

# APIs

## (for beginners)



le wagon A small, stylized white bus icon with four windows and two wheels.

# Application Programming Interface

an Interface  
used by Programs to interact  
with an Application



# Application



**(User) Interface**

# Program



No (direct)  
human usage  
of APIs



# Developers

**APIs expose  
something useful**



# API

**Developers  
write Programs  
which consumes APIs**

A close-up photograph showing a person's fingers plugging a white three-prong electrical plug into a grey, multi-outlet power strip. The power strip has several empty outlets. The background is a plain, light-colored wall.

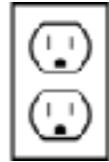
# API Consumption

# **Web APIs**



<http://www.programmableweb.com/category/all/apis>

# Google Maps JS API



A screenshot of a web browser displaying the Google Developers website for the Google Maps JavaScript API v3.

The browser window has a title bar showing "developers.google.com". The main content area features the Google Developers logo and navigation links for "Get Started", "Documentation", "Reference", "Showcase", "Support", and "Blog". A search bar is also present.

## Google Maps Javascript API v3

A prominent blue "Get Started" button is located below the main heading.

The main map displays a route from Secaucus, New Jersey, through Weehawken and Union City, New Jersey, across the Hudson River via the Lincoln Tunnel, and into Manhattan. The map shows Central Park, Hell's Kitchen, and the Theater District. The FDR Drive is highlighted in orange. The map includes labels for "American Museum of Natural History", "Carnegie Hill", "Upper West Side", "Lincoln Square", "Central Park", "Hell's Kitchen", "Theater District", "Midtown", "Midtown East", "Yorkville", "Upper East Side", and "Museum of Moving Image".

Below the map, a "Base Maps" section is shown with a thumbnail image featuring a red gear icon and a count of "8+1". A text overlay reads: "For the last decade, we've obsessed over building great maps—maps that are comprehensive, accurate, and easy to use."

Navigation tabs above the map include "Demos", "Base Maps", "Satellite", "Street View", "Places", "Routing", and "Data Visualization".

# AirBnB

Airbnb, Inc.

Paris, France

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, ...

Search When I Move the Map

Language and Currency

# Twilio API



The screenshot shows the Twilio API homepage with a dark header bar. The header includes the Twilio logo, navigation links for PRODUCTS, PRICING, SOLUTIONS, API & DOCS, and HELP, and buttons for SIGN UP and LOG IN. Below the header is a large banner featuring a city skyline background. Overlaid on the banner are several callout bubbles from various companies: UBER (RIDES), AIRBNB (ROOMS), OpenTable (RESERVATIONS), and a general message about building modern communications. A red 'GET STARTED' button is prominent in the bottom right corner of the banner area.

twilio.com

SIGN UP LOG IN

PRODUCTS • PRICING • SOLUTIONS • API & DOCS • HELP

twilio

ROOMS

airbnb

Welcome to Airbnb.

RIDES

U B E R

Your car is arriving now.

RESERVATIONS

OpenTable

Your table is booked.

Powering Modern Communications

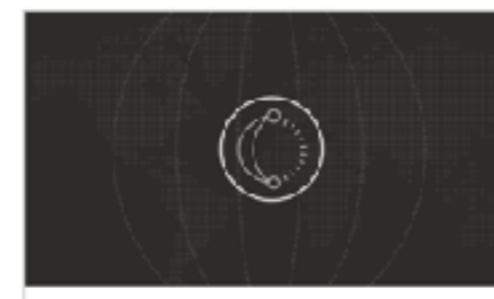
Build the next generation of Voice and SMS applications.

SEE HOW IT WORKS

GET STARTED



Electric Grid Telematics



Network Telemetry Services



Now Available in Germany



Medical Twilio



A screenshot of the Uber website homepage. The browser window shows the URL <https://www.uber.com>. The page features the Uber logo at the top right. Below it is a navigation bar with links for "Ride", "Drive", "FIND A CITY", "HELP", "SIGN IN", and a prominent green "BECOME A DRIVER" button. The main content area has a large, bold "Get there" heading followed by the tagline "Your day belongs to you". Below this is a large, blurred photograph of a smiling man in a car, with other passengers visible in the background. A green call-to-action box overlays the image, containing the text "Start riding with Uber" and a "SIGN UP →" button.

