



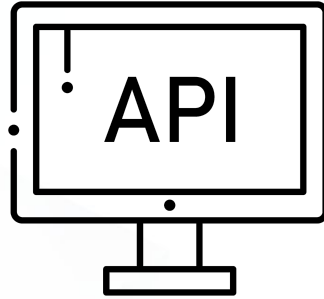
Advanced AJAX

Web Development Boot Camp

Lesson 3.4



API Recap



What Is an API?

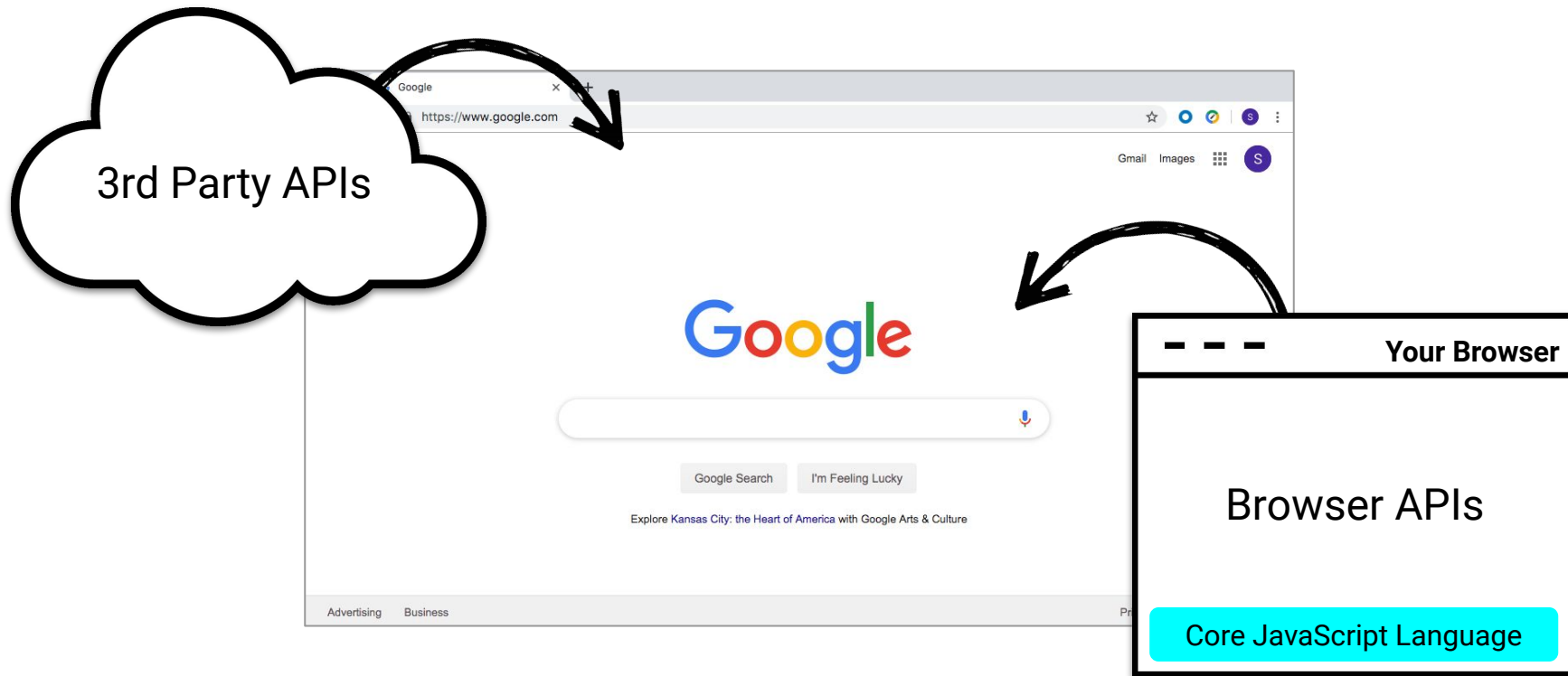


An **application programming interface (API)** is a set of features and rules that exist inside a software program (the application) enabling interaction with it through software—as opposed to a human user interface.

