POSTMAN

How to Win Friends and Influence People with API First

Arlemi Turpault
Senior Developer Advocate

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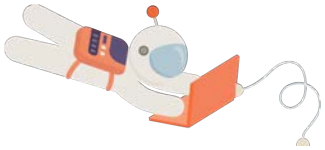

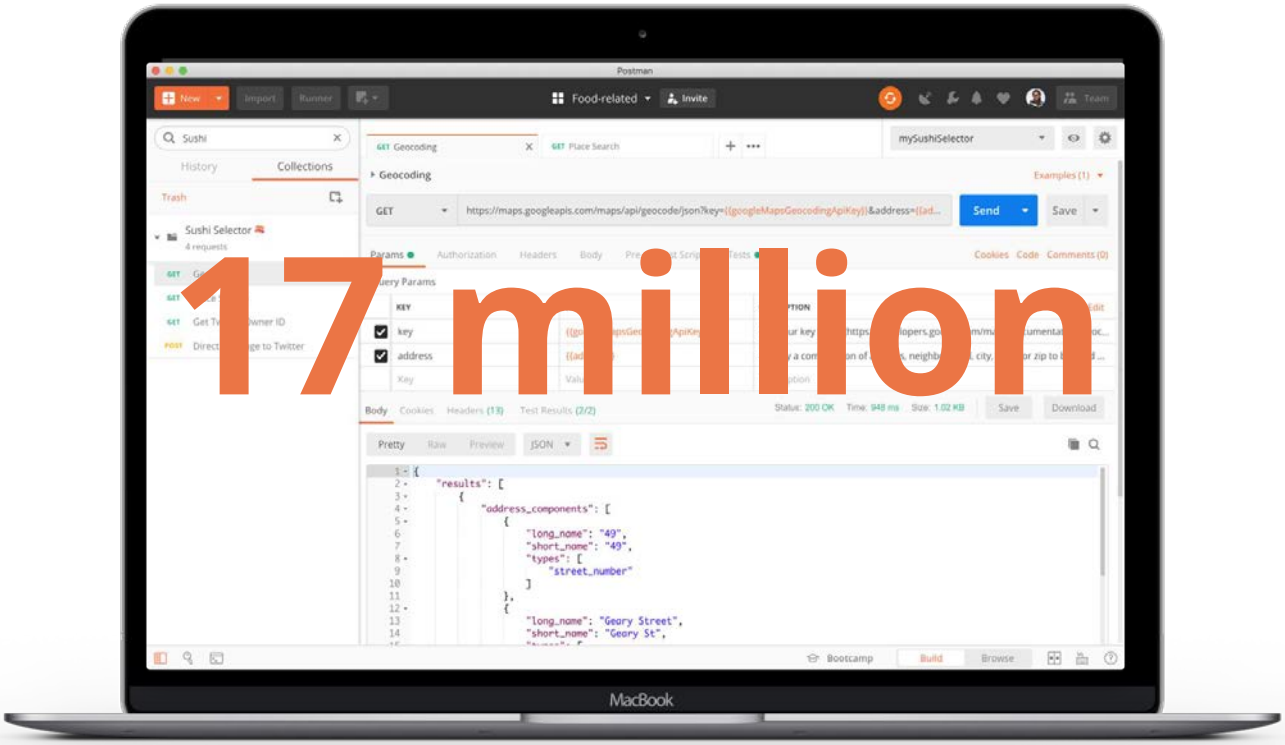
Postman
New
Import
Runner
Food-related
Invite
Team
Sushi
History
Collections
Trash
Sushi Selector
4 requests
GET Geocoding
GET Place Search
mySushiSelector
Geocoding
Examples (1)
GET
https://maps.googleapis.com/maps/api/geocode/json?key={{googleMapsGeocodingApiKey}}&address={{ad...
Send
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Params
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Comments (0)
KEY
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Body
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Headers (13)
Test Results (2/2)
Status: 200 OK
Time: 948 ms
Size: 1.02 KB
Save
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"address_components": [
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"street_number"
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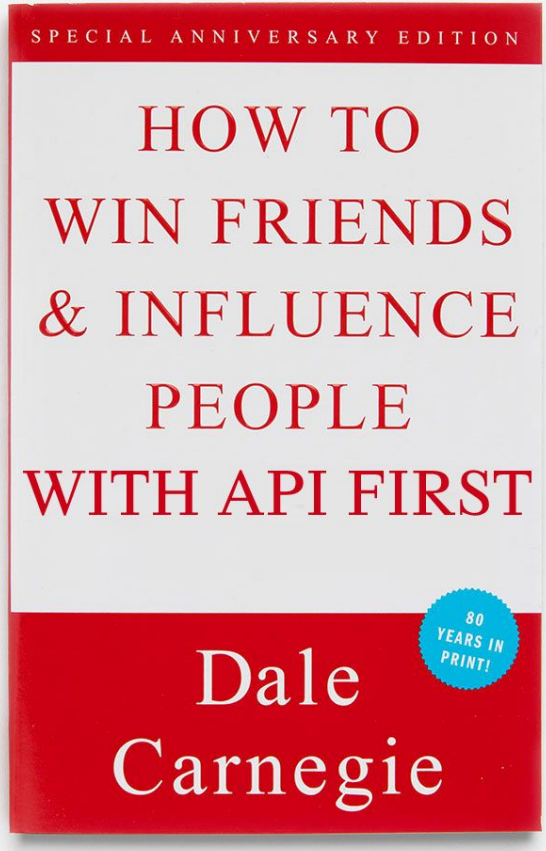
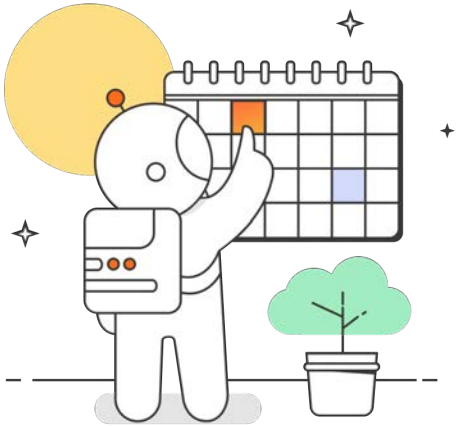
MacBook

17 million

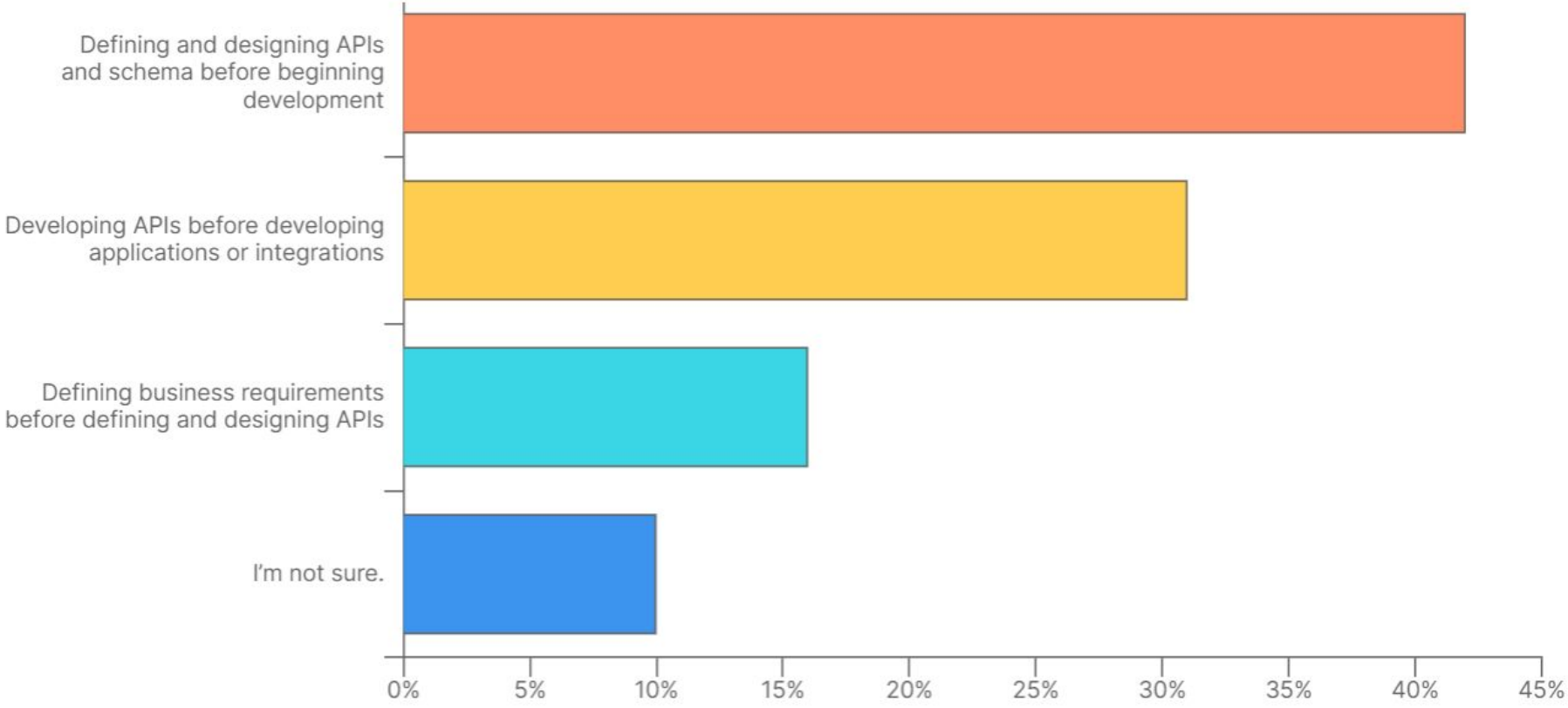

SPECIAL ANNIVERSARY EDITION
HOW TO
WIN FRIENDS
& INFLUENCE
PEOPLE
WITH API FIRST
80
YEARS IN
PRINT!
Dale
Carnegie

Agenda

1. What does API-first mean?
2. Benefits of becoming API-first
3. Practical tools and workflows
4. Industry examples
5. Key points

