

Accessing YouTube Search API

This document walks through an example AJAX method call to a third party API. Here we are using YouTube Search API.

What is an API (Application Programming Interface)?

We can think of an API like a menu in a restaurant. which provides a list of dishes you can order, along with a description of each dish. When you order what menu items you want, the restaurant's kitchen does the work and provides you with some finished dishes. You don't know exactly how that particular dish is prepared, and you don't really need to.

Similarly an API lists a bunch of functionalities that developers can use, along with its description. The developer doesn't necessarily need to know how it works in the backend. They just need to know that it's available for use in their application.

Which API are we using in this activity?

We are using YouTube Search API. The URL for the particular API is <https://www.googleapis.com/youtube/v3/search> . In-order to access this URL we need an API Key and several other parameters which are discussed below

How to get the API Key ?

Navigate to the google developers console <https://console.developers.google.com>, and if you don't have an account, take a moment to set one up.

Once you are logged in, you will need to:

- Create a new project
- Enable Youtube Data API
- Create Credentials
- Copy Your API Key

This quick video explains the steps better:

<https://www.youtube.com/watch?v=iItL3MmqJQo&feature=youtu.be&hd=1>

Making a GET Request using AJAX

The following parameters are required in order to make a request for the YouTube API

key: API key that you get from the google developer console (see below: how to get this key).

q: The q parameter specifies the query term that will hold your search value.

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part: The part parameter specifies a comma-separated list of one or more search resource properties that the API response will include. Set the parameter value to snippet.

type: We are interested in video output here

videoEmbeddable: Set to True , because this parameter lets us to restrict a search to only videos that can be embedded into a webpage.

The following code snippet gives a better idea on how we are using AJAX to call the API.

```
function getVideo() {  
  $.ajax({  
    type: 'GET',  
    url: 'https://www.googleapis.com/youtube/v3/search',  
    data: {  
      key: 'PASTE YOUR API KEY HERE',  
      q: "cats",  
      part: 'snippet',  
      maxResults: 1,  
      type: 'video',  
      videoEmbeddable: true,  
    },  
    success: function(data){  
      embedVideo(data)  
    },  
    error: function(response){  
      console.log("Request Failed");  
    }  
  });  
}
```

Using the Data Received from our request

If the request is successful we get the data (video) as a response, which we want to display in an iframe. We do this using the embedVideo function defined in the success option of the ajax() method. The following code snippet of the embedVideo function shows how we can embed a video and corresponding description and display it on the browser.

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```
// Display result back to the browser
function embedVideo(data) {
  $('iframe').attr('src', 'https://www.youtube.com/embed/' + data.items[0].id.videoId)
  $('h3').text(data.items[0].snippet.title)
  $('p.description').text(data.items[0].snippet.description)
  $('#show_result').show()
  $('#input_value').hide()
}
```

How to make the application work on your computer

Now we know how we can integrate AJAX method to call YouTube API. So it's time to setup this application on your computer. Follow the instruction below.

1. Explore the HTML, CSS and JS files given to you.
2. Open the Youtube.js file
3. Get the API Key as explained in the section “*How to get the API Key ?*”
4. Replace ‘PASTE YOUR API KEY HERE’ with your generated API Key at line number 21 of Youtube.js file.
5. Save and upload your files on your webpages account
6. Access the Youtube_Index.html file using the correct URL on your browser
7. Search for any keyword like car , dogs , UNCC ..etc to get a related video. This video is fetched from the YouTube Search API.

You can do more !!

It is just an example of how we can access an API using AJAX. There are many other open source APIs like openWeather API , Google news API and Twitter API to name a few. We encourage you to explore other APIs, and implement one on your website.

References:

Understanding APIs

<https://www.webopedia.com/TERM/A/API.html>

<https://www.howtogeek.com/343877/what-is-an-api/>

<https://medium.com/@perrysetgo/what-exactly-is-an-api-69f36968a41f>

Implementation of YouTube Search API

<https://dev.to/aveb/making-your-first-get-request-to-youtube-search-api-4c2f>