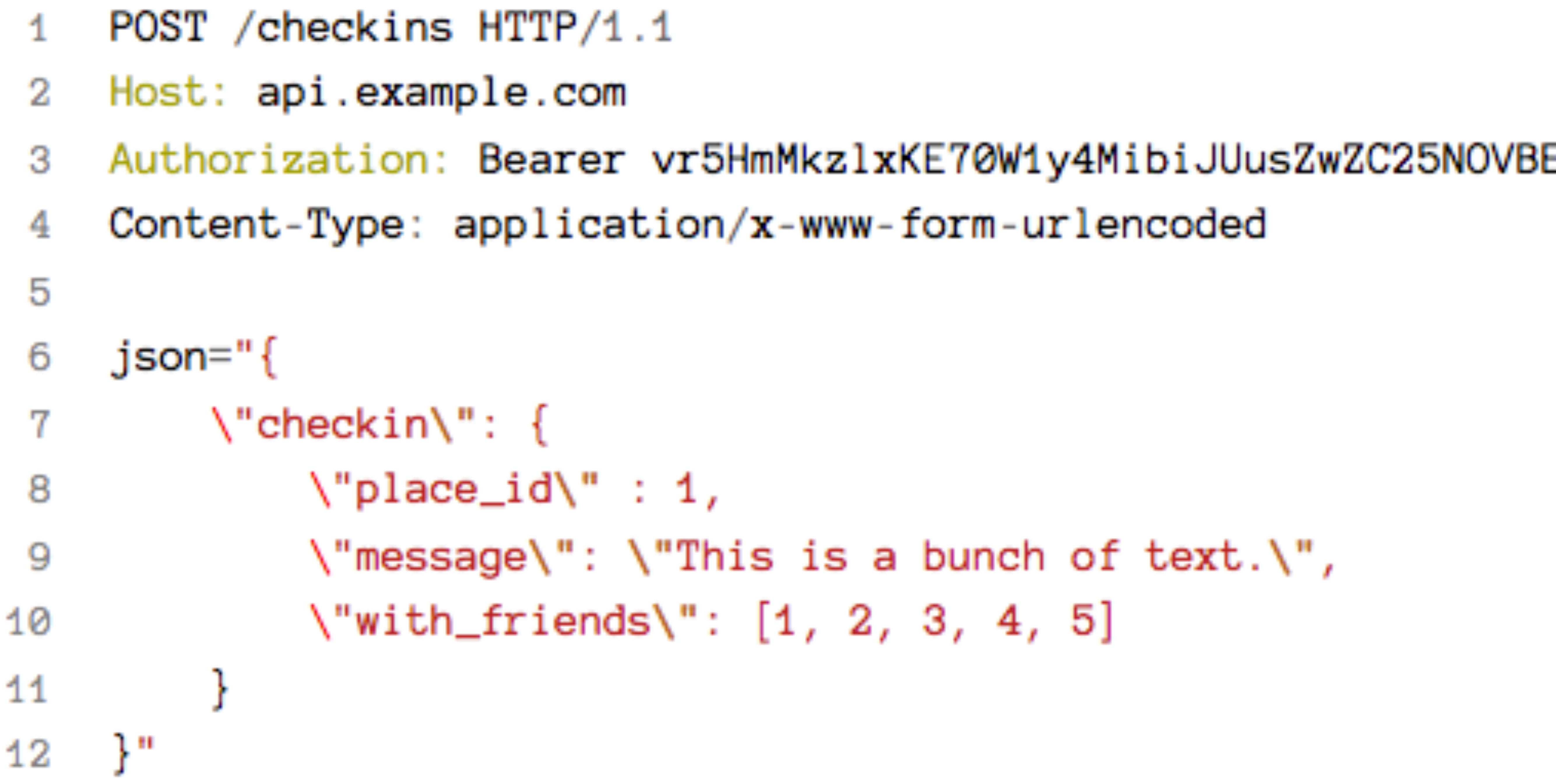
```
POST /checkins HTTP/1.1
Host: api.example.com
Authorization: Bearer vr5HmMkzlxKE70W1y4MibiJUusZwZC25NOVBEx3BD1
Content-Type: application/x-www-form-urlencoded

checkin[place_id]=1&checkin[message]=This is a bunch of text&checkin[with_friends][]=1&che\
ckin[with_friends][]=2&checkin[with_friends][]=3&checkin[with_friends][]=4&checkin[with_fr\
iends][]=5
```

