

API

Sprint



Welcome, **class** !

Let's learn what is and how to use an API 😎



Let's take a **Restaurant** as a metaphor



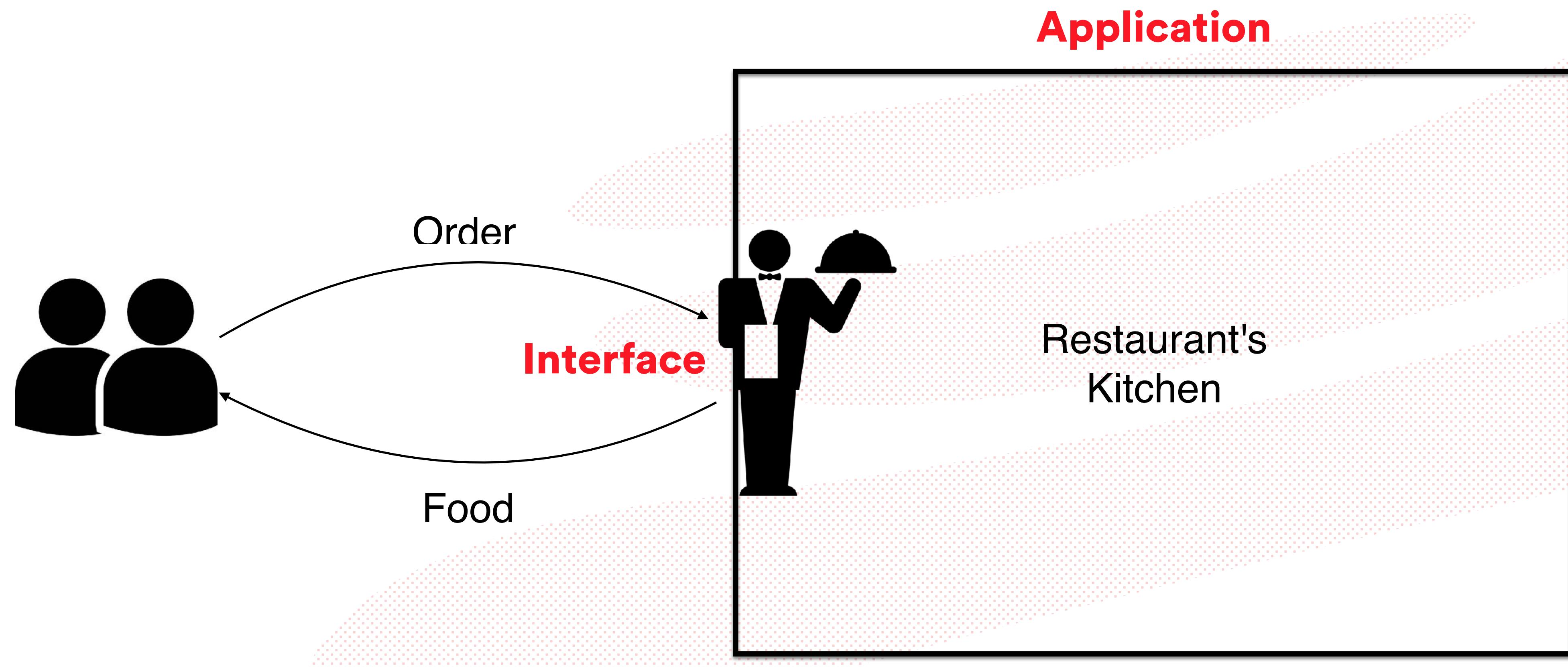


*How do **you** get some food?*



Ask a waiter







Why is it useful?



Abstracting Complexity



Documentation

. Plats du Jour .

. Grillades & Poissons .

. Pâtisseries Maison .

. Glaces & Sorbets .

. Crêpes & Snacks .



A well-known acronym

Application

Programming

Interface



Developers



Users



Let's look at some **vocabulary**.

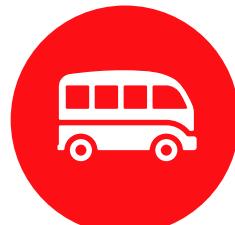


An API exposes a service

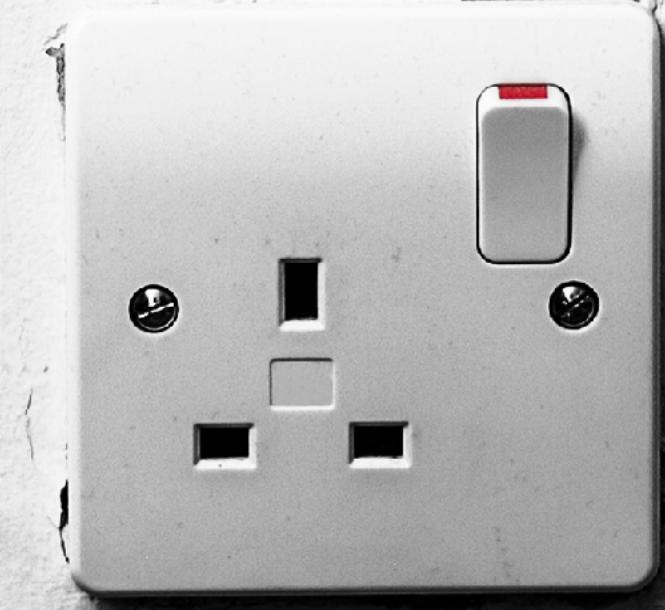
Developers write programs which consume it



Another metaphor: wall sockets



Service? Consumer?



