



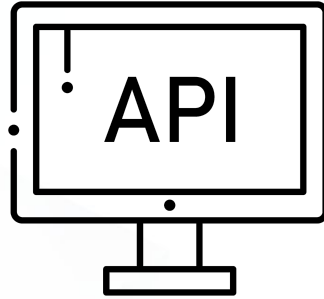
# Advanced AJAX

Web Development Boot Camp

Lesson 3.4



# API Recap



# What Is an API?

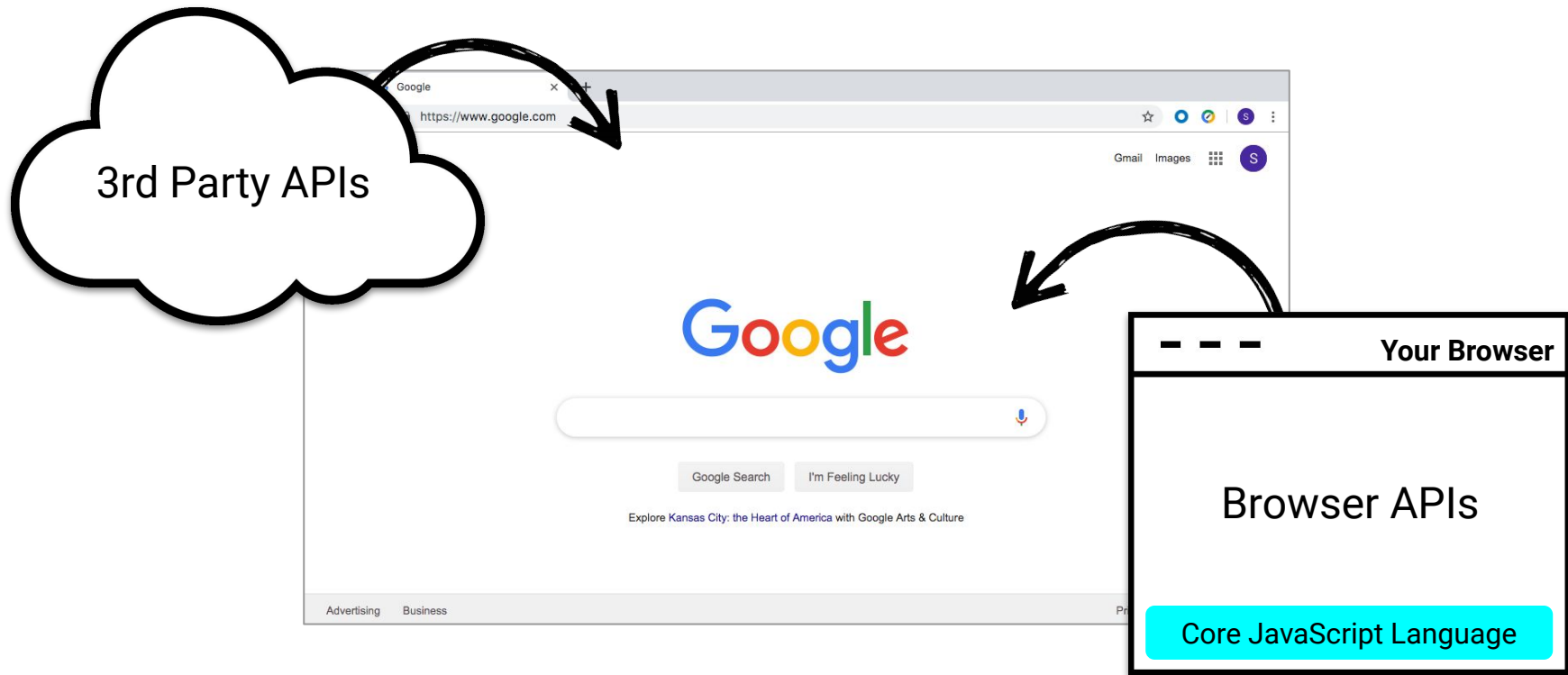


An **application programming interface (API)** is a set of features and rules that exist inside a software program (the application) enabling interaction with it through software—as opposed to a human user interface.

— [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

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01

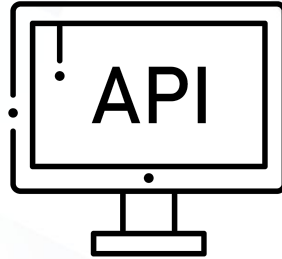
Provide pre-built code for accessing and sending data to a centralized database (e.g., weather data, movie data from IMDB).