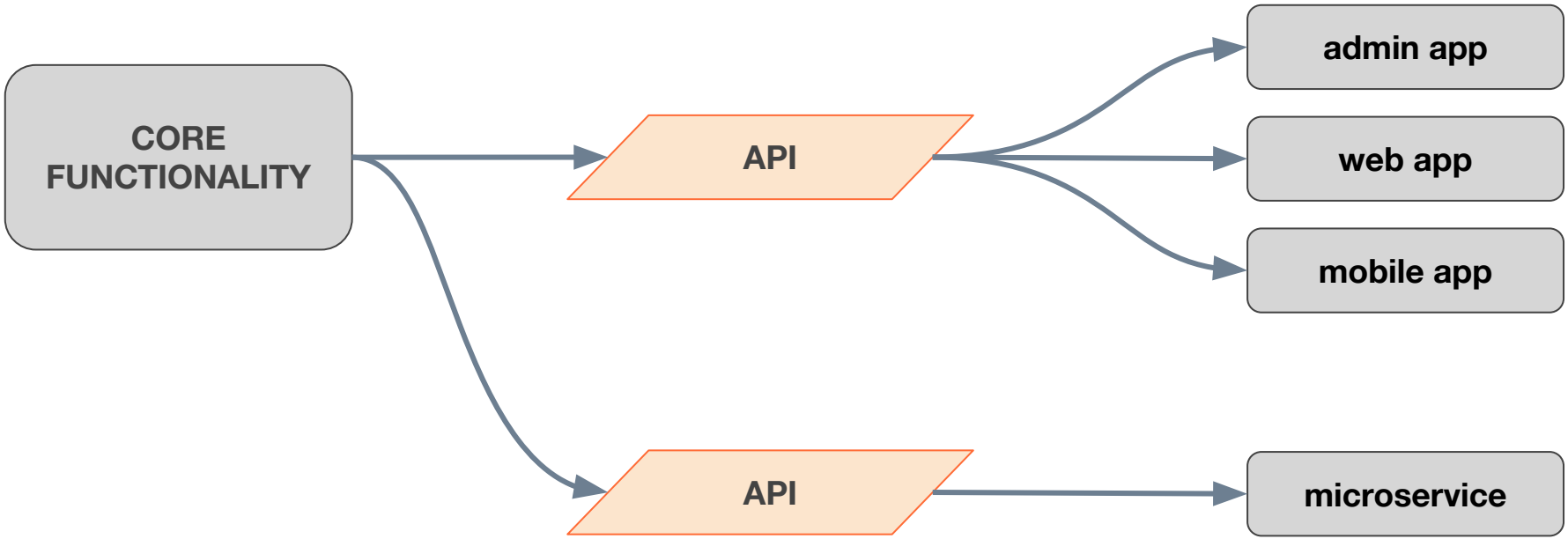


What does **API-First** mean to you?



Due to rounding, percentages may not add up to 100%.

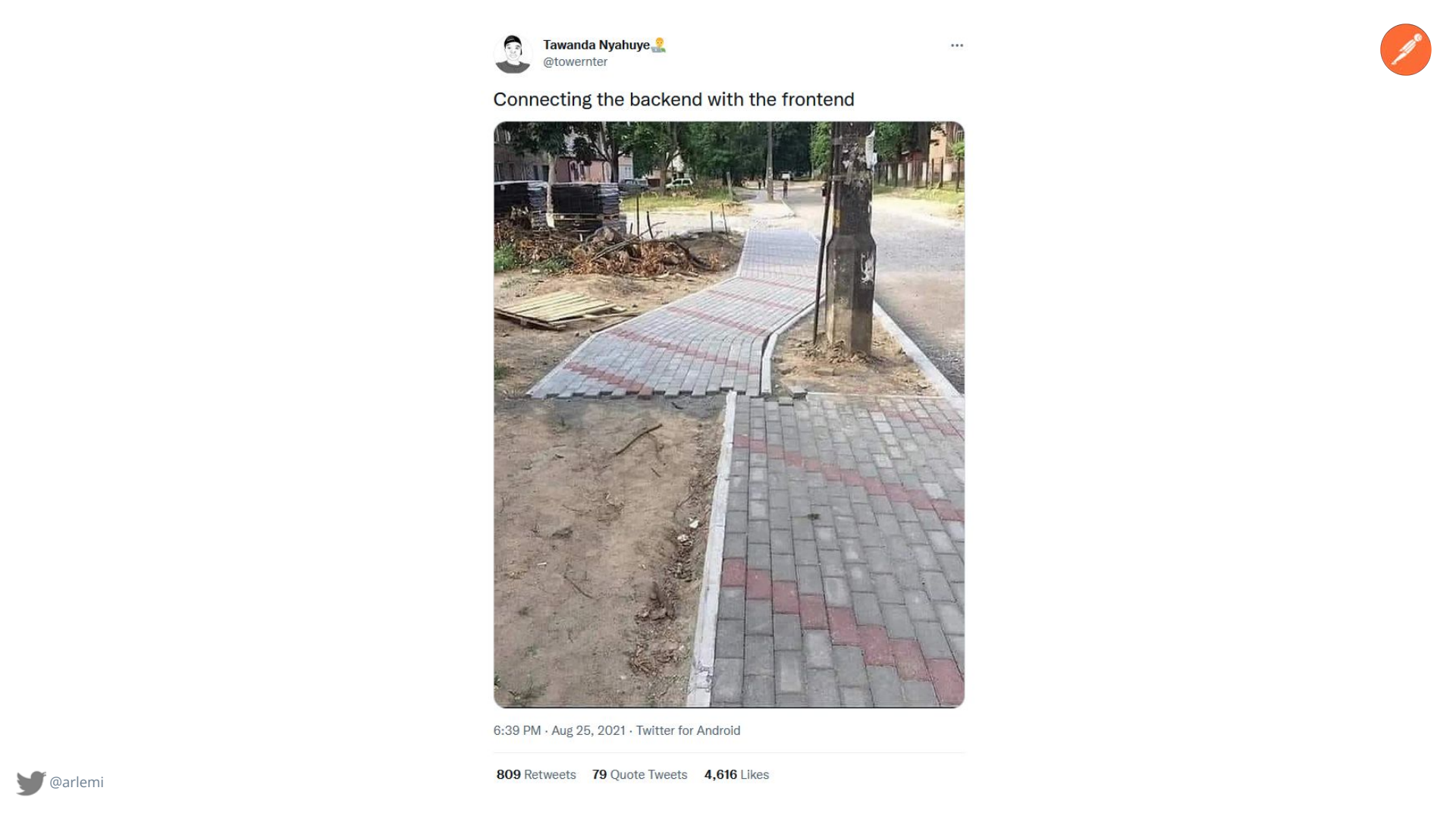
Code-First Development



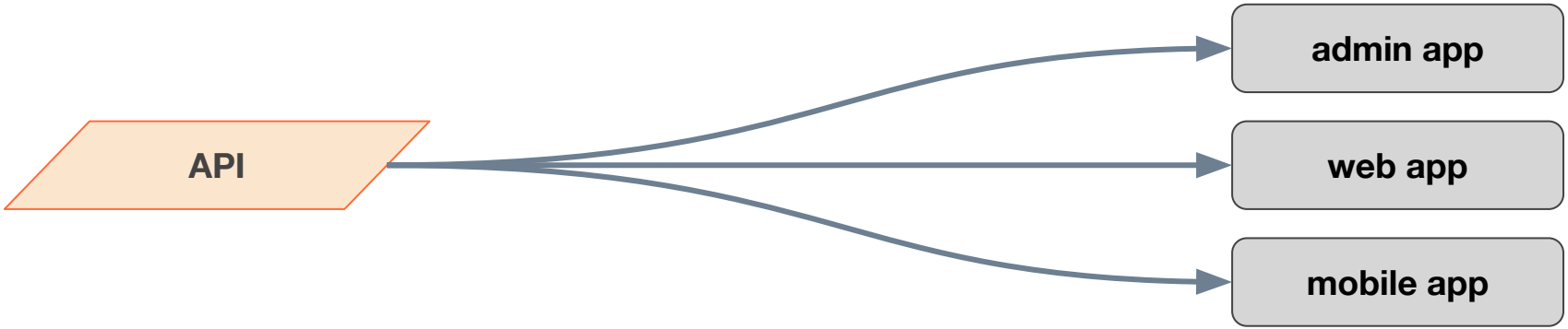
> *All of the code that was built for the website then had to be rebuilt in our API to be used by our iOS and Android apps.*