Web APIs

Examples





API Directory | ProgrammableWeb X +

https://www.programmableweb.com/category/all/apis

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ProgrammableWeb API DIRECTORY API NEWS

Search over 20,091 APIs and much more

LEARN ABOUT APIs WHAT IS AN API ? TUTORIALS API CHARTS & RESEARCH ADD APIs & MORE

Google Maps [This API is no longer available. Google Maps' services have been split into multiple APIs, including the [Static Maps API](#), Mapping 12.05.2005

Twitter [This API is no longer available. It has been split into multiple APIs, including the [Twitter Ads API](#), [Twitter Search Tweets...](#) Social 12.08.2006

YouTube The Data API allows users to integrate their program with YouTube and allow it to perform many of the operations available on the website. It provides the capability to search for videos, retrieve... Video 02.08.2006

Flickr The Flickr API can be used to retrieve photos from the Flickr photo sharing service using a variety of feeds - public photos and videos, favorites, friends, group pools, discussions, and more. The... Photos 09.04.2005

Facebook [This API is no longer available. Its functions have been split among the following APIs: [Facebook Ads](#), Social 08.16.2006

Amazon Product Advertising What was formerly the ECS - eCommerce Service - has been renamed the Product Advertising API. Through this API developers can retrieve product information. The API exposes Amazon's product data... eCommerce 12.02.2005

Twilio Twilio provides a simple hosted API and markup language for businesses to quickly build scalable, reliable and advanced voice and SMS communications applications. Twilio provides a telephony... Telephony 01.09.2009

API UNIVERSITY AP

FEATURED LATEST

FOR API PROVIDERS

What Are APIs and How Do They Work?

8 Real World API Strategies and the Keys to Their Success

Microservices 101: Understanding and Leveraging Microservices

More for API Providers >

FOR DEVELOPERS

How to Get Started With Google Actions

How to Build a Monitoring Application With the Google Cloud Vision API

How to Access Any RESTful API Using the R Language

More for Developers >

Today in APIs

Geo APIs



Custom Maps | Google Maps Platform

https://cloud.google.com/maps-platform/maps/

Google Cloud

Google Maps Platform Overview Products Pricing Documentation Contact sales Get started

Maps

Bring the real world to your users with customized maps and Street View imagery

[GET STARTED](#)

99%
coverage of the world

Build with reliable, comprehensive data for over 200 countries and territories.

25 million
updates daily

Count on accurate, real-time location information.

1 billion
monthly active users

Scale confidently, backed by our infrastructure.

Visualize the world with rich, accurate maps

Berlin – Airbnb

Airbnb, Inc. (US) | https://www.airbnb.com/s/Checkpoint-Charlie--Friedrichstraße--Berlin--Germany/homes?refinement_paths[]=%2Fhomes&query=Checkpoint Cha ... 340

Q Checkpoint Charlie, Friedrichstraße · Homes

Add listing Host Saved Trips Messages Help

Dates Guests Home type Price Instant Book Trip type More filters Show Map

ENTIRE APARTMENT · 2 BEDS
Sunny flat near Checkpoint Charlie
€100 per night · Free cancellation
★★★★★ 197 · Superhost

ENTIRE APARTMENT · 4 BEDS
NEU Checkpoint Charlie3 2room-App.
€100 per night · Free cancellation
★★★★★ 139

Map of Berlin showing room prices (in €) across the city, with a focus on Checkpoint Charlie and surrounding areas.

Map data ©2018 GeoBasis-DE/B

Terms, Privacy, Currency & More

Markers | Maps JavaScript API X +

https://developers.google.com/maps/documentation/javascript/markers#icons

Google Maps Platform Overview Products Pricing Documentation Search ALL PRODUCTS SEND FEEDBACK

GUIDES REFERENCE SAMPLES SUPPORT

Controlling Zoom and Pan

Drawing on the Map

Overview

Markers

Custom Markers

Info Windows

Shapes

Symbols

Ground Overlays

Custom Overlays

Displaying data

Overview

Data layer

Fusion Tables

Heatmap

Displaying KML

KML and GeoRSS

Traffic, Transit, and Bicycling Layers

Services

Directions

Distance Matrix

Elevation

Geocoding

Maximum Zoom Imagery

Street View

Libraries

Overview

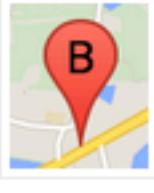
Customize a marker image

If you want to display a letter or number on a marker, you can use a marker label. If you need greater customization, you can define an icon to show instead of the default marker image. Defining an icon involves setting a number of properties that determine the visual behavior of the marker.

The sections below describe marker labels, simple icons, complex icons, and symbols (vector icons).

Marker labels

A marker label is a letter or number that appears inside a marker. The marker image in this section displays a marker label with the letter 'B' on it. You can specify a marker label as either a string or a `MarkerLabel` object that includes a string and other label properties.



When creating a marker, you can specify a `label` property in the `MarkerOptions` object. Alternatively, you can call `setLabel()` on the `Marker` object to set the label on an existing marker.

