

Register Pre-Class

https://home.openweathermap.org/users/sign_up

- Day 17

AJAX and APIs

The Coding Bootcamp • March 2, 2017

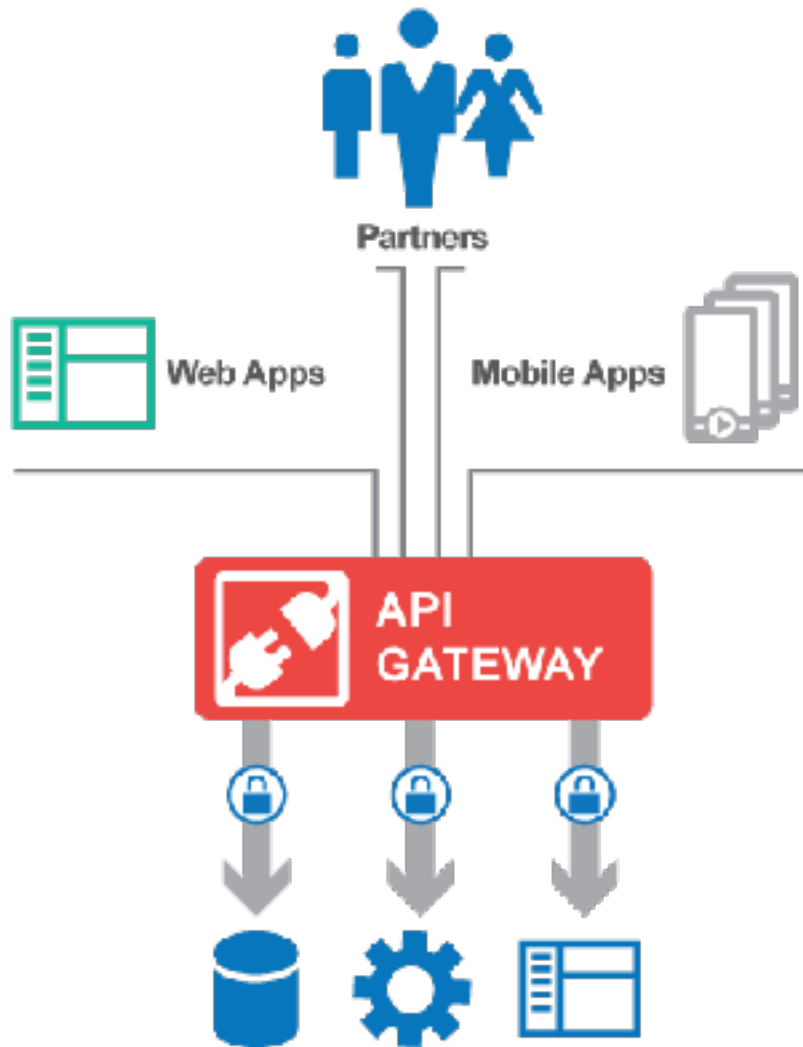
API Recap

What is an API?

What is an API?

“An Application Programming Interface (API) offers a set of pre-defined routines, code snippets, and tools for building software applications”

Recap Questions



In software development APIs are often the **bridge** between different components

API Use Cases

Three Common Use-Cases for APIs:

1. To provide pre-built code for getting and sending data to a centralized database (e.g. Weather Data, IMDB Movie Data).
2. To provide pre-build code for creating or utilizing other software components (e.g. Google Maps, Spotify Tools).
3. To interface with physical sensors or hardware devices. (e.g. Nest Thermostat, Phillips Hue)

