

An Introduction to APIs

Kevin Lewis - Developer Advocate, Vonage



Hi! I'm Kevin & I work for Vonage

Integrate voice, video & messaging with our cloud communications platform.



You Got This

You Got This Conferences

Community events focusing on core skills needed for a happy, healthy work life.

IT'S NOT YOUR JOB TO LOVE YOUR JOB



Keziah Lewis
@KeziahL

LENDING PRIVILEGE



Anjuan Simmons
@anjuan

LEVEL UP: DEVELOPING DEVELOPERS



Melinda Seckington
@mseckington

MAKING YOUR FIRST DAYS COUNT



Nathaniel Okenwa
@chatterboxCoder

NEGOTIATING AFTER YOUR START DATE



Jeanine Mendez
@j9mendez

PERFECTIONISM, IMPOSTER SYNDROME & ANXIETY



Jo Franchetti
@ThisIsJoFrank

REAL TALK ABOUT WHEN TO WALK AWAY



Amy Dickens
@RedRoxProjects

THE POWER OF CO-WORKING



Suze Shardlow
@SuzeShardlow

UX YOUR CV



Matt Rose
@mrjesslynnrose

In This Session

First

We'll take time to understand APIs

Then

We'll use a couple of APIs ourselves

Finally

We'll briefly cover more concepts

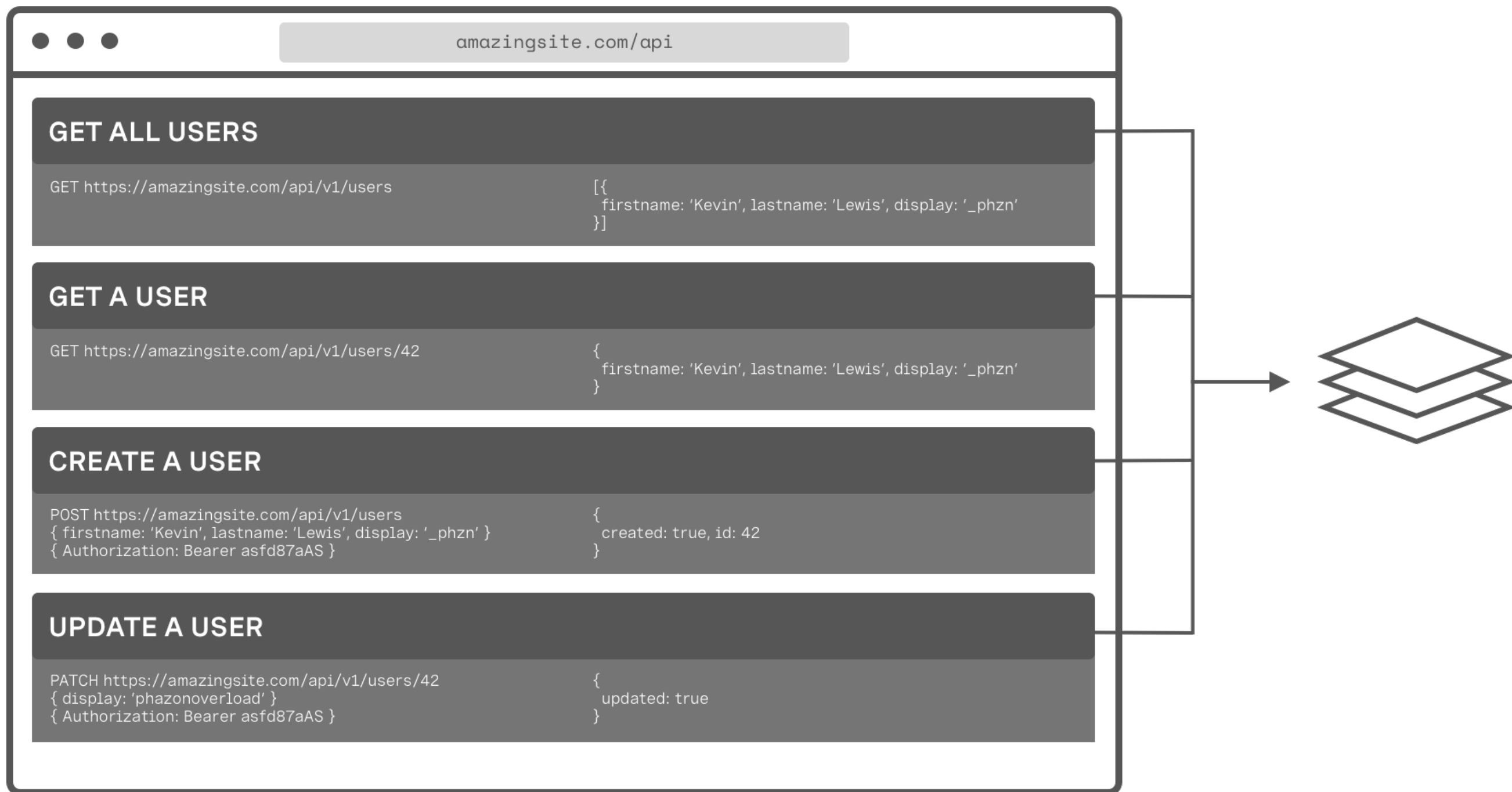
GET ALL USERS

GET A USER

CREATE A USER

UPDATE A USER







Welcome to TheAudioDB

TheAudioDB is a community Database of audio artwork and metadata with a JSON API.

The content here is only possible thanks to the hard work of our editors.

If you like the site, please consider [registering](#) as an editor or supporting our [patreon](#) campaign.



👤 Currently: 550 supporters 🙌



👤 **User Edits:** 775,590 🎵 **Albums:** 236,150 🎧 **Tracks:** 2,815,714

Scores

- ★ zag The Temptatio - My Girl 10
- ★ zag Talla 2XLC - Carry Me (10
- ★ zag Talla 2XLC - Eternal My 10
- ★ zag Talla 2XLC - No Inbetwe 10
- ★ zorg2000k Sabaton - The Last S 7

Edits (131 today)

- manfeed Dream Girl: The misco 📺 Cover [47 secs ago]
- Axel1105 Don Robey 🇩🇪 Bio German [1 min ago]
- manfeed Why So Serious?: The 📺 Cover [1 min ago]
- manfeed I'm Your Boy 📺 Cover [3 mins ago]
- Axel1105 Steve Winwood 🇩🇪 Bio German [3 mins ago]

Loves

- zag The Temptatio - My Girl ❤️
- xmha97 B-band ❤️
- xmha97 Little Mix ❤️
- zag Talla 2XLC - Carry Me (❤️
- zag Talla 2XLC - Eternal My ❤️

The Directions API overview

The Directions API is a [web service](#) that uses an HTTP request to return JSON or XML-formatted directions between locations. You can receive directions for several modes of transportation, such as transit, driving, walking, or cycling.

For direction calculations that respond in real time to user input (for example, within a user interface element), you can use the Directions API or, if you're using the Maps JavaScript API, use the [Directions service](#). For server-side use, you can use [Java Client](#), [Python Client](#), [Go Client](#) and [Node.js Client for Google Maps Services](#).

Getting started

- Try out the Directions API by completing the quickstart:

Quickstart

- Start developing with the Directions API by setting up your Google Cloud project:

Set up in Cloud Console

- For a list of all parameters when building your Directions API HTTP request:

Getting directions

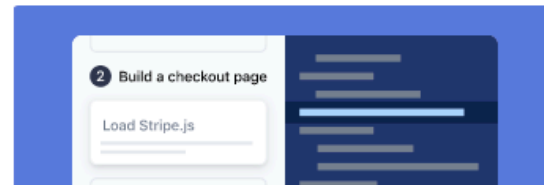
- Overview
- Online payments
- Subscriptions and invoices
- In-person payments
- Multiparty payments
- After the payment
- Add payment methods
- Stripe Checkout
- About the APIs
- Regulation support
- Testing

Payments

Find a guide to integrate Stripe's payments APIs.

Not ready for a full integration? See options for getting started quickly without code →

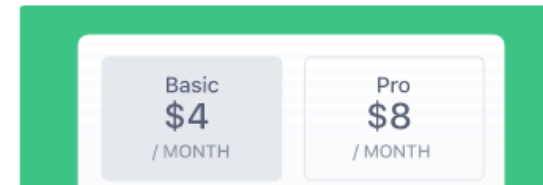
Most popular Online In-person Subscriptions Invoices



Accept online payments

Build a payment form or use a prebuilt checkout page to accept online payments.

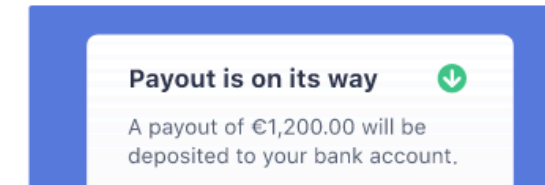
PAYMENTS



Create a subscription

Set up recurring billing for your SaaS or e-commerce business.

BILLING



Receive payouts

Set up your bank account to receive payouts.

