Intro to APIs and AJAX
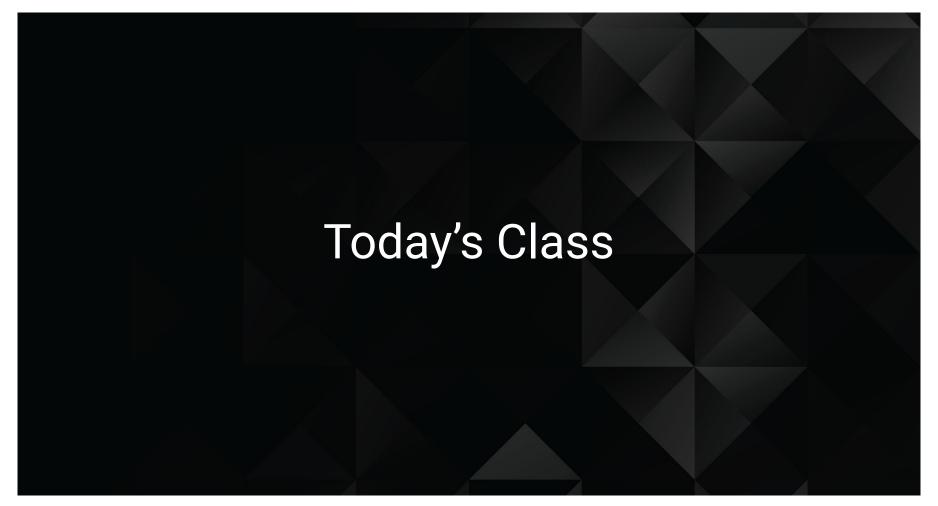
Today's Class

Objectives

01   Object Parsing / JSON Formatter

02   To introduce the concept and utility of APIs and JSON in web applications

03   To be exposed to a variety of APIs and the process for building endpoint URLs to utilize them

04   To work with the OMDb and Giphy APIs to build data-rich applications

XML vs JSON

XML

```
<empinfo>
  <employees>
    <employee>
      <name>James Kirk</name>
      <age>40></age>
    </employee>
    <employee>
      <name>Jean-Luc Picard</name>
      <age>45</age>
    </employee>
    <employee>
      <name>Wesley Crusher</name>
      <age>27</age>
    </employee>
  </employees>
</empinfo>
```

JSON

```
{  "empinfo" :
    {
        "employees" :  [
        {
            "name" : "James Kirk",
            "age" : 40,
        },
        {
            "name" : "Jean-Luc Picard",
            "age" : 45,
        },
        {
            "name" : "Wesley Crusher",
            "age" : 27,
        }
            ]
    }
}
```

Student Activity:
Customer Object Parsing

Suggested Time:
7 minutes

Instructor Demonstration
Review CustomerObject Parsing

JSON Formatter

offered by callumlocke.co.uk

★★★★ (892) | **Developer Tools** | *387,885 users*

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```
● ● ●                f https://graph.facebook.com    ✕