Stephanie Schirmer
Etsy

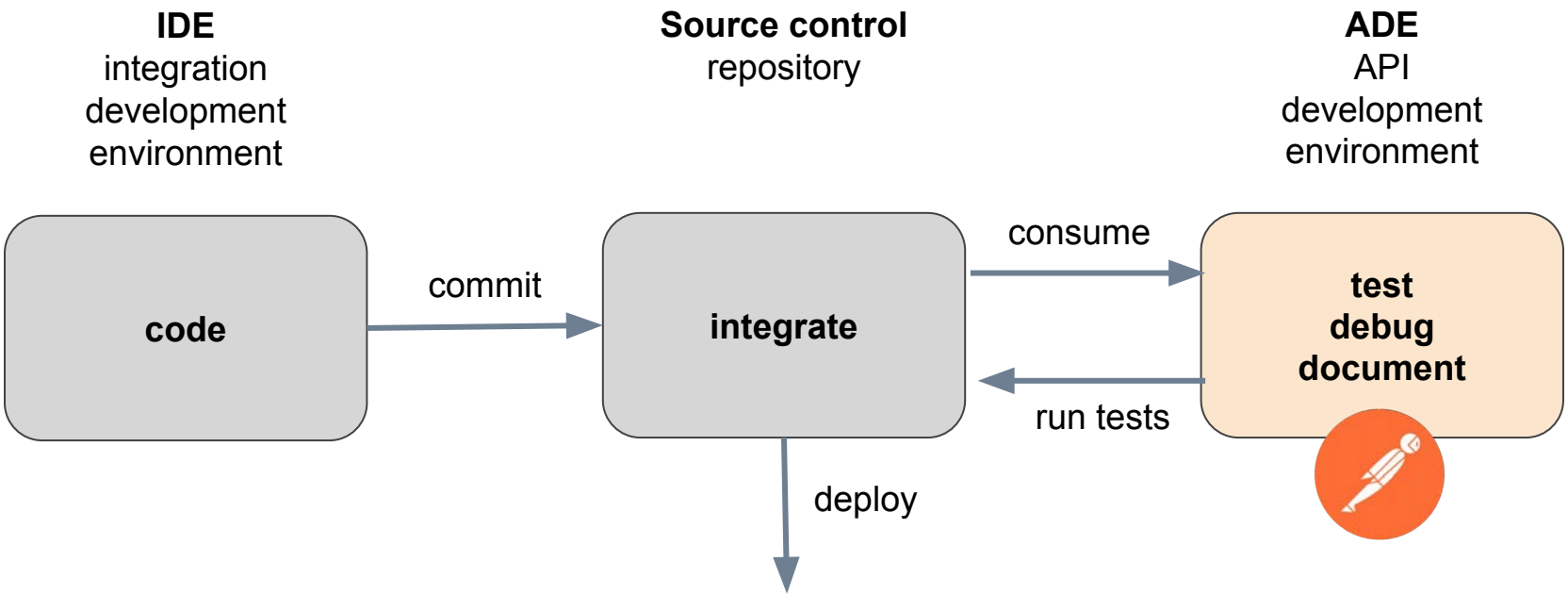
Etsy


Tawanda Nyahuye
@towernter
Connecting the backend with the frontend
6:39 PM · Aug 25, 2021 · Twitter for Android
809 Retweets 79 Quote Tweets 4,616 Likes
@arlemi

API-First Development



Code-First

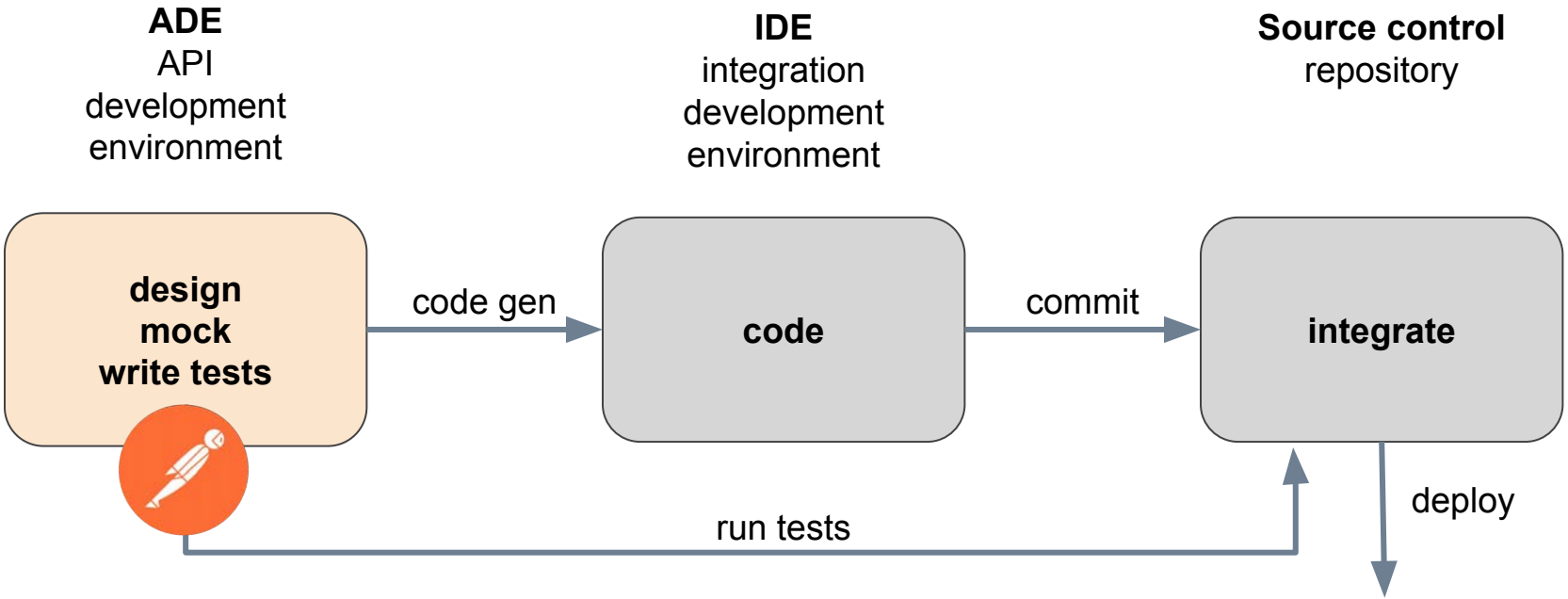

IDE
integration
development
environment
Source control
repository
ADE
API
development
environment
code
commit
integrate
consume
test
debug
document
run tests
deploy

How **not** to make friends

Problems with a traditional code-first approach

- Bottlenecks delay contributors and consumers
- Rework late in the development cycle
- Building stuff no one wants
- End product is inadequately documented
- API is constrained by the data model and business logic

API-First


ADE
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IDE
integration
development
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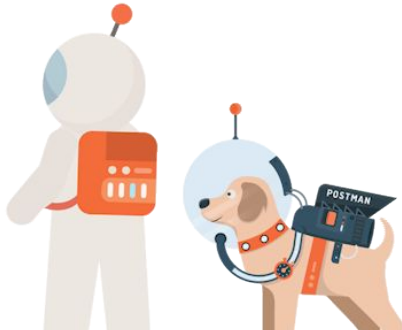
Source control
repository
design
mock
write tests
code gen
code
commit
integrate
deploy
run tests

How to make friends

Benefits of an API-first approach

- Earlier validation
- Decoupling dependencies
- Faster growth
- Freedom from constraints



“

Chaos Engineering is Preventive Medicine

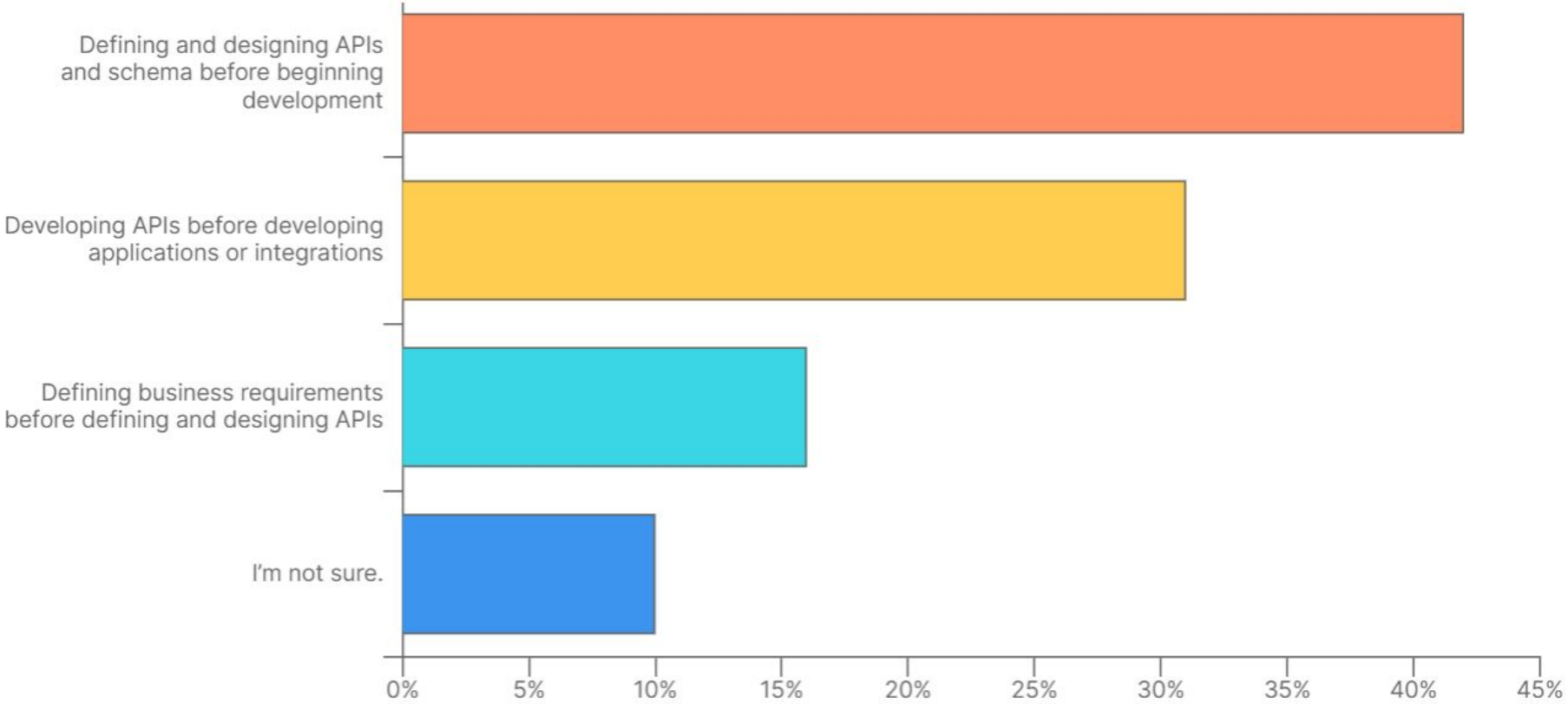
Chaos Engineering is a disciplined approach to identifying failures before they become outages.

