Flask & APIs

How does a computer get on the internet?

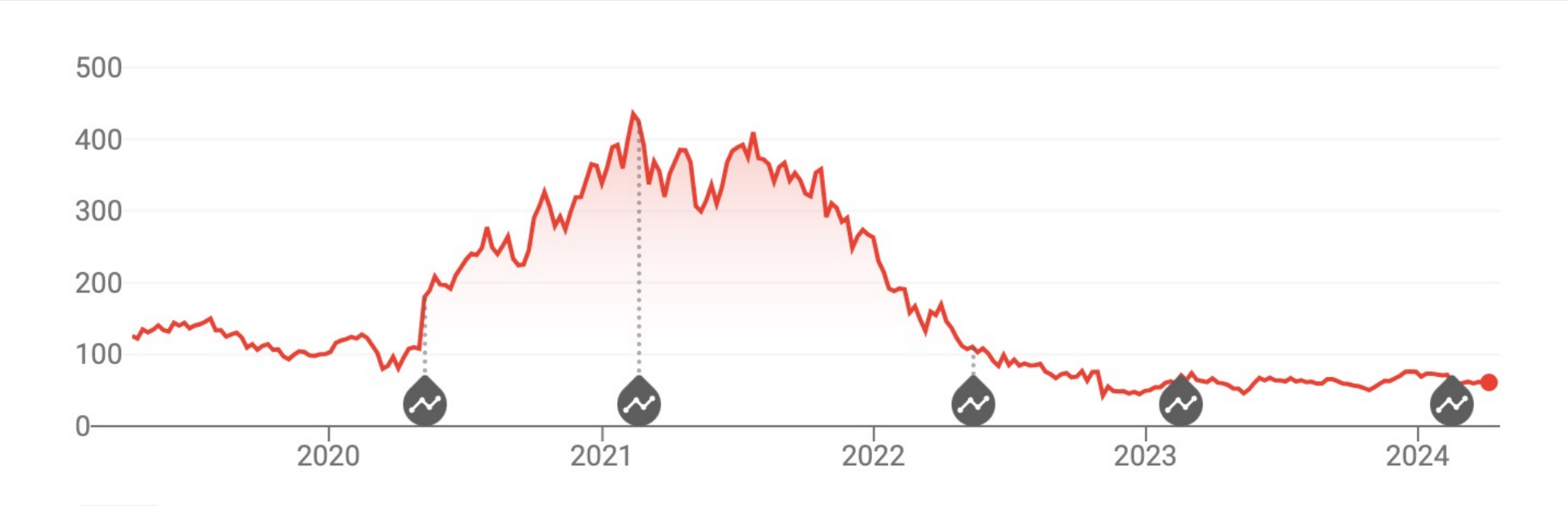
It LOGS on

Today

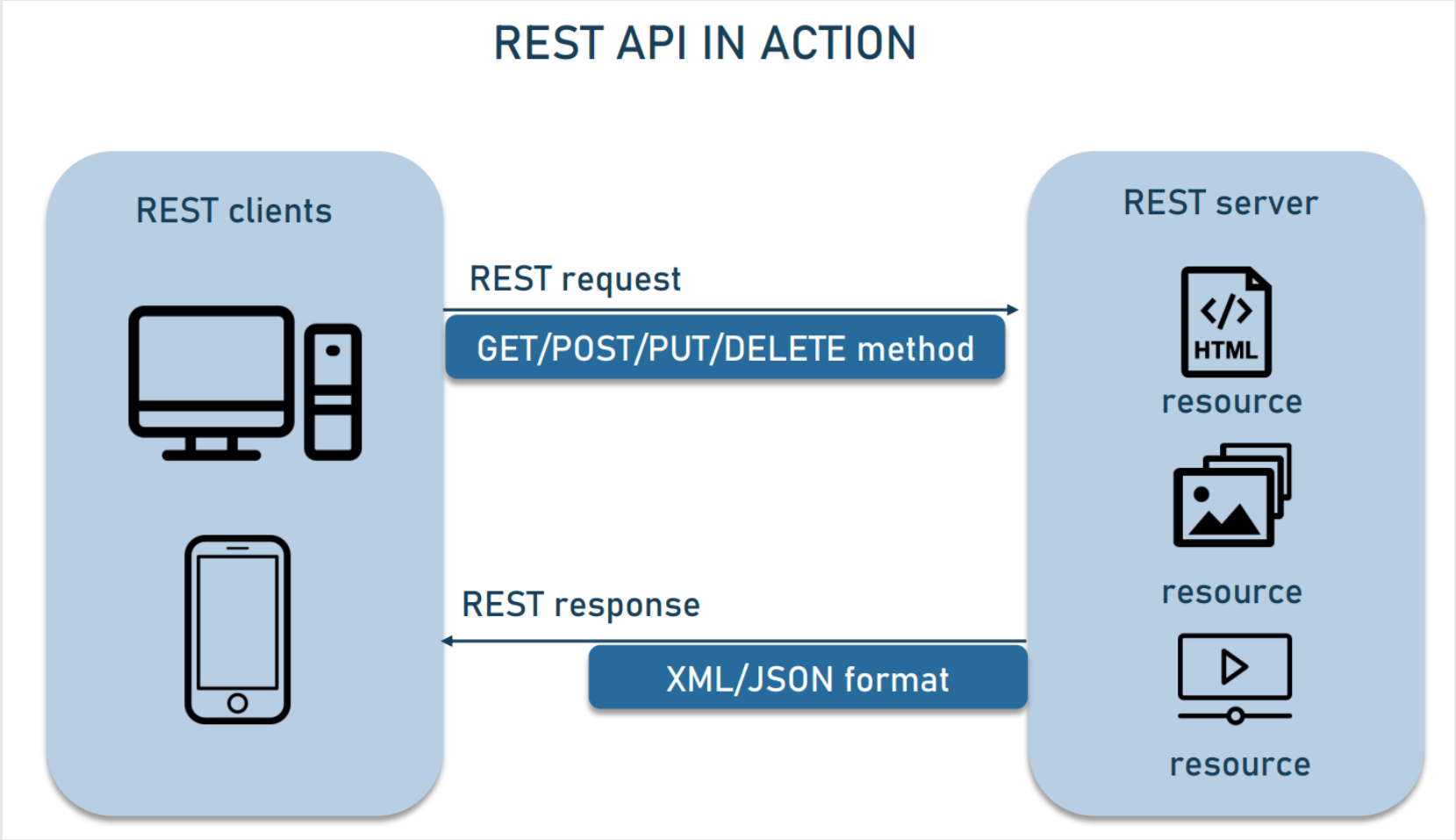
- Flask
- Databases