The following example displays labeled markers when the user clicks on the map:

```
// In the following example, markers appear when the user clicks on the map.
// Each marker is labeled with a single alphabetical character.
var labels = 'ABCDEFGHIJKLMNPQRSTUVWXYZ';
var labelIndex = 0;

function initialize() {
  var bangalore = { lat: 12.97, lng: 77.59 };
  var map = new google.maps.Map(document.getElementById('map'), {
    zoom: 12,
    center: bangalore
  });

  // This event listener calls addMarker() when the map is clicked.
  google.maps.event.addListener(map, 'click', function(event) {
    addMarker(event.latLng, map);
  });
}

function addMarker(latlng, map) {
  var label = labels[labelIndex % labels.length];
  var marker = new google.maps.Marker({
    position: latlng,
    label: { text: label }
  });
  map.setCenter(latlng);
}
```





Pricing Table | Google Maps Platform X +

https://cloud.google.com/maps-platform/pricing/sheet/

Google Cloud

Google Maps Platform Overview Products Pricing Documentation Contact sales Get started

Maps

APIs in Maps include: [Maps SDK for Android](#); [Maps SDK for iOS](#); [Maps JavaScript API](#); [Maps Static API](#); [Street View API](#); [Maps Embed API](#); and [Maps URLs](#).

SKU	\$200 MONTHLY CREDIT EQUIVALENT FREE USAGE	MONTHLY VOLUME RANGE (PRICE PER THOUSAND CALLS)		
		0–100,000	100,001–500,000	500,001+
Mobile Native Static Maps	Unlimited loads	\$0.00	\$0.00	
Mobile Native Dynamic Maps	Unlimited loads	\$0.00	\$0.00	
Embed	Unlimited loads	\$0.00	\$0.00	
Embed Advanced	Up to 14,000 loads	\$14.00	\$11.20	
Static Maps	Up to 100,000 loads	\$2.00	\$1.60	
Dynamic Maps	Up to 28,000 loads	\$7.00	\$5.60	
Static Street View	Up to 28,000 panos	\$7.00	\$5.60	
Dynamic Street View	Up to 14,000 panos	\$14.00	\$11.20	

[CONTACT SALES](#) for volume discounts.

Rates in the pricing charts above are based on your monthly usage, determined at the end of each month. For simplicity, prices listed are per 1,000 calls; note that on your bill, you incur a charge for each call, not for each 1,000 calls. For each billing account, a monthly \$200 USD Google Maps Platform credit is available and automatically applied to the qualifying SKUs. [Additional currencies](#) may be available within the console. When you select a different currency, rates will convert from the USD equivalent listed here.

Definitions: Load (map load): See [here](#). Pano (panorama): See [here](#).



Telephony API



SMS, Short Message Service | X +

https://www.twilio.com/sms

WHATSSAPP API. NOW ON TWILIO. TRY IT TODAY.

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Overview Features Coverage API Use Cases Pricing

Programmable SMS

Send and receive text messages globally with the API that over a million developers depend on.

Sign up and start building >



Galen Knapp, Engineering Team Lead
"The documentation is really top-notch. It's made it really easy to develop on."

REDFIN

Coca-Cola Enterprises **INTUIT** **airbnb** **yelp** **NETFLIX**

 SMS built for developers

COOKIE PREFERENCES



twlo - Google Search

https://www.google.com/search?q=TWLO&hl=en

Google TWLO

All Finance News Images Videos More Settings Tools

About 204,000 results (0.35 seconds)

Twilio Inc
NYSE: TWLO

72.50 USD **-4.12 (5.38%)**

Oct 8, 1:08 PM EDT · Disclaimer

1 day 5 days 1 month 6 months **YTD** 1 year 5 years Max

100
80
60
40
20

Mar 2018 May 2018 Jul 2018 Oct 2018

Open	75.52	Div yield	-
High	75.89	Prev close	76.62
Low	71.46	52-wk high	88.88
Mkt cap	7.06B	52-wk low	23.25
P/E ratio	-		

Twilio Company

twilio.com

Twilio is a cloud communications platform as a service company based in San Francisco, California. Twilio allows software developers to programmatically make and receive phone calls, send and receive text messages, and perform other communication functions using its web service APIs. [Wikipedia](#)

Headquarters: San Francisco, California, United States

Revenue: 399 million USD

Founded: March 13, 2008

Number of employees: 1,100

Executives: Jeff Lawson (CEO, Founder, Chairperson), [MORE](#)

Founders: Jeff Lawson, John Wolthuis, Evan Cooke

Profiles

Twitter

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TWLO : Summary for Twilio Inc. Class A - Yahoo Finance

<https://finance.yahoo.com/quote/TWLO/>

View the basic TWLO stock chart on Yahoo Finance. Change the date range, chart type and compare Twilio Inc. Class A against other companies.

[TWLO Headlines](#) | [Twilio Inc ...](#) · [TWLO Conversations](#) · [TWLO Profile](#) · [Financials](#)

Twilio stock (TWLO) soars to all-time high - CNBC.com



Built with Twilio | Twilio Custom X +

https://customers.twilio.com/?q=location_region&c=AAACAA%3D%3D

TWILIO FLEX: A CONTACT CENTER PLATFORM WITH FULL-STACK PROGRAMMABILITY

HELP LOG IN

twilio Products Solutions Docs & Tools Customer Stories Pricing Talk to Sales Sign up

Built with Twilio

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FILTERED BY: Europe Clear

 **airbnb**

Streamlined the rental experience for 60M travelers worldwide

Airbnb uses automated SMS messages & confirmations to automate accommodation bookings for hosts & guests.

 TransferWise

OVER 90% OF TRANSFERWISE CUSTOMERS ADOPT TWILIO'S AUTHY 2FA SECURITY AT FIRST LOGIN

Push authentication lets our customers protect their accounts with much more granularity and much higher levels of security.

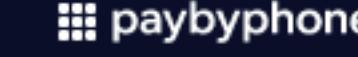
UBER

Built a great ridesharing experience with SMS & Voice

Keeps customers up-to-date with real-time ETA alerts delivered as a text.