PAYMENTS

Multiparty payments

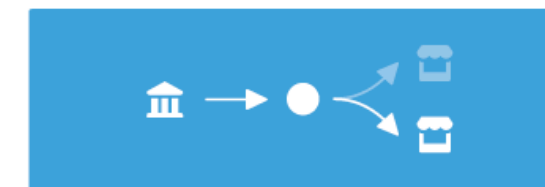
Build a platform, marketplace, or any two-sided business with Stripe Connect.



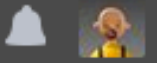
Collect payments then pay out



Enable businesses to accept payments directly



Pay out money NO CODE REQUIRED

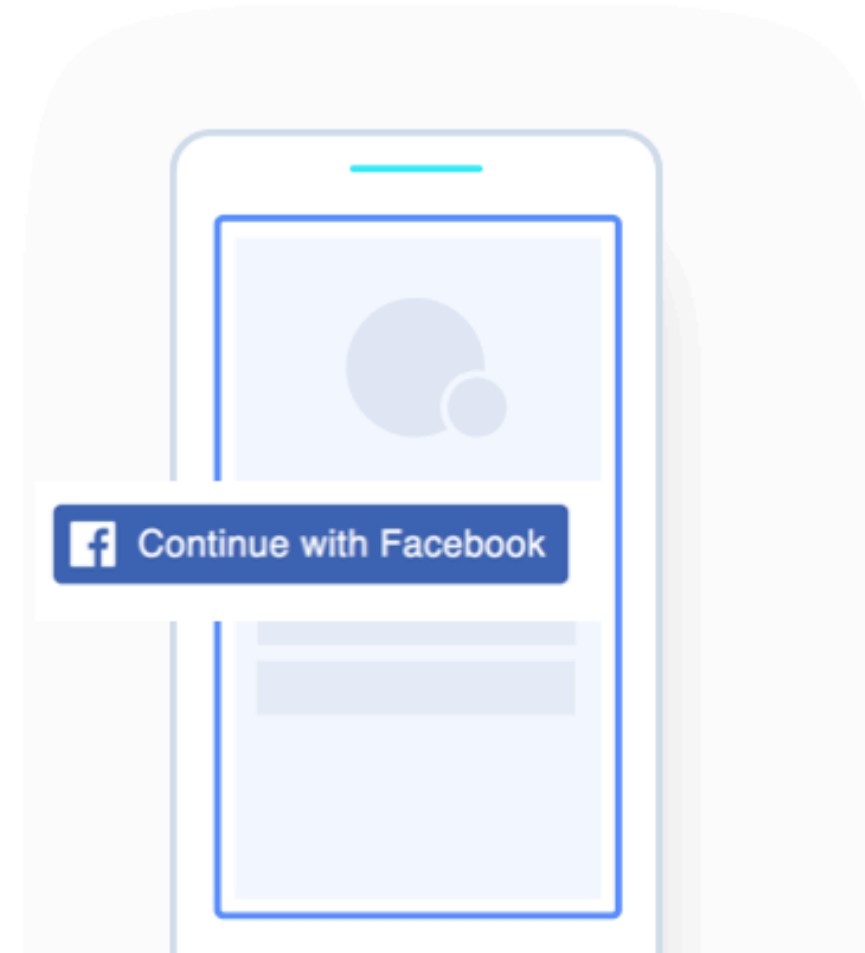


Facebook Login

[Overview](#)[iOS](#)[Android](#)[Web](#)[For Devices](#)[Best Practices](#)[User Experience Design](#)[Login Security](#)[Permissions](#)[Access Tokens](#)[Authentication Versus
Data Access](#)[Testing](#)[Advanced](#)[Changelog](#)[Limited Login](#)[Business Login for Direct
Businesses](#)

Facebook Login

A secure, fast, and convenient way for users to log into your app, and for your app to ask for permissions to access data

[iOS](#)[Android](#)[Websites or mobile websites](#)[Devices](#)

On This Page

[Facebook Login](#)[Get Started](#)[Plan](#)[Review and Test](#)[Submit Your App for Review
and Approval](#)[Advanced](#)[Business Results](#)[Further Resources](#)

Get Started

Overview

Core use cases and features for Facebook Login.