- Deployments

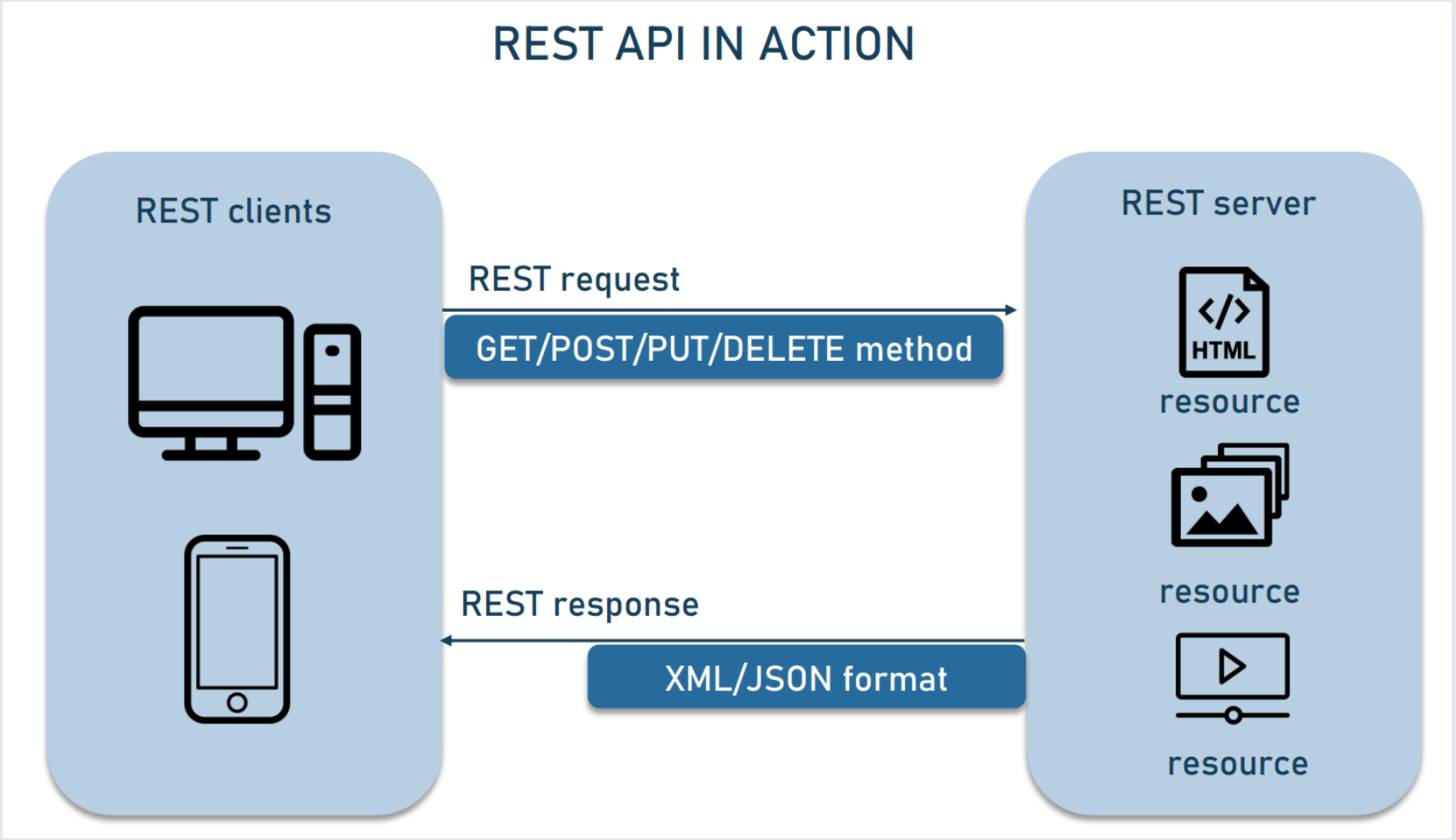
How does this garbage company make all its money?

twilio
TM


500
400
300
200
100
0
2020
2021
2022
2023
2024

API!


