

# APIs

## (for beginners)

**A**pplication  
**P**rogramming  
**I**nterface

an Interface  
used by Programs to interact  
with an Application



# Application

A close-up photograph of a typewriter keyboard. The keys visible are the numeric keypad (0-9) and the space bar. The keys are dark grey or black with light-colored lettering. The space bar has a small circular hole near its center. The background is dark.

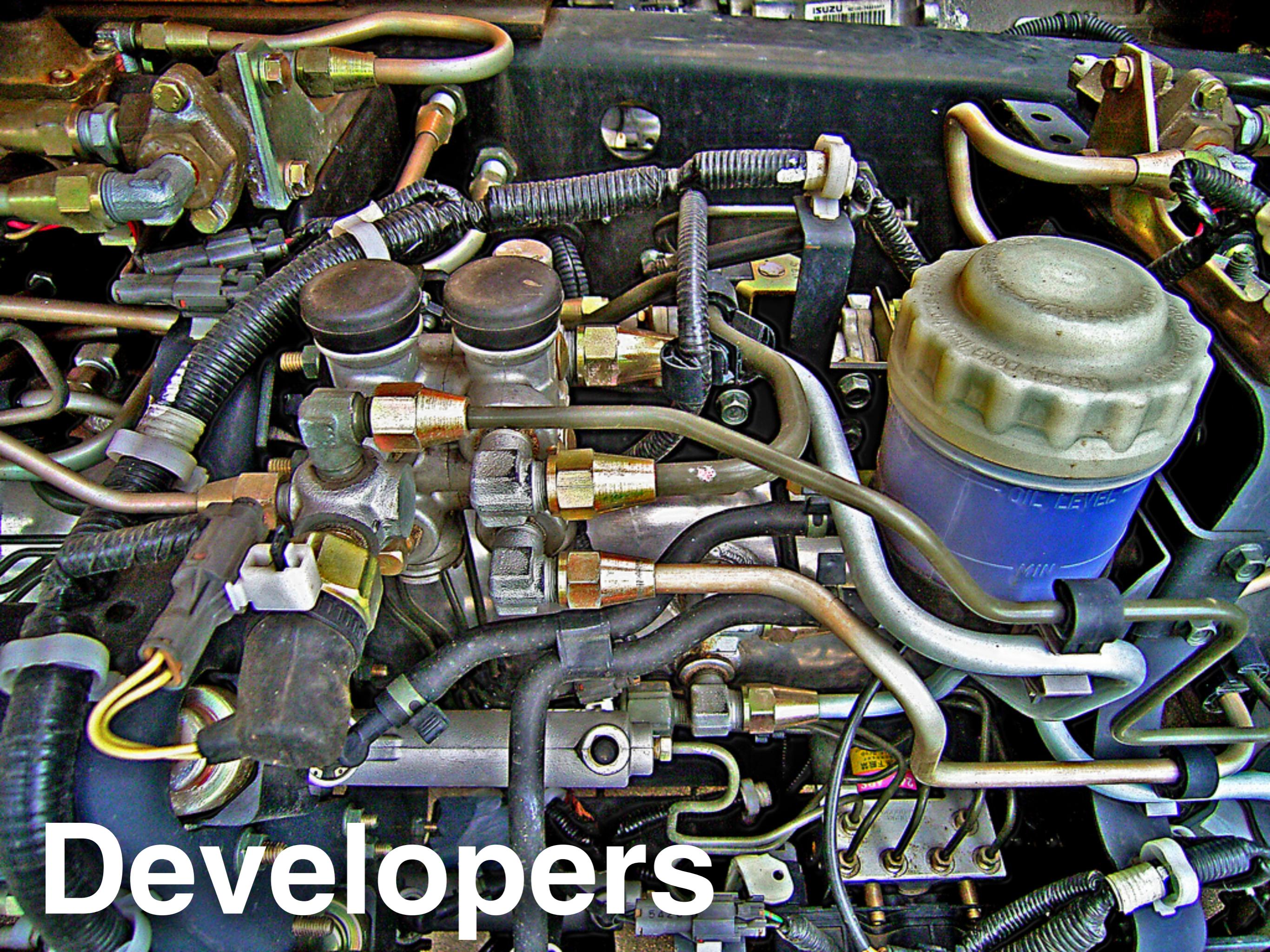
**(User) Interface**

# Program



No (direct)  
human usage  
of APIs





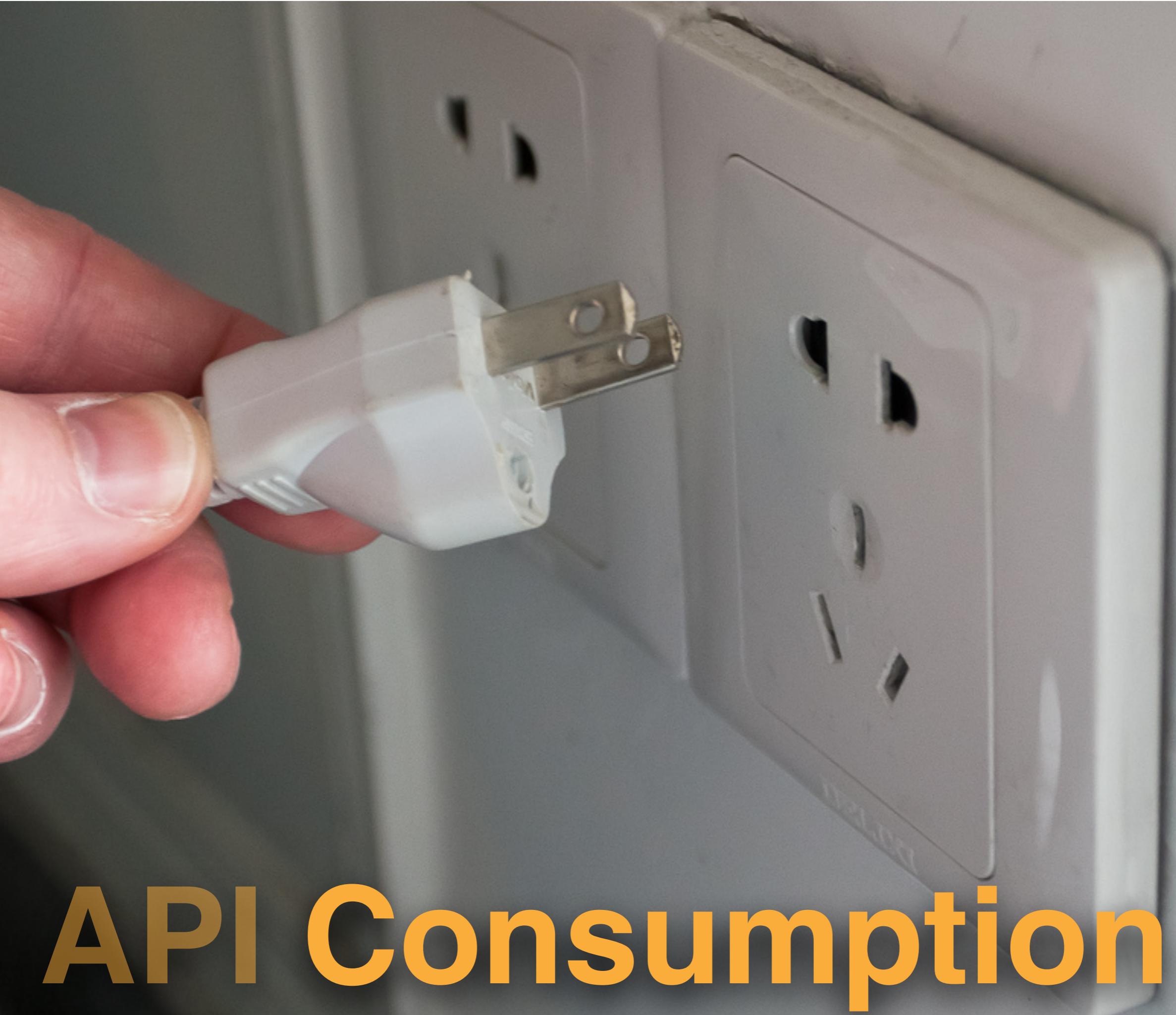
# Developers

**APIs expose  
something useful**



# API

**Developers  
write Programs  
which consumes APIs**



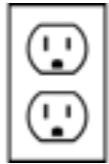
# API Consumption

# Web APIs



[www.programmableweb.com/apis/directory](https://www.programmableweb.com/apis/directory)

# Google Maps JS API



developers.google.com

Connexion

Google Developers

Google Maps JavaScript API v3

Get Started Documentation Reference Showcase Support Blog GDG Live

# Google Maps Javascript API v3

Get Started →

Demos: Base Maps Satellite Street View Places Routing Data Visualization

Base Maps

For the last decade, we've obsessed over building great maps—maps that are comprehensive, accurate, and easy to use.

# AirBnB



airbnb  Browse Sign Up Log In Help List Your Space

Filters

1000+ Rentals · Paris

**€ 49**

Cosy central one bedroom apart...  
Entire home/apt · 9 reviews · XI Arrondissement, P...

**€ 100**

Modern Quiet Flat Champs Elysees  
Entire home/apt · 73 reviews · VIII Arrondissement...

**€ 88**

Paris à la Folie, 2R, top location  
Entire home/apt · 7 reviews · XI Arrondissement, P...

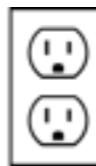
**€ 280**

Amazing View on the Eiffel Tower  
Entire home/apt · 6 reviews · VII Arrondissement, ...