 OpenRent

 landmax.pro

 paybyphone®

COOKIE PREFERENCES

Other APIs



YouTube | Google Developers X +

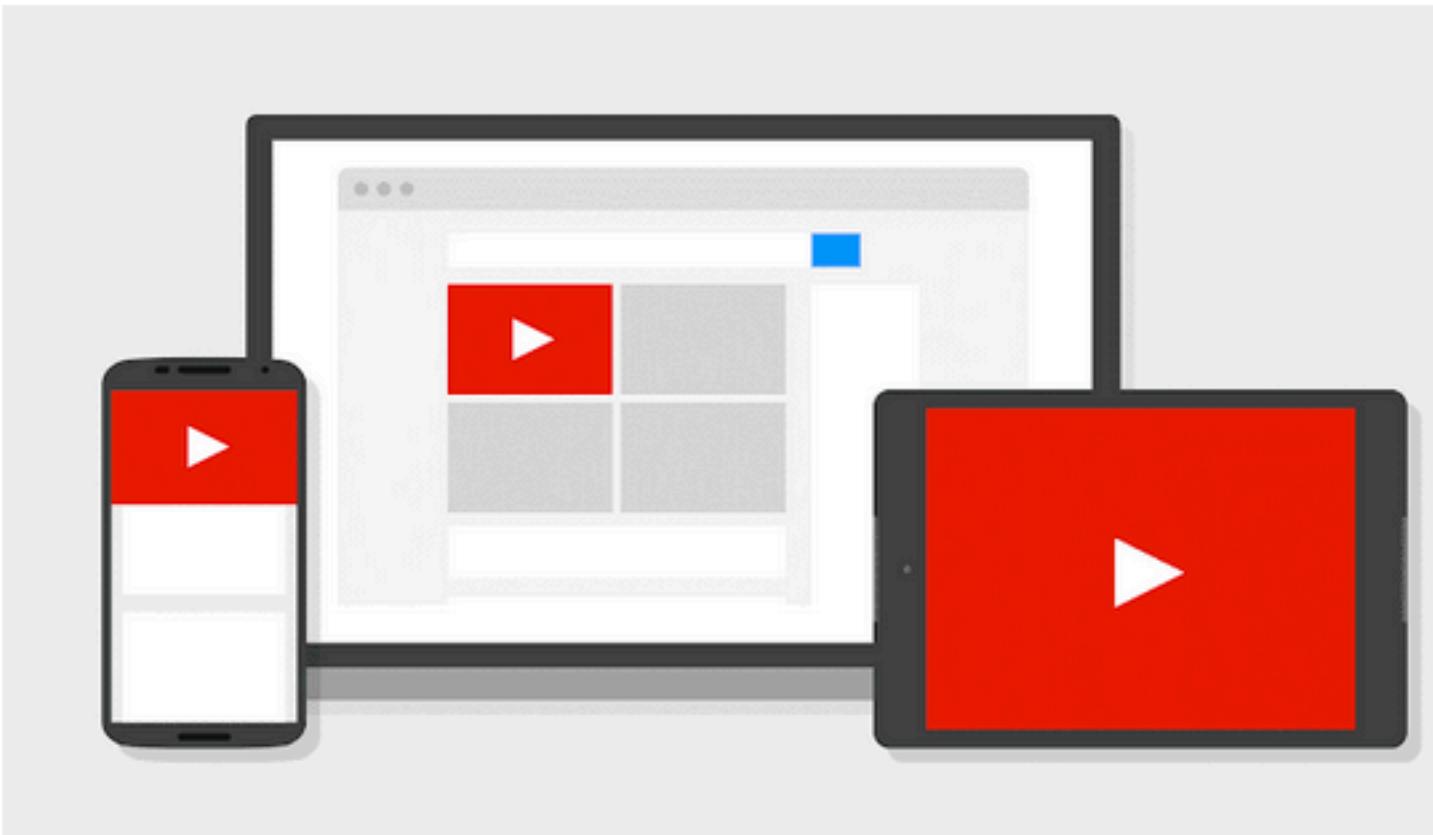
https://developers.google.com/youtube/

YouTube

Add YouTube functionality to your sites and apps.