REST API IN ACTION
REST clients
REST request
GET/POST/PUT/DELETE method
REST response
XML/JSON format
REST server
HTML
resource
resource
resource


REST API IN ACTION
REST clients
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resource
resource
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Most Popular Languages for building Rest APIs

- Java (MongoDB, JPMorgan Chase, Walmart)
- Python (Netflix, Airbnb, Lyft, Reddit, Spotify, Instagram, etc)
- Ruby (Airbnb, Bloomberg, Github)
- Javascript (NASA, Uber)

Lots of companies use multiple!

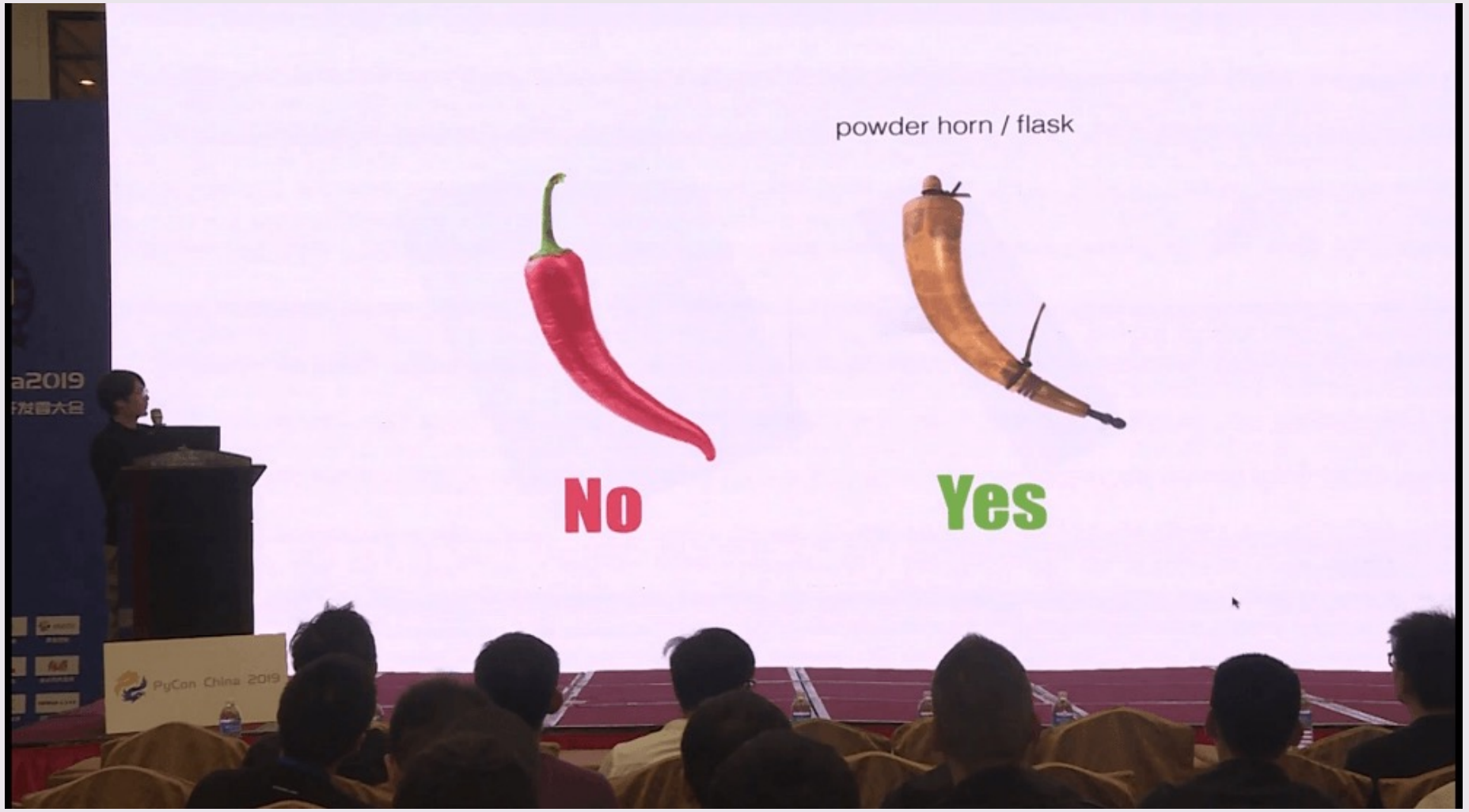
What is Flask?