Map of Paris showing the locations of the listed rentals. Red pins mark the approximate locations of each apartment across various arrondissements.

Language and Currency

# Twitter API



The screenshot shows a web browser window for the Twitter Developers documentation site at [dev.twitter.com](https://dev.twitter.com). The page title is "The Search API".

The left sidebar contains a navigation menu with the following items:

- API Console Tool
- Public API
- Uploading Media
- Uploading Media: Multiple Photos
- The Search API
- The Search API: Tweets by Place
- Working with Timelines
- API Rate Limits
- API Rate Limits: Chart
- GET statuses/mentions\_timeline
- GET statuses/user\_timeline
- GET statuses/home\_timeline
- GET statuses/retweets\_of\_me

The main content area has the following sections:

## The Search API

The Twitter Search API is part of Twitter's v1.1 REST API. It allows queries against the indices of recent or popular Tweets and behaves similarly to, but not exactly like the Search feature available in Twitter mobile or web clients, such as [Twitter.com search](#).

Before getting involved, it's important to know that the Search API is focused on relevance and not completeness. This means that some Tweets and users may be missing from search results. If you want to match for completeness you should consider using a [Streaming API](#) instead.

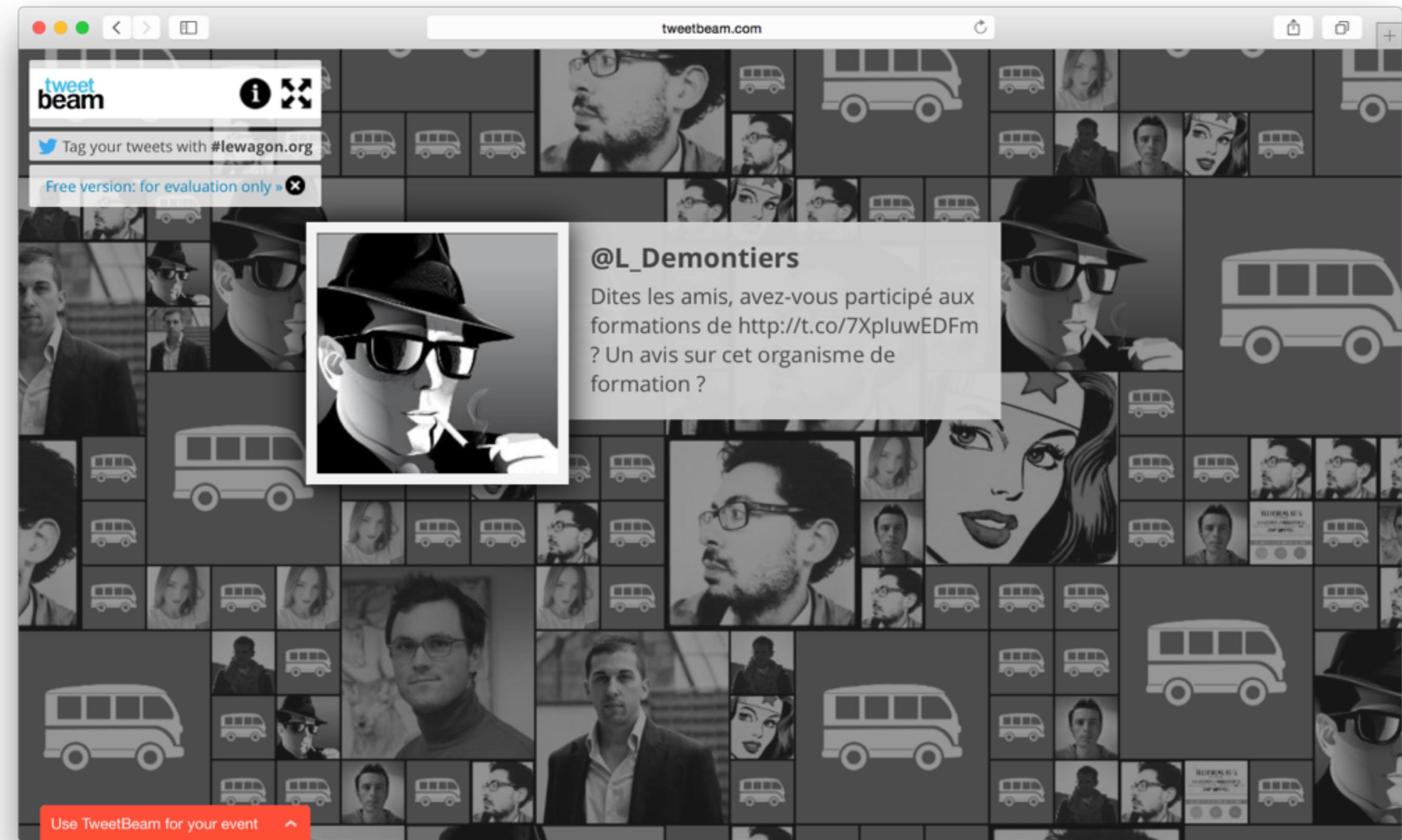
A detailed reference on this API endpoint can be found at [GET search/tweets](#).