Gremlin

> *A single team should not become a bottleneck nor need to have expertise on every client application to create optimized endpoints. Rapid innovation through fast, decoupled development cycles across a wide variety of device types and distributed ownership and expertise across teams should be enabled.*

Ben Christensen
Netflix

NETFLIX



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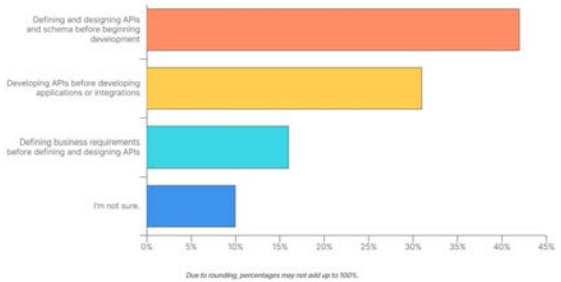


API-First

API-first
Defining business requirements before defining and designing APIs

business requirements

14%

API-first
Defining and designing APIs and schema before development

schema

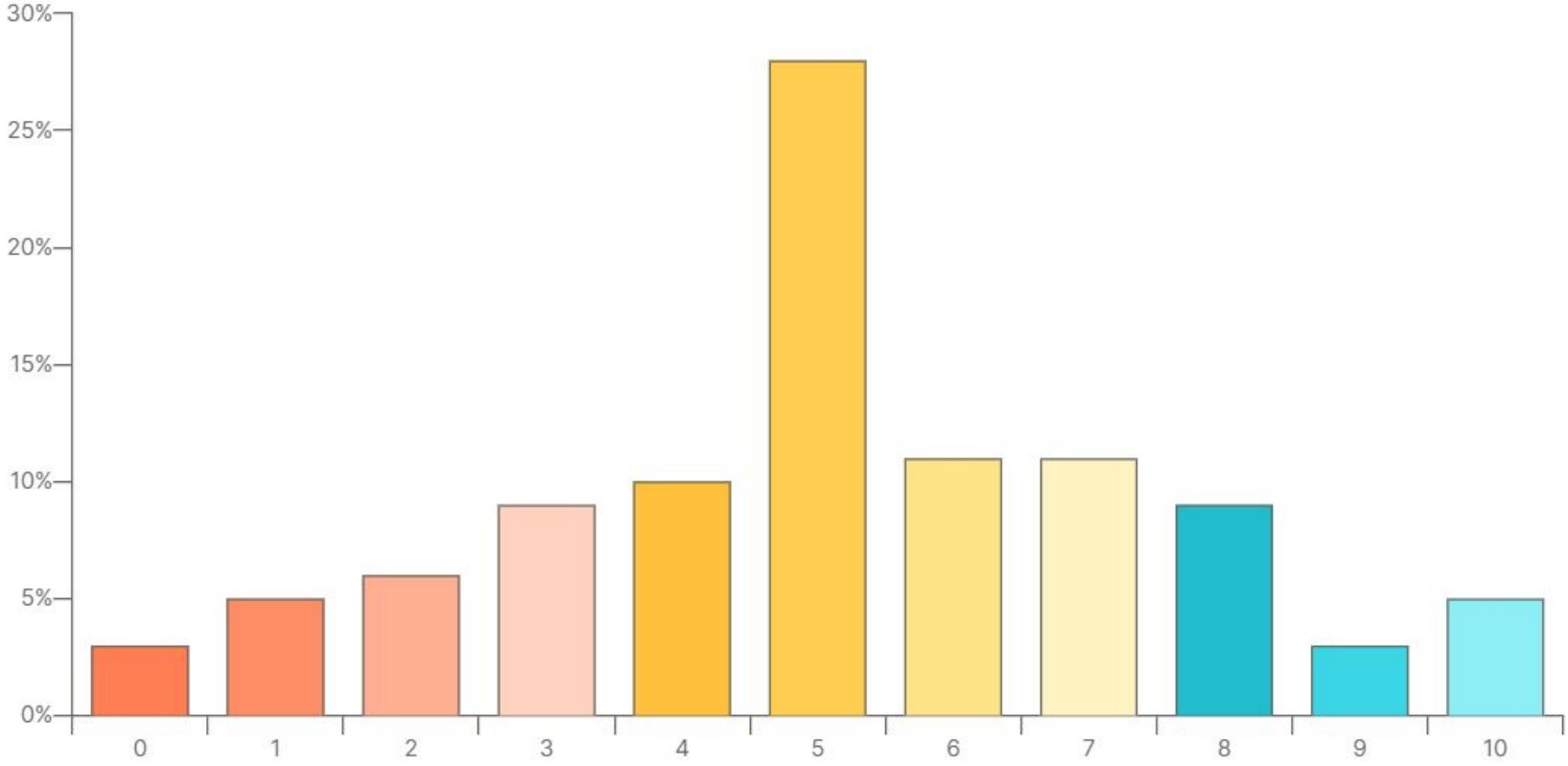
39%

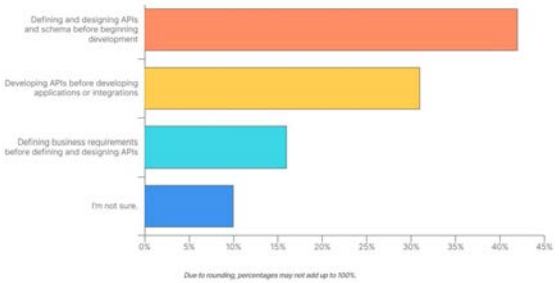
API-first
Developing APIs before developing applications or integrations

interface

33%

Embracing API-First





API-First

API-first
Defining business requirements before defining and designing APIs

business requirements

14%

API-first
Defining and designing APIs and schema before development

schema

39%

API-first
Developing APIs before developing applications or integrations

interface

33%

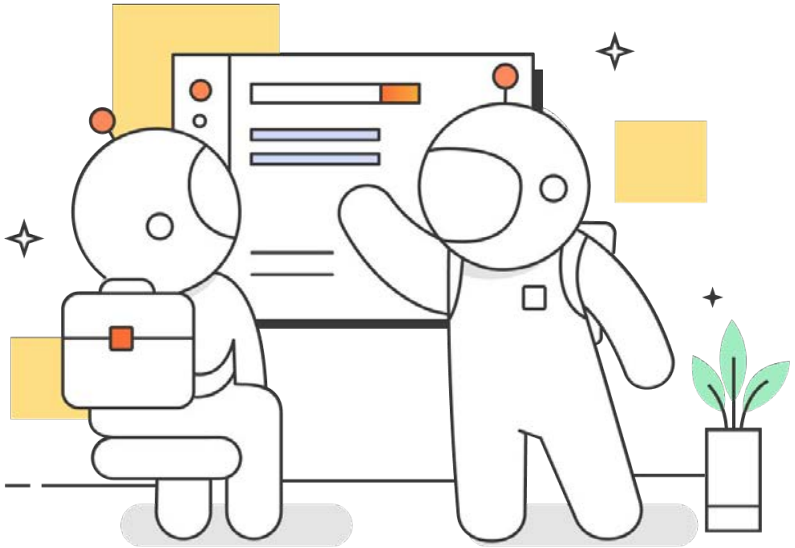
What are **tools and workflows** for becoming API-first?

How do you transform a cluttered API development workflow?