Use Case #1 – Accessing and Sending Data

OMDb API
The Open Movie Database



DATA.GOV



UN Data API

YAHOO FINANCE

HOME INVESTING NEWS PERSONAL FINA

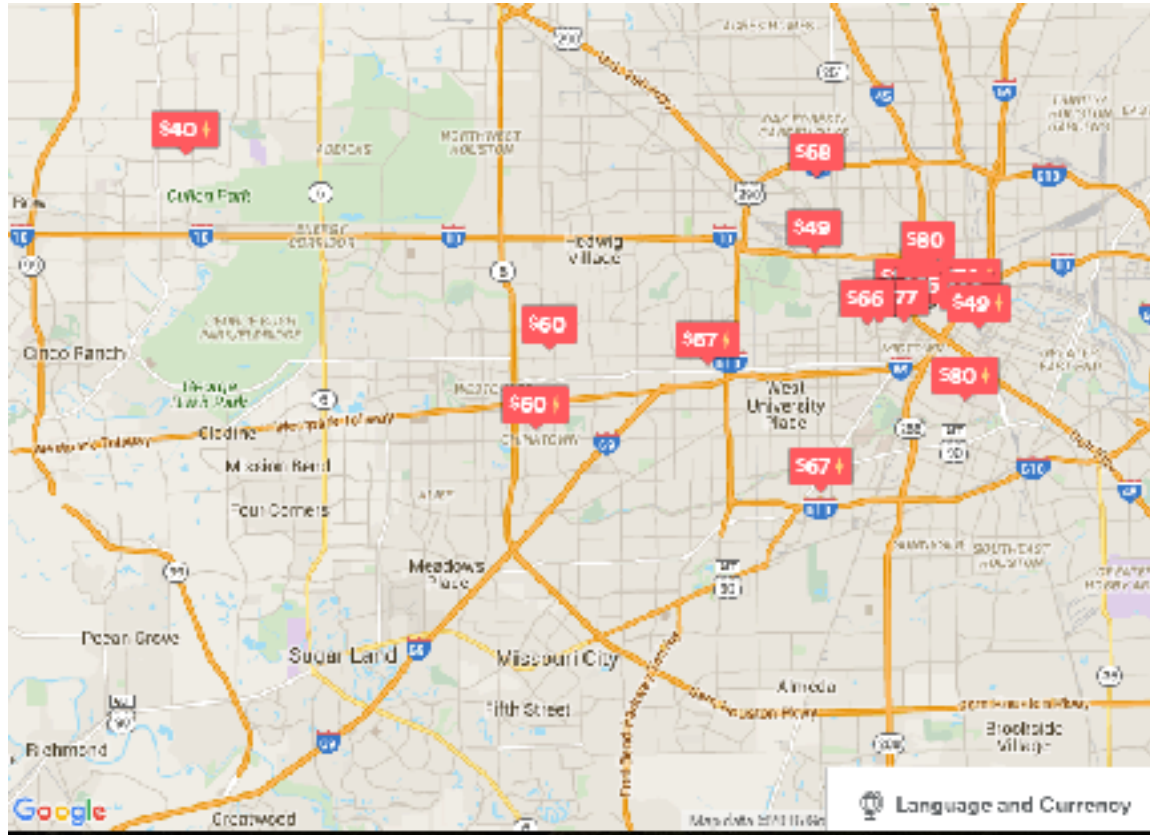
GlaxoSmith X Look Up

GSK	GlaxoSmithKline plc
GSK.L	GlaxoSmithKline plc
GSKCONS.NS	GlaxoSmithKline Consumer Healthcare Limited
GS7A.HM	GLAXOSMITHKLINE ADR

NYC OpenData



Use Case #2 – Utilizing Pre-Built Code



Example: AirBNB utilizes the Google Maps API to power its entire mapping service

Use Case #3 – Controlling Physical Hardware



Nest Smart Thermostat API: <https://developer.nest.com/>

Phillips Hue API: <http://www.developers.meethue.com/>

NodeBots (Ceylon) API: <https://cylonjs.com/>

Use Case #3 – Controlling Physical Hardware



HueCraft: <https://www.youtube.com/watch?v=ovYORLk05bQ>

JSON Recap

What is a JSON?

What is a JSON?

JSON stands for Javascript Object Notation and is nothing more than simple Javascript Objects used as a “data interchange format”.

Recap Questions

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

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

Getting Data

Recap Questions

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

Recap Questions

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

AJAX!!!!!!