foo=something&bar[baz]=thing&bar[stuff]=junk&bar=true

NOT LIKE THAT

HACKY PAYLOADS

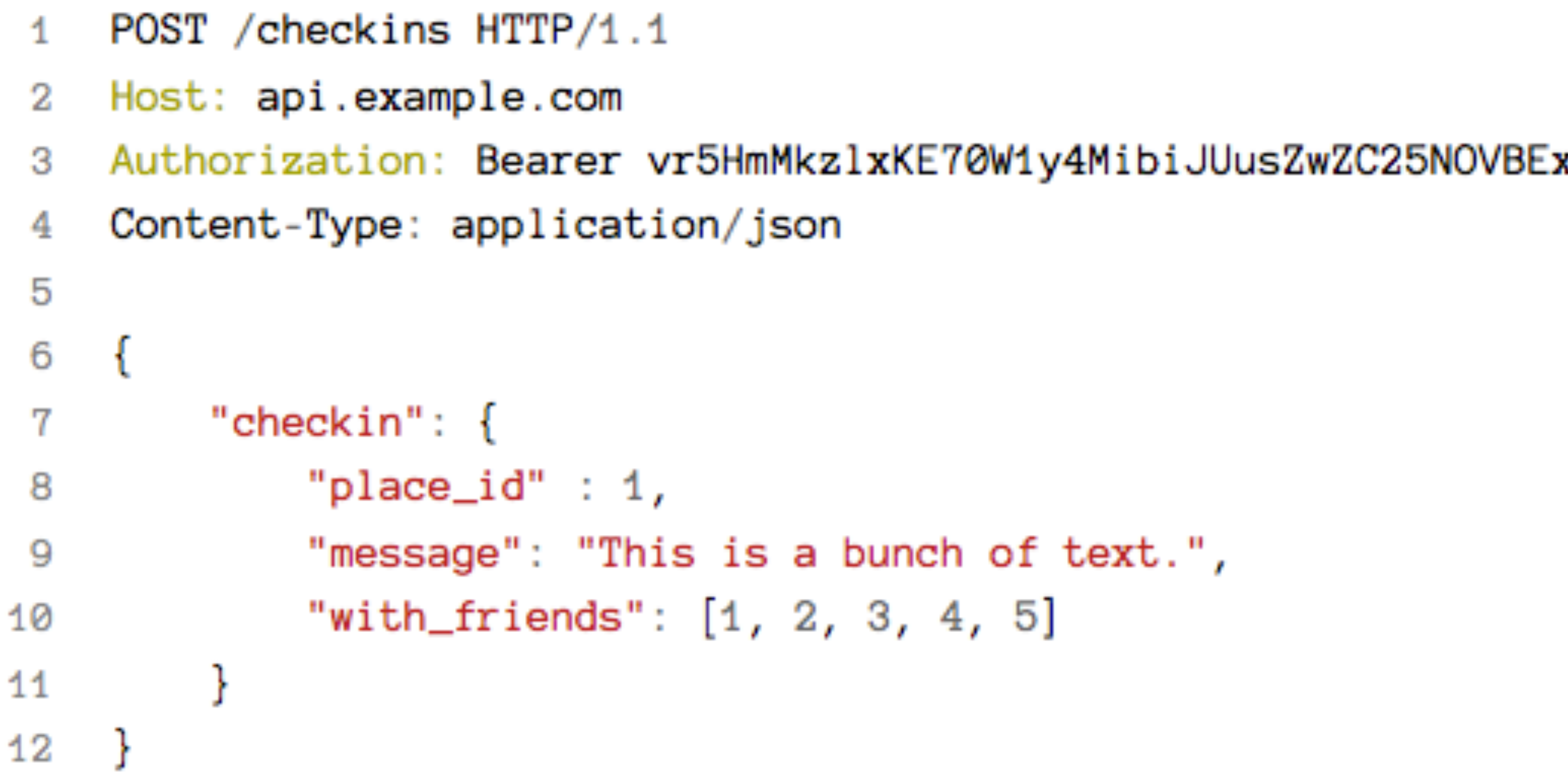


```
POST /checkins HTTP/1.1
Host: api.example.com
Authorization: Bearer vr5HmMkzlxKE70W1y4MibiJUusZwZC25NOVBE
Content-Type: application/x-www-form-urlencoded

json="{
    \"checkin\": {
        \"place_id\" : 1,
        \"message\": \"This is a bunch of text.\",
        \"with_friends\": [1, 2, 3, 4, 5]
    }
}"
```

THNX!

REAL JSON PAYLOADS



```
POST /checkins HTTP/1.1
Host: api.example.com
Authorization: Bearer vr5HmMkzlxKE70W1y4MibiJUusZwZC25NOVBEx
Content-Type: application/json

{
    "checkin": {
        "place_id" : 1,
        "message": "This is a bunch of text.",
        "with_friends": [1, 2, 3, 4, 5]
    }
}
```

THE HTTP WAY

READING REAL DATA IS EASY

Lazy

```
$_POST[‘foo’];
```

Proper

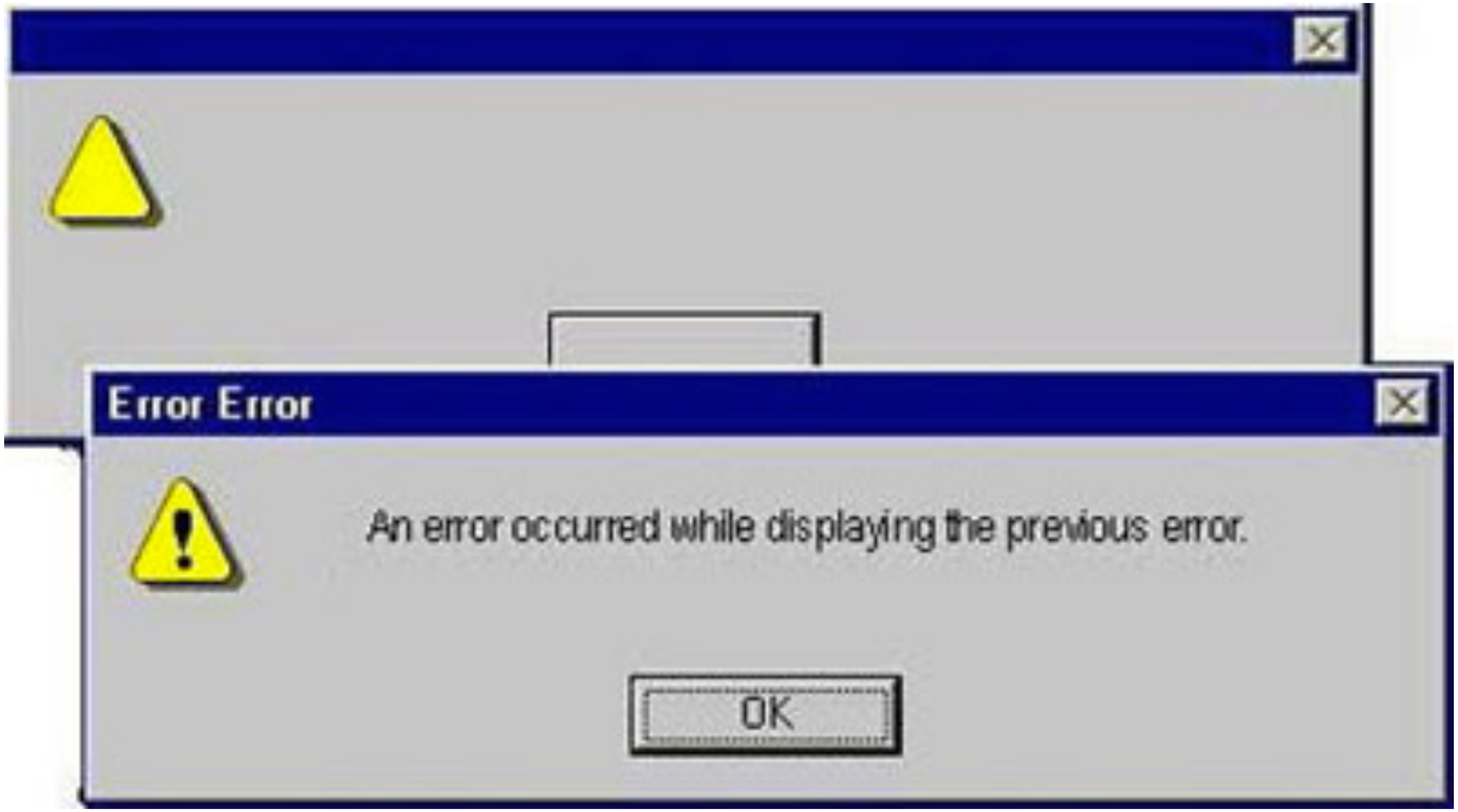
```
json_decode(file_get_contents(‘php://input'));
```