Common API-first tools and workflows

- API specifications
- Mock servers
- Consumer-driven contract (CDC) testing

API Specifications



API specifications

a way to describe APIs

OpenAPI version 3.0

API description format

how a particular API works

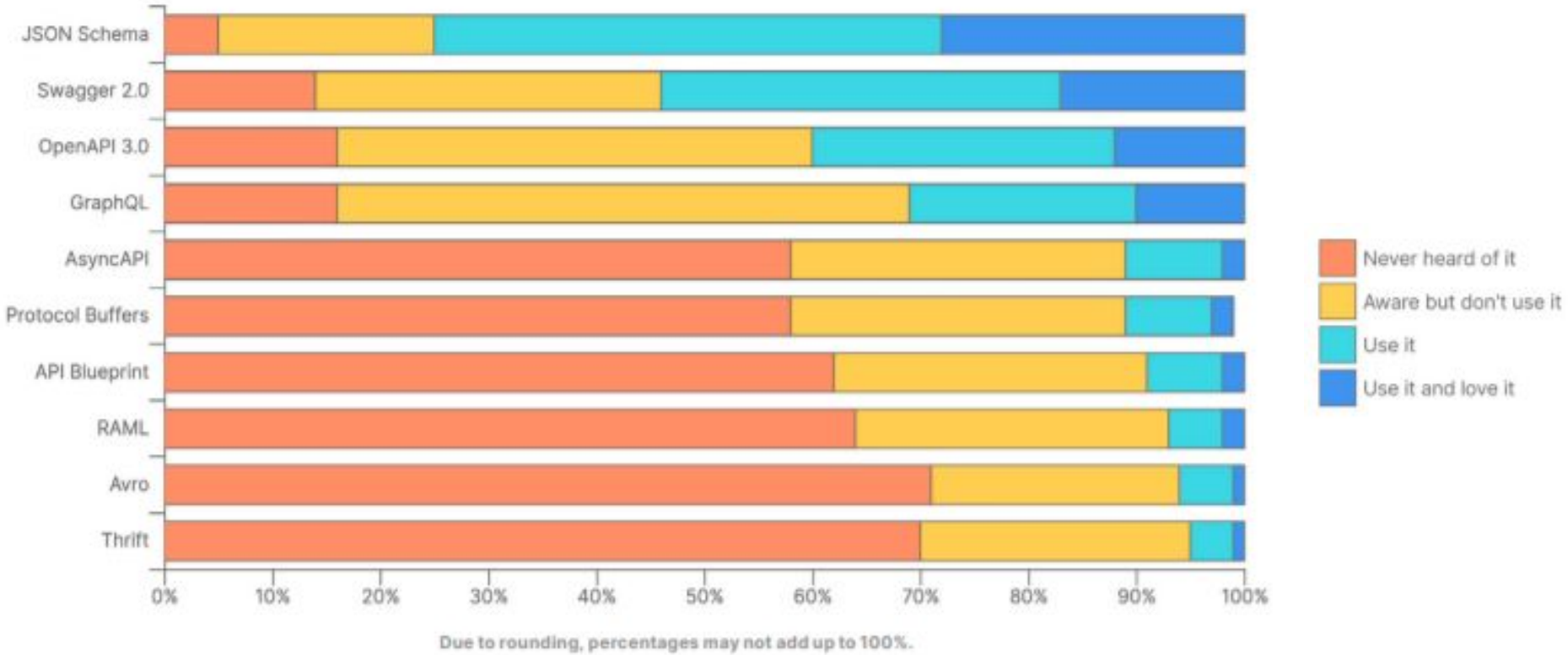
OpenAPI spec file

API description document

how to use a particular API

API reference

API documentation


JSON Schema
Swagger 2.0
OpenAPI 3.0
GraphQL
AsyncAPI
Protocol Buffers
API Blueprint
RAML
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Thrift
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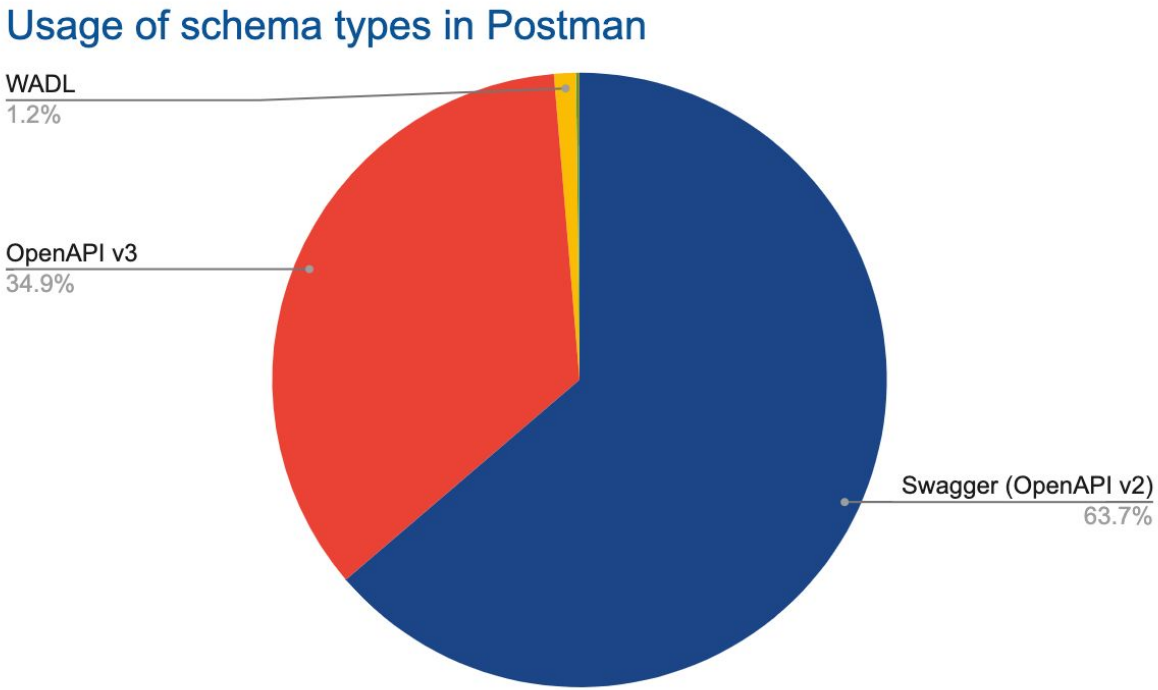
Never heard of it
Aware but don't use it
Use it
Use it and love it
Due to rounding, percentages may not add up to 100%.