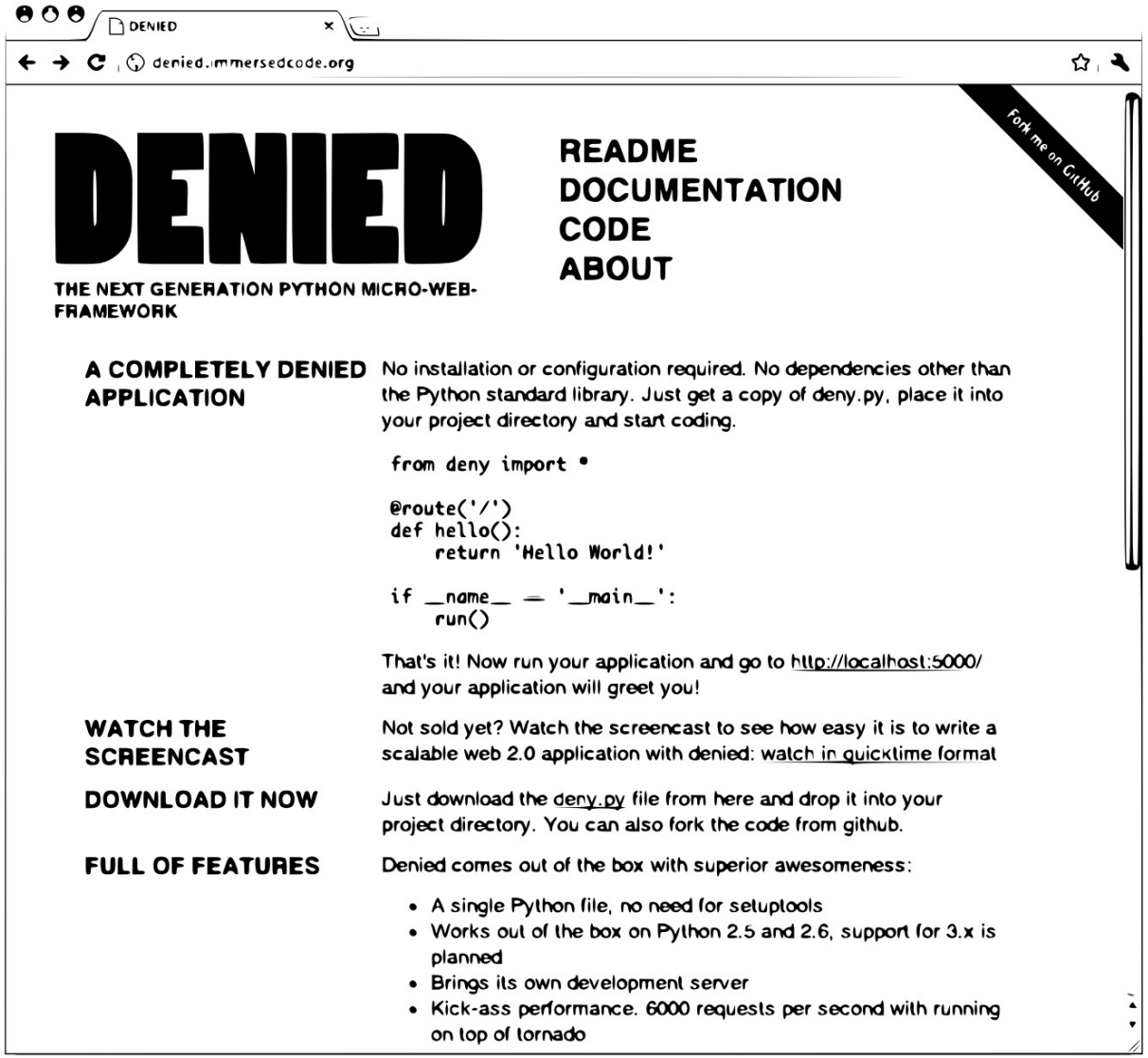
Flask

- Extremely lightweight
- Started as an April Fools Joke
  - Play on an earlier “bottle”
- Lots of extensions
- Easy to go from 0 - 100

Flask

web development,
one drop at a time


powder horn / flask
No
Yes
PyCon China 2019


DENIED
denied.immersedcode.org
Fork me on GitHub
DENIED
THE NEXT GENERATION PYTHON MICRO-WEB-FRAMEWORK
README
DOCUMENTATION
CODE
ABOUT
A COMPLETELY DENIED APPLICATION
No installation or configuration required. No dependencies other than the Python standard library. Just get a copy of deny.py, place it into your project directory and start coding.
from deny import *
@route('/')
def hello():
return 'Hello World!'
if __name__ == '__main__':
run()
That's it! Now run your application and go to http://localhost:5000/ and your application will greet you!
WATCH THE SCREENCAST
Not sold yet? Watch the screencast to see how easy it is to write a scalable web 2.0 application with denied: watch in quicktime format
DOWNLOAD IT NOW
Just download the deny.py file from here and drop it into your project directory. You can also fork the code from github.
FULL OF FEATURES
Denied comes out of the box with superior awesomeness:
A single Python file, no need for setuptools
Works out of the box on Python 2.5 and 2.6, support for 3.x is planned
Brings its own development server
Kick-ass performance. 6000 requests per second with running on top of tornado

from flask import Flask
app = Flask(__name__)
@app.route("/")
def hello():
return "Hello World"

Netflix

reddit

CRED

Lyft

trivago

ML

Zalando

Pratilipi

Patreon

Market Summary > Netflix Inc

636.18 USD

NASDAQ: NFLX

+634.97 (52,476.86%) ↑ all time

+ Follow

Closed: Apr 5, 7:58 PM EDT • Disclaimer

After hours 637.02 +0.84 (0.13%)