## How to build a query

The best way to build a query and test if it's valid and will return matched Tweets is to first try it at [twitter.com/search](#). As you get a satisfactory result set, the URL loaded in the browser will contain the proper query syntax that can be reused in the API endpoint. Here's an example:

1. We want to search for tweets referencing @twitterapi account. First, we run the

# TweetBeam



The screenshot shows the TweetBeam application interface. At the top, there's a navigation bar with standard Mac OS X window controls (red, yellow, green buttons) and a title bar displaying "tweetbeam.com". Below the title bar is a sidebar containing the "tweetbeam" logo, a help icon (info symbol), and a Twitter icon with the text "Tag your tweets with #lewagon.org". A message "Free version: for evaluation only »" with a close button is also present. The main area features a large grid of user profiles and event-related icons (minivans). A prominent white box highlights a tweet from the user "@L\_Demontiers" with the text: "Dites les amis, avez-vous participé aux formations de <http://t.co/7XpluwEDFm> ? Un avis sur cet organisme de formation ?". At the bottom left, a red footer bar contains the text "Use TweetBeam for your event" and a small upward arrow icon.

tweetbeam

Tag your tweets with #lewagon.org

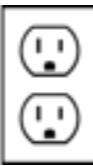
Free version: for evaluation only »

@L\_Demontiers

Dites les amis, avez-vous participé aux formations de <http://t.co/7XpluwEDFm> ? Un avis sur cet organisme de formation ?

Use TweetBeam for your event

# Youtube API



A screenshot of a web browser window showing the Google Developers YouTube API page. The URL in the address bar is `developers.google.com`. The page features the Google Developers logo and navigation links for Products > YouTube. A sidebar on the left lists various API resources: Getting Started, Code Samples, YouTube Data API, YouTube Analytics API, YouTube Live Streaming API, YouTube Player Tools, YouTube Subscribe Button, YouTube Upload Widget, Get Help, Stay Informed, Terms of Service, and More. The main content area has a large banner titled "YouTube for Developers" with a subtext about building businesses or enhancing apps with video. Below the banner is a "Featured video" section showing a thumbnail for "Google I/O 2013 - Broadcast Your..." and a "YouTube API Resources" section listing content APIs and player APIs.

Products > YouTube

YouTube 8+1 2.7k

Help developers solve problems [LEARN MORE](#)

Getting Started

Code Samples

YouTube Data API

YouTube Analytics API

YouTube Live Streaming API

YouTube Player Tools

YouTube Subscribe Button

YouTube Upload Widget

Get Help

Stay Informed

Terms of Service

More

YouTube for Developers

Whether you're building a business on YouTube or want to enhance your app with video, a rich set of YouTube APIs can bring your products to life

Featured video

PLAYLIST | 1 / 12 Google I/O 2013 - Broadcast Your...

Stream

YouTube API Resources

- Check out our content APIs:
  - YouTube Data API
  - YouTube Analytics API
  - YouTube Livestreaming API
- Learn about our player APIs and use the [player demo](#) to customize the playback experience.
  - Android

# TrackGuru

LATEST TOP TRACKS

Skylevel - Picture Tomorrow (Skylevel Edit)  
Mon réveille

Magnetrixx - Quagga  
Trance progressive

Robert Hood - Dancer (Robert Hood's unreleased remix)  
Classic Re-Plant . Hood by Hood.

Horizontal Ground - 5.1  
1.n.4. (aka AnD) - Untitled A on Hori...

Syclops - Jump Bugs  
Crazy

YESTERDAY DECEMBER 15TH

Phase - Behind The Sun  
TOKEN

Moomin - Time Circle  
A1

TALISMANN - ZULA  
TECHNO

Drax - Amphetamine (1994)  
OTHER

Moomin - Time Circle



► 7:11 / 7:36

HD YouTube

5 Moomin - Time Circle posted 1 day ago by Mardar

[Tweet](#)

SPREAD THE TRACK

5 UPVOTES



0 COMMENTS

what do you think about ?

[Post comment](#)

Feedback !

# Twilio API



twilio.com

SIGN UP LOG IN

PRODUCTS ▾ PRICING ▾ SOLUTIONS ▾ API & DOCS ▾ HELP

ROOMS

airbnb Welcome to Airbnb.

RIDES

U B E R Your car is arriving now.

RESERVATIONS

OpenTable Your table is booked.

Powering Modern Communications

Build the next generation of Voice and SMS applications.