Proper in Laravel

```
Input::json(‘foo’);
```

BEING WRONG CORRECTLY

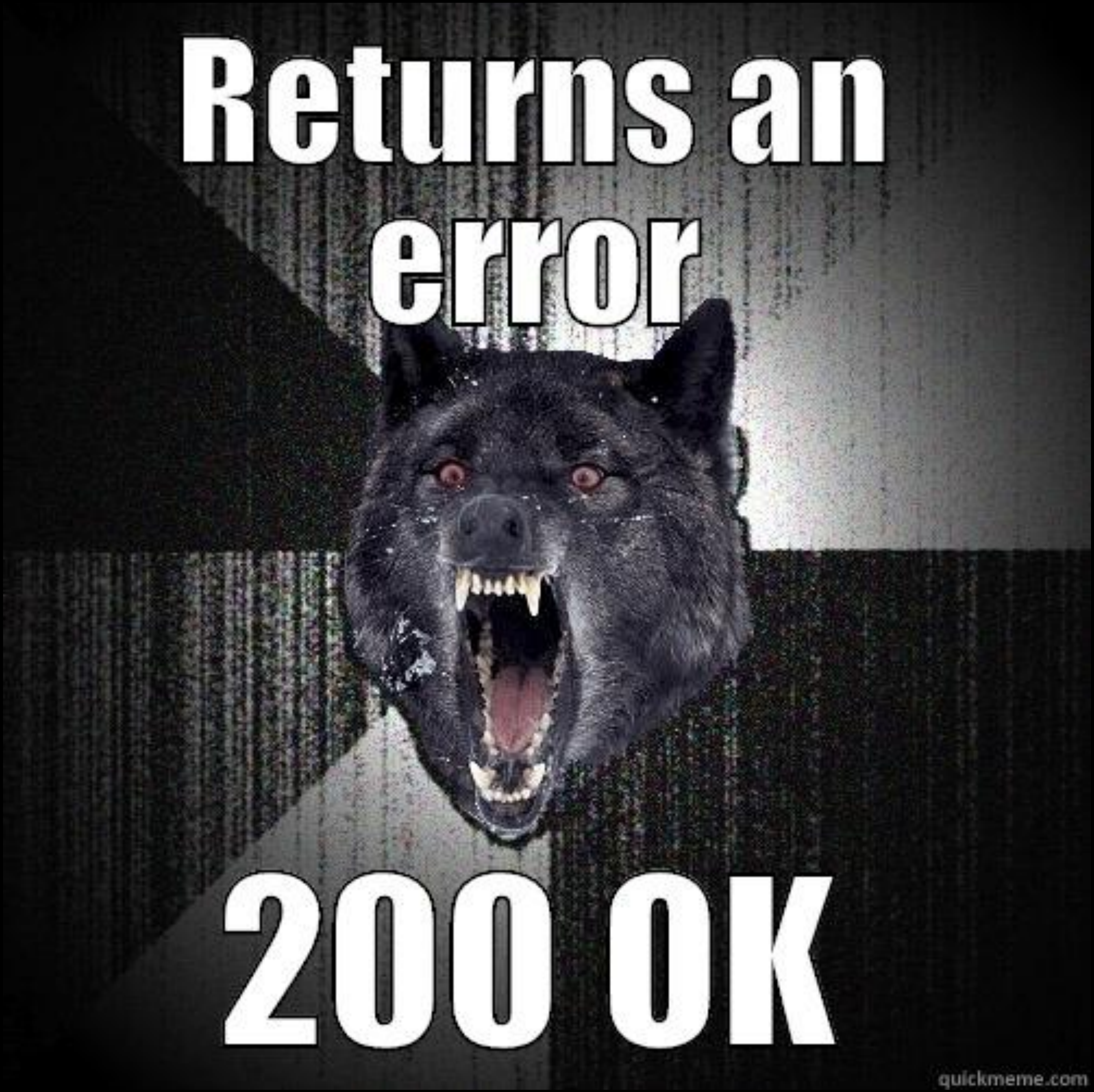
ERROR MESSAGES



Error Error

An error occurred while displaying the previous error.

http://www.funcage.com/blog/page/439/


Returns an error
200 OK
quickmeme.com

200 IS NOT THE ONLY SUCCESS

```
if ($statusCode != 200) {
    throw new Exception('AAGHH!!');
}
```

2xx is all about success

3xx is all about redirection

4xx is all about client errors

5xx is all about service errors

200 - Generic everything is OK

201 - Created something OK

202 - Accepted but is being processed async

400 - Bad Request (Validation?)