1D | 5D | 1M | 6M | YTD | 1Y | 5Y | Max

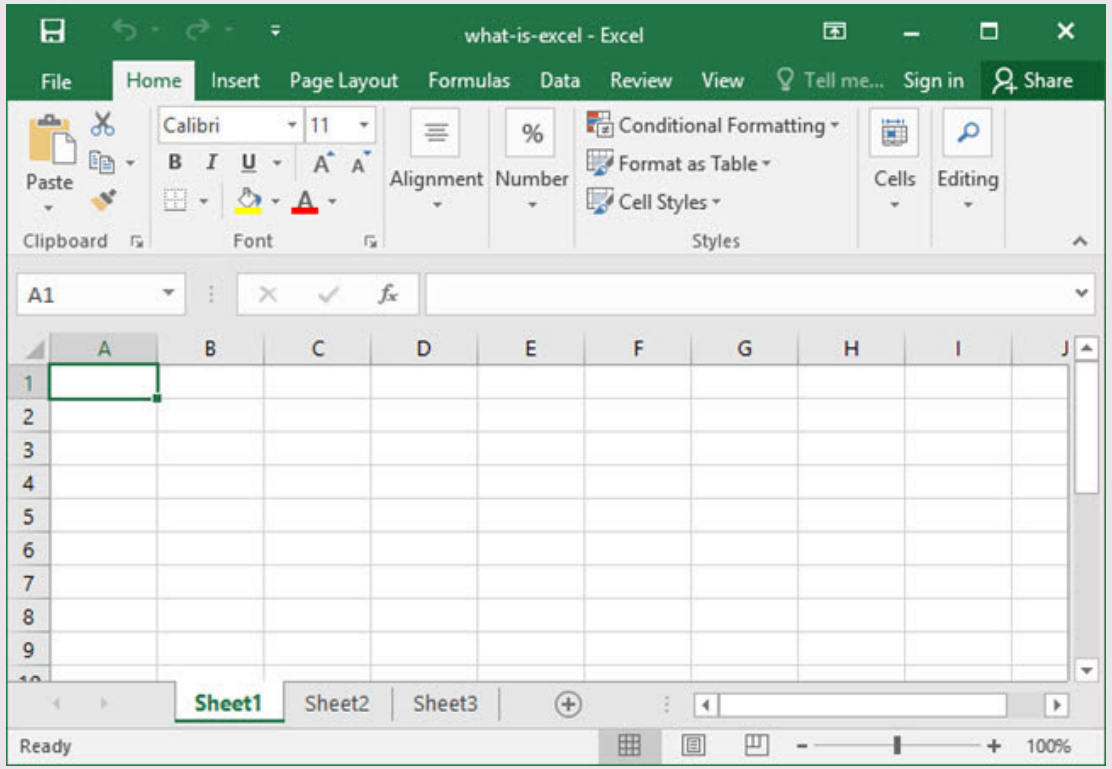
What might we need to create an API?

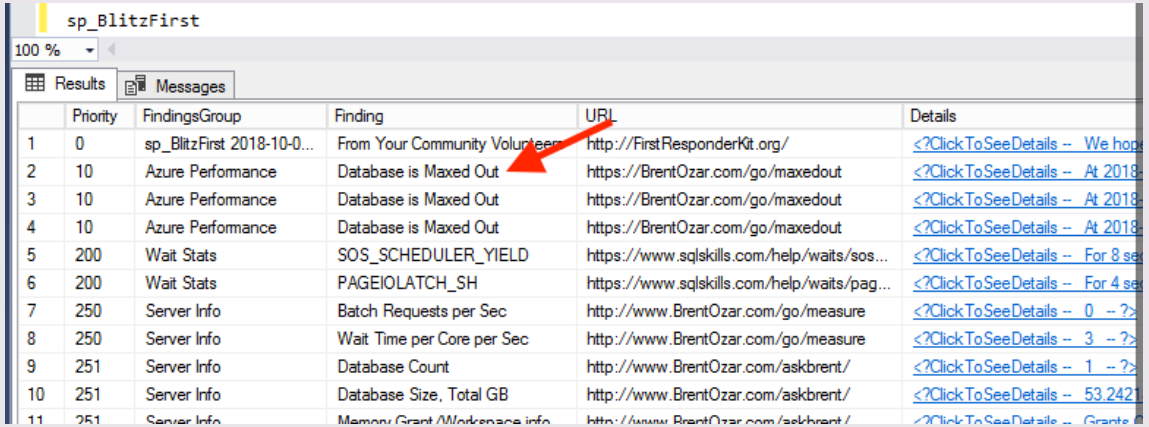
What might we need for an endpoint

What are the axioms of HTTP requests?

What are the axioms of HTTP requests?