— [MDN Web Docs](#)

API Recap

In software development, APIs are often the bridge between different components.



API Use Cases

Three Common Use Cases for APIs

01

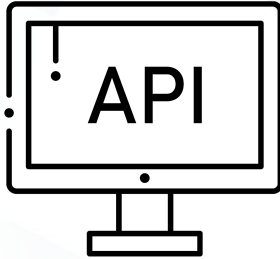
Provide pre-built code for accessing and sending data to a centralized database (e.g., weather data, movie data from IMDB).

02

Provide pre-built code for creating or utilizing other software components (e.g., Google Maps, Spotify tools).

03

Interface with physical sensors or hardware devices (e.g., Nest thermostats, Philips Hue).

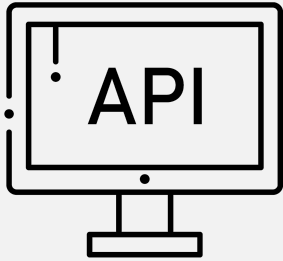


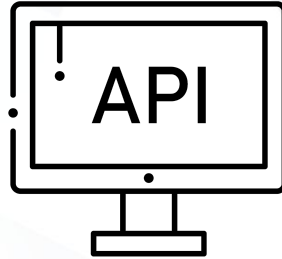
Use Case #1:

Accessing and Sending Data

Example:

Airbnb utilizes the Google Maps API to power its entire mapping service.

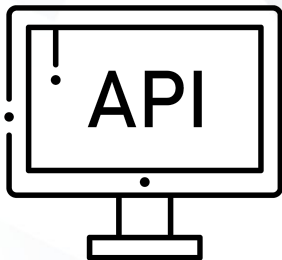




Use Case #2: Utilizing Pre-Built Code

Use Case #2: Utilizing Pre-Built Code

```
1  var context;
2  var request;
3  var source;
4
5  try {
6    context = new AudioContext();
7    request = new XMLHttpRequest();
8    request.open("GET", "http://jplayer.org/audio/mp3/RioMez-01-Sleep_together.mp3", true);
9    request.responseType = "arraybuffer";
10
11    request.onload = function() {
12      context.decodeAudioData(request.response, function(buffer) {
13        source = context.createBufferSource();
14        source.buffer = buffer;
15        source.connect(context.destination);
16        // auto play
17        source.start(0); // start was previously noteOn
18      });
19    };
20
21    request.send();
22
23  } catch(e) {
24    alert('web audio api not supported');
25  }
```



Use Case #3:

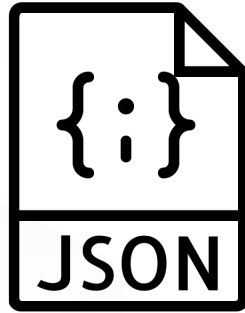
Controlling Physical Hardware

Nest Smart Thermostat API: developer.nest.com

Philips Hue API: developers.meethue.com

NodeBots (Cylon.js) API: cylonjs.com

JSON Recap



What Is JSON?

JSON stands for **JavaScript Object Notation** and is nothing more than simple JavaScript objects used as a **data interchange format**.

JSON Recap

JSON is a lightweight data interchange format used to correlate keys with values.

```
1  "apiVersion":"2.0",
2  "data":{
3    "updated":"2010-01-07T19:58:42.949Z",
4    "totalItems":800,
5    "startIndex":1,
6    "items":[
7      {
8        "id":"hYB0mn5zh2c",
9        "uploaded":"2007-06-05T22:07:03.000Z",
10       "updated":"2010-01-07T13:26:50.000Z",
11       "uploader":"GoogleDeveloperDay",
12       "category":"News",
13       "title":"Google Developers Day US - Maps API Introduction",
14       "description":"Google Maps API Introduction ...",
15       "tags":["GDD07","GDD07US","Maps"],
16       "duration":2840,
17       "rating":4.63,
18       "viewCount":220101,
19       "favoriteCount":201,
20       "commentCount":22
21     }
22   ]
23 }
```


Getting Data



What **jQuery method** do we use to retrieve data from a URL database?