SEE HOW IT WORKS

GET STARTED



Elastic SIP Trunking



Network Telemetry Service

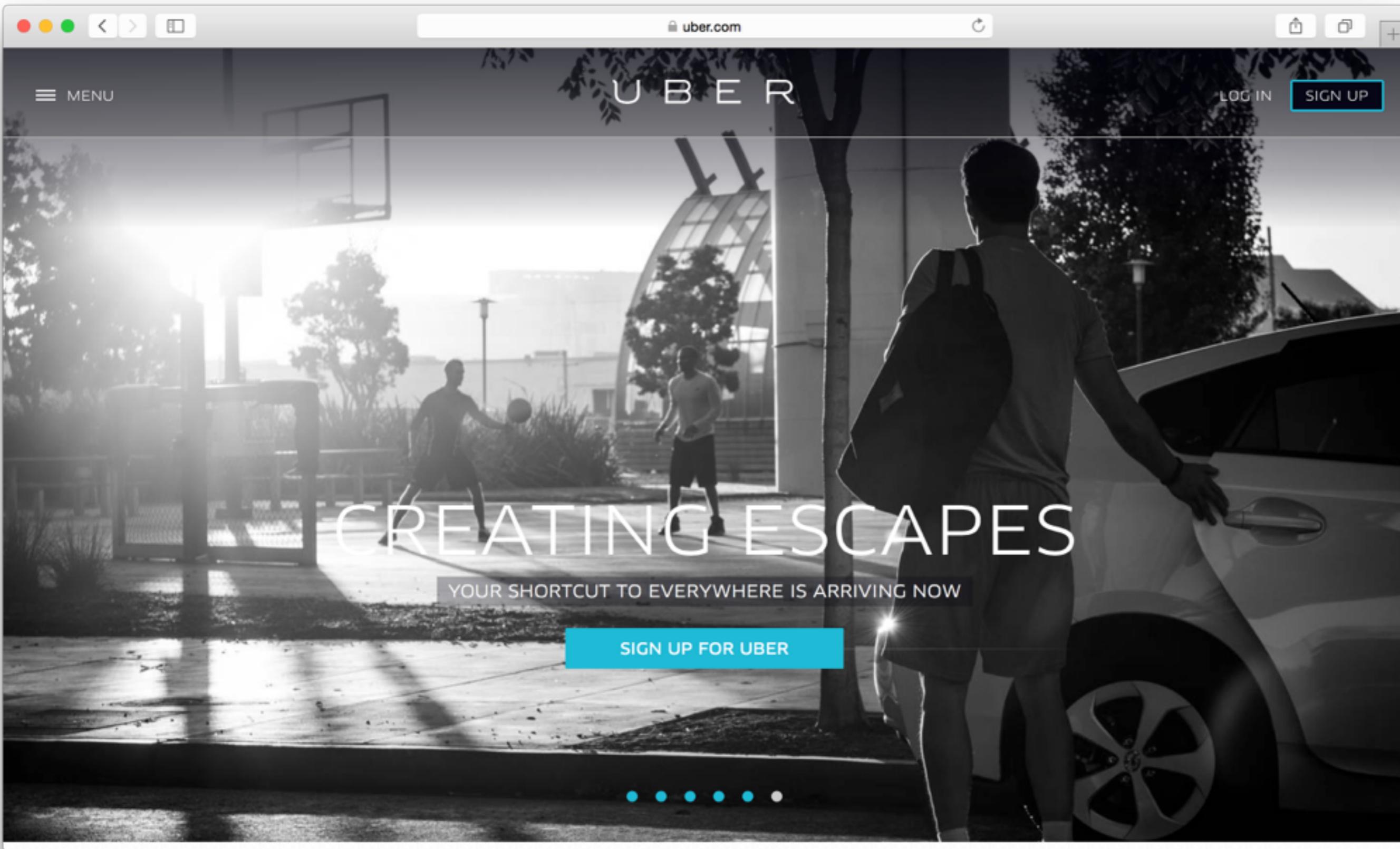


Now Available in Germany



Work at Twilio!

# UBER



A screenshot of the Uber website homepage. The background is a black and white photograph of a man walking away from a car towards a basketball court where two other men are playing. The Uber logo is at the top right. The word "MENU" is in the top left. "LOG IN" and "SIGN UP" buttons are in the top right. The main text "CREATING ESCAPES" is in large white letters, with "YOUR SHORTCUT TO EVERYWHERE IS ARRIVING NOW" below it. A "SIGN UP FOR UBER" button is at the bottom center. A series of five dots is at the bottom.

uber.com

MENU

LOG IN SIGN UP

CREATING ESCAPES

YOUR SHORTCUT TO EVERYWHERE IS ARRIVING NOW

SIGN UP FOR UBER

.....