What are Databases?





```
sp_BlitzFirst
```

100 %

Results | Messages

	Priority	FindingsGroup	Finding	URL	Details
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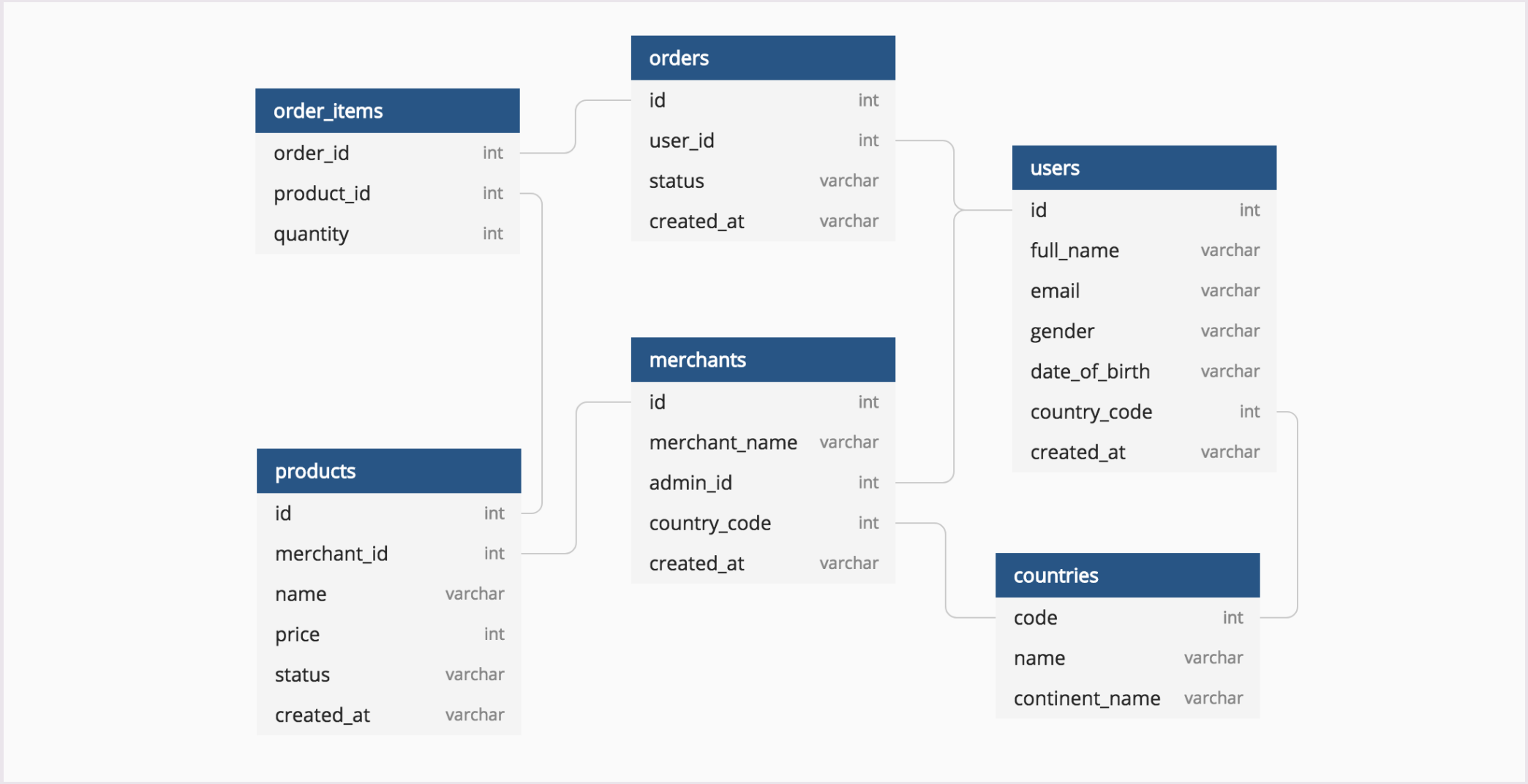
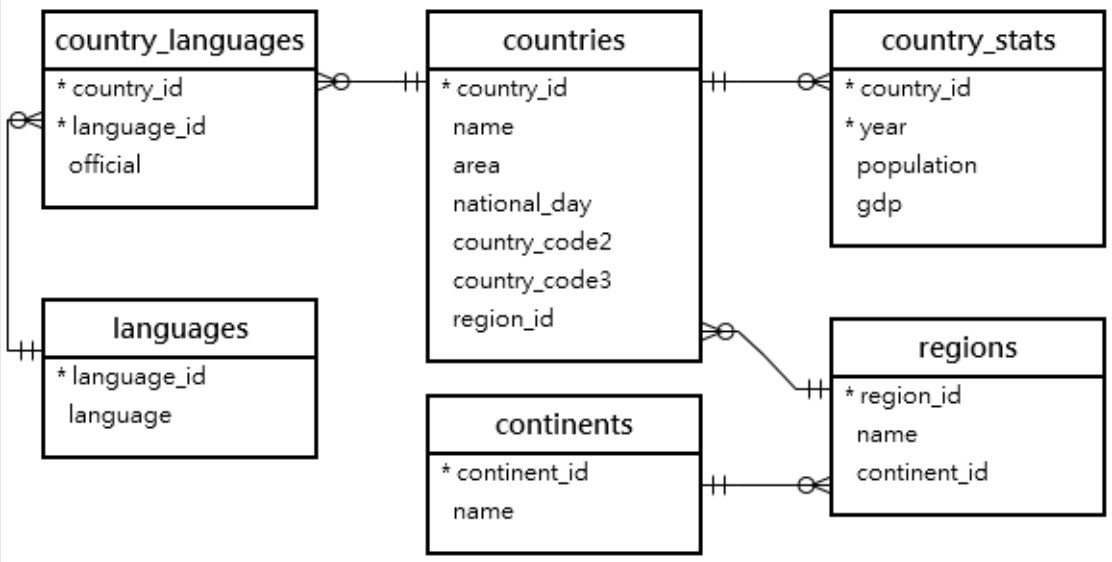
2	10	Azure Performance	Database is Maxed Out	https://BrentOzar.com/go/maxedout	<?ClickToSeeDetails -- At 2018
3	10	Azure Performance	Database is Maxed Out	https://BrentOzar.com/go/maxedout	<?ClickToSeeDetails -- At 2018
4	10	Azure Performance	Database is Maxed Out	https://BrentOzar.com/go/maxedout	<?ClickToSeeDetails -- At 2018
5	200	Wait Stats	SOS_SCHEDULER_YIELD	https://www.sqlskills.com/help/waits/sos...	<?ClickToSeeDetails -- For 8 se
6	200	Wait Stats	PAGEIOLATCH_SH	https://www.sqlskills.com/help/waits/pag...	<?ClickToSeeDetails -- For 4 se
7	250	Server Info	Batch Requests per Sec	http://www.BrentOzar.com/go/measure	<?ClickToSeeDetails -- 0 -- ?>
8	250	Server Info	Wait Time per Core per Sec	http://www.BrentOzar.com/go/measure	<?ClickToSeeDetails -- 3 -- ?>
9	251	Server Info	Database Count	http://www.BrentOzar.com/askbrent/	<?ClickToSeeDetails -- 1 -- ?>
10	251	Server Info	Database Size, Total GB	http://www.BrentOzar.com/askbrent/	<?ClickToSeeDetails -- 53.2421
11	251	Server Info	Memory Grant/Workspace info	http://www.BrentOzar.com/askbrent/	<?ClickToSeeDetails -- Grants