Vonage API Developer

Everything you need to build connected applications with Vonage APIs



SEND AND RECEIVE

SMS

Overview

Guides

Code Snippets

Tutorials

API Reference



PROGRAMMABLE

Voice

Overview

Guides

Code Snippets

Tutorials

API Reference

NCCO Reference



PROGRAMMABLE

Video

Overview

Guides

Code Snippets

Tutorials

API Reference



USER AUTHENTICATION

Verify

Overview

Guides

Code Snippets

Tutorials

API Reference



USER IDENTITY

Number Insight

Overview

Guides

Code Snippets

Tutorials

API Reference



PROGRAMMABLE CONVERSATIONS Beta

Conversation API

Overview

Concepts

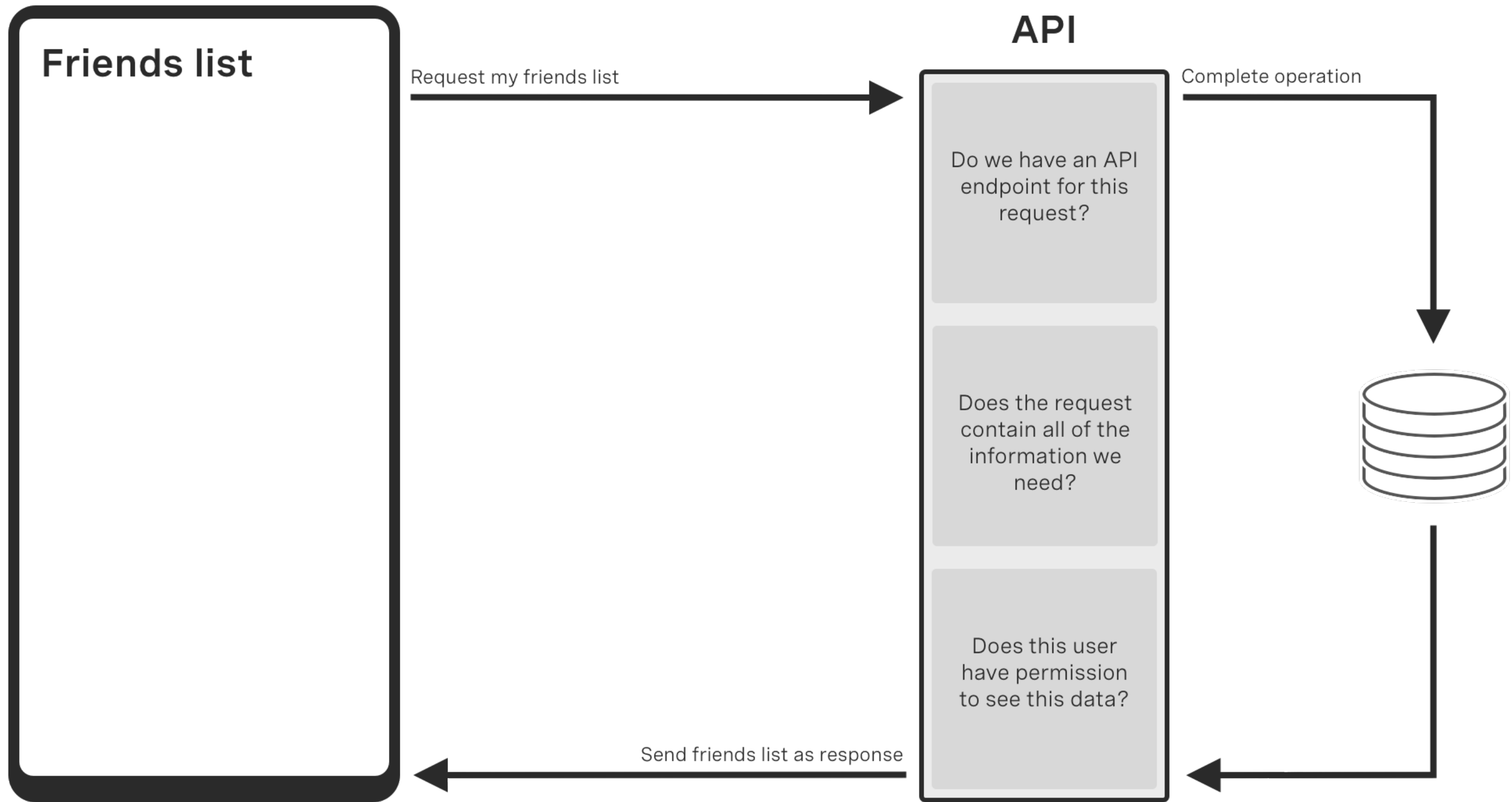
Code Snippets

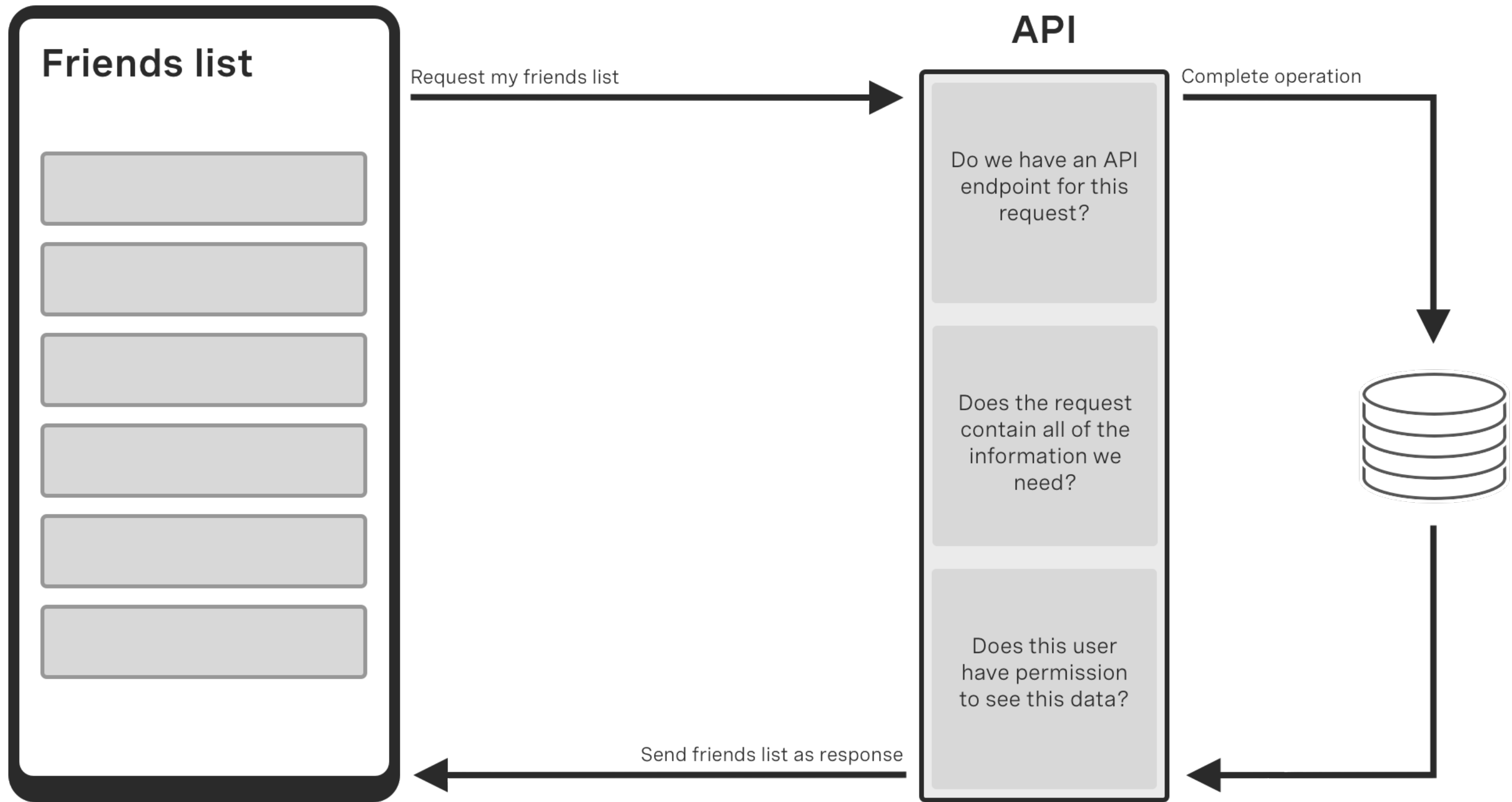
Tutorials

API Reference







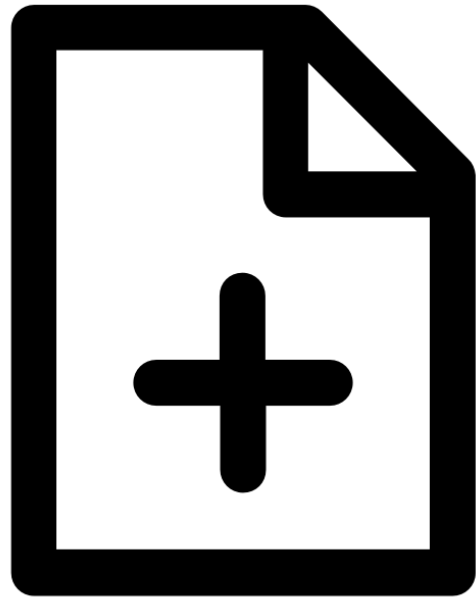


APIs provide a contract between the company providing it and a developer. If you request data in the correct way, you should receive a response.