**As a developer,**



I need GPS coordinates  
of venues to show next  
gigs in town on a map

**LYLO content manager  
don't know**

**GPS coordinates of venues**

**LYLO content manager  
won't manually enter  
GPS coordinates of venues**

**LYLO content manager  
will enter venue addresses**

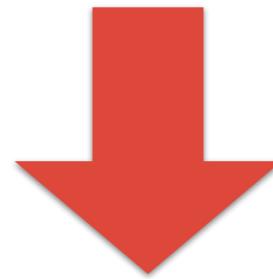
**There's an API for that**

# Google Geocoding API

[developers.google.com/maps/documentation/geocoding/](https://developers.google.com/maps/documentation/geocoding/)

25, rue du petit Musc

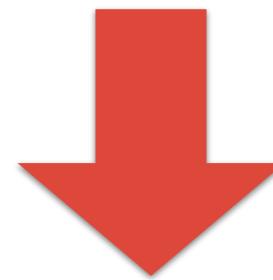
25, rue du petit Musc



```
{  
  location : {  
    "lat": 48.8529369,  
    "lng": 2.364178  
  }  
}
```

**How does it work?**

[https://maps.googleapis.com/maps/api/geocode/json?address=25 rue du petit musc](https://maps.googleapis.com/maps/api/geocode/json?address=25%20rue%20du%20petit%20musc)



```
{  
  "results": [  
    {  
      "formatted_address": "25 Rue du Petit Musc, 75004 Paris, France",  
      "geometry": {  
        "location": {  
          "lat": 48.8529369,  
          "lng": 2.364178  
        }  
      }  
    },  
    {  
      "formatted_address": "25 Rue du Petit Musc, 78660 Prunay-en-Yvelines, France",  
      "geometry": {  
        "location": {  
          "lat": 48.52695139999999,  
          "lng": 1.7964071  
        }  
      }  
    },  
    {"partial_match": true,  
    }  
  ]  
}
```

**API call is an HTTP request**

**When do we call the API?**

## Lylo - Add a venue



<http://www.lylo.com/venues/new>



Add a venue

Name

Address

[Create this venue](#)