HOME GUIDES SAMPLES TERMS

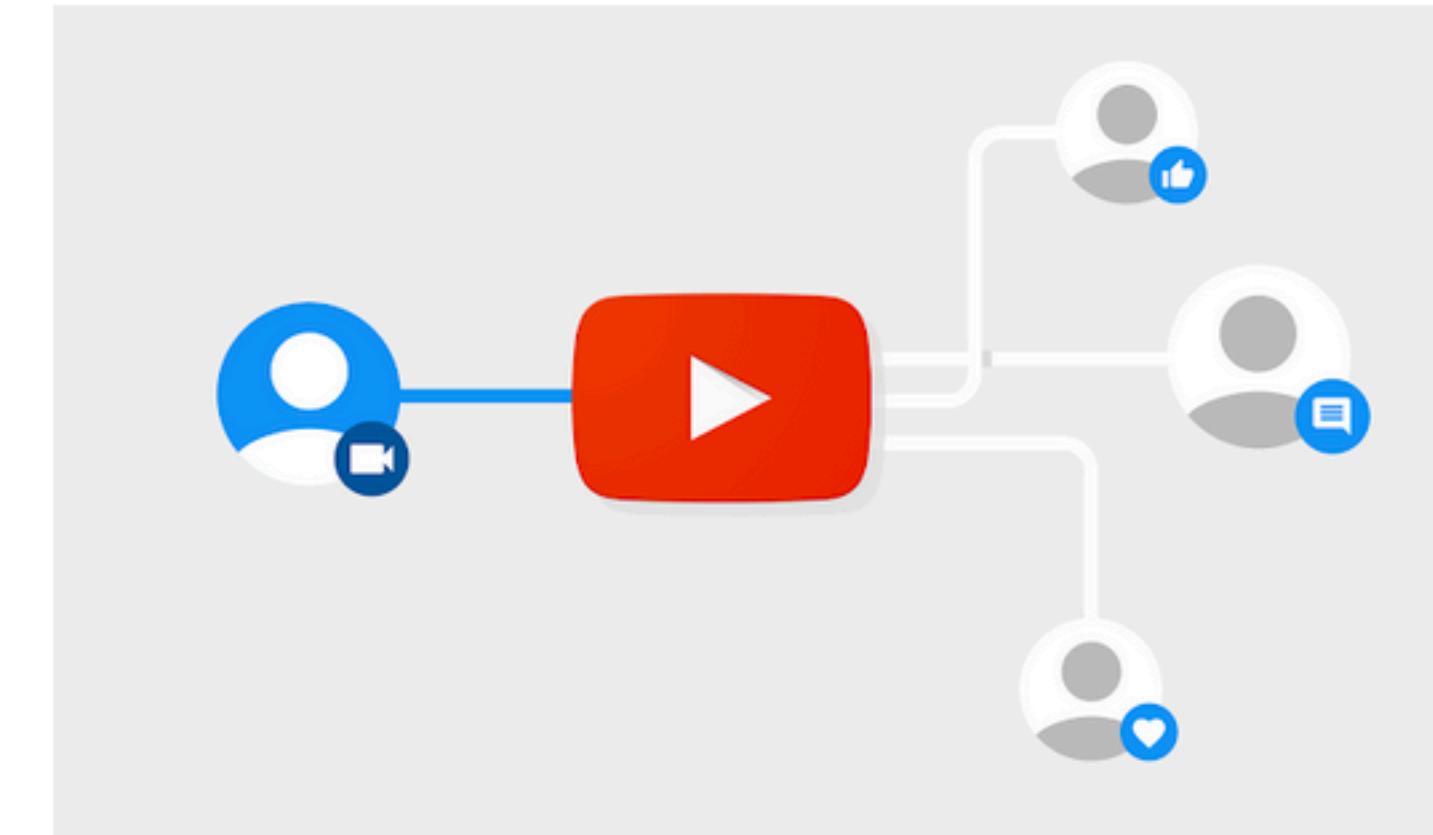
Let users watch, find, and manage YouTube content



Play YouTube Videos

Use an embedded player to play videos directly in your app and customize the playback experience.

[IFRAME](#) [ANDROID](#) [iOS](#) [PLAYER PARAMETERS](#)



Add YouTube Data

Let users search YouTube content, upload videos, create and manage playlists, and more.

[OVERVIEW](#) [REFERENCE](#) [CODE SAMPLES](#)

Add more YouTube features



Facebook Social Plugins Overview

https://developers.facebook.com/products/social-plugins

facebook for developers

Products Docs More ▾ My Apps ▾

Social Plugins to Grow Engagement

The easiest way to make your app or website social.

Read Docs

Like, Share, Send, & Quotes: Social made simple

LAIRD / Dec 18, 2013

Engaging makes a splash with WickrX

“WickrX is designed to bring the best of Facebook to mobile devices,” says WickrX Super Sessions founder

A red circular icon containing a white bus icon is located in the bottom left corner.

Stripe - Online payment process X +

Stripe, Inc (US) | https://stripe.com/us

stripe Products Developers Company Pricing Support Sign in →

NEW Introducing Stripe Terminal >

The new standard in online payments

Stripe is the best software platform for running an internet business. We handle billions of dollars every year for forward-thinking businesses around the world.

[CREATE ACCOUNT](#) [CONTACT SALES](#)

THE COMPLETE TOOLKIT FOR INTERNET BUSINESS

DOORDASH KICKSTARTER

DigitalOcean

A screenshot of the Stripe website homepage. The header includes the Stripe logo, navigation links for Products, Developers, Company, Pricing, Support, and Sign in. A green button at the top left says "NEW Introducing Stripe Terminal >". Below the headline, a paragraph describes Stripe as the best software platform for running an internet business. Two call-to-action buttons are present: "CREATE ACCOUNT" in green and "CONTACT SALES" in white. The main visual is a collage of mobile device screens displaying various Stripe integrations and features, such as Shopify's dashboard, payment processing, and analytics. At the bottom, there are icons for a bus and a car, and text for "THE COMPLETE TOOLKIT FOR INTERNET BUSINESS" along with logos for Doordash and Kickstarter.

Open Data



Find open data

Find data published by central government, local authorities and public bodies to help you build products and services

Business and economy Small businesses, industry, imports, exports and trade	Environment Weather, flooding, rivers, air quality, geology and agriculture	Mapping Addresses, boundaries, land ownership, aerial photographs, seabed and land terrain
Crime and justice Courts, police, prison, offenders, borders and immigration	Government Staff numbers and pay, local councillors and department business plans	Society Employment, benefits, household finances, poverty and population
Defence Armed forces, health and safety, search and rescue	Government spending Includes all payments by government departments over £25,000	Towns and cities Includes housing, urban planning, leisure, waste and energy, consumption
Education Students, training, qualifications	Health Includes smoking, drugs, alcohol	Transport Airports, roads, freight, electric

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Here you will find data, tools, and resources to conduct research, develop web and mobile applications, design data visualizations, and more.