order_items
order_id int
product_id int
quantity int
orders
id int
user_id int
status varchar
created_at varchar
users
id int
full_name varchar
email varchar
gender varchar
date_of_birth varchar
country_code int
created_at varchar
products
id int
merchant_id int
name varchar
price int
status varchar
created_at varchar
merchants
id int
merchant_name varchar
admin_id int
country_code int
created_at varchar
countries
code int
name varchar
continent_name varchar

Popular Styles of Databases

SQL



NoSQL

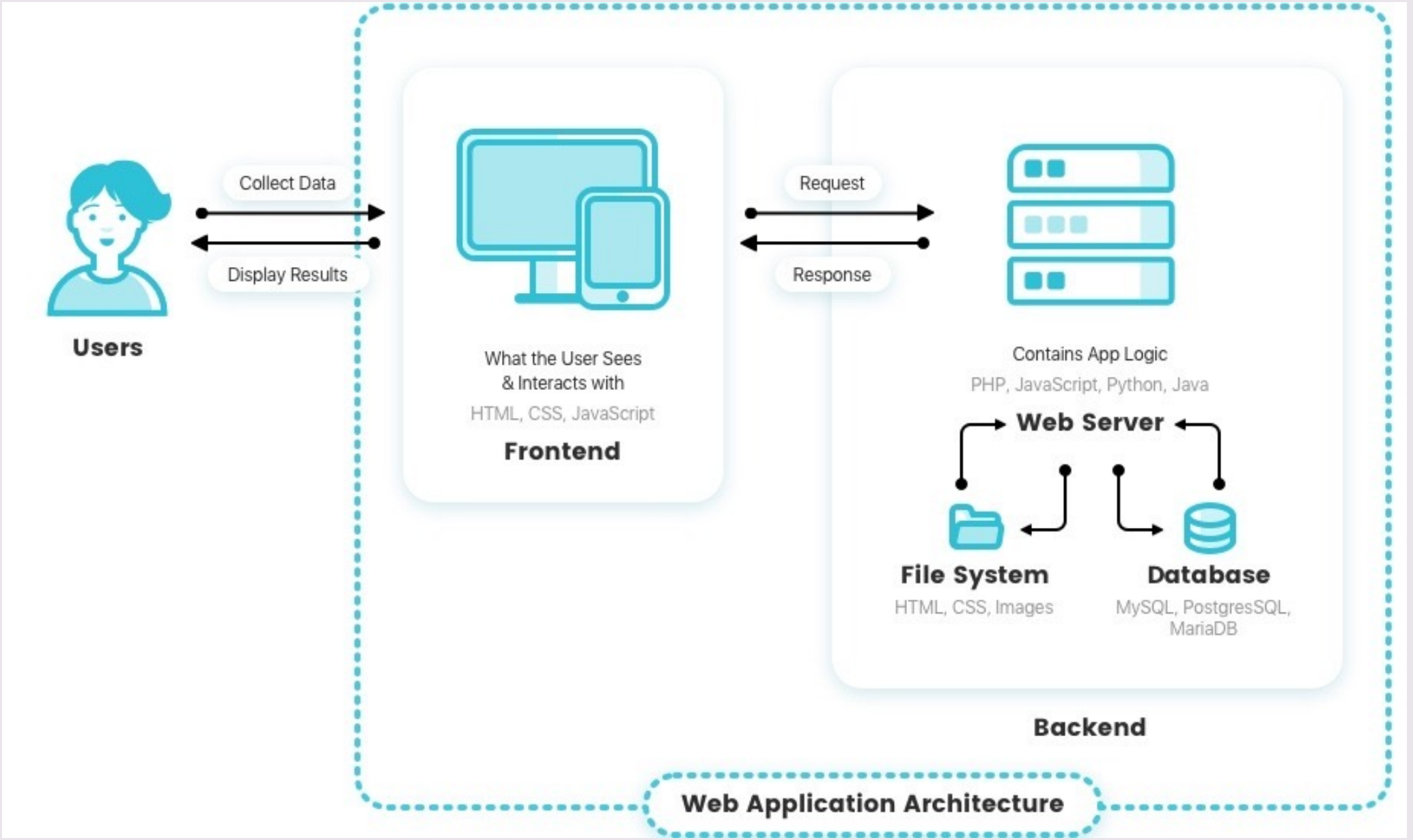
Key	Document
1001	{ "CustomerID": 99, "OrderItems": [{ "ProductID": 2010, "Quantity": 2, "Cost": 520 }, { "ProductID": 4365, "Quantity": 1, "Cost": 18 }], "OrderDate": "04/01/2017" }
1002	{ "CustomerID": 220, "OrderItems": [{ "ProductID": 1285, "Quantity": 1, "Cost": 120 }], "OrderDate": "05/08/2017" }