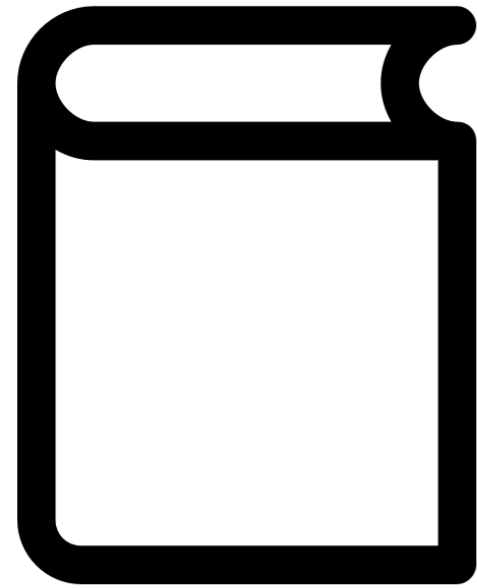
Ingredients in an API Request

HTTP Method

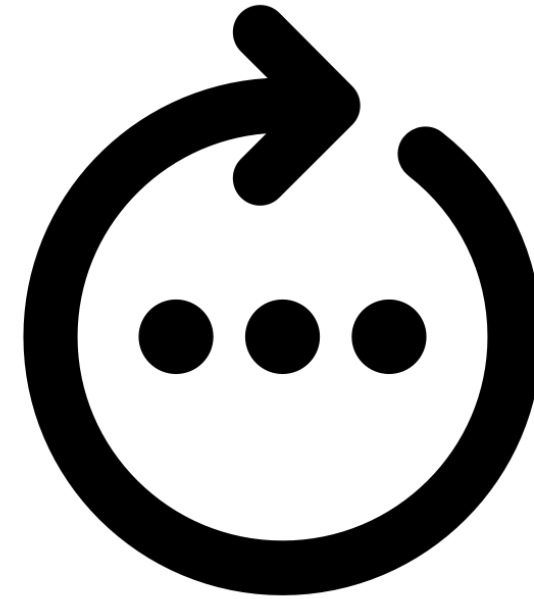
Type of request



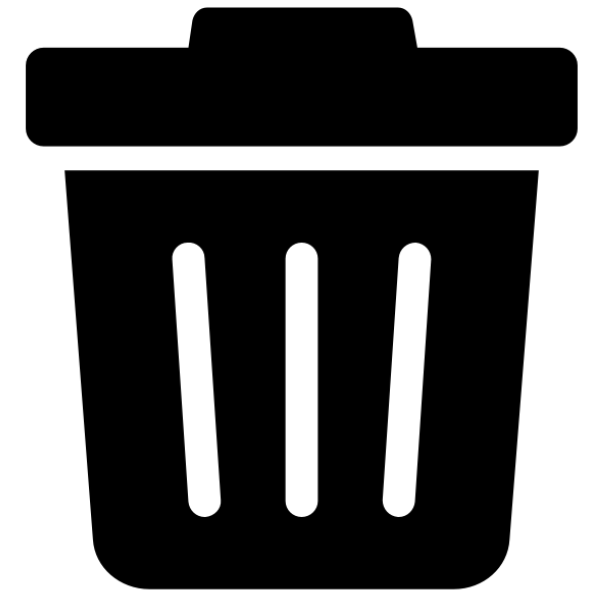
CREATE



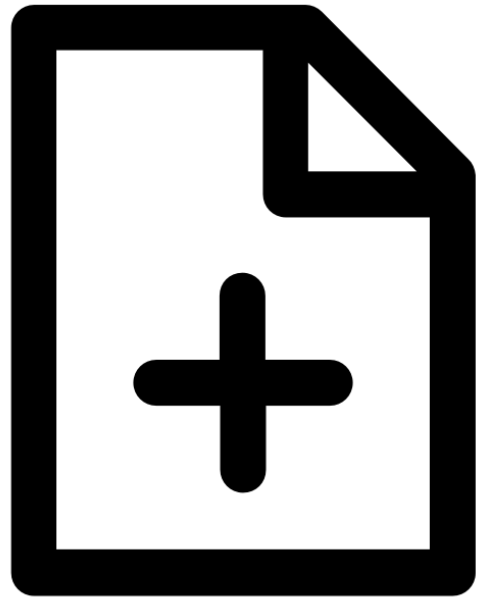
READ



UPDATE

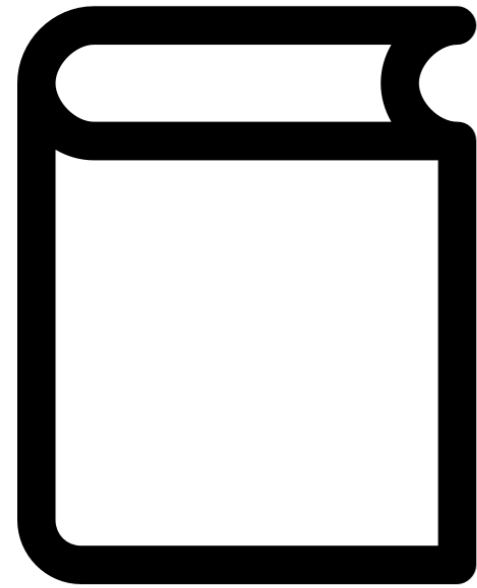


DELETE



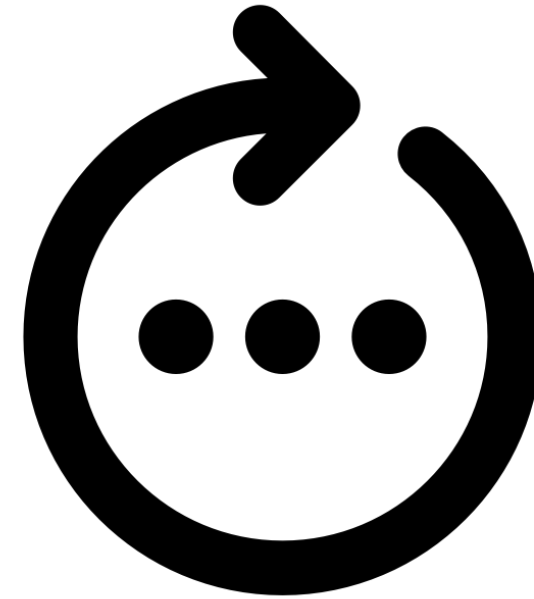
CREATE

POST



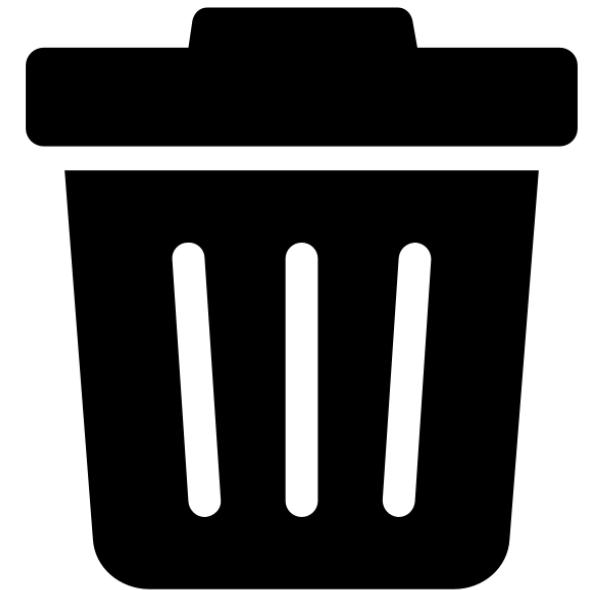
READ

GET



UPDATE


PUT



DELETE

DELETE

Ingredients

 HTTP Method - GET, POST, etc

Endpoints

URL for the request

INTERACTIVE API TESTER

The panel below displays documentation all endpoints, parameters and error messages available to the Marvel API. For a more detailed explanation of API structure, please read the [full documentation](#). If you have an API key, you can also test API calls directly from this panel. Just log-in to your Marvel account and your key will be pre-filled. (If you don't have a key, [get one now](#).)


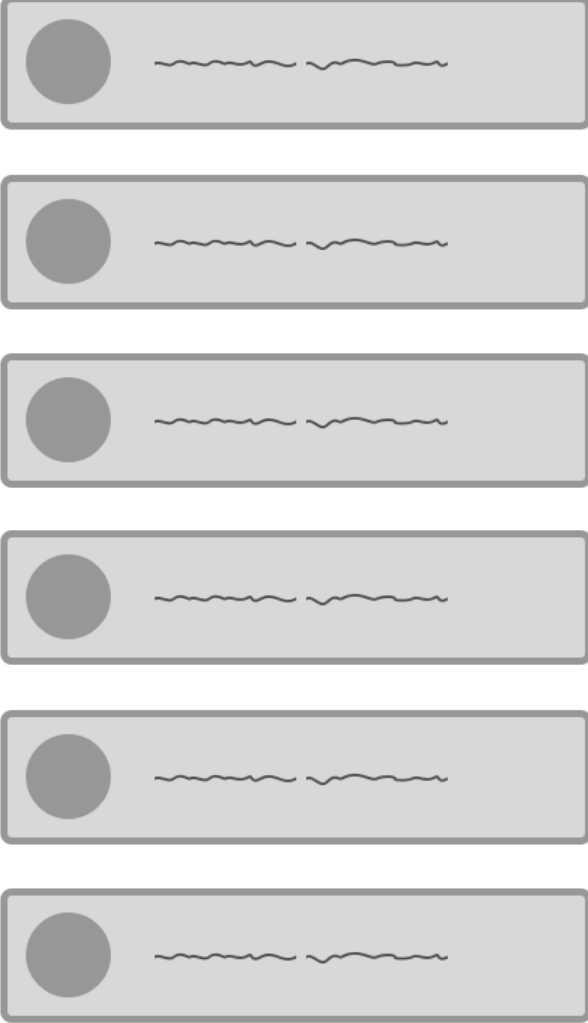


public :

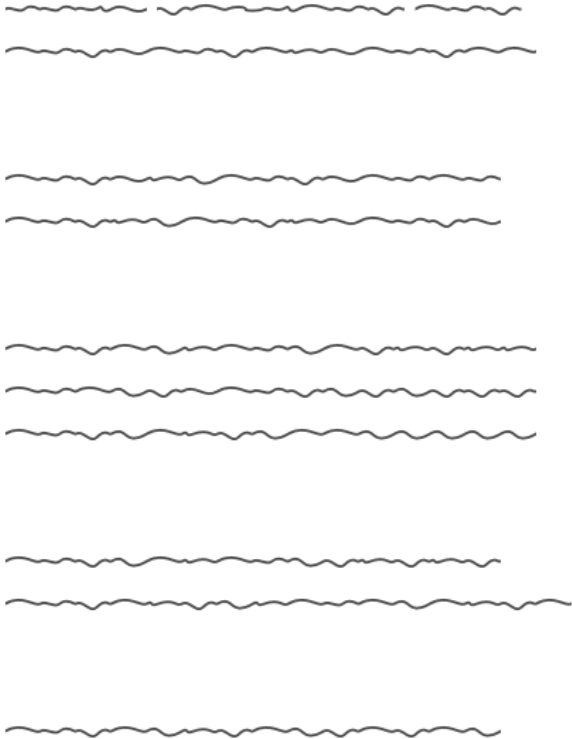
[Show/Hide](#) | [List Operations](#) | [Expand Operations](#) | [Raw](#)

GET	/v1/public/characters	Fetches lists of characters.
GET	/v1/public/characters/{characterId}	Fetches a single character by id.
GET	/v1/public/characters/{characterId}/comics	Fetches lists of comics filtered by a character id.
GET	/v1/public/characters/{characterId}/events	Fetches lists of events filtered by a character id.
GET	/v1/public/characters/{characterId}/series	Fetches lists of series filtered by a character id.
GET	/v1/public/characters/{characterId}/stories	Fetches lists of stories filtered by a character id.
GET	/v1/public/comics	Fetches lists of comics.
GET	/v1/public/comics/{comicId}	Fetches a single comic by id.
GET	/v1/public/comics/{comicId}/characters	Fetches lists of characters filtered by a comic id.
GET	/v1/public/comics/{comicId}/creators	Fetches lists of creators filtered by a comic id.
GET	/v1/public/comics/{comicId}/events	Fetches lists of events filtered by a comic id.
GET	/v1/public/comics/{comicId}/stories	Fetches lists of stories filtered by a comic id.
GET	/v1/public/creators	Fetches lists of creators.