401 - Unauthorized

403 - Current user is forbidden

404 - That URL is not a valid route

405 - Method Not Allowed

410 - Data has been deleted, deactivated, suspended, etc

500 - Something unexpected happened and it is the APIs fault

503 - API is not here right now, please try again later

418 - I am a Teapot

http://httpstatus.es/418

WHAT HAPPENED

CLEAR, HUMAN ERRORS

```
{
 "error": {
  "errors": [
   {
    "domain": "youtube.parameter",
    "reason": "missingRequiredParameter",
    "message": "No filter selected.",
    "locationType": "parameter",
    "location": ""
   }
  ],
  "code": 400,
  "message": "No filter selected."
 }
}
```

WHAT HAPPENED

ERRORS SHOULD MAKE SENSE

```
"reason": "missingRequiredParameter",
"message": "No filter selected.",
```

…

```
&mine=true
```

WTF

WHAT HAPPENED

SUPPLEMENT HTTP CODES

```
{
    "error": {
        "type": "OAuthException",
        "message": "Session has expired at unix time
1385243766. The current unix time is 1385848532"
    }
}
```

WHAT HAPPENED

SUPPLEMENT HTTP CODES

```
{
    "error": {
        "message": "(#210) Subject must be a page.",
        "type": "OAuthException",
        "code": 210
    }
}
```

WHAT HAPPENED

SUPPLEMENT HTTP CODES

```
{
    "error": {
        "message": "(#210) Subject must be a page.",
        "type": "OAuthException",
        "code": 210,
        "url": “http://developers.facebook.com/errors#210“
    }
}
```

OAUTH 2.0

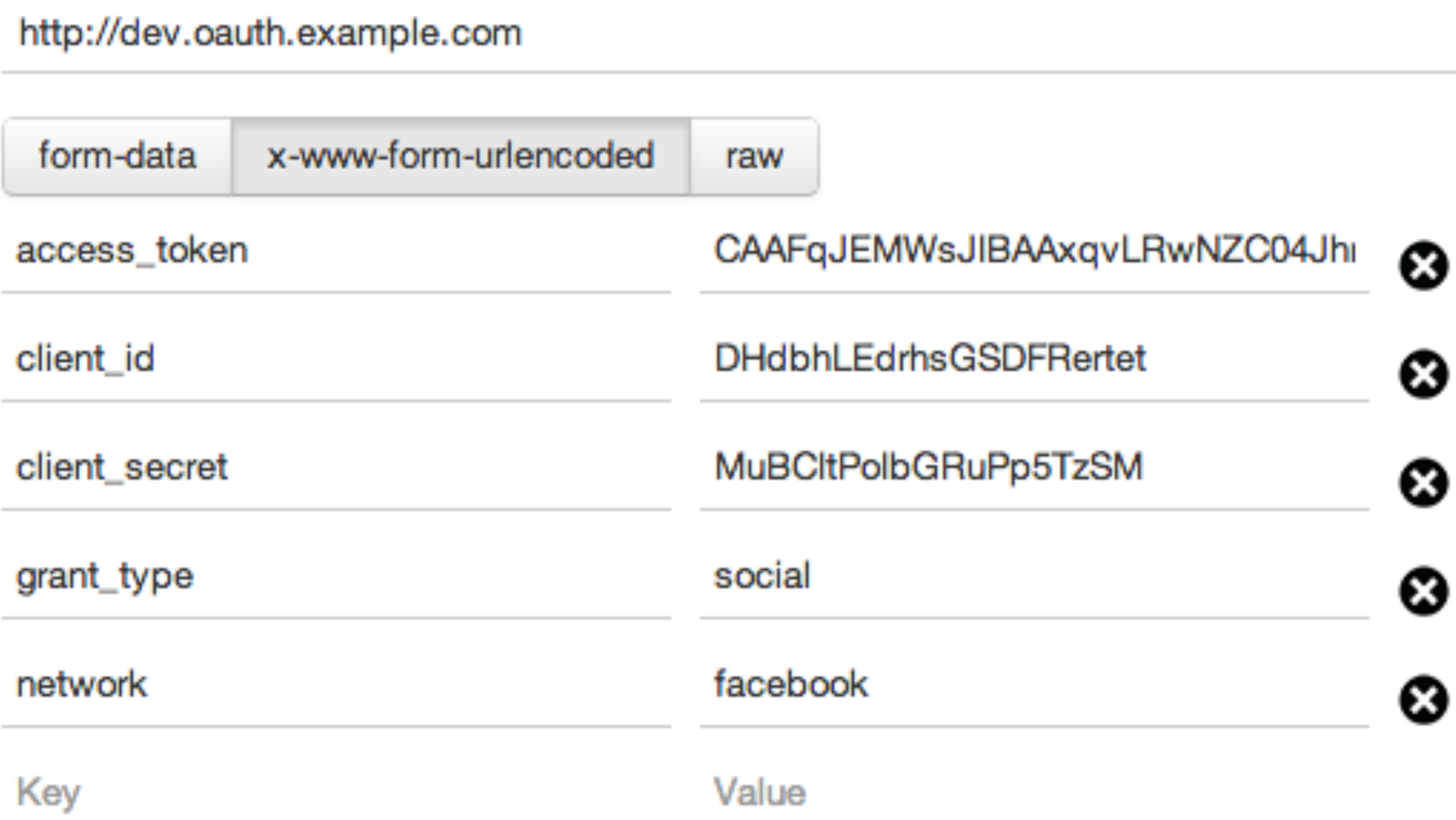
THE LEAGUE OF EXTRAORDINARY PACKAGES

thephpleague.com

github.com/thephpleague/oauth2-server

PASSWORDS, IMPLICIT, SOCIAL LOGINS...

OAUTH 2 CAN DO A LOT



http://dev.oauth.example.com

access_token	CAAFqJEMWsJIBAAxqvLRwNZC04Jh
client_id	DHdbhLEdrhsGSDFRertet
client_secret	MuBCltPolbGRuPp5TzSM
grant_type	social
network	facebook
Key	Value

USE SSL

EXCEPT FOR…

LOL

SERIOUSLY

FACEBOOK... YOU B#%@*DS!!!

Refresh Tokens?

Lol

STILL SERIOUSLY

YOUTUBE… YOU SEMI-B#%@*DS!!!

Refresh Tokens?