←  →  ⟳   🔒 https://graph.facebook.com/cocacola

▼ {
        "id": "40796308305",
        "name": "Coca-Cola",
        "picture": "http://profile.ak.fbcdn.net/hprofile-ak-ash2/174560_407963083
        "link": "http://www.facebook.com/coca-cola",
        "likes": 46963810,
   ▼ "cover": {
            "cover_id": "10151829640053306",
            "source": "http://a8.sphotos.ak.fbcdn.net/hphotos-ak-
            ash3/s720x720/529413_10151829640053306_446360541_n.jpg",
            "offset_y": 0
        },
        "category": "Food/beverages",
        "is_published": true,
        "website": "http://www.coca-cola.com",
        "username": "coca-cola",
        "founded": "1886",
        "description": "Created in 1886 in Atlanta, Georgia, by Dr. John S. Pembe
```

✓ Compatible with your device

Makes JSON easy to read. Open source.

FEATURES
• JSON & JSONP support
• Syntax highlighting
• Collapsible trees, with indent guides
• Clickable URLs
• Toggle between raw and parsed JSON
• Works on any valid JSON page – URL doesn't matter
• Works on local files too (if you enable this in chrome://extensions)
• You can inspect the JSON by typing "json" in the console

🏠 **Website**

❗ **Report Abuse**

Additional Information

Version: 0.6.0
Updated: October 5, 2014
Size: 27.62KiB
Language: English

Instructor Demonstration
New York Times Scraper Demo

Students Do: API Research Questions

Research amongst yourselves the answers to the following questions:

What is an API?

What does API stand for?

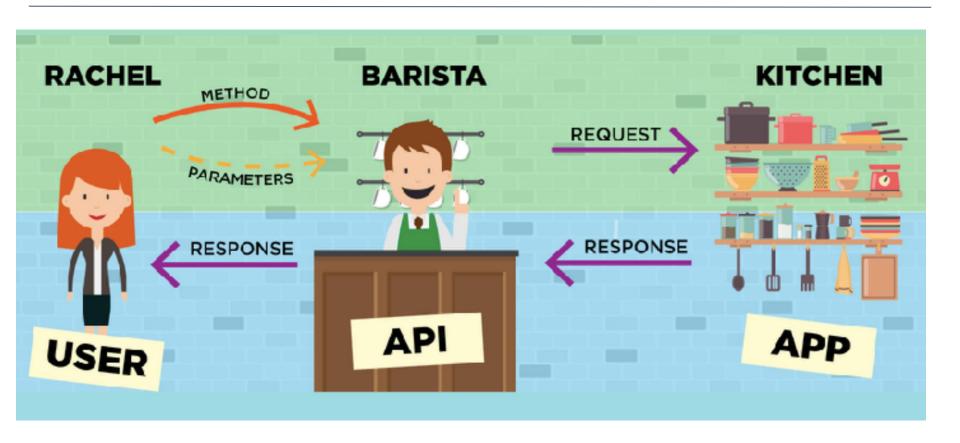What are some examples of APIs? (Find links to specific APIs)

What do these specific APIs allow you as a developer to do?

Suggested Time: 7 minutes

API Process

API Definitions

APIs stand for Application Programming Interfaces. They provide a way for creating user code that utilizes other pre-built code to do various tasks. It can be used to quickly retrieve data from another person's database, to utilize someone else's more complex functionality (like maps), or to control other hardware and software.

Instructor Demonstration
API Experimenting

Students Do: API Experimenting

Experiment on your own with new APIs

Using the RapidAPI library as a starting point experiment with a few APIs of your own.

Note: You will need to create an account on RapidAPI first.
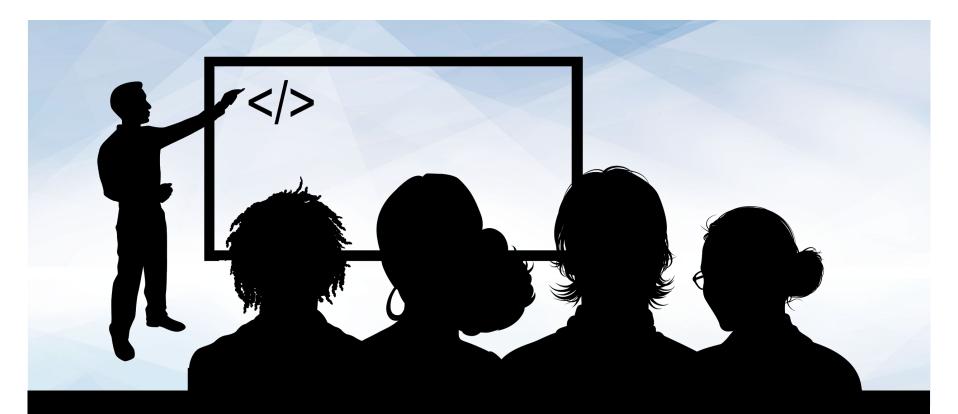
Note: Use the "free" filter, as some APIs require an subscription.

Note: Not all of the APIs are easy to use, just keep experimenting!

Suggested Time: 7 minutes

Instructor Demonstration
API Demo

Partners Do: OMDb API Exploration

Go to the OMDb API then use the documentation to try to answer the following:

Without using the user interface, how would I query the OMDB API to get all of the information related to the movie: Frozen?

Hint: you will have to build a URL of your own with the search parameters listed.

Note: The OMDb API now requires an API key. Here is your key: trilogy

Suggested Time: 7 minutes

OMDb API URLs (10 mins)

What are all the parameter listed (i.e. the ?t, the +, the &, apikey=, etc).

How would you would show multiple movies that meet a condition? (i.e. how would you get all movies with the word Matrix in it)

BREAK

Time to Take a Break?

Instructor Demonstration
AJAX Query Demo

top ▾ ☐ Preserve log