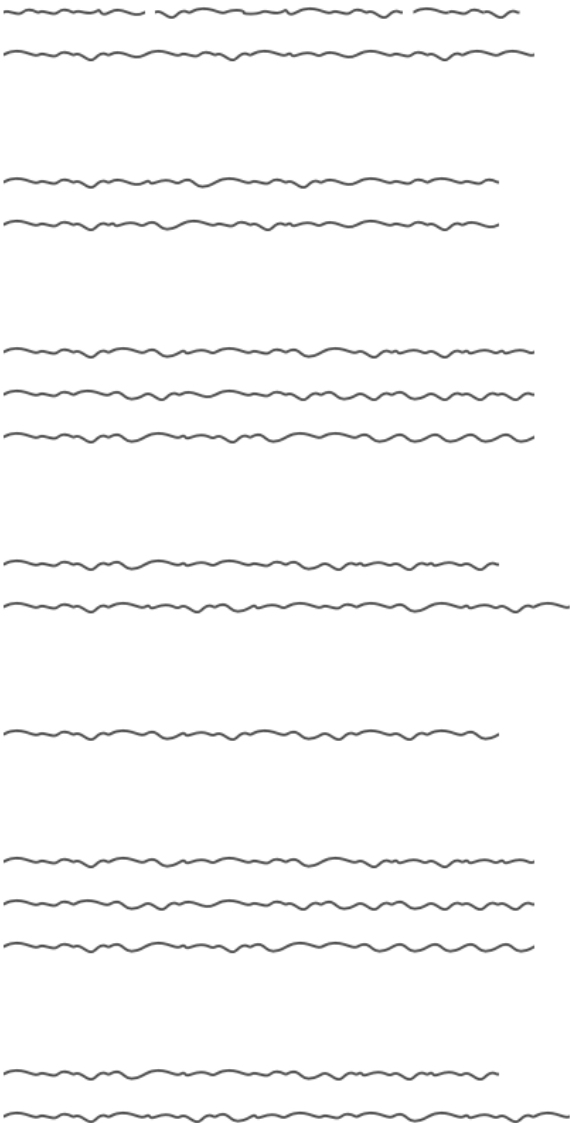
Users




Agatha Harkness



Posts



Post



Ingredients

- ✓ HTTP Method - GET, POST, etc
- ✓ Endpoint - a URL

Lets make an API request

lws.io/apis-1

Getting data from an API

```
axios.get("https://yougotthis.io/talks-flat.json")  
  .then(function(response){  
    console.log(response.data)  
  })
```

Ingredients

- ✓ HTTP Method - GET, POST, etc
- ✓ Endpoint - a URL

Body

A set of data sent with the request

Example bodies

- Message content
- Files to upload
- New user information
- Phone number to call

api.lws.io

POST /people

Required body

```
{  
  "name": "Your Name",  
  "location": "Place Name"  
}
```

Success: HTTP 200

```
{  
  "name": "Kevin Lewis",  
  "location": "London, UK",  
  "id": "rec17pDfbhg9qUtev",  
  "created": "2021-02-24T12:18:36.000Z"  
}
```

Error: HTTP 400

HTTP 400 means the body with your request is missing or invalid. The message will describe what is missing.

```
{  
  "error": "error message"  
}
```

Error: HTTP 500

```
{  
  "error": "error message"  
}
```

Lets send a POST request
lws.io/apis-2

Ingredients

- ✓ HTTP Method - GET, POST, etc
- ✓ Endpoint - a URL
- ✓ Body - data to send with request

Headers

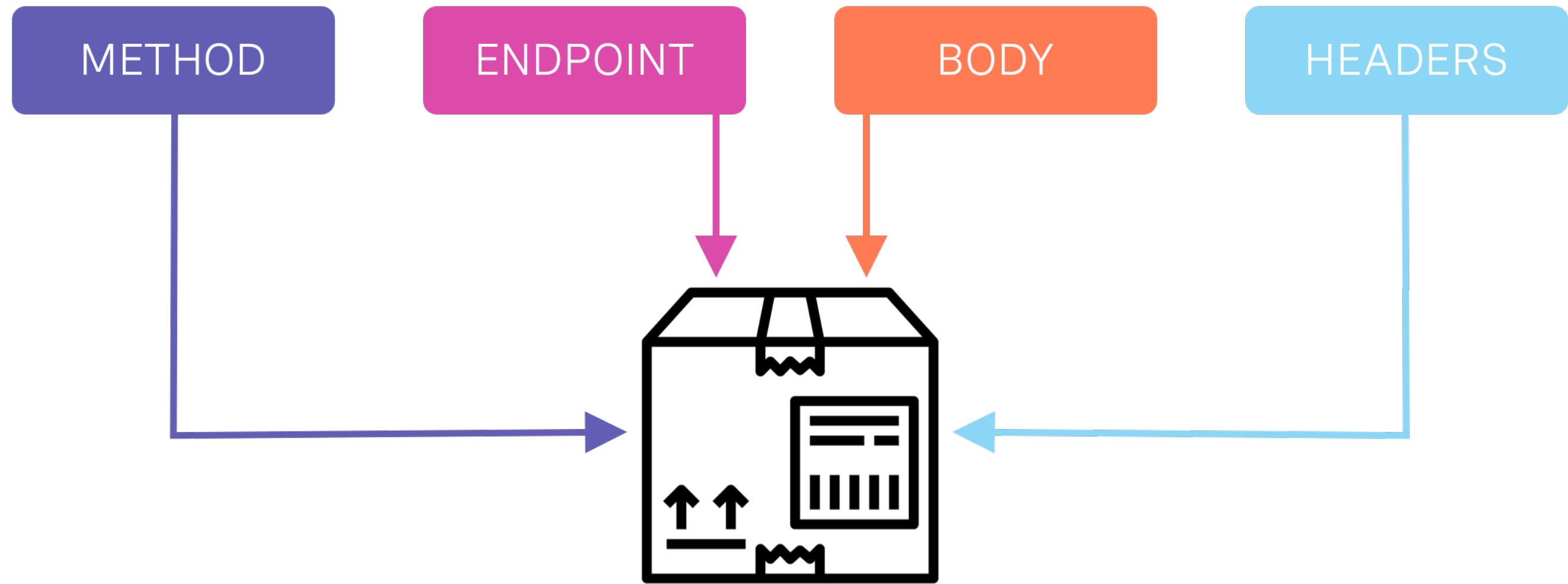
Additional info, often including authentication