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Federal Student Loan Program Data

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Recherche

Agriculture et Alimentation
Culture
Économie et Emploi
Éducation et Recherche
International et Europe
Logement, Développement Durable et Énergie
Santé et Social
Société
Territoires, Transports, Tourisme

Partagez, améliorez et réutilisez les données publiques

MEILLEURES RÉUTILISATIONS

DataFrance MAP Accès local

ENVIRONNEMENT

Qualité de vie
Sécurité
Type de territoire de vie
Stations d'épuration
Quartiers prioritaires

CARTE INTERACTIVE DES INITIATIVES POUR LA TRANSITION ENERGÉTIQUE

GovData | Datenportal für Deutschland

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GOVDATA

Daten Informationen Blog Standardisierung

Das Datenportal für Deutschland

Open Government: Verwaltungsdaten transparent, offen und frei nutzbar

Nach Datensätzen suchen
Erweiterte Suche Kartensuche

DCAT-AP.de als formaler Metadatenstandard für offene Verwaltungsdaten bestätigt

Der IT-Planungsrat hat DCAT-AP.de als formalen Austauschstandard für allgemeine offene Verwaltungsdaten festgelegt.
Vor knapp drei Jahren hat die Geschäfts- und Koordinierungsstelle GovData die Verantwortung für das Standardisierungsvorhaben "Metadatenstruktur für offene Verwaltungsdaten" des IT-Planungsrates übernommen. Am 28. Juni konnte dieses Vorhaben erfolgreich mit dem Beschluss des IT-Planungsrates zum Abschluss gebracht werden, mit dem DCAT-AP.de als formaler Austauschstandard für allgemeine offene Verwaltungsdaten festgelegt wurde. Weitere Informationen finden Sie [hier](#).

Stöbern Sie in diesen Kategorien



From St Pancras Station, Euston X +

https://citymapper.com/trip/signature?signature=eJyNIG1v2jAQx7%2BK5bdLih%2BS4PBu6pBatYJurK2mqorc2GVewWaOszGhfvfZDmVkhW5Ckcjl7n93P59vA2tu4QhkZ ...   JOBS CONTACT  

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St Pancras Station, Euston Road, London, UK

St Pancras Station, Euston Rd, Kings Cross, London N1C 4QL, UK

Le Wagon London, Kingsland Road, London, UK

Unit 13, 138 Kingsland Rd, London E2 8DY, UK

 • 

£2.90  **9 min**  **20 min**

Victoria Northbound  **in 2, 3, 3 min**

King's Cross St Pancras  **2 min**

Highbury & Islington 

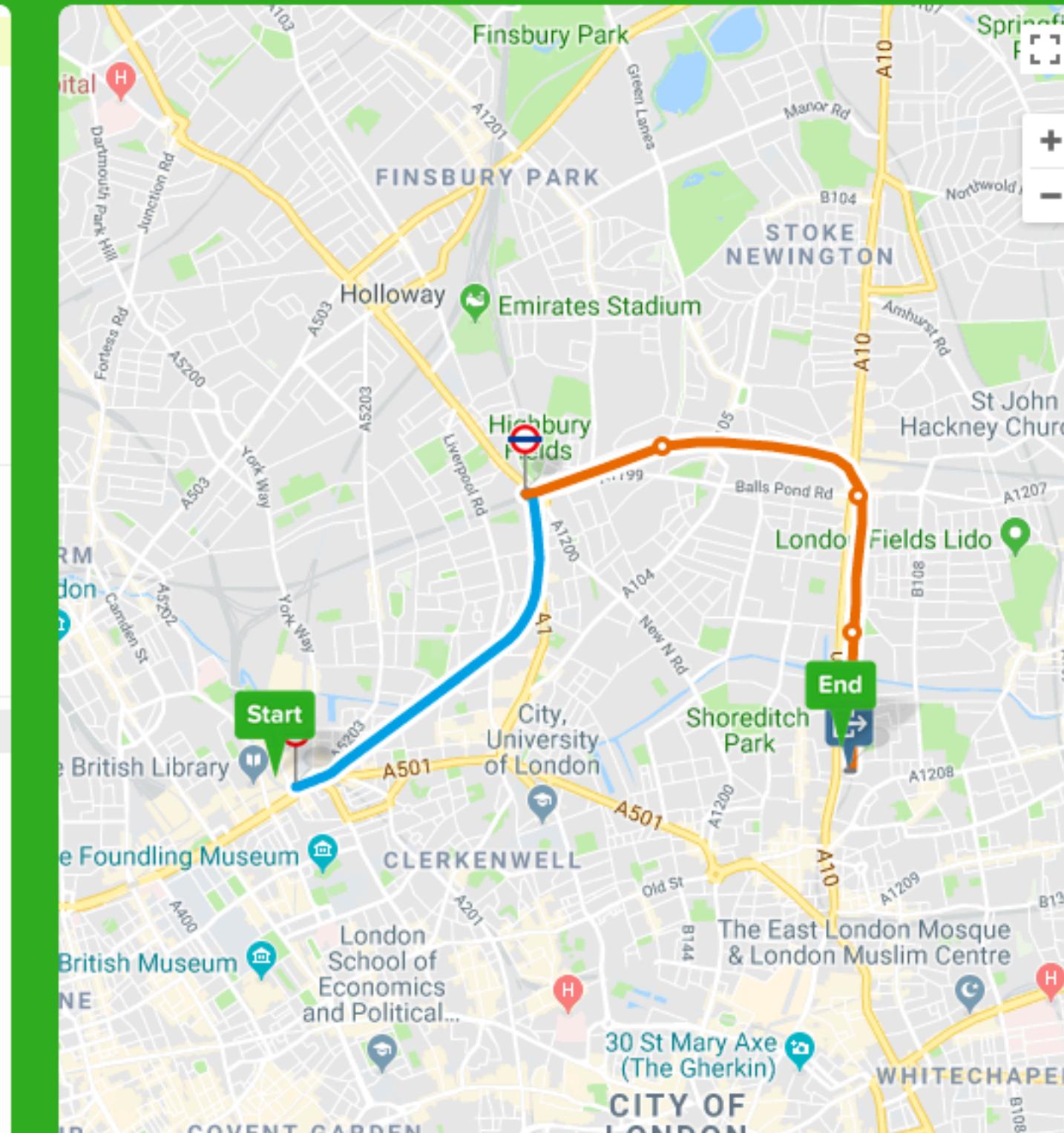
Change Platforms Highbury & Islington  **4 min**

