Introduction to API

> API is the acronym for Application Programming Interface, which is **a software intermediary that allows two applications to talk to each other**. Each time you use an app like Facebook, send an instant message, or check the weather on your phone, you're using an API.

What applications use API?

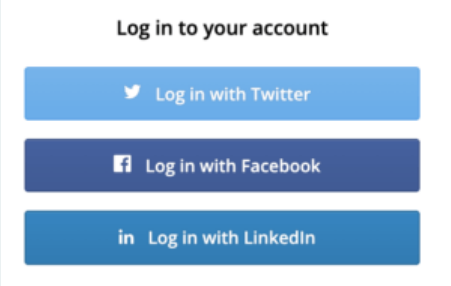
Web applications use APIs to connect user-facing front ends with all-important back end functionality and data. Streaming services like Spotify and Netflix use APIs to distribute content. Automotive companies like Tesla send software updates via APIs. Others use APIs to unlock car data for third-parties

1. Weather Snippets

Google utilizes APIs to display relevant data from user search queries.

One common API usage example we come across on a daily basis is **weather data**. Rich weather snippets seem to be commonplace, found on all platforms, like Google Search, Apple's Weather app, or even from your smart home device. For example, if you search "weather + [your city's name]" on Google, you'll see a dedicated box at the top of the search results (called a *rich snippet*) with the current weather conditions and forecast. As an example, here's the search for "weather new york".

2. Log-in Using XYZ

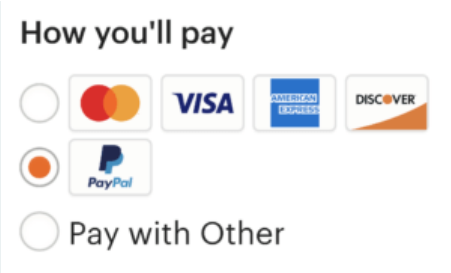


Taken from Buffer's social login

Another prominent example of API usage is the "log-in using Facebook/Twitter/Google/Github" functionality you see on so many websites. It's incredibly convenient, but have you ever wondered how it works?

Instead of actually logging-in to users' social media accounts (which would pose a serious security concern), applications with this functionality leverage these platforms' APIs to authenticate the user with each login. For example, here's the Facebook Login API.

3. Pay with PayPal



Most online stores offer Paypal and other payment methods, utilizing API connections to these services.

Ever used PayPal to pay for something, directly within an eCommerce store? Yep, that's also an API at work. Just like with logging-in using a social media service, the "Pay with PayPal" functionality is built with APIs to ensure that the end application can only do what it needs to, without being exposed to sensitive data or gaining access to unintended permissions.

In terms of the inner-workings of this handy function, it's very similar to the log-in process described above. When the user clicks the "Pay with PayPal" button, the application sends an "order" request to the PayPal API, specifying the amount owed and other important details. Then, a pop-up authenticates the user and confirms their purchase. Finally, if everything goes to plan, the API sends confirmation of payment back to the application.

4. Twitter Bots

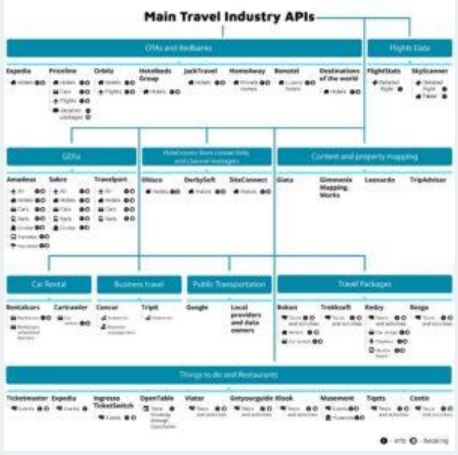
TinyCareBot, a Twitter bot, uses the Twitter API to automate posts.

Another example of APIs at work is the huge range of **bots** on Twitter. Twitter bots are accounts that automatically tweet (or retweet), follow, and send direct messages based on software instructions. There are *loads* of bots on Twitter, but here are just a few of our favorites:

- TinyCareBot: Sends hourly reminders to drink water, stretch, get fresh air, and more.
- Grammar Police: Identifies common grammar mistakes made by its followers.
- Netflix Bot: Tweets when new content is released on Netflix.

All of these bots are powered by the Twitter API. Aside from allowing you to execute simple actions — like Tweeting a certain phrase or following a user — the Twitter API can also tell bots when something specific happens on the platform. For example, you can ask the Twitter API to tell your bot whenever it receives a new follower. Then, you can program your bot to send a message to that follower using the API.

5. Travel Booking



There are many APIs at work within the travel and booking industry. Click to expand this graphic by AltexSoft.

Ever wondered how travel booking sites are able to aggregate thousands of flights and destinations and showcase the cheapest option? Often, the answer is by using third-party APIs to collect flight and hotel availabilities from providers. Likewise, if you make a booking through one of these services, they'll use APIs to confirm the trip with the provider they sourced it from.

APIs are great for travel services since they make it easy for machines to quickly and autonomously exchange both data *and* requests — in this case, trip availabilities and reservation requests. Without using APIs, an employee of the booking service would have to manually email the airline or hotel to find out their availability. Then, after an email comes back from the provider, they'd have to confirm it with the traveler. By the time the travel broker sends yet another email back to the provider, confirming the trip, it'd probably no longer be available!

Behind the Scenes with APIs

So far, this article has discussed **five everyday examples of API usage**. However, it's important to recognize that APIs are used behind the scenes for a *whole* lot more than those examples could ever illustrate! This is especially true in corporate sectors, where effectively storing and exchanging data is paramount to everyday operation.

Here are just some of the ways APIs power our lives from behind the scenes:

- **Financial institutions** like banks use private APIs to track and manage checking accounts, credit cards, and more.
- **Retail giants** use APIs to communicate with courier networks, ensuring packages are picked up as soon as possible and tracking them as they are moved.
- **Web applications** use APIs to connect user-facing front ends with all-important back end functionality and data.
- **Streaming services** like Spotify and Netflix use APIs to distribute content.
- **Automotive** companies like Tesla send software updates via APIs. Others use APIs to unlock car data for third-parties