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:**

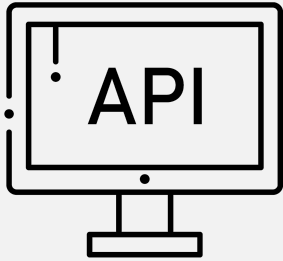
## Accessing and Sending Data

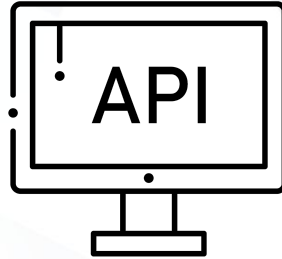


## Example:

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

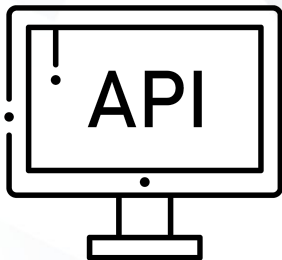




## **Use Case #2:** Utilizing Pre-Built Code

## 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:**

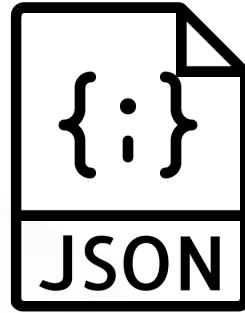
# Controlling Physical Hardware

Nest Smart Thermostat API: [developer.nest.com](https://developer.nest.com)

Philips Hue API: [developers.meethue.com](https://developers.meethue.com)

NodeBots (Cylon.js) API: [cylonjs.com](https://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

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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 parameters** do we pass into  
AJAX 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

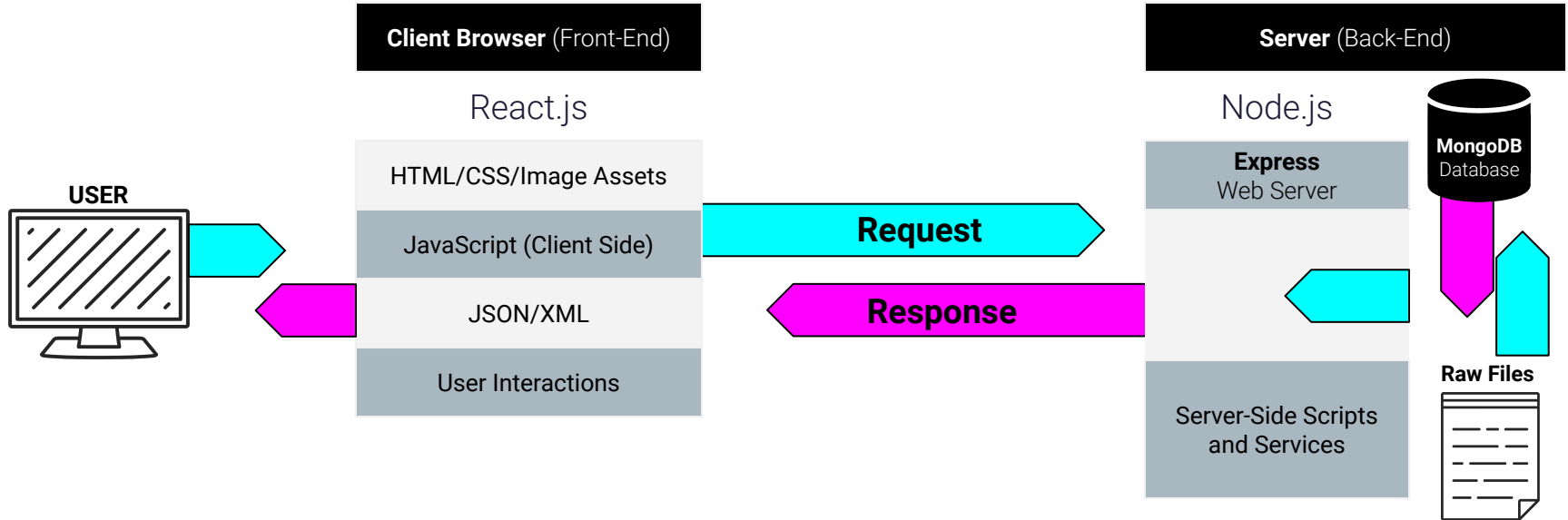
# Knowledge Is Power

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# 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

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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?