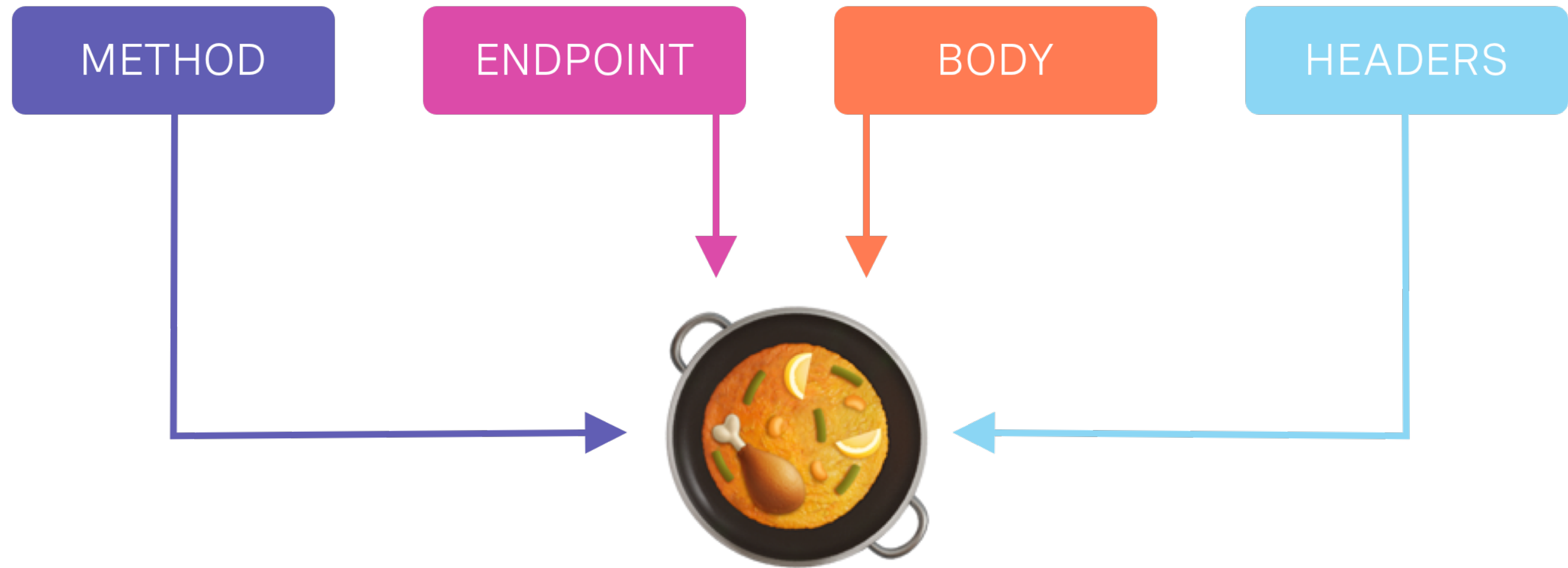


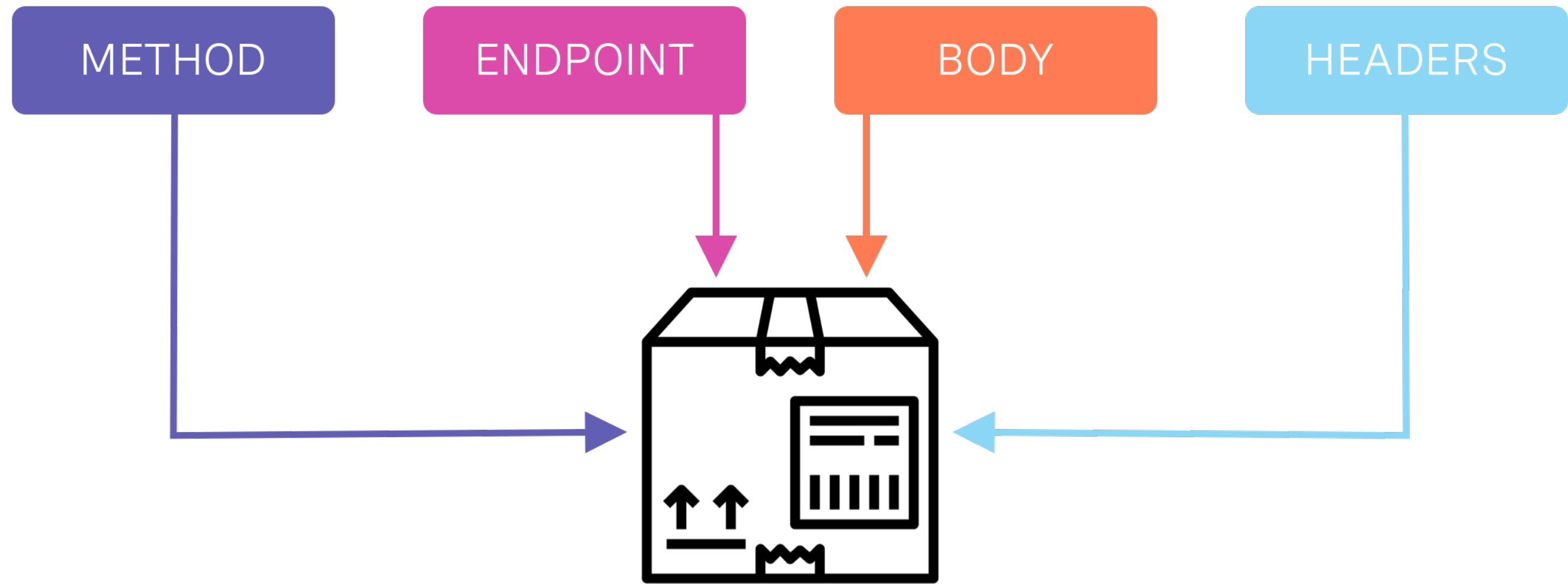
Ingredients

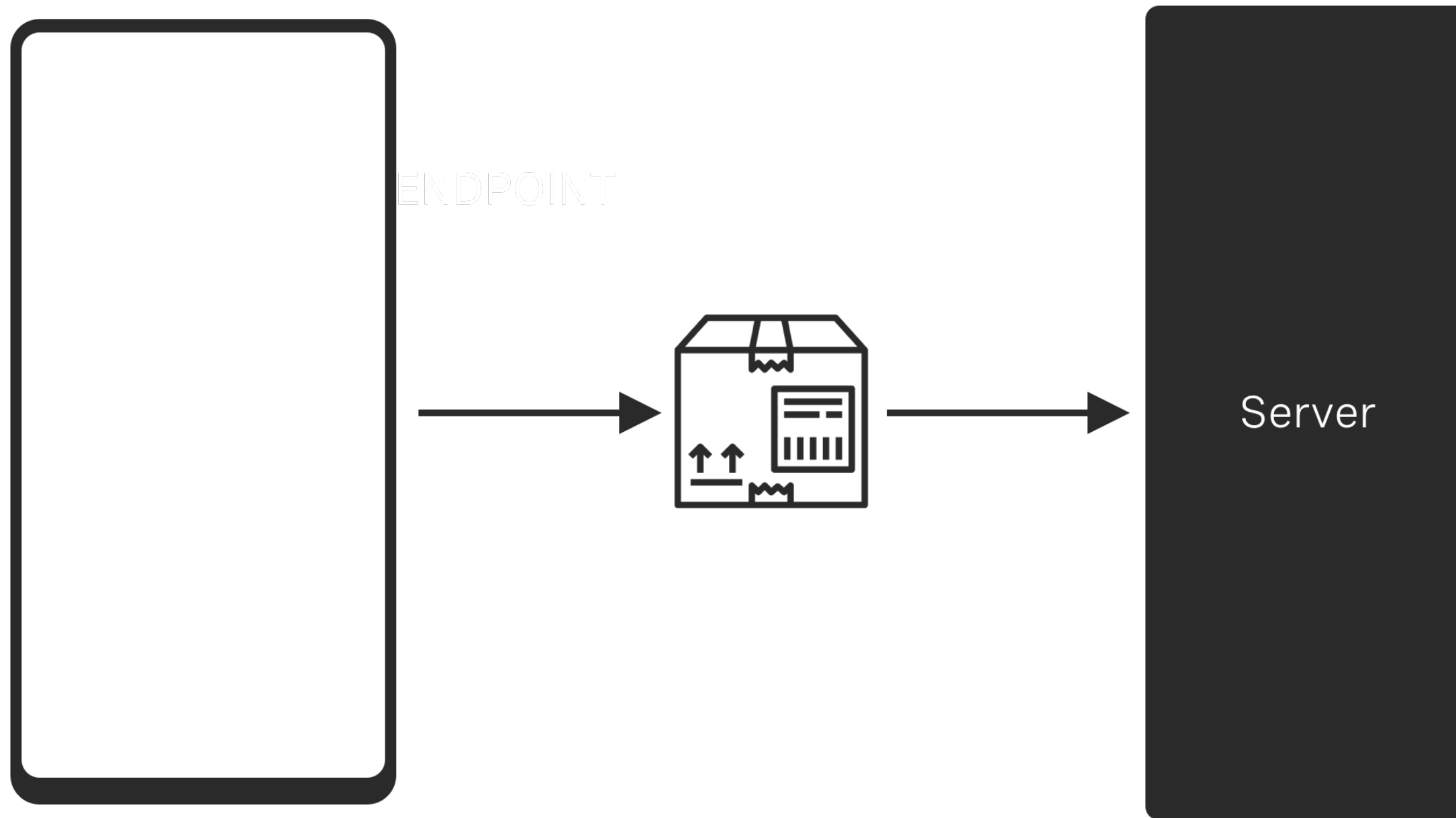
- ✓ HTTP Method - GET, POST, etc
- ✓ Endpoint - a URL
- ✓ Body - data to send with request
- ✓ Headers - additional info & settings

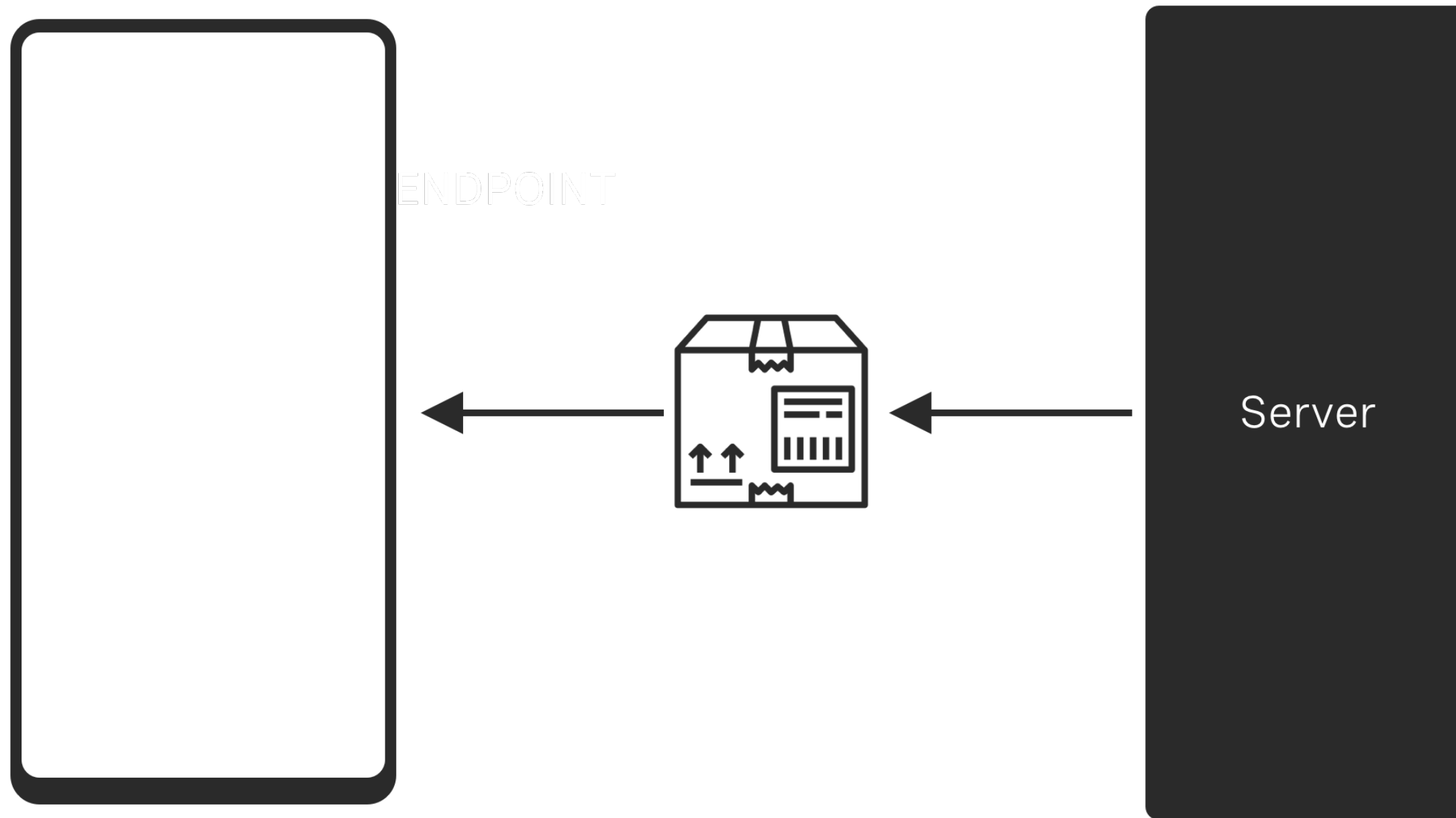
**NOT EVERY API IS THE SAME.
READ THE DOCS.**