Kinda

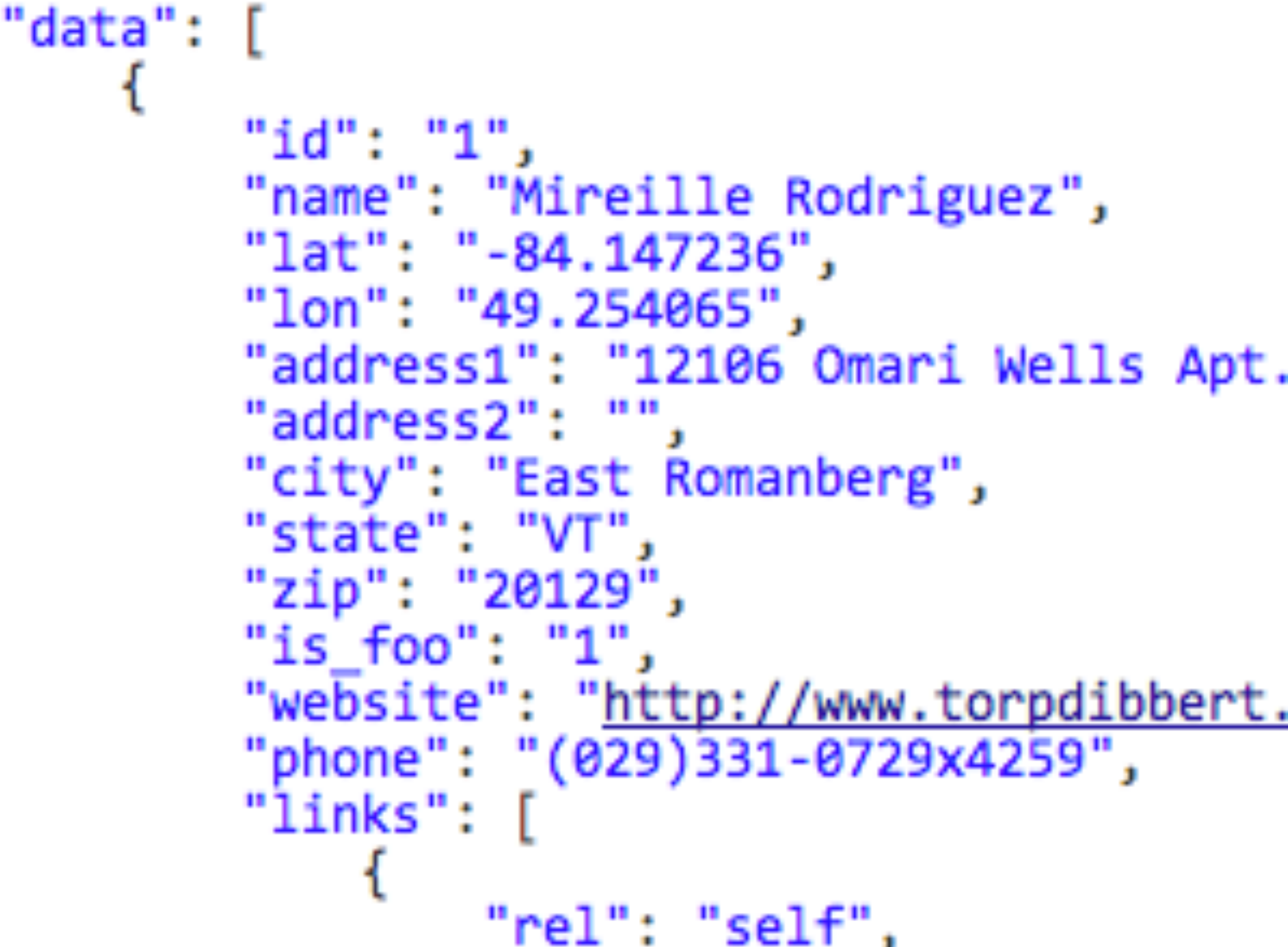
DONT LET USERS BEHIND THE CURTAIN

PRESENTATION LAYER

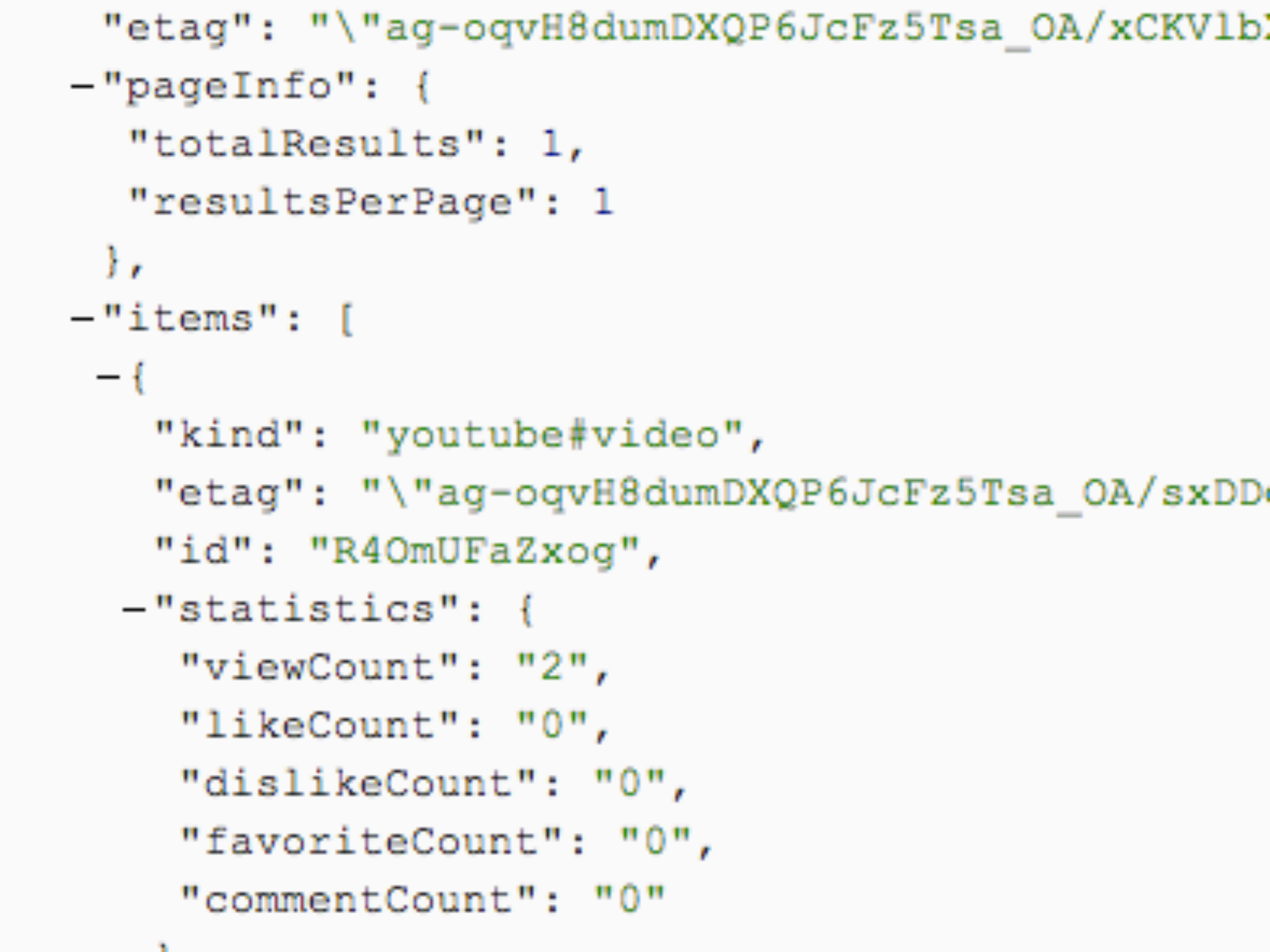
DONT LET USERS BEHIND THE CURTAIN

PRESENTATION LAYER

```
return Places::all();
```



```
"data": [
    {
        "id": "1",
        "name": "Mireille Rodriguez",
        "lat": "-84.147236",
        "lon": "49.254065",
        "address1": "12106 Omari Wells Apt.
        "address2": "",
        "city": "East Romanberg",
        "state": "VT",
        "zip": "20129",
        "is_foo": "1",
        "website": "http://www.torpdibbert.
        "phone": "(029)331-0729x4259",
        "links": [
            {
                "rel": "self",
```



```
  "etag": "\"ag-oqvH8dumDXQP6JcFz5Tsa_OA/xCKVlb
-"pageInfo": {
   "totalResults": 1,
   "resultsPerPage": 1
  },
-"items": [
 -{
    "kind": "youtube#video",
    "etag": "\"ag-oqvH8dumDXQP6JcFz5Tsa_OA/sxDD
    "id": "R4OmUFaZxog",
  -"statistics": {
     "viewCount": "2",
     "likeCount": "0",
     "dislikeCount": "0",
     "favoriteCount": "0",
     "commentCount": "0"
    }
```

TRANSFORMERS… ASSEMBLE!

```
public function transform(Book $book)
{
    return [
        'id' => (int) $book->id,