Overground Crystal Palace | West Croydon  **Every 8 min**

Highbury & Islington  **9 min**

↓ 4 stops 

Hoxton 





API / Widgets - Citymapper X +

https://citymapper.com/api

Citymapper

SMARTRIDE JOBS CONTACT

Widgets for Humans

Links, Buttons and Boxes for your websites.

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API for Robots

(or Developers)

Show Travel Time, launch Citymapper for Directions + more

READ MORE

Partner Showcase

Here are some clever companies using us already

FOURSQUARE

DOJO

TimeOut

Demo



Let's build a custom Sales CRM



What do we need?

1. Capture lead information
2. Push it to a workflow/process tool



Turn data collection into an exp X +

https://www.typeform.com

Typeform

Product Connect Pricing Help Blog Login Sign up

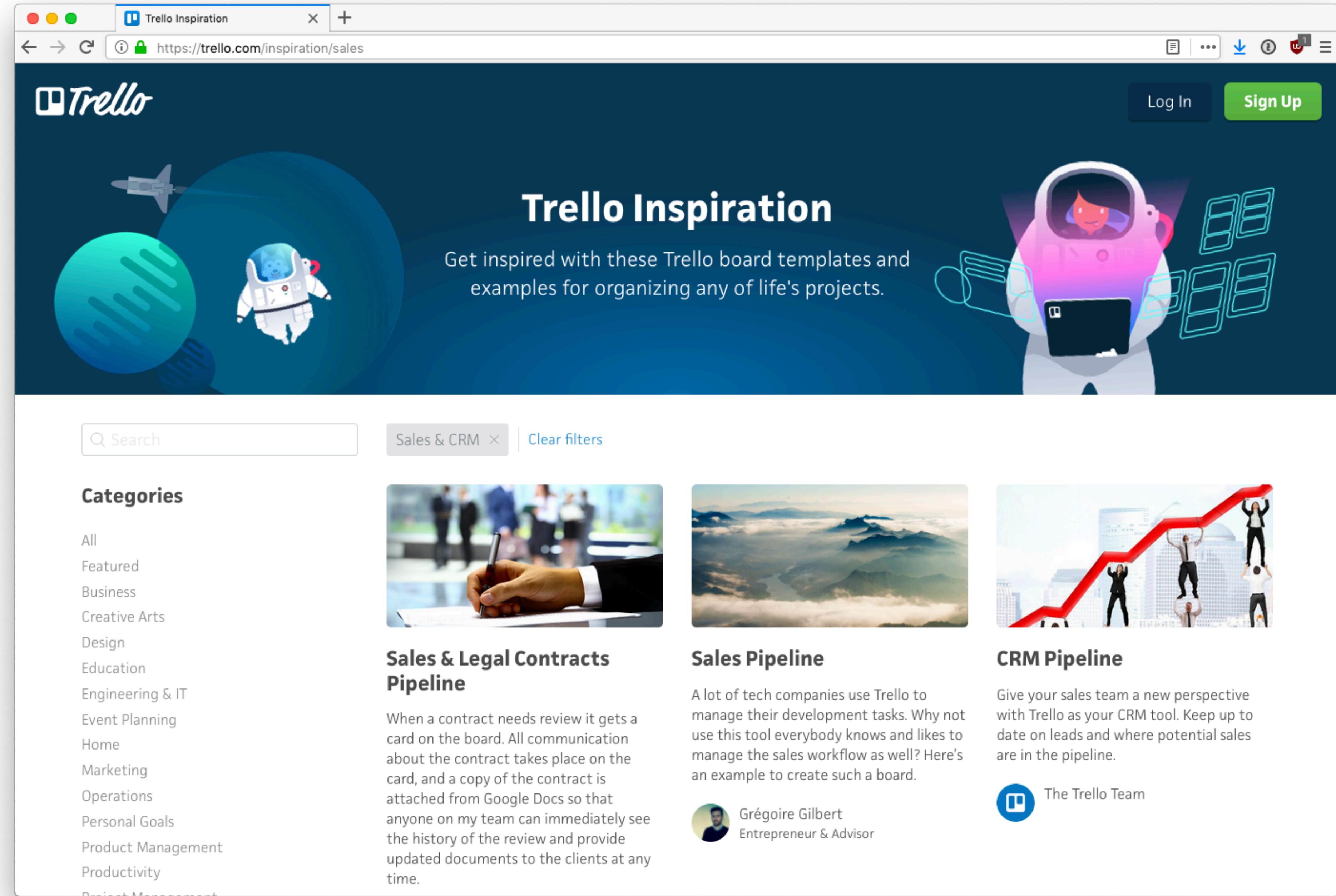
How you ask is everything.

The versatile data collection tool for professionals. Typeform makes asking easy & answering refreshing.

