Before we begin...

- Open up these slides:
  - https://bit.ly/2qQaruf

AJAX & APIs

Learning Objectives

- **Understand** AJAX and the benefits it provides
- **Learn** to use the Fetch API
- **Request** data from APIs and **use** it to create HTML

Agenda

- APIs
- AJAX
- Fetch

A quick review

- APIs
- AJAX
- Fetch

Fetch

What is Fetch?

- It is a way to make AJAX Requests
- It is a function that is defined automatically for us
- It is supported by all major browsers now
  - For those that don't support it, there is a polyfill

What is Fetch?

- You make an *HTTP Request* with it
  - Specifying the URL, the method etc.
- It comes back with an *HTTP Response*
  - Most of the time, the data is returned as **JSON**
- Then returns a *Promise*
  - We can work with the returned data in a ***.then***

Using Fetch

```
fetch( URL, HTTP_OPTIONS? )
    .then( SUCCESS_HANDLER )
    .catch( ERROR_HANDLER );
```

Using Fetch

```
fetch("http://api.open-notify.org/astros.json")
    .then(function (res) {
        return res.json();
    })
    .then(function (data) {
        console.log(data);
    });
```

1. We have make a Request to the API
2. We parse the Response and turn it into a JS Object with .json()
3. We can then work with the data!

Parameters

- We can attach a Query String or Parameters to a URL
- This provides extra information to the API
- Works in a similar way to an object - query strings have keys and values
- Looks something like this:

```
?keyOne=valueOne&keyTwo=valueTwo&keyThree=valueThree
```

Using Fetch - Parameters

```
fetch("https://randomuser.me/api/?results=10")
    .then(function (res) {
        return res.json();
    })
    .then(function (data) {
        console.log(data);
    });
```

1. We have make a Request to the API
2. We parse the Response and turn it into a JS Object with .json()
3. We can then work with the data!

Using Fetch - Parameters

```
fetch("https://randomuser.me/api/?results=10&gender=male")
    .then(function (res) {
        return res.json();
    })
    .then(function (data) {
        console.log(data);
    });
```

1. We have make a Request to the API
2. We parse the Response and turn it into a JS Object with .json()
3. We can then work with the data!

Ron Swanson API

- Open up the documentation here

Chuck Norris API

- Open up the documentation here

OMDB APi

1. Go to OMDB APi's Website
2. Get an API Key from here and select Free
3. Input your details
4. Check your email
5. Click the verify API key link
6. Copy your API key from that email

OMDB APi - Authentication

```
fetch("http://www.omdbapi.com/?t=Jaws&apikey=API_KEY_GOES_HERE&plot=full")
    .then(function (res) {
        return res.json()
    })
    .then(function (data) {
        console.log(data)
    });
```

OpenWeatherMap API

1. Go to the OpenWeatherMap APi website
2. Sign up for an API key here
3. Fill in your details
4. Log in
5. Go to the API Key Tab on your settings page
6. Copy the API Key
7. It'll take ten minutes for the API Key to work

OpenWeatherMap API

```
var baseURL = "http://api.openweathermap.org/data/2.5/weather";
var parameters = "?q=Sydney&units=metric&appid=API_KEY";

fetch(baseURL + parameters)
    .then(function (response) {
        return response.json();
    })
    .then(function (data) {
        console.log(data);
    });
```

Giphy API

- Open up the documentation here
- Create an account here
- Create an app here
  - Copy your API key!
- Looks at the Docs here

Yandex Translate API

- Open up the documentation here

Some other things...

- Using Geolocation
  - getCurrentPosition
- Speech to Text, Text to Speech
  - SpeechRecognition
  - SpeechSynthesis

Resources

- MDN: Using Fetch
- CSS Tricks: Using Fetch
- Scotch.io: Fetch
- David Walsh: Fetch
- Google Developers: Fetch
- Google Developers: Working with the Fetch API
- MDN: Fetch API

Homework

- Find another API and do something cool with it!
  - e.g. ISS Location and Google Maps API
  - e.g. Google Books
  - Or one from here (if it says OAuth, don't pick it for the moment)
- Finish all exercises from class
- Upload your homework to GitHub
- Prepare for next lesson

Homework (Extra)

- Go through The Modern JavaScript Tutorial
- Read Eloquent JavaScript
- Read Speaking JavaScript

What's next?

More AJAX and APIs!

Questions?

Thanks!