What **two keys** do we pass into AJAX object parameter to retrieve data from online?

AJAX

What two parameters do we pass into AJAX to retrieve data from online?

```
7 <script src='http://code.jquery.com/jquery-2.1.3.min.js'></script>
8 <script type="text/javascript">
9   var type = 'the+matrix';
10  var queryURL = "http://www.omdbapi.com/?t=" + type + "&y=&plot=short&r=json";
11
12  $.ajax({url: queryURL, method: 'GET'})
13    .done(function(response) {
14      console.log(response);
15    });
16
17 </script>
```



url



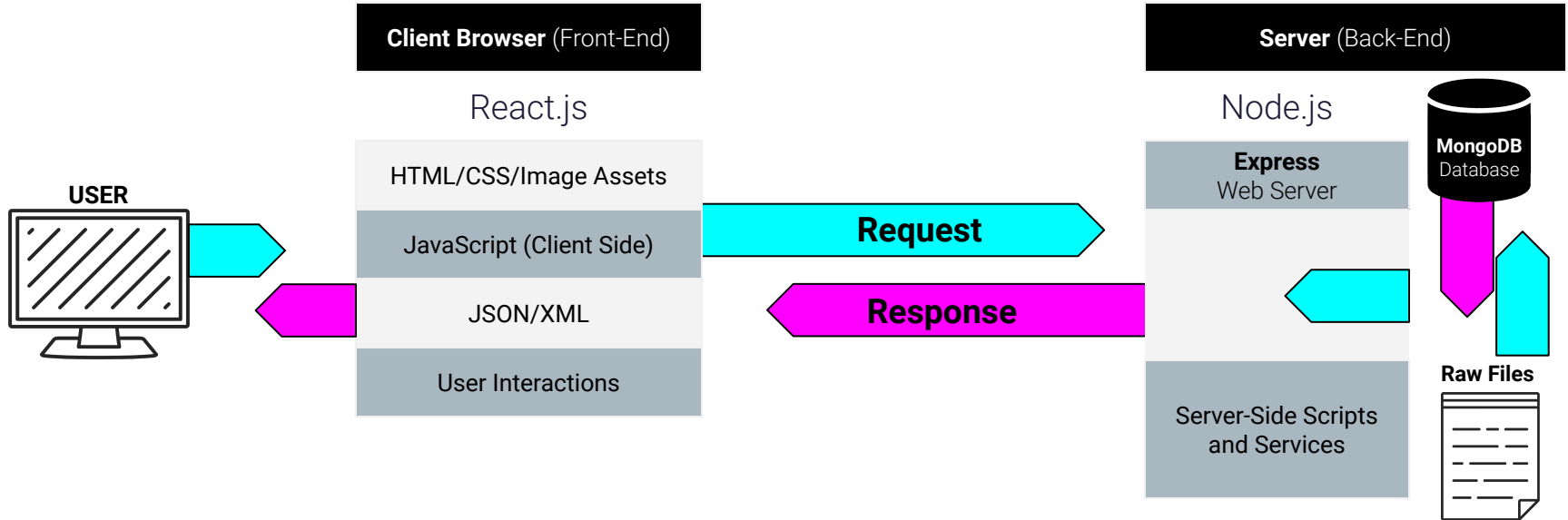
'GET' method

Knowledge Is Power



Welcome to Full-Stack Development

Full-stack development refers to the development of every aspect of the web application, from visuals and interactions to data transfer and processing.



AJAX and API Overview

At this point, you should know:

01

The definition of API

02

The definition of JSON

03

Why AJAX methods are used (i.e., retrieving data in databases).

04

How to create a basic AJAX get request using jQuery (i.e., include URL and `'GET'`).



Questions?