**As a developer,**

# TimeOut

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

**Timeout** content manager  
**don't know**  
**GPS coordinates of venues**

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

**Timeout content manager  
will enter venue addresses**

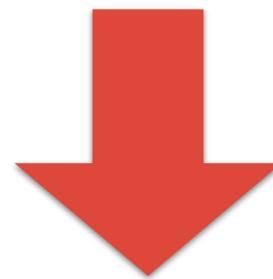
**There's an API for that**

# Google Geocoding API

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

10 Downing St, London

# 10 Downing St, London



```
{  
  "location" : {  
    "lat" : 51.5034066,  
    "lng" : -0.1275923  
  }  
}
```

*This is called JSON*

**How does it work?**

**API call is an HTTP request**

**[https://maps.googleapis.com/maps/api/geocode/json?address=10 Downing St, London](https://maps.googleapis.com/maps/api/geocode/json?address=10%20Downing%20St,%20London)**

**When do we call the API?**

## Timeout - New Venue



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



Add a venue

Name

Address

Create this venue



Timeout - New Venue



<http://www.timeout.com/venues/brixton-academy>



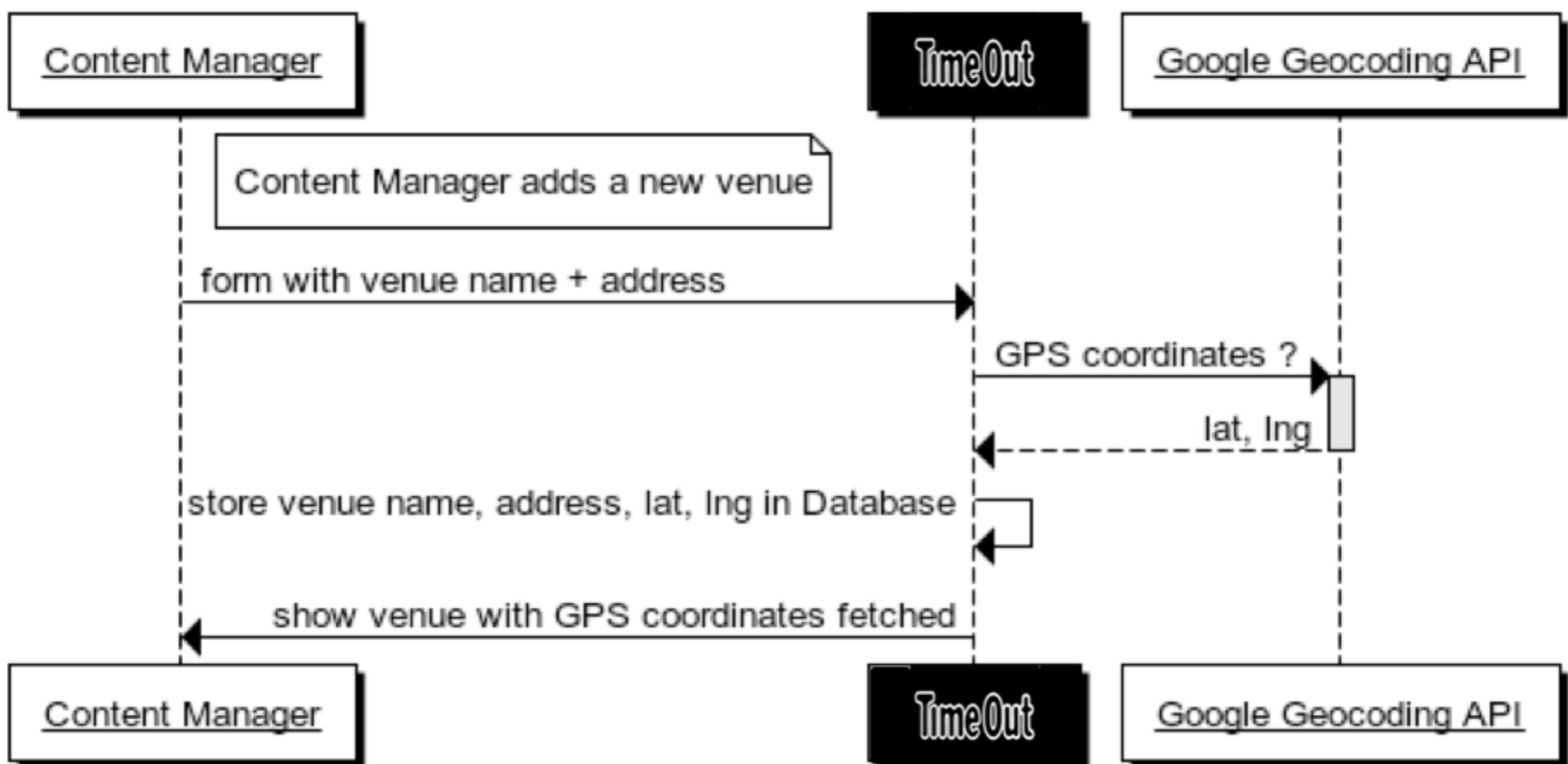
## Brixton Academy

211 Stockwell Rd, Brixton, London

51.4651626  
-0.1149344



# Geocoding Sequence



**Timeout Server  
did the API call**

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

**APIs are consumed by  
programs  
(not humans)**

**Are we done?**



Raw GPS coordinates



**Developer should  
now integrate the  
Google Maps JS API**

*JS stands for JavaScript here*

**Let's look at some code**

# TimeOut

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!**

# **WEBHOOKS**

## **(API)**



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

# Hollywood Principle

**Don't call us, we'll call you**

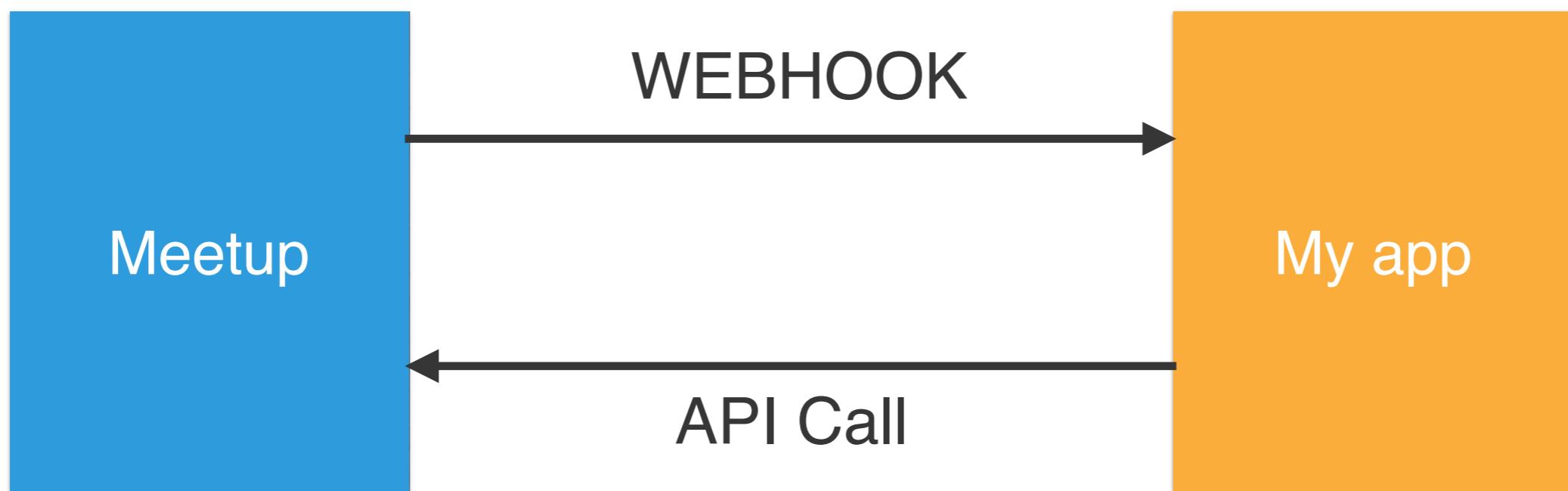
# Webhook

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**