        'title' => $book->title,
        'year' => $book->yr,
        ‘created' => (string) $book->created_at,
    ];
}
```

fractal.thephpleague.com

FLEXIBLE RESPONSES

```
GET /checkins/dsfXte
?include=place,user,activity
```

DATA GROWS FAST

PAGINATE

```
{
   "data": [
      ...
   ],
   "cursors": {
      "after": "MTI=",
      "next_url": "https://api.example.com/places
?cursor=MTI%3"
   }
}
```

DEFINE A LIMIT RANGE

```
if ($limit < 1 || $limit > 100) {
    $limit = 100;
}
```

http://www.engineersgotblued.com/

IF YOU LOVE YOUR JOB

AUTOMATE TESTING

PHPUNIT + BEHAT

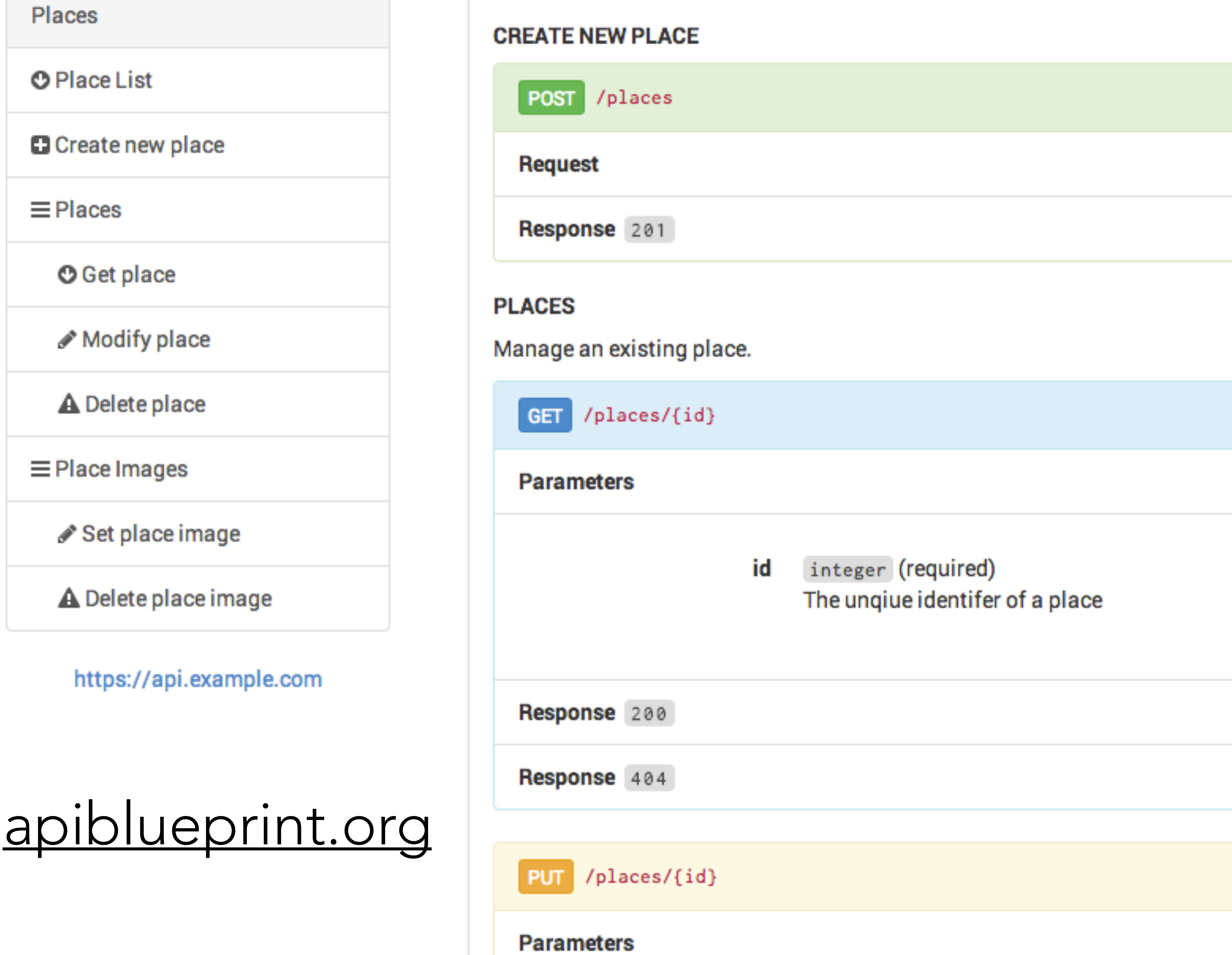
http://www.bil-jac.com/bestfriendsclub.php

```
Scenario: Find a merchant
  When I request "GET /moments/1"
  Then I get a "200" response
  And scope into the "data" property
    And the properties exist:
      """
      id
      title
      year
      created
      """
```

```
Scenario: Try to find an ` checkin
  When I request "GET /checkins/nope"
  Then I get a "404" response
```

```
Scenario:Wrong Arguments for user follow
  Given I have the payload:
      """
      {"is_following": "foo"}
      """
  When I request "PUT /users/1”
  Then I get a "400" response
```