<http://www.lylo.com/venues/25>



# Venue - Batofar

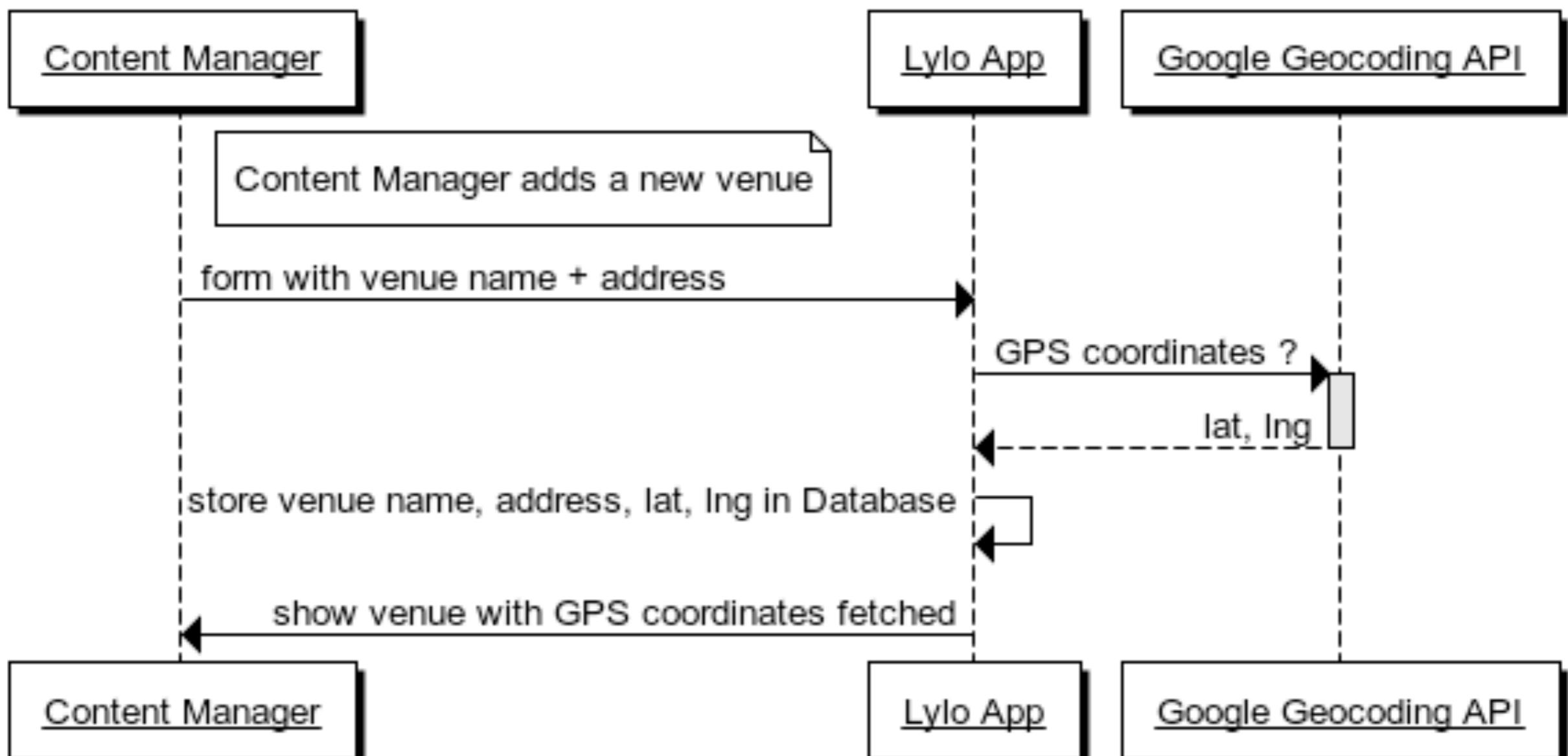
---

11 Quai François Mauriac, 75013 Paris, France

Latitude: 48.8327009, Longitude: 2.3788474



# Geocoding Sequence



**Lylo Server**  
**did the API call**

**Lylo Server**  
**did the API call**  
**not you,**  
**neither your browser**

**API** are consumed by

**programs**

(not humans)

**Are we  
done?**



# Raw GPS coordinates



Developer should  
now

integrate the  
Google Maps JS API

**Let's look at some  
code**



I want the app to  
send **text messages**  
if a gig is cancelled



**Step 1 - Sign up to  
Twilio**



## **Step 2 - Fetch credentials**

# Step 3 - Write some ruby

```
require 'twilio-ruby'

account_sid = 'AC_____'
auth_token = '_____'

client = Twilio::REST::Client.new(account_sid, auth_token)

client.messages.create(
  from: '+336123456789',
  to: '+337000000000',
  body: 'Hi buddy, you should attend Le Wagon!'
)
```

# **Step 4 - Run code**

**Your program sent a  
text!**

# WEBHOOK

S<sup>-1</sup>

(API )



Every 10 seconds,  
**call** the API to fetch list  
of  
Meetup attendees

# Hollywood Principle

Don't call us, we'll call  
you

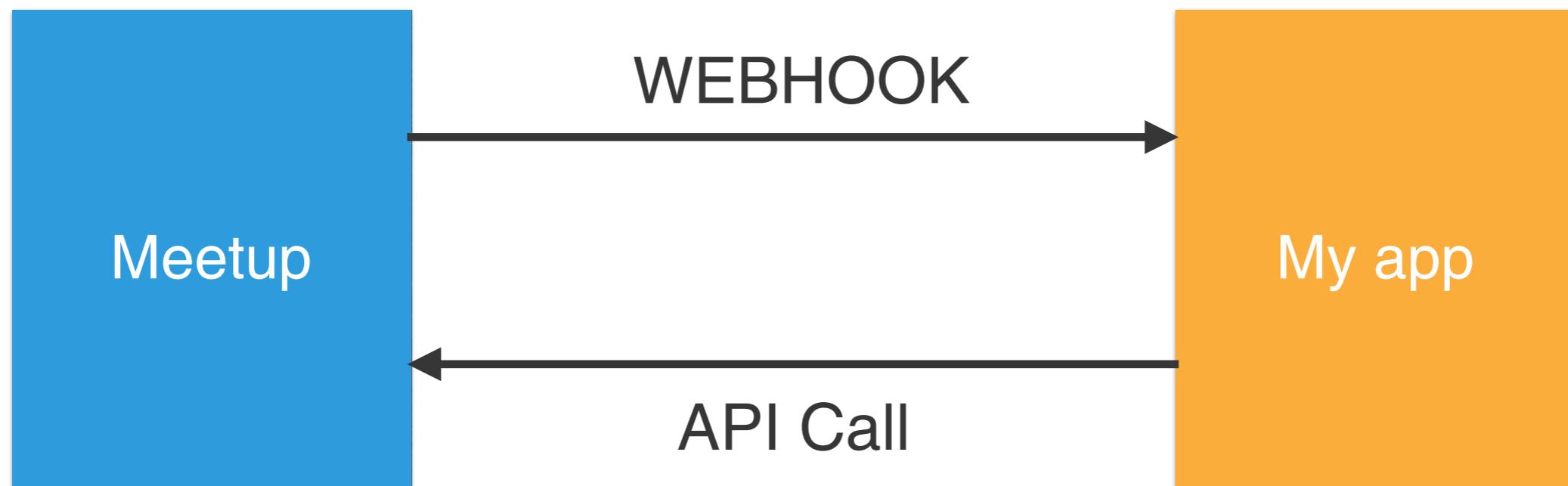
# Webhook

Meetup, please  
call my server  
as soon as  
a new member has RSVP'd

**myapp.com/member\_rsvpd**

**For incoming requests**

# Webhook vs API call



# META

**Let's take an  
example,**

# **Lead Management**

**Wufoo form to capture  
leads**

**Trello for my sales team**

# WEBHOOK

Service A **pushes** data  
as soon as available

# API

Service B **exposes** methods  
to read, create or update data

# WEBHOOK

**Wufoo pushes form entries  
as soon as captured**

# API

**Trello exposes methods  
to create new cards**

# Introducing **Zapier**

zapier.com

Explore How It Works Login Signup

Zapbook > Zaps > Integrate Wufoo and Trello

## Create Trello Card from Wufoo Entry

Create Trello Card from Wufoo Entry  
Automatically create Trello cards from Wufoo entries.