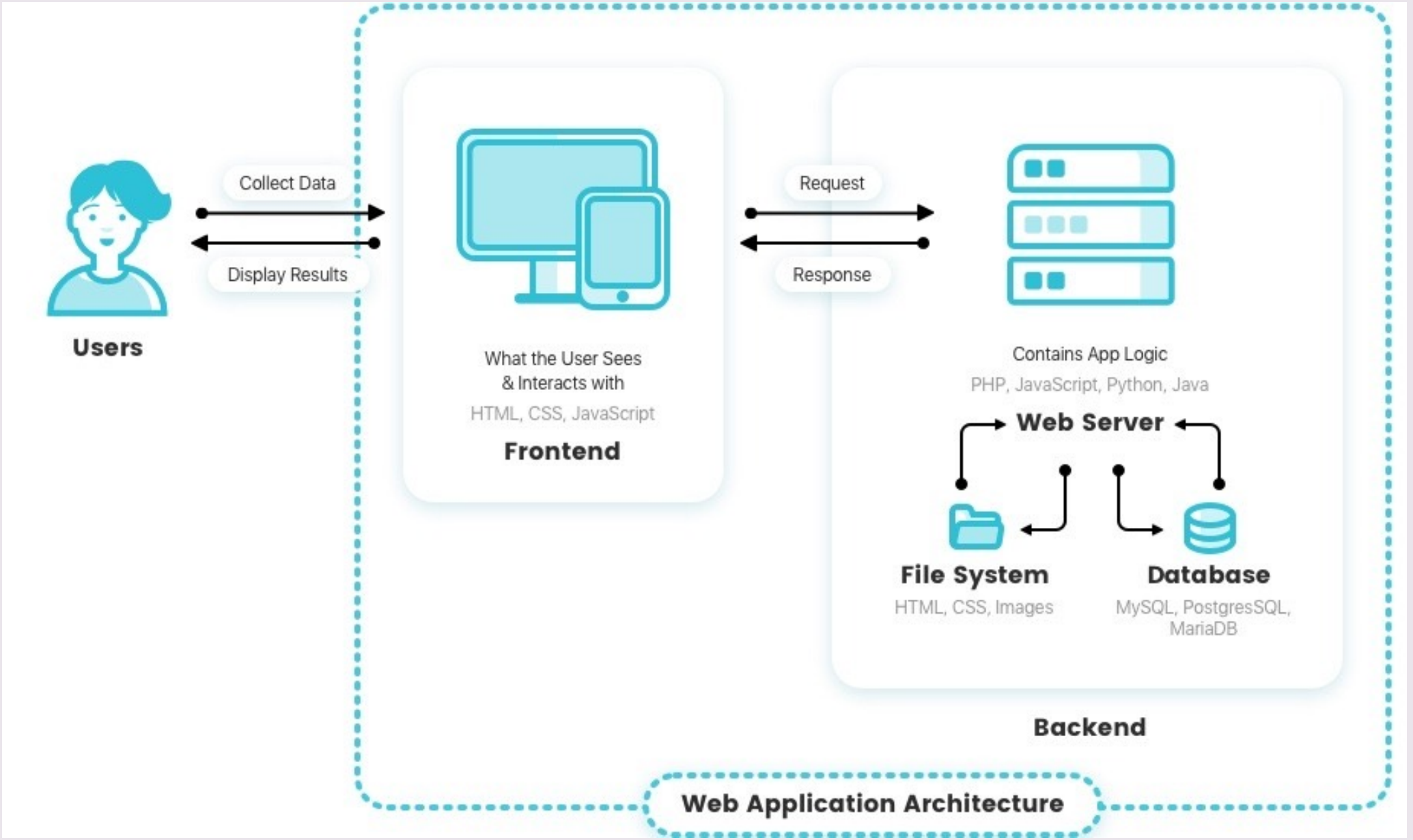
SQL

Microsoft
SQL Server
PostgreSQL
IBM
DB2
MySQL
ORACLE

NoSQL

mongoDB
Apache
CASSANDRA
APACHE
HBASE
amazon
DynamoDB
neo4j
RAVENDB
redis
HYPERTABLE
CouchDB
relax
OrientDB


Collect Data
Display Results
Users
What the User Sees
& Interacts with
HTML, CSS, JavaScript
Frontend
Request
Response
Contains App Logic
PHP, JavaScript, Python, Java
Web Server
File System
HTML, CSS, Images
Database
MySQL, PostgresSQL,
MariaDB
Backend
Web Application Architecture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Query Languages (SQL, for example)

Let's Dive In