Recap Questions

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

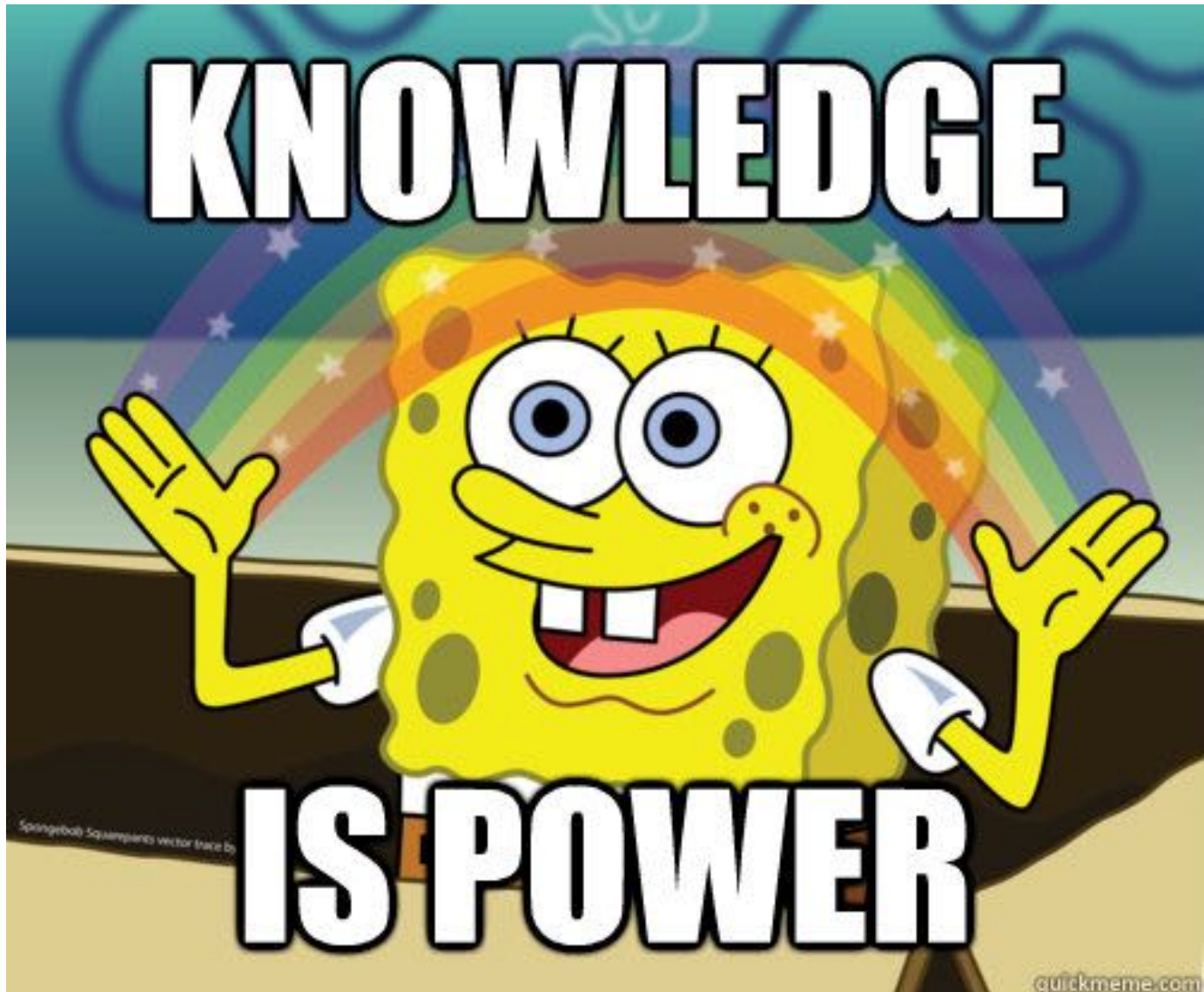
Recap Questions

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

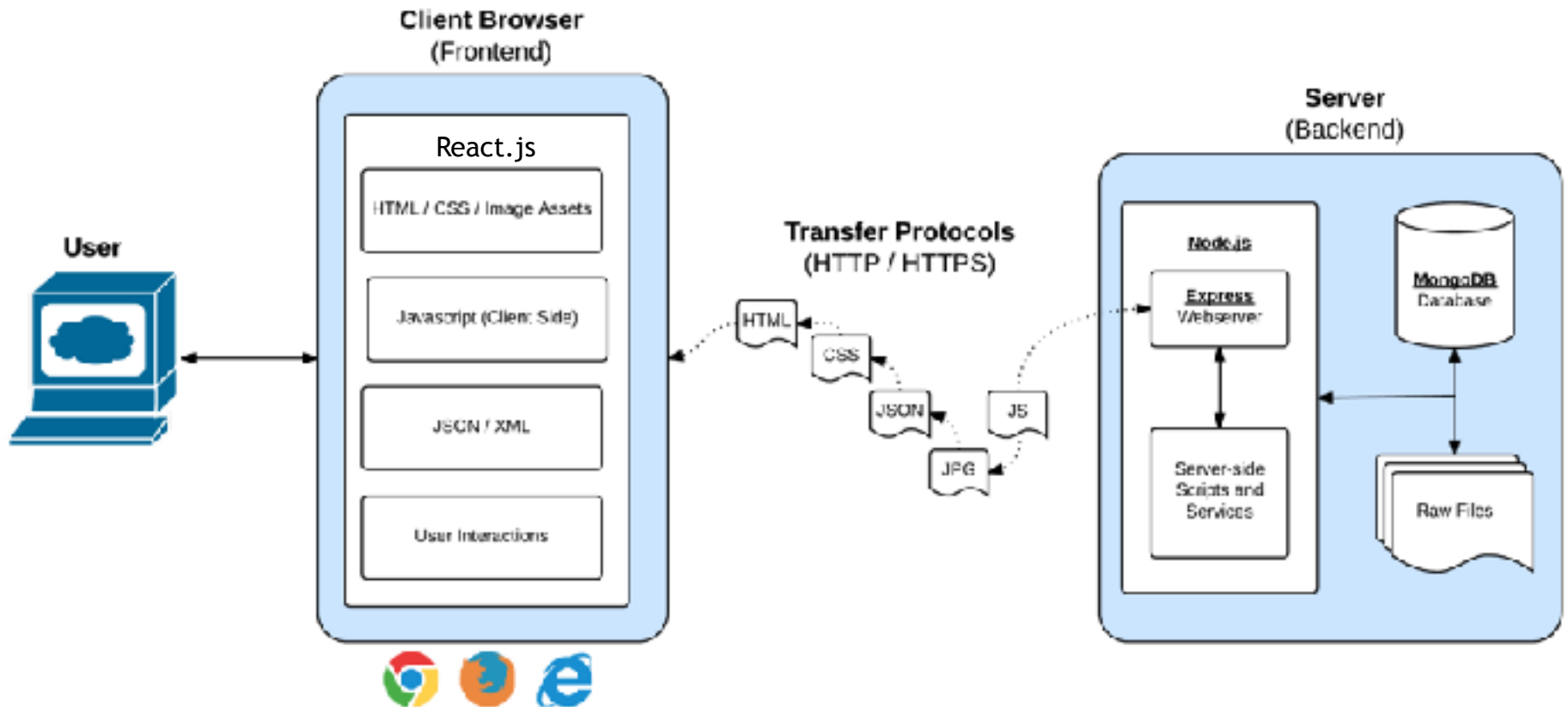
```
7 <script src='http://code.jquery.com/jquery-2.1.3.min.js'></script>
8 <script type="text/javascript">
9   var type = 'the+matrix';
10  var queryURL = "http://www.omdbapi.com/?t=" + type + "&y=&plot=short&r=json";
11
12  $.ajax({url: queryURL, method: 'GET'})
13    .done(function(response) {
14 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

Url and method: 'get'

Recap Questions



Welcome to “Full-Stack” Development



- **Full-Stack Development** is the concept of building every aspect of the web application – from the visuals and interactions, to the data transfer and processing.

Overview

At this point, you should...

1. Understand what an API is.
2. Understand what JSON means.
3. Realize that AJAX Methods are used for retrieving data in databases.
4. Know how to create a basic AJAX GET Request using jQuery. (i.e. include URL and “GET”)

The Weather in Bujumbura

Using either `bujumbura-easier.html` or `bujumbura-harder.html` as a starting point, add in the missing code necessary to accomplish the following:

Query the OpenWeatherMap API for the current weather data on Bujumbura, Burundi.