Not a boolean



- Places
  - Place List
  - Create new place
- Places
  - Get place
  - Modify place
  - Delete place
- Place Images
  - Set place image
  - Delete place image

https://api.example.com

CREATE NEW PLACE

POST `/places`

Request

Response `201`

PLACES

Manage an existing place.

GET `/places/{id}`

Parameters

id `integer` (required)
The unqiue identifer of a place

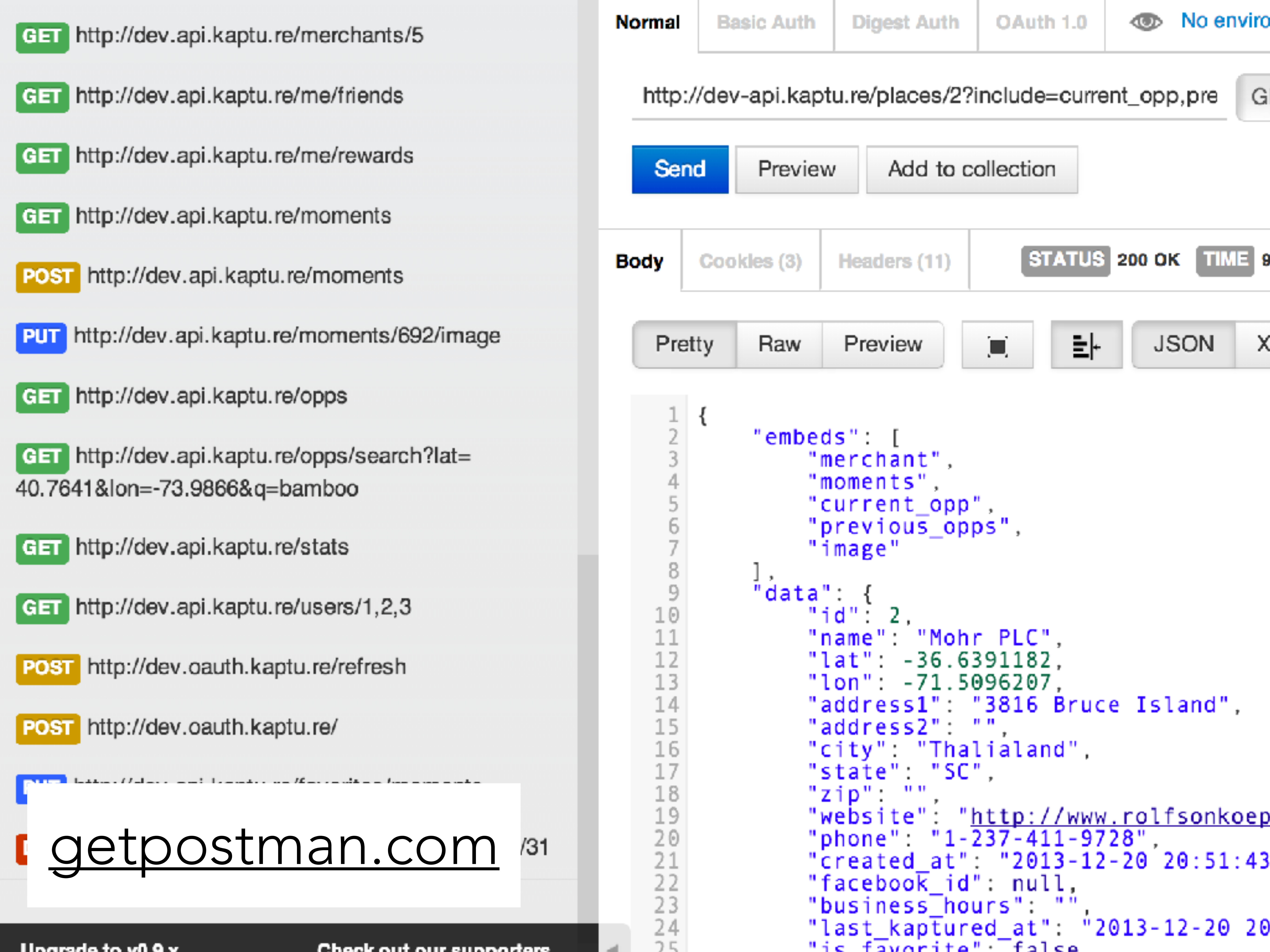
Response `200`

Response `404`

PUT `/places/{id}`

Parameters

apiblueprint.org



- GET http://dev.api.kaptu.re/merchants/5
- GET http://dev.api.kaptu.re/me/friends
- GET http://dev.api.kaptu.re/me/rewards
- GET http://dev.api.kaptu.re/moments
- POST http://dev.api.kaptu.re/moments
- PUT http://dev.api.kaptu.re/moments/692/image
- GET http://dev.api.kaptu.re/opps
- GET http://dev.api.kaptu.re/opps/search?lat=40.7641&lon=-73.9866&q=bamboo
- GET http://dev.api.kaptu.re/stats
- GET http://dev.api.kaptu.re/users/1,2,3
- POST http://dev.oauth.kaptu.re/refresh
- POST http://dev.oauth.kaptu.re/
- PUT http://dev.api.kaptu.re/favorites/moments
- /31