```
▼ Object
    Actors: "Michael Jordan, Wayne Knight, Theresa Randle, Manner Washington"
    Awards: "5 wins & 6 nominations."
    Country: "USA"
    Director: "Joe Pytka"
    Genre: "Animation, Adventure, Comedy"
    Language: "English"
    Metascore: "N/A"
    Plot: "Michael Jordan agrees to help the Looney Tunes play a basketball game vs. alien slavers to determine
    Poster: "http://ia.media-imdb.com/images/M/MV5BMTQ5NDg1NTgwOV5BMl5BanBnXkFtZTcwODAwNDAwMQ@@._V1_SX300.jpg"
    Rated: "PG"
    Released: "15 Nov 1996"
    Response: "True"
    Runtime: "88 min"
    Title: "Space Jam"
    Type: "movie"
    Writer: "Leo Benvenuti, Steve Rudnick, Timothy Harris, Herschel Weingrod"
    Year: "1996"
    imdbID: "tt0117705"
    imdbRating: "6.3"
    imdbVotes: "107,127"
  ▶ __proto__: Object
```

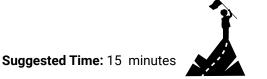# **Students Do:** AJAX to HTML Activity (3-ajax)

Fill up the HTML table with information about your own favorite movies.

HINT: You will need multiple AJAX Calls

BONUS: Once you've completed the basic activity, refactor your solution to be more DRY by placing repetitive logic inside of functions to be called when needed.
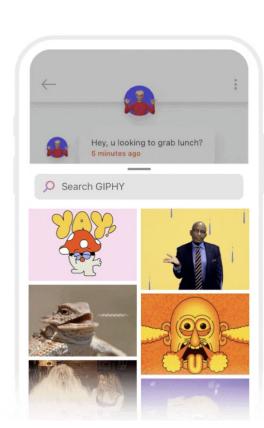
Suggested Time: 15 minutes

GIPHY SDK

By integrating with GIPHY, the first and largest GIF search engine, you gain free access to our ever-growing content library of GIFs and Stickers, plus brand new features like animated Emoji and Text — featuring the latest in entertainment, sports, and breaking news from GIPHY's official content partners.

The fastest and easiest way to bring the full GIPHY experience directly to your app is with GIPHY SDK. Built with developers and product designers in mind, GIPHY SDK is a top-to-bottom solution for all things GIF in your app. This includes interfacing with GIPHY API, fetching and caching assets, and displaying GIFs and Stickers on screen in customizable UI templates.

With billions of requests a day, it's safe to say GIPHY knows GIFs. We're excited to share our best-in-class tools with you so your users can have the best GIF experience possible, with all the same features they're already enjoying on Facebook, Slack, Instagram, and more — with just a few lines of code.

Partners Do: As partners, using the Giphy API Documentation

How would you return back a single gif tied to a search term?

How would you return five gifs tied to a search term?

How would you return the trending gifs back from this API?

Suggested Time: 10 minutes

Questions?