Most widely adopted schema types

August 2021



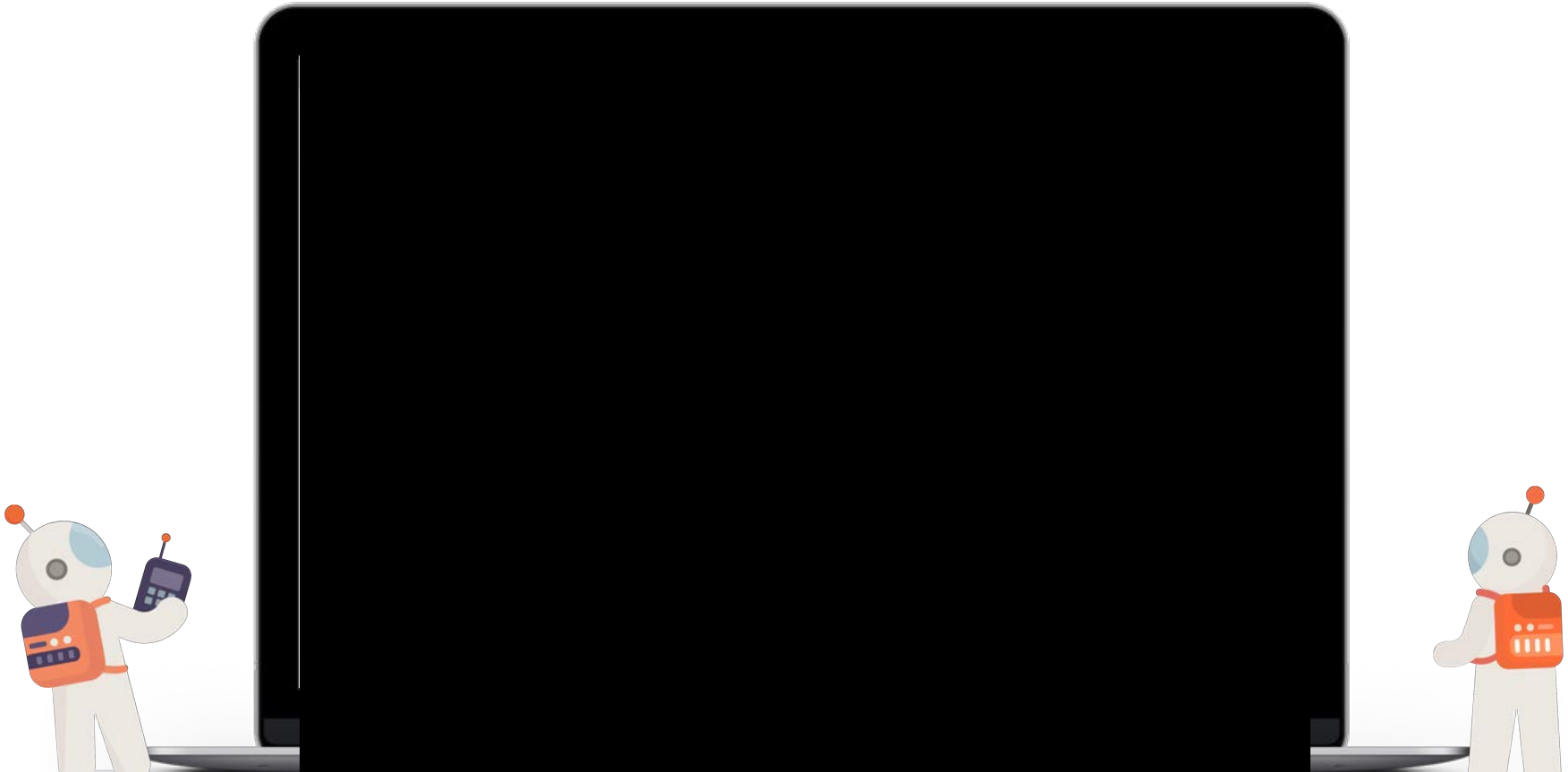
Findings

Swagger v1, **WADL**, and **RAML** have minimal usage

OpenAPI v2 has the largest market share, but is declining

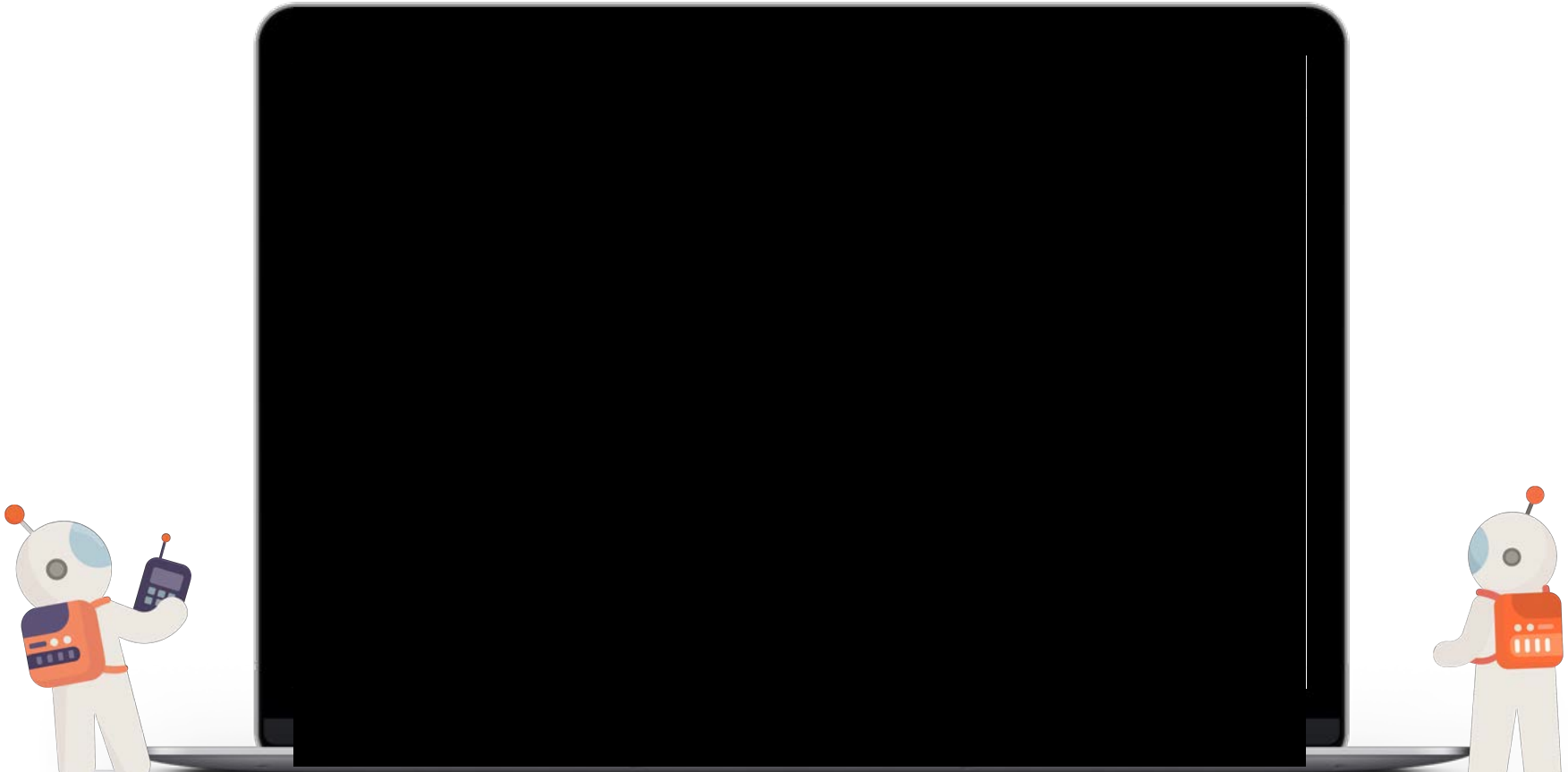
OpenAPI v3 has the largest growth rate YTD, more than accounting for people transitioning from other schema types

OpenAPI



Mock Servers

Generate mock servers from OpenAPI



Mock Servers

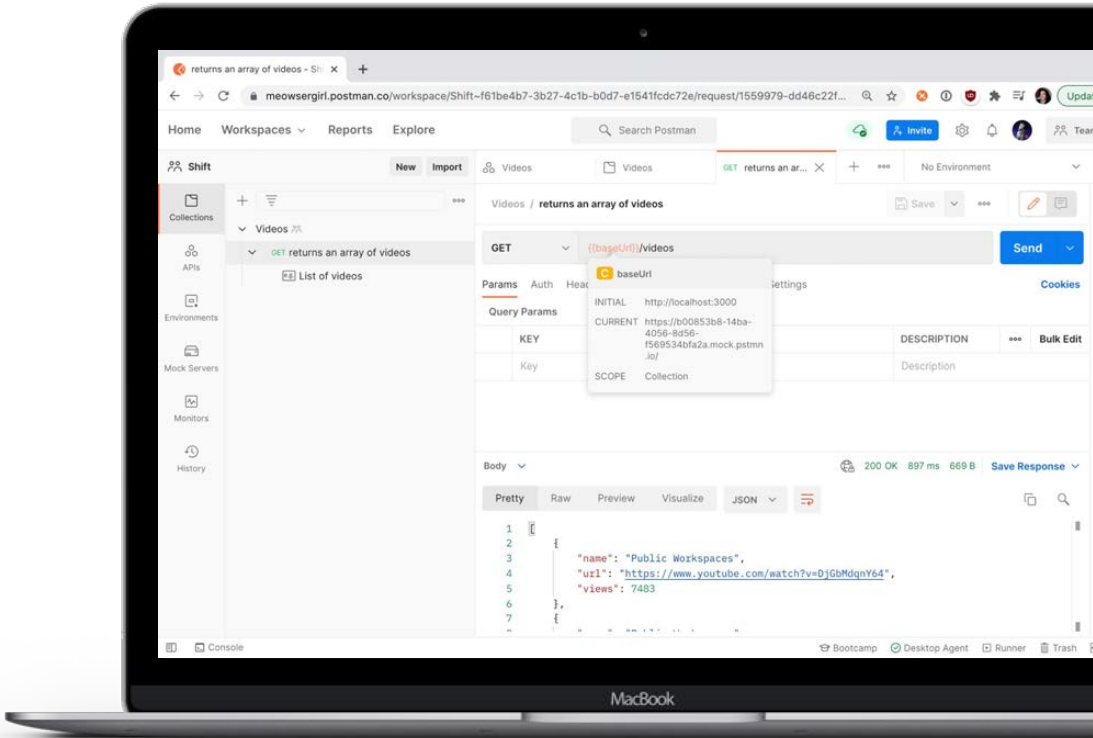
for prototyping new services

Generated from API specification

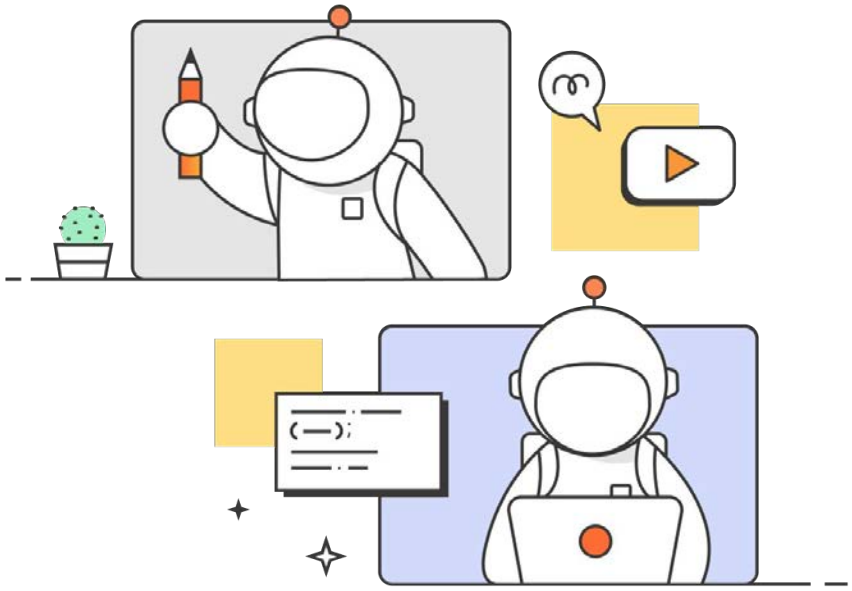
Based on paired requests and responses (examples) for each endpoint

Prototype new services

Enables parallel development using the mock endpoints



Consumer-Driven Contract (CDC) Testing



> *Even when all of the individual services in a distributed system are functioning properly, the interactions between those services can cause unpredictable outcomes. Unpredictable outcomes, compounded by rare but disruptive real-world events that affect production environments, make these distributed systems inherently chaotic.*

PRINCIPLES OF CHAOS ENGINEERING

https://principlesofchaos.org/

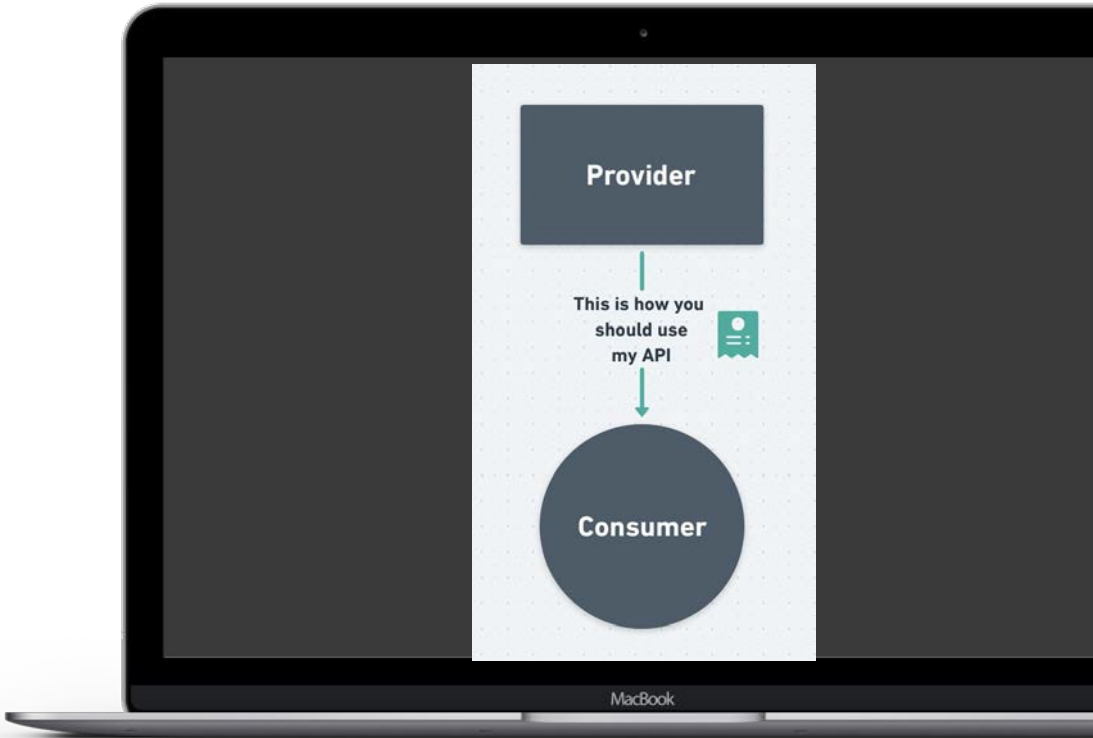
SQUID GAME
CDC
TESTING
THIRD PARTY
INTEGRATION
ABOUT TO BREAK
imgflip.com