**Typeform 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

**Typeform** pushes form entries  
as soon as captured

## API

**Trello** exposes methods  
to create new cards

# Introducing Zapier

The screenshot shows the Zapier homepage with a dark background featuring a white rocket ship icon and a small robot icon. The main headline reads "Connect Your Apps and Automate Workflows". Below it, a sub-headline says "Easy automation for busy people. Zapier moves info between your web apps automatically, so you can focus on your most important work." To the right, there's a sign-up form with fields for First Name, Last Name, Email, and Password, along with a checkbox for "Email me about new features." and a "Sign Up" button. Below the sign-up form is a "Sign Up With Google" button with a Google logo. At the bottom, a footer states "Trusted at companies large and small" with logos for Buffer, Asana, Freshdesk, Adalo, and FOX.

zapier.com

APP DIRECTORY LOG IN SIGN UP FOR FREE

First Name Last Name

Email

Password

Email me about new features.

Sign Up

OR

Sign Up With Google

By signing up, you agree to Zapier's [Terms of Service](#).

Trusted at companies large and small

Buffer Asana Freshdesk Adalo FOX

# Zapier



# Demo

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

**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)
- <https://www.flickr.com/photos/cgc76/13637753574>
- [https://www.flickr.com/photos/nori\\_n/271373399](https://www.flickr.com/photos/nori_n/271373399)
- <https://www.flickr.com/photos/jnyemb/5225841771>
- <https://www.flickr.com/photos/booleansplit/5527628335>
- <https://www.flickr.com/photos/lizhaslam/13257286833>
- <https://www.flickr.com/photos/armandfrasco/8741186>
- [https://www.flickr.com/photos/photobunny\\_earl/2239452148](https://www.flickr.com/photos/photobunny_earl/2239452148)
- <https://www.flickr.com/photos/89228431@N06/11221050956>