Log the retrieved data from this query to console.

Parse the retrieved data to display wind speed, humidity, and temperature information into the HTML.

HINT: You will need to request an API key from the website.

BONUS: Figure out how to convert the Kelvin temperature provided into Fahrenheit.

NOTE: Don't worry if this feels hard. Push yourself!

Movie App JSON Dump

Using starter code, add functionality such that clicking Movie Search triggers an AJAX call to the OMDb database and the JSON response to be appended onto the page.

Dynamic Movie Button Layout

Using either `movie-button-layout-easier.html` or `movie-button-layout-harder.html` as a starting-point, replicate the functionality of the application just demonstrated to you.

Your final code should:

Dynamically generate the initial buttons using jQuery

Allow users to create new buttons upon entering text in the textbox and clicking Add a Movie Bro.

If you finish early, begin reading about the Bands In Town API. Try to understand how to search for a specific artist.

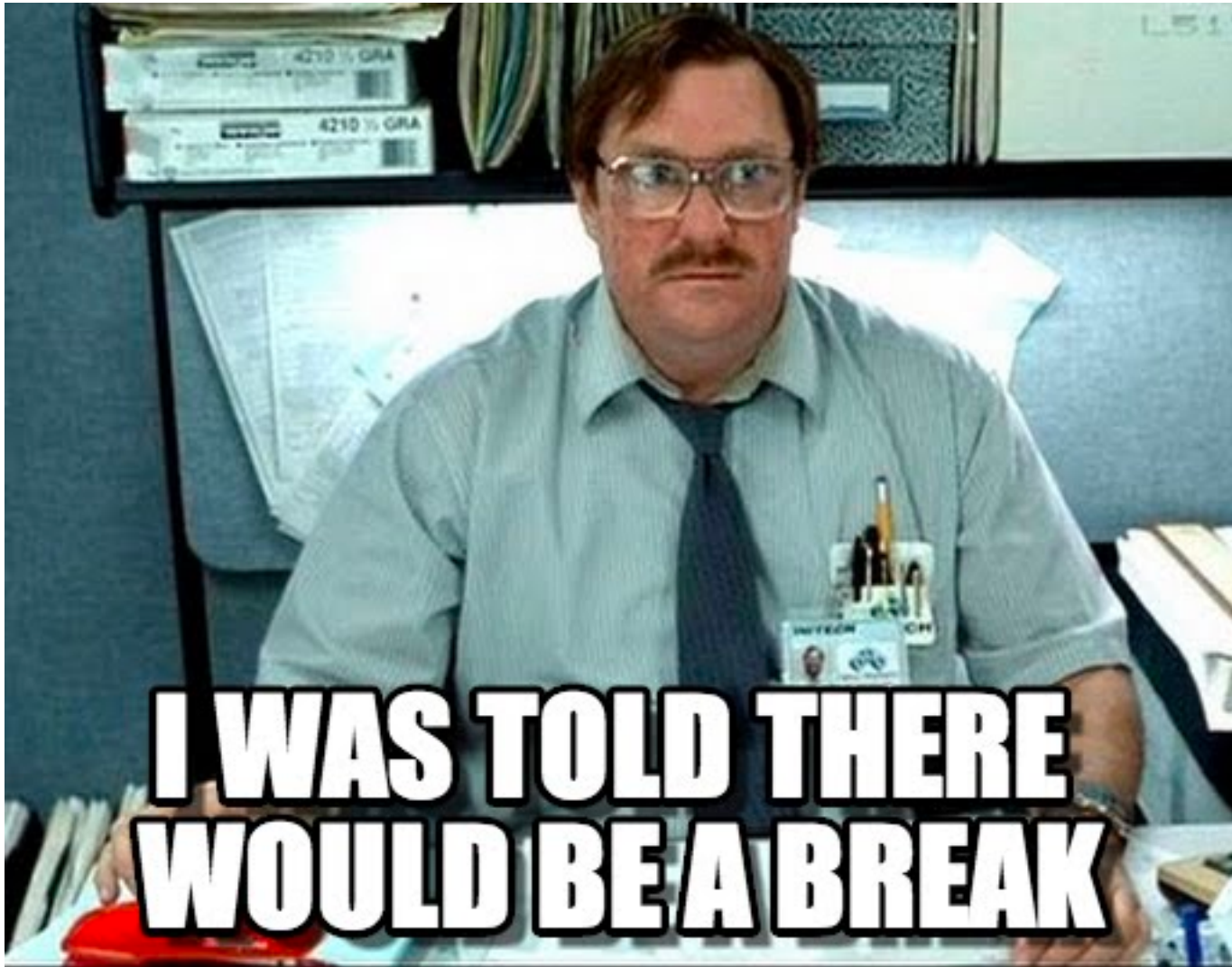
Log Movie JSON & Click JSON Data Attribute

Using the starter code provided, create the missing code snippets inside the `alertMovieName` function necessary to capture the movie name for both the original and new buttons.

Using the Starter code provided, create the missing code snippets inside the `displayMovieInfo()` function necessary to display JSON data about each movie.

HINT: You should use HTML data- attributes.

Break!



Complete Working Movie App

Using either version of the starter code provided to you, complete the application so that various snippets of information about your movie are displayed underneath. As a suggestion, display at least each of the following:

- Movie Poster
- Rating
- Release Date
- Plot

Bands In Town App

Using the starter code provided to you, complete the application such that your code will search the Bands In Town API for the artist specified in the search box.

Bands in Town is a service for finding out when and where bands and artists are scheduled to tour.

Information on how to use query the Bands In Town API can be found here:
<https://app.swaggerhub.com/apis/Bandsintown/PublicAPI/3.0.0>

Note: This is a free public API and you will not need to sign up for anything.

HINT: Scroll down the API docs and study the examples. See if you can figure out how to query for an artist's information. You will need to use the `/artists/{artistname}` endpoint.

HINT: The `app_id` parameter described in the docs is required, but can be set to anything you wish.

Questions