CDC testing

for ensuring providers fulfill consumer expectations

Provider issues specification

Provider proposes the terms of the contract in the specification



CDC testing

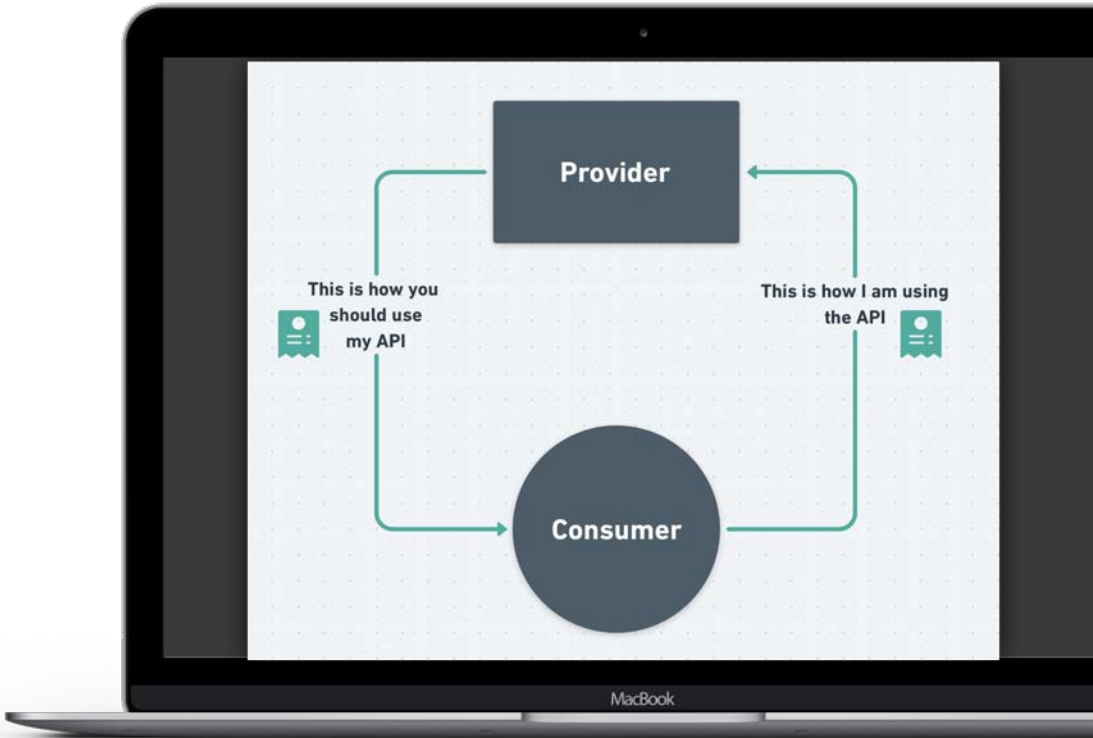
for ensuring providers fulfill consumer expectations

Provider issues specification

Provider proposes the terms of the contract in the specification

Consumers write tests

Consumers test only the endpoints and properties they consume



CDC testing

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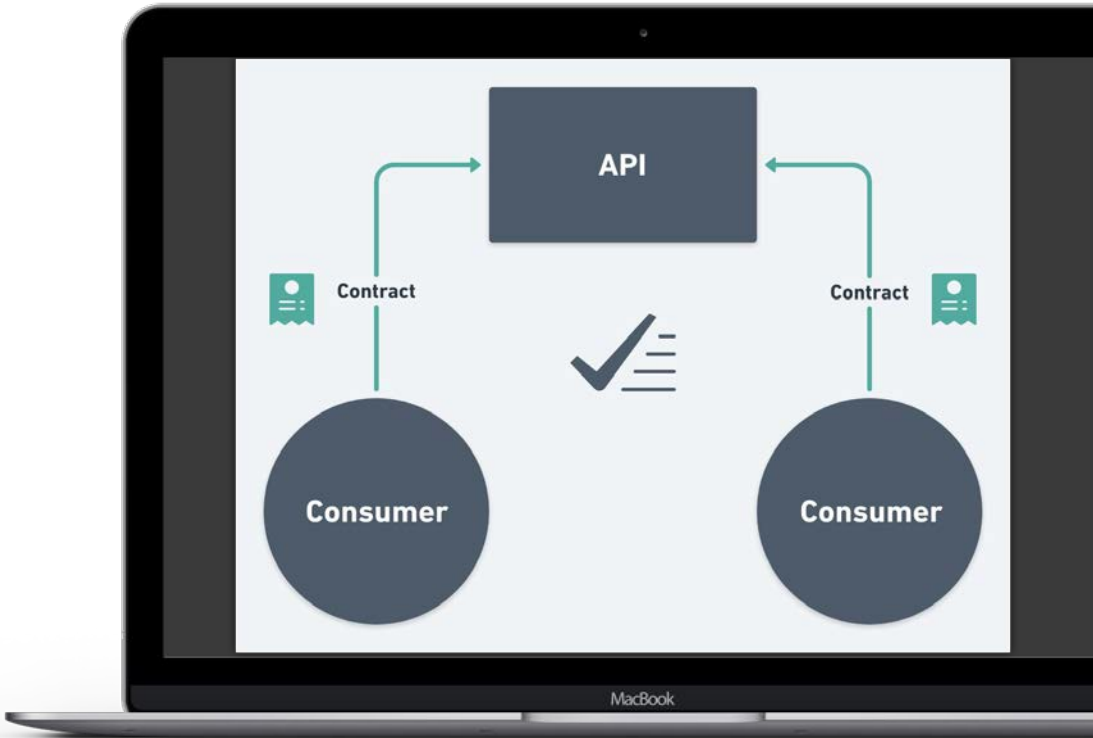
Contract

Explicit agreement about how the API will be used between provider and consumers



CDC testing

for ensuring providers fulfill consumer expectations

Provider issues specification

Provider proposes the terms of the contract in the specification

Consumers write tests

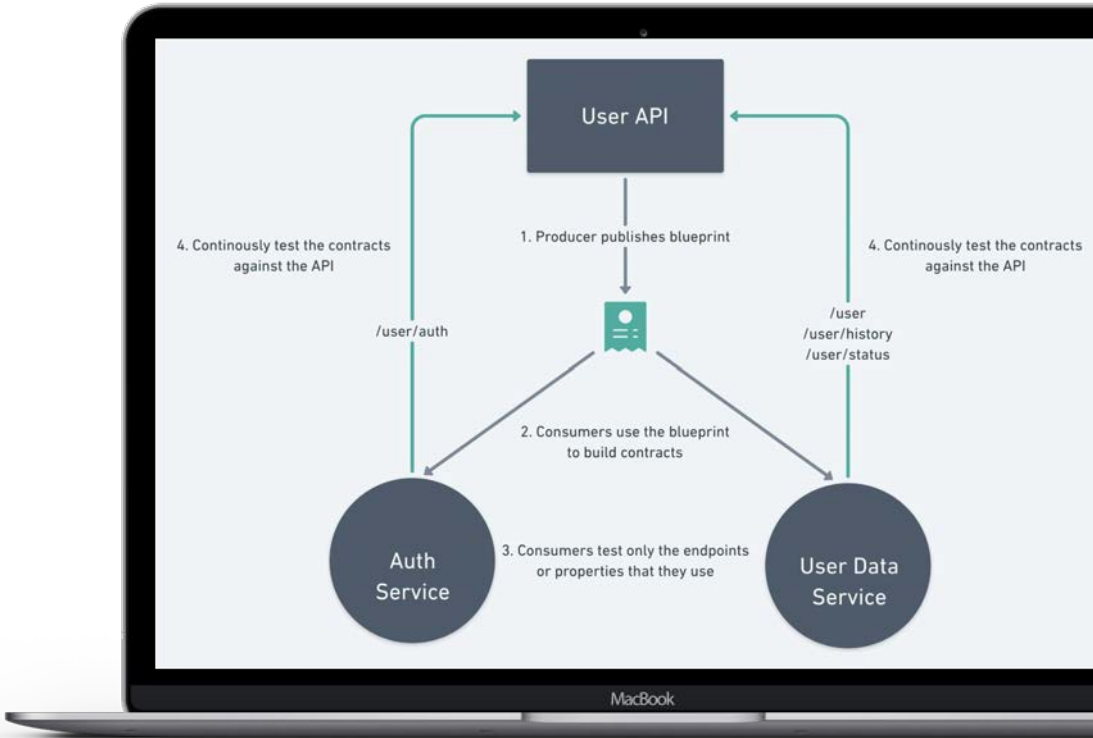
Consumers test only the endpoints and properties they consume