[Start Using This!](#)



Wufoo is an easy way to create and manage HTML forms.



Trello is team collaboration tool that lets you organize anything and everything to keep your projects on task.

What Is Zapier?  
Zapier sets you free by making it easy to connect apps like Wufoo and Trello so your data can be where you want it, when you want it.

Unlock the Hidden Power of Your Apps

- ✓ Easy 5-minute setup
- ✓ No credit card required
- ✓ Lots of customization options

[Get help](#)



# Zapier

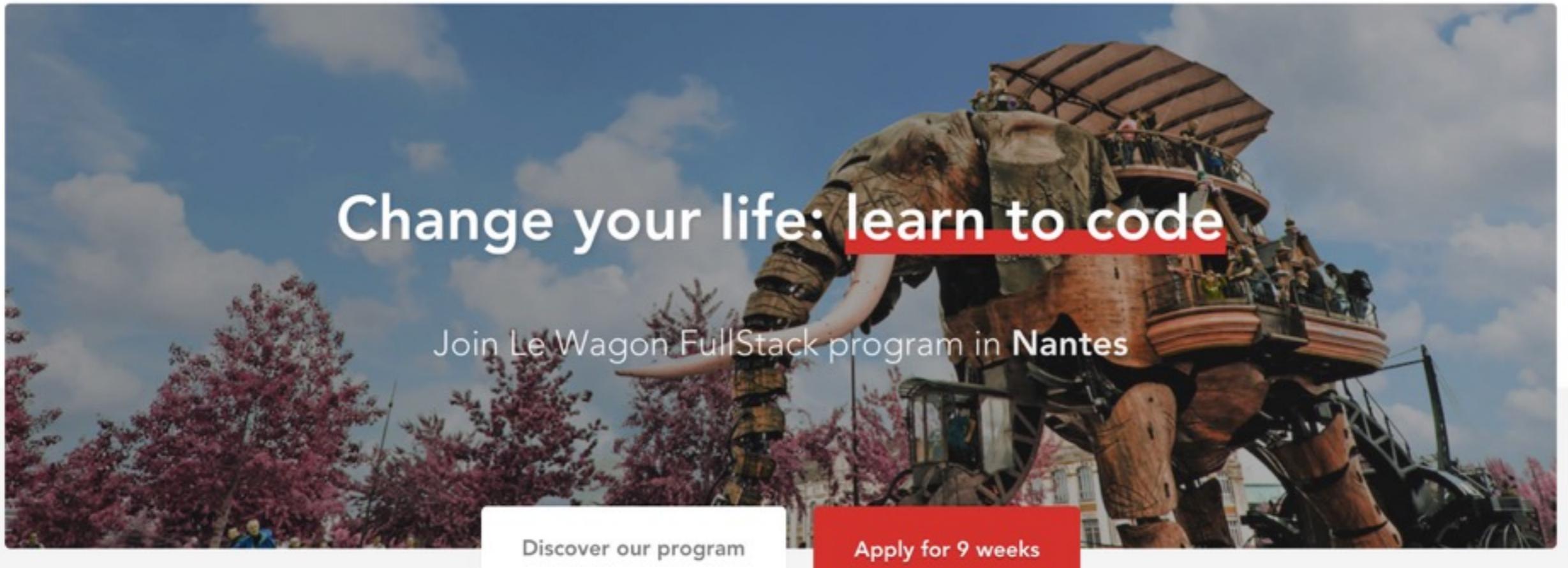
# Demo

When you'll hit  
Zapier's limit, come  
**learn to code at**  
**Le Wagon!**

# Go beyond

[lewagon.com/nantes](http://lewagon.com/nantes)

#3 batch : janvier 2017



**Thank  
you!**

# Going further

<http://www.slideshare.net/welkaim/api-part-1-introduction-to-technology-and-business-models>

# Photo Credits

- <http://pixabay.com/en/phone-dial-old-arrangement-499991/>
- <https://www.flickr.com/photos/knowledge-test/10359484896/>
- [http://www.gentside.com/wall-e/wallpaper/page\\_4.html](http://www.gentside.com/wall-e/wallpaper/page_4.html)
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