



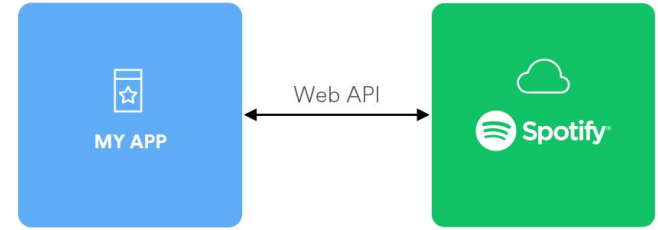
Intro To WEB APIS

Kevin Taha



What is an API

- Application Programming Interface
- Communicate with services on the internet
- Most commonly connects to databases



Requests and HTTP



Hey, server!
Could you **GET** me the data you have at
the location `/products.html`?

Sure! Here it is! It's an HTML content.



Hey, server!
I'm sending you the information of a new
user. Could you **POST** it to `/create-user.php`?
Data: { name: "John", email: "j@mail.com" }

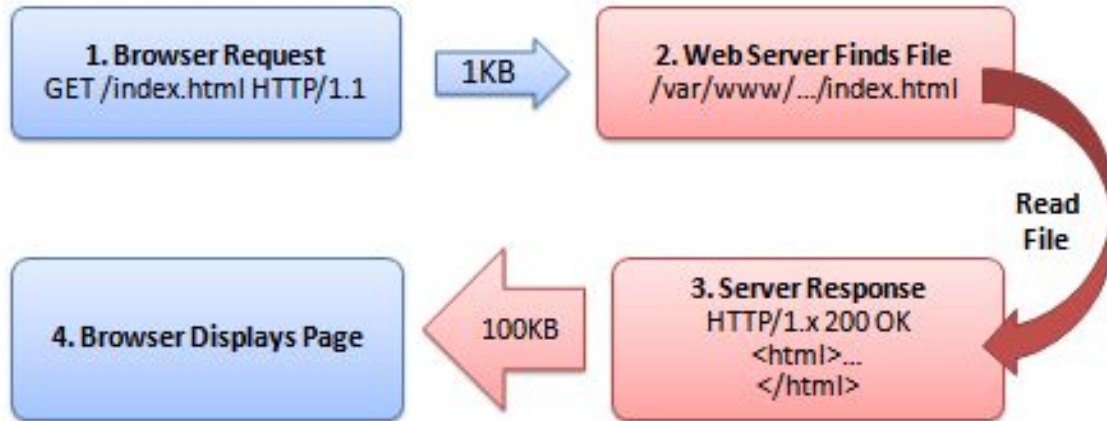
Oops! Sorry, mate! There was an error on
my side and I could not save your
information.



GET vs POST

- GET Request - Retrieve information from a server. This is how your browser requests website.

HTTP Request and Response



Note: GET Requests can return more than just HTML files (images, JSON data, etc...).

Your browser however expects HTML files and is built to render them.

Actual GET request from a browser

| | Path to the source on Web Server | Parameters to the server | Protocol Version Browser supports |
|---------------------------|---|-----------------------------|--------------------------------------|
| The HTTP Method | GET /RegisterDao.jsp?user=ravi&pass=java HTTP/1.1 | | |
| The Request Headers | Host: www.javatpoint.com | | |
| | User-Agent: Mozilla/5.0 | | |
| | Accept-text/xml,text/html,text/plain,image/jpeg | | |
| | Accept-Language: en-us,en | | |
| | Accept-Encoding: gzip,deflate | | |
| | Accept-Charset: ISO-8859-1,utf-8 | | |
| | Keep-Alive: 300 | | |
| | Connection: keep-alive | | |

Browser GET requests often look like this. Every time you load a page, a message like this is sent to a server and a similar looking response is received (hopefully)

Programming languages can also send GET requests. Libraries make these pretty simple.

Python

>>>

```
>>> response = requests.get('https://api.github.com')
>>> response.content
b'{"current_user_url":"https://api.github.com/user","current_user_authorizations_html
```

POST Request

Post Requests allow you to attach some data when you ping a server

Python

>>>

```
>>> requests.post('https://httpbin.org/post', data={'key': 'value'})  
<Response [200]>
```

| The HTTP Method | Path to the source on Web Server | Protocol Version Browser supports |
|---------------------|--|-----------------------------------|
| | Post /RegisterDao.jsp | HTTP/1.1 |
| The Request Headers | Host: www.javatpoint.com | |
| | User-Agent: Mozilla/5.0 | |
| | Accept: text/xml,text/html,text/plain,image/jpeg | |
| | Accept-Language: en-us,en | |
| | Accept-Encoding: gzip,deflate | |
| | Accept-Charset: ISO-8859-1,utf-8 | |
| | Keep-Alive: 300 | |
| | Connection: keep-alive | |
| | User=ravi&pass=java | Message body |

Request General Form (HTTP)

method URI http version

POST /create-user HTTP/1.1

Host: localhost:3000

Connection: keep-alive

Content-type: application/json

{ "name": "John", "age: 35 }

} header

} body

Response General Form (HTTP)

http ver. status

HTTP/1.1 200 OK

Date: 2017-01-10 12:28:53 GMT

Server: Apache/2.2.14

Content-type: text/html

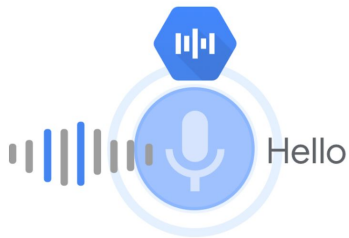
<h1>Hello World</h1>

} header

} body

Why this matters for you project

- Connecting to social media API's to get data from internet - Facebook, Twitter, Spotify, etc...
- Your project may need you to write your own API that processes and sends data
- Services like Google/Azure ML



Cloud Speech-to-Text API

Speech recognition across 120 languages

Cloud Speech-to-Text enables developers to convert audio to text by applying neural network models in an easy-to-use API. The API recognizes 120 languages and variants to support your global user base. You can enable voice command-and-control, transcribe audio from call centers, and more. It can process real-time streaming or prerecorded audio, using Google's machine learning technology.

[Learn more](#) →

API's Open you up to very powerful, well researched services that only make sense online



Decision

Build apps that surface recommendations for informed and efficient decision-making.



Vision

Recognize, identify, caption, index, and moderate your pictures, videos, and digital ink content.



Speech

Convert speech into text and text into natural-sounding speech. Translate from one language to another and enable speaker verification and recognition.



Search

Add Bing Search APIs to your apps and harness the ability to comb billions of webpages, images, videos, and news with a single API call.



Language

Allow your apps to process natural language with pre-built scripts, evaluate sentiment and learn how to recognize what users want.

Let's Code

We'll be making an interface for Azure's face detection API.