HTTP Status Codes

Comes with response and gives indication of overall result

HTTP Status Codes

Code Range

Meaning

200

Here is the data

401

Not authorized

404

Does not exist

POST /people

Required body

```
{  
  "name": "Your Name",  
  "location": "Place Name"  
}
```

Success: HTTP 200

```
{  
  "name": "Kevin Lewis",  
  "location": "London, UK",  
  "id": "rec17pDfbhg9qUtev",  
  "created": "2021-02-24T12:18:36.000Z"  
}
```

Error: HTTP 400

HTTP 400 means the body with your request is missing or invalid. The message will describe what is missing.

```
{  
  "error": "error message"  
}
```

Error: HTTP 500

```
{  
  "error": "error message"  
}
```

APIs describe a set of instructions that developers can use to interact with a platform.

Requests always have a method and endpoint.

They may also have a body and headers.

Responses have a HTTP status code, and almost always a body.

Language SDKs

Calls
Stream Audio
Play TTS
Play DTMF

Create an outbound call

Create an outbound Call

POST <https://api.nexmo.com/v1/calls>

Authentication

Key	Description	Example	Default
Authorization	Your JSON web token. Read more about JWTs	Bearer <JWT>	None

Request body application/json

Call Details

With NCCO With Answer URL

ncco
array of objects | **REQUIRED**
The [Nexmo Call Control Object](#) to use for this call.

to
array | **REQUIRED**

Choose an option: • Connect to a Phone (PSTN) number

- Connect to a SIP Endpoint
- Connect to a Websocket
- Connect to a VBC extension

type
string | **REQUIRED**
The type of connection. Must be `phone`

number
string | **REQUIRED** | **MIN: 7** | **MAX: 15**
The phone number to connect to

dtmfAnswer
string
Provide [DTMF digits](#) to send when the call is answered

Example Request » With NCCO

Required Fields Only All Fields

```

{
  "ncco": [
    {
      "action": "talk",
      "text": "Hello World"
    }
  ],
  "to": [
    {
      "type": "phone",
      "number": "14155550100"
    }
  ],
  "from": {
    "type": "phone",
    "number": "14155550100"
  }
}

```

Example Responses

201

```

{
  "uuid": "63f61863-4a51-4f6b-86e1-46edebcf9356",
  "status": "started",
  "direction": "outbound",
  "conversation_uuid": "CON-f972836a-550f-45fa-956c-12a2ab5b7d22"
}

```

Feedback

SDKs and Tools

Client SDKs

The [Client SDKs](#) allows you to build in-app messaging and voice solutions. Android, iOS and JavaScript are supported.

Android SDK



Develop voice and message applications using the Client SDK for Android.

iOS SDK



Develop voice and message applications using the Client SDK for iOS.

JavaScript SDK



Develop voice and message applications using the Client SDK for JavaScript.

Server SDKs

The Server SDKs allow you to quickly get up and running with the Vonage APIs in your language of choice.

vonage-ruby-sdk

gem version 7.3.0

Vonage REST API client for Ruby

• Ruby ★ 203 📄 96

vonage-dotnet-sdk

nuget package 5.6.5

Vonage REST API client for .NET

• C# ★ 76 📄 64

vonage-php-sdk

php package 2.4.0

Vonage REST API client for PHP

• PHP ★ 95 📄 3

vonage-node-sdk

npm package 2.10.6-beta2

Vonage REST API client for Node.js

• JavaScript ★ 322 📄 155

vonage-python-sdk

pypi package 2.5.5

Vonage REST API client for Python

• Python ★ 131 📄 94

vonage-java-sdk

version ??.?

Vonage REST API client for Java

• Java ★ 75 📄 113

dashboard.nexmo.com

COUPON ONLY SHOWN LIVE

€10 of credit - coupon expires March 31 2021

Lets use the Vonage
Server SDK for

Node.js

lws.io/apis-3

ORBIT API

About the Orbit API

Prerequisites

Authorization

Postman

Pagination

Rate Limiting

Key Concepts

Common API calls

ORBIT API

Activity Types >

Users >

Activities >

Members >

Notes >

Posts >

Reports >

Rate Limiting

The Orbit API is protected by a number of rate-limiting measures to ensure the stability of the system.

The API is rate-limited at **120 requests per IP per minute.** 

Should you hit this limit, you will receive a response with an HTTP status code set to `429 Too Many Requests`. The time at which you can make the next request will be indicated with a `Retry-After` header. More information about the current rate-limiting status for a particular request is available in the `RateLimit-*` headers.

If you require a higher rate limit, please [get in touch](#), we'd love to learn more about your use case.

Key Concepts

What are some
common features of
API pricing?



- Dashboard
- Projects & Apps
- Products** NEW
- Twitter API
- Labs
- About
- Docs
- Premium
- Dev Environments
- Subscriptions**
- Account

PRODUCT
Search Tweets: Full Archive

CHOOSE PACKAGE
Premium [Change](#)

SELECT LEVEL OF USAGE

PRICE PER MONTH

Configure Search Tweets: Full Archive

Choose product package

Package	Sandbox	Premium
Time frame ⓘ	Full history	Full history
Tweets per request ⓘ	100	500
Counts vs. data ⓘ	Data only	Both
Query length ⓘ	128 characters	1024 characters
Operator availability ⓘ	Standard	Premium
Rate limit per minute ⓘ	30 requests/min	60 requests/min
Enrichments ⓘ	n/a	URLs, Polls, Profile Geo
Dev environments ⓘ	1	2
Monthly Tweet cap ⓘ	5k	1.25M
Rate limit per second ⓘ	10 requests/sec	10 requests/sec
View the API Reference to learn more.	Select	Selected!

Pricing

Get \$200 in free usage for Maps, Routes, and Places every month

MAPS	ROUTES	PLACES
<p>Directions</p> <p>Get directions for transit, biking, driving or walking</p>		<p>\$5</p> <p>PER 1000 REQUESTS</p>
<p>Directions Advanced</p> <p>Get directions for transit, biking, driving or walking, and calculate current or future travel times based on real-time traffic</p>		<p>\$10</p> <p>PER 1000 REQUESTS</p>
<p>Distance Matrix</p> <p>Deliver travel times and distances for one or more locations</p>		<p>\$5</p> <p>PER 1000 <u>ELEMENTS</u></p>
<p>Distance Matrix Advanced</p> <p>Deliver travel times and distances for one or more locations + real-time traffic</p>		<p>\$10</p> <p>PER 1000 <u>ELEMENTS</u></p>
<p>Roads - Route Traveled</p> <p>Determine the route a vehicle travels</p>		<p>\$10</p> <p>PER 1000 REQUESTS</p>
<p>Roads - Nearest Road</p>		

Authenticated Requests

ACCOUNT

- [Overview](#)
- [Referrals and credits](#)
- [Recent activity](#)

WORKSPACES

- [Stream/Blog/Hack Demos](#)
FREE PLAN
- [Vonage Community](#)
PRO PLAN ✨
- [The Late Night Build](#)
FREE PLAN

Account overview



Kevin Lewis [Edit name](#)
kevin.lewis@vonage.com [Edit email](#)
[+ Add password](#)

★ CREDITS

You have \$0 in credit.

Get \$10 in credit for every person you invite.