Sign up free See examples

A screenshot of the Typeform website homepage. The page features a large, bold headline "How you ask is everything." followed by a descriptive paragraph about the tool's versatility. Below the text are two buttons: "Sign up free" and "See examples". The main visual is a photograph of a woman smiling, with several concentric circles drawn around her face, symbolizing the impact of asking the right questions. In the bottom right corner of the image, there is a smaller inset photo showing a group of people sitting on a beach, representing diverse responses or users. The top navigation bar includes links for Product, Connect, Pricing, Help, and Blog, along with Login and Sign up buttons. The URL https://www.typeform.com is visible in the browser header.



A screenshot of the Trello Inspiration website. The header features the Trello logo, a search bar, and navigation links for 'Log In' and 'Sign Up'. The main title 'Trello Inspiration' is displayed prominently. Below it, a sub-headline reads 'Get inspired with these Trello board templates and examples for organizing any of life's projects.' On the left, there's a sidebar with a search bar, a 'Sales & CRM' filter, and a list of categories: All, Featured, Business, Creative Arts, Design, Education, Engineering & IT, Event Planning, Home, Marketing, Operations, Personal Goals, Product Management, and Productivity. A red circular icon with a white bus symbol is located at the bottom left. The main content area shows four examples: 'Sales & Legal Contracts Pipeline' (image of a hand signing a document), 'Sales Pipeline' (image of a landscape with mountains and clouds), and 'CRM Pipeline' (image of people standing on a red line graph). Each example includes a brief description and a bio for Grégoire Gilbert.

Trello Inspiration

Get inspired with these Trello board templates and examples for organizing any of life's projects.

Search

Sales & CRM | Clear filters

Categories

- All
- Featured
- Business
- Creative Arts
- Design
- Education
- Engineering & IT
- Event Planning
- Home
- Marketing
- Operations
- Personal Goals
- Product Management
- Productivity



Sales & Legal Contracts Pipeline

When a contract needs review it gets a card on the board. All communication about the contract takes place on the card, and a copy of the contract is attached from Google Docs so that anyone on my team can immediately see the history of the review and provide updated documents to the clients at any time.



Sales Pipeline

A lot of tech companies use Trello to manage their development tasks. Why not use this tool everybody knows and likes to manage the sales workflow as well? Here's an example to create such a board.



CRM Pipeline

Give your sales team a new perspective with Trello as your CRM tool. Keep up to date on leads and where potential sales are in the pipeline.

 Grégoire Gilbert
Entrepreneur & Advisor

The Trello Team

Sales - CRM Pipeline | Trello +

https://trello.com/b/lrAla0JW/sales-crm-pipeline

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Sales - CRM Pipeline | Inspiring Boards BC | Public |  8 ... Show Menu

Sales Pipeline CRM Template:

Create a pipeline for managing incoming leads or requests that is adaptable to your team's needs for any type of contact or customer relationship management.

Organize contact info and notes on each lead's card.

Keep assets in one centralized location by attaching all the relevant materials, like emails and follow-up requests to cards.

Keep business development on track by assigning team members and due dates to tasks, then watch as they move the card through the process from "Incoming" to "Done."

This process can be adapted to an incoming ticketing system for any contact or user management: Capturing Sales Leads, Customer Support tickets, etc.

Copy or create a board like this board (click for info)

Contacted Us

HOT! Kabul Industries 

HOT! Shusko Station 

Leads

HOT! A'roFilter 

HOT! Gantor Mining Company 

Warm Quarren Industrial 

HOT! Mensix Corp 

Cold Jonex 

Contacted

HOT! Fax Ventures 

HOT! Kanauer Corporation 

Warm INFRAC 

Warm Spagga Core, Inc. 

Meeting Scheduled

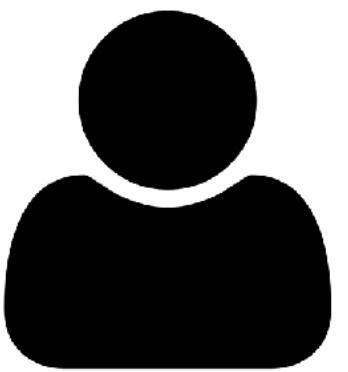
HOT! Wain Prospecting  2/3

HOT! Vulca Minerals  1/3

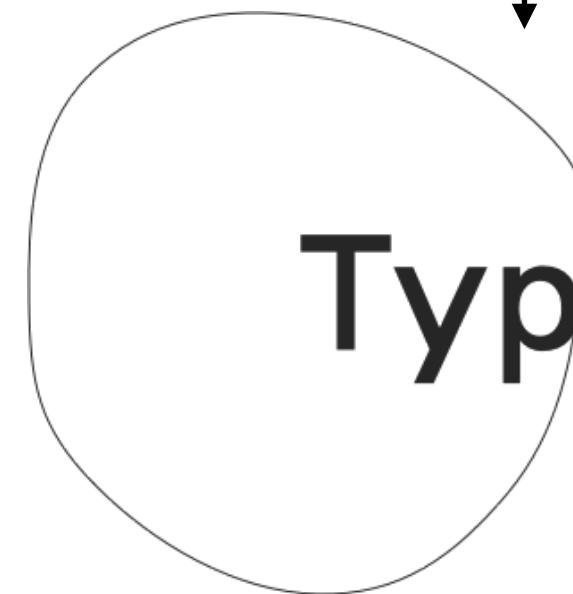
Warm TaggeCo  2/3

Cold MineSystems  1/3





Fills form



Typeform

Webhook



Trello





le wagon
Executive

Thank you!