http://dev-api.kaptu.re/places/2?include=current_opp,pre

```
{
    "embeds": [
        "merchant",
        "moments",
        "current_opp",
        "previous_opps",
        "image"
    ],
    "data": {
        "id": 2,
        "name": "Mohr PLC",
        "lat": -36.6391182,
        "lon": -71.5096207,
        "address1": "3816 Bruce Island",
        "address2": "",
        "city": "Thalialand",
        "state": "SC",
        "zip": "",
        "website": "http://www.rolfsonkoep
        "phone": "1-237-411-9728",
        "created_at": "2013-12-20 20:51:43
        "facebook_id": null,
        "business_hours": "",
        "last_kaptured_at": "2013-12-20 20
        "is_favorite": false
```

getpostman.com

/V1/DOESNT COUNT

VERSIONING

https://api.example.com/**v1**/places

/V1/DOESNT COUNT

VERSIONING

https://api-**v1**.example.com/places

/V1/DOESNT COUNT

VERSIONING

Accept: application/vnd.example+json; version=**1**

Accept: application/vnd.example+json; version=**2**

/V1/DOESNT COUNT

VERSIONING

Accept: application/vnd.example.**user**+json; version=1

Accept: application/vnd.example.**user**+json; version=2

/V1/DOESNT COUNT

VERSIONING

~~Copy Facebook~~

~~Maybe?~~

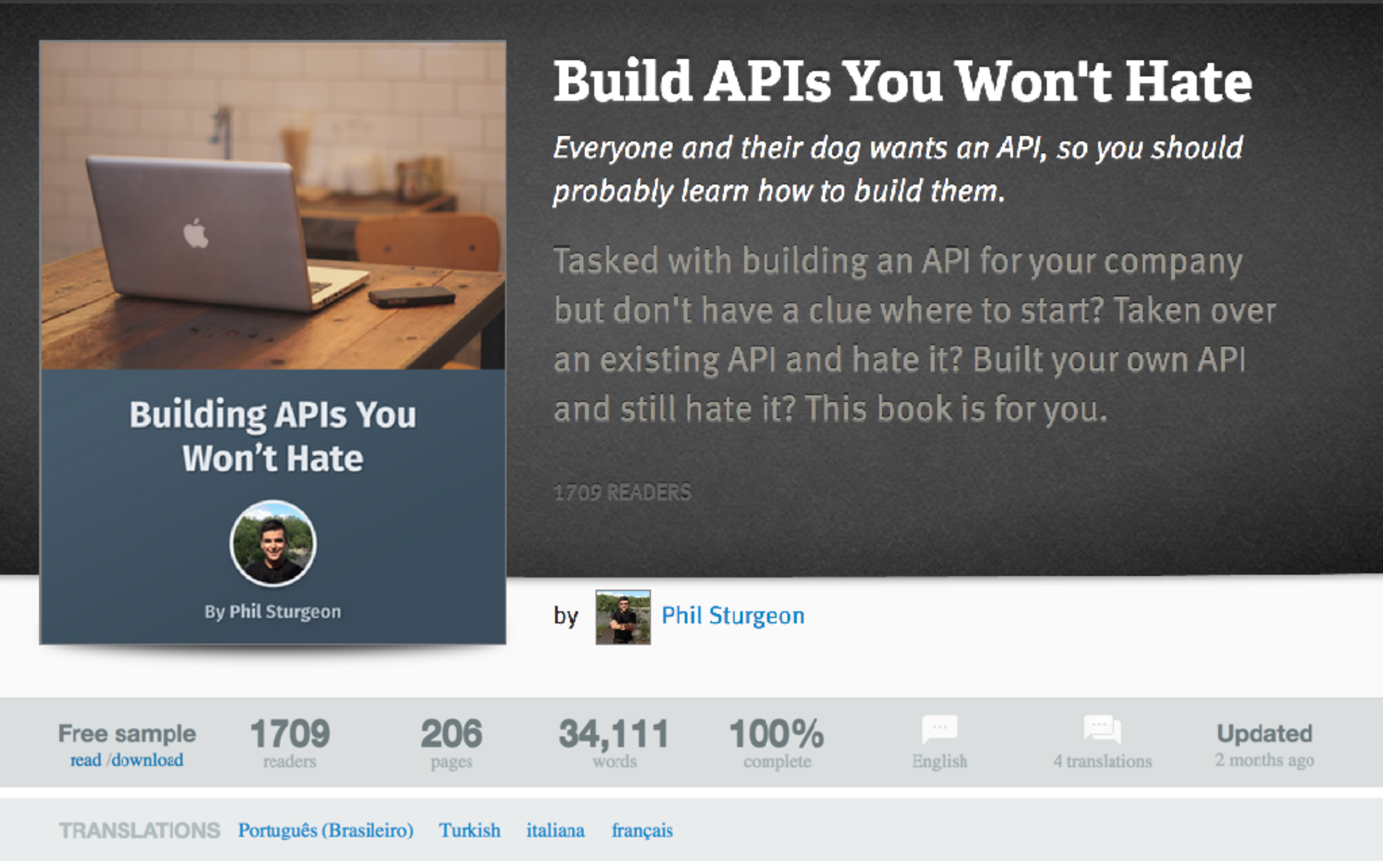
~~**THIS ONE TIME!**~~

Facebook ruined the one good thing they ever did

DONT BE THAT GUY

EVERYTHING IS WRONG

troyhunt.com/2014/02/your-api-versioning-is-wrong-which-is.html



Building APIs You Won't Hate

By Phil Sturgeon

Build APIs You Won't Hate

Everyone and their dog wants an API, so you should probably learn how to build them.

Tasked with building an API for your company but don't have a clue where to start? Taken over an existing API and hate it? Built your own API and still hate it? This book is for you.

1709 READERS

by Phil Sturgeon

Free sample	1709	206	34,111	100%			Updated
read /download	readers	pages	words	complete	English	4 translations	2 months ago

TRANSLATIONS Português (Brasileiro) Turkish italiana français

leanpub.com/build-apis-you-wont-hate/c/ARGENTINA14