You've been awarded credit for inviting 2 users

✓ You received \$2 in credit for installing the mobile app.

[Referrals and credits →](#)

↔ API

This is your personal API key. It's required in order to use the [Airtable API](#).

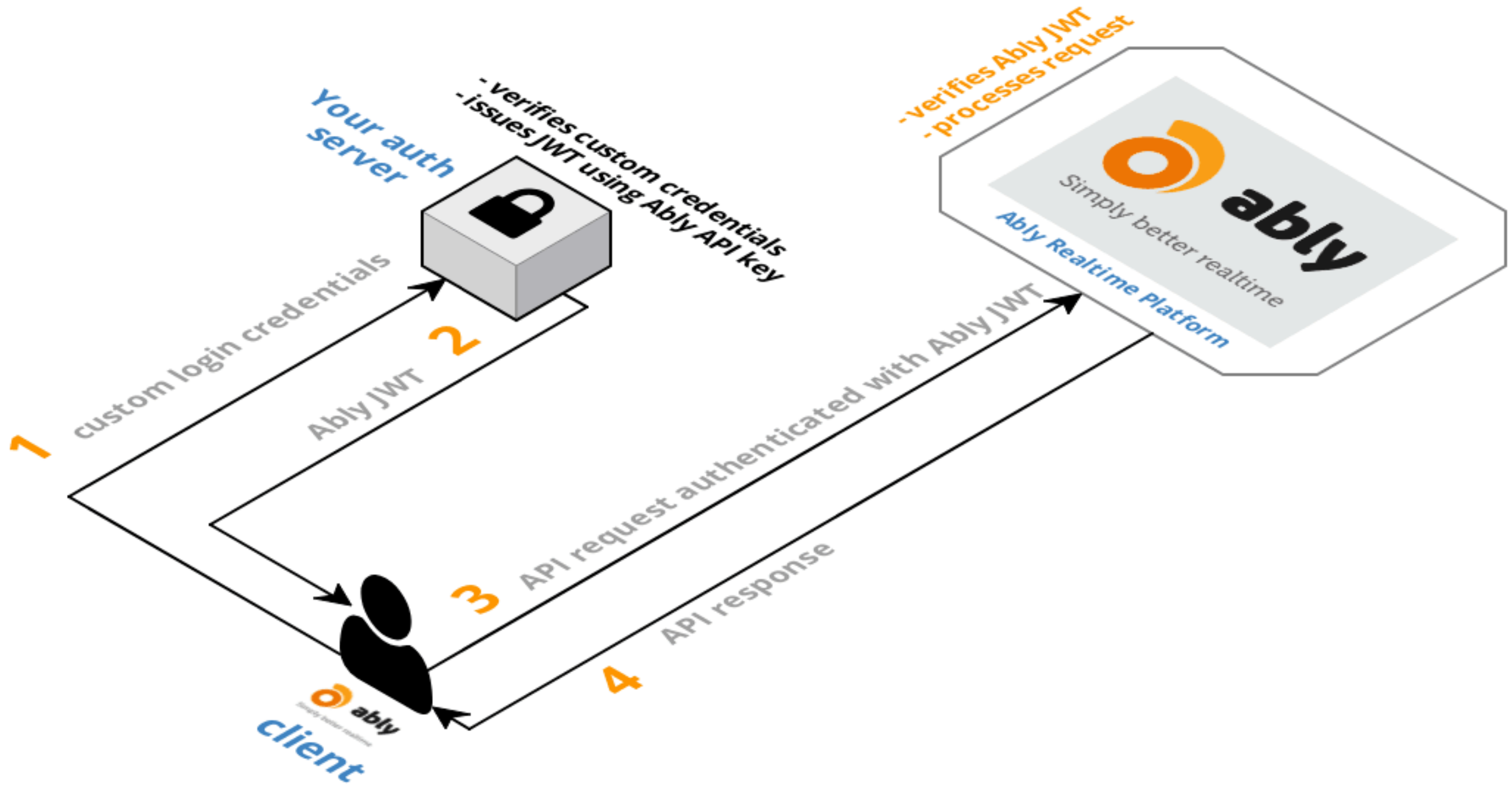
Your personal API key has access to all the data in your Airtable bases.

Only share this key with third-party services and applications that you trust.

To limit the access of a third-party service, consider following [these instructions](#) to create a read-only API key and sharing that key instead .

.....

[↻ Regenerate API key](#) [🗑 Delete key](#)



Introduction to Snowflake

Tutorials, Videos & Other Resources

Release Notes

Connecting to Snowflake

Loading Data into Snowflake

Unloading Data from Snowflake

Using Snowflake

Sharing Data Securely in Snowflake

Managing Your Snowflake Organization

Managing Your Snowflake Account

Managing Security in Snowflake

Summary of Security Features

Authentication

Federated Authentication & SSO

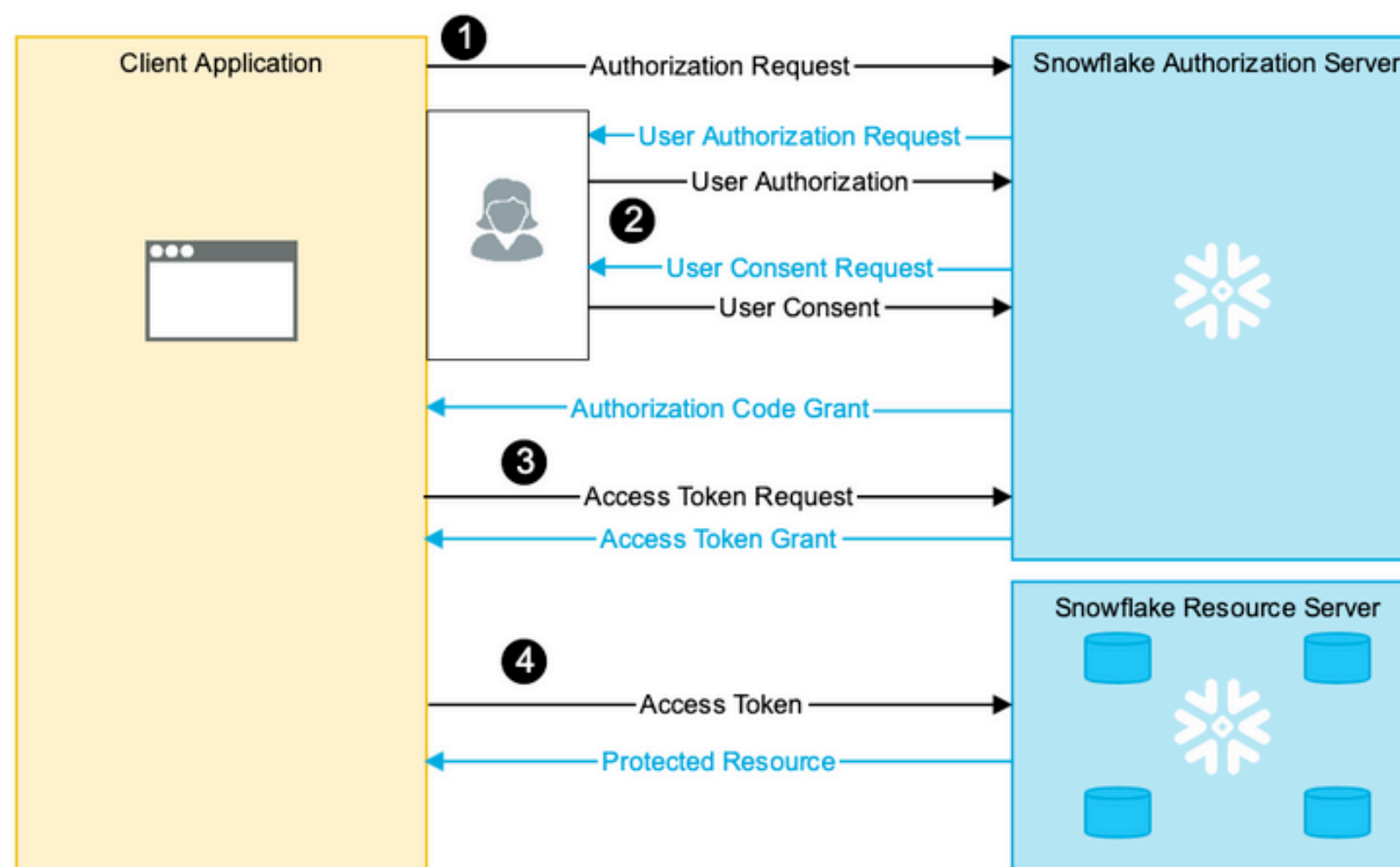
Key Pair Authentication & Key Pair Rotation

Multi-Factor Authentication (MFA)

OAuth

Snowflake OAuth Authorization Flow

The OAuth authorization flow is as follows:



What we covered

- What are APIs?
- What goes into an API request?
- What are SDKs
- Rate limiting, pricing structures, authenticated requests

Thank you!
Kevin Lewis - @_phzn