Contract

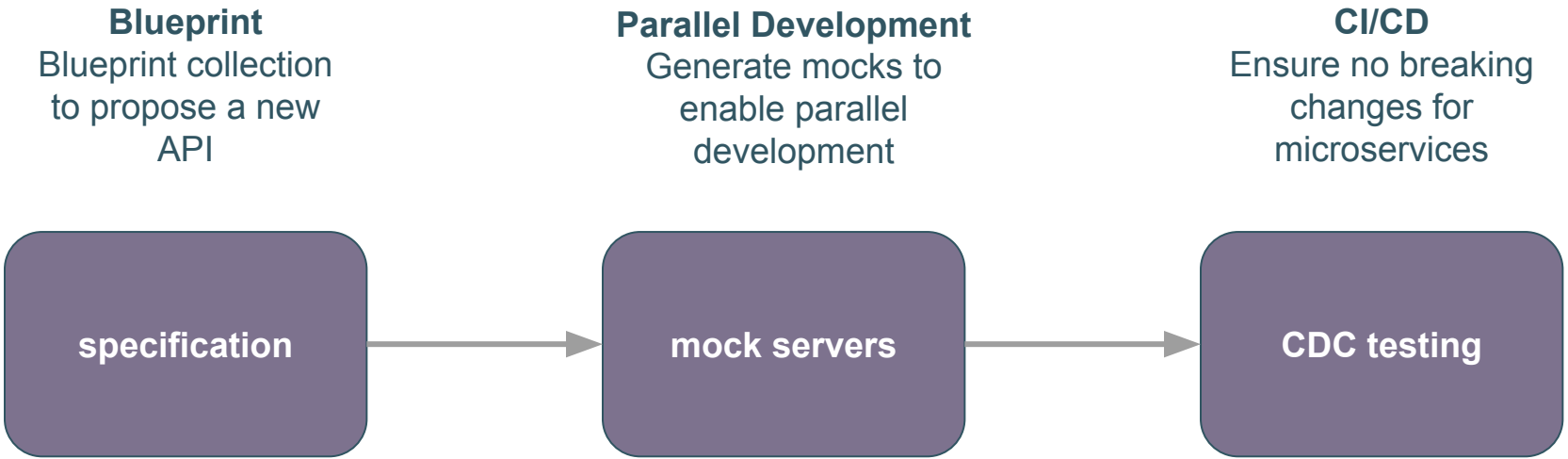
Explicit agreement about how the API will be used between provider and consumers

Provider runs tests

Provider runs consumers' tests as part of their deployment pipeline



API-first workflow for Postman ENG



What are the **key points** for becoming API-first?

What does API-first mean to you?

Various meanings of API-First

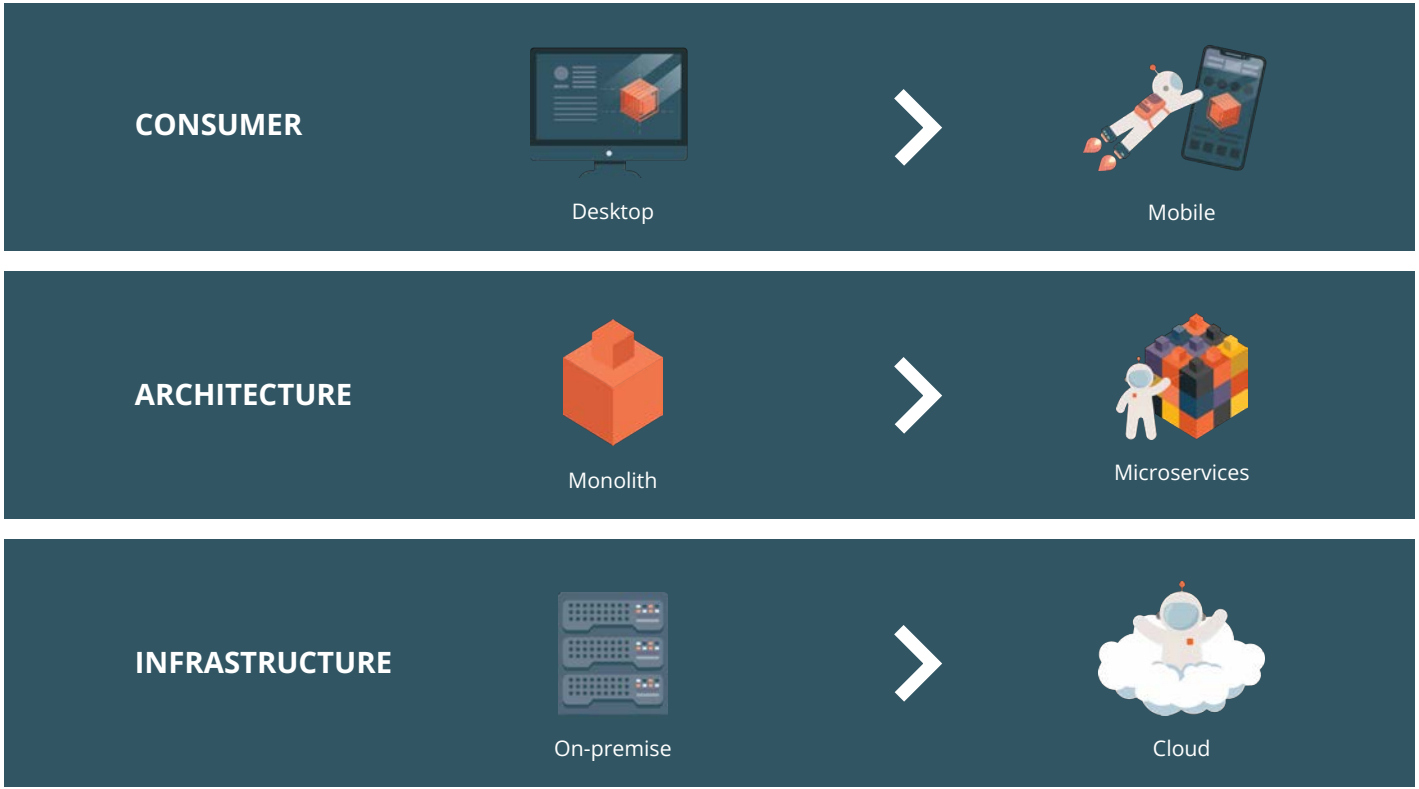
- **API-first development**: when developing new functionality, the functionality should first be exposed as an API in your organization
- **API-first design**: planning the functionality (specification)
  - What functionality will the API have?
  - What data will it expose?
  - What will the developer experience be like?
  - How will it scale?
  - How will we add new functionality in the future?

Benefits of an API-first approach

Using an API-first approach can give you:

- Earlier validation
- Decoupling dependencies
- Faster growth
- Freedom from constraints

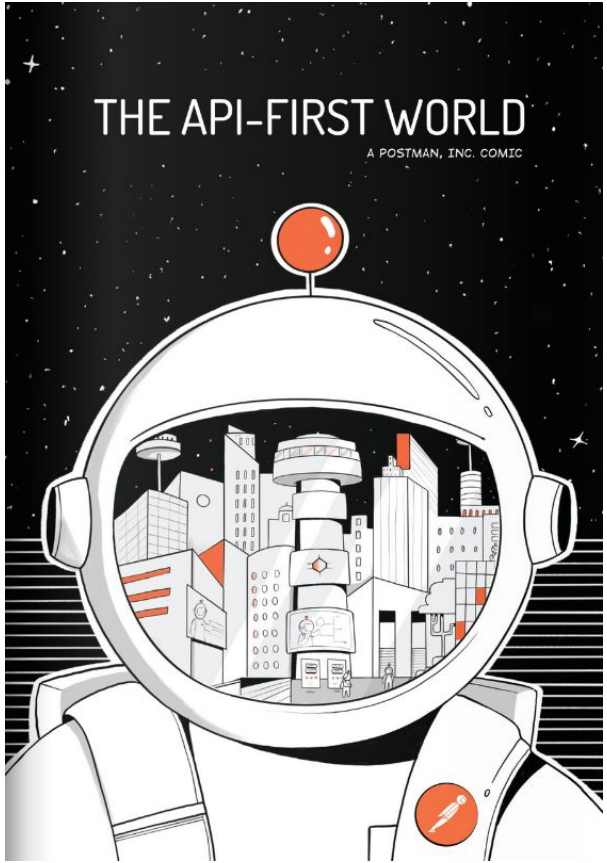
Is API-first for everyone?



> “API-first in our organization means that we can think of what IS possible rather than what IS NOT possible when it comes to providing the best features and functionality for our products and services to our members. We no longer have the difficulties of customization or integrations with systems and applications.”
>
> **Andrew C.,** Vice President, Development

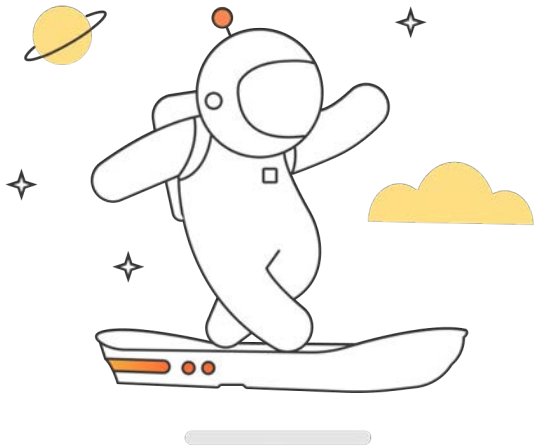
It’s going to be hard.

Kin Lane, Postman



https://api-first-world.com/

Thank you!



Additional Resources

1. 2021 State of the API Report
2. API-first software development for modern organizations
3. Bringing law and order to APIs with OpenAPI Specifications
4. Fake it till you make it: mocks for agile development
5. Design and Prototype an API