

# Introduction to API

Week 09

TCNJ Web 2

Jean Chu

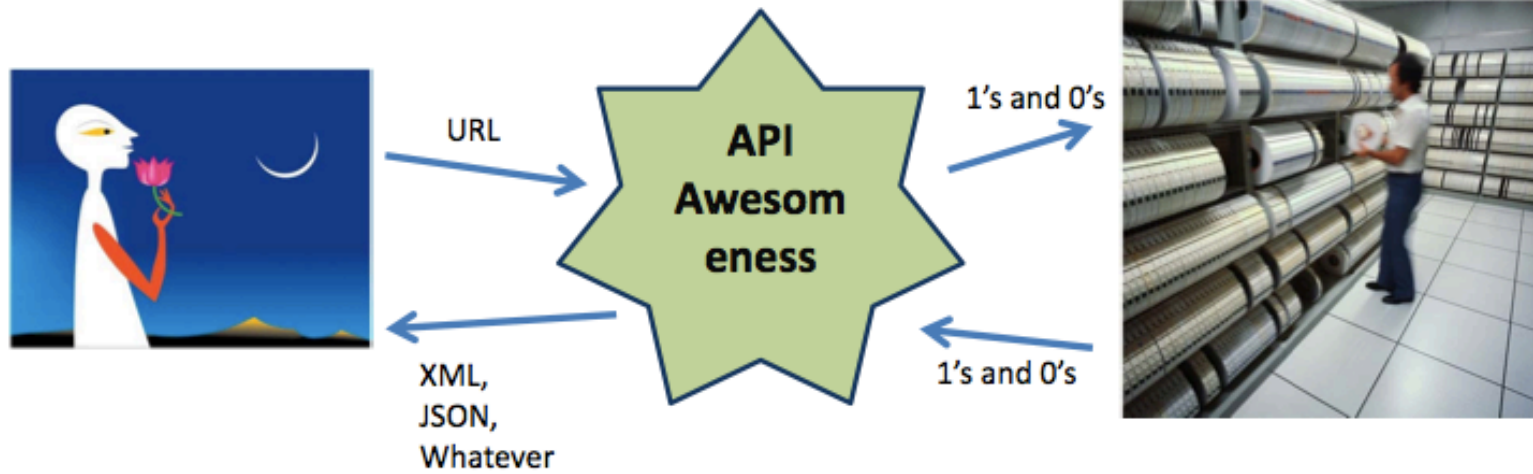
API's are nifty.

**Human/Computer: GUI**

AS

**Computer/More complex Computer: API**

*Shamefully Stolen from* <http://www.binaryspark.com/classes/>



*Shamefully Stolen from* <http://www.binaryspark.com/classes/>

# Application Programming Interface (Api)

- Through the API you are able to call functions from a web service.
- An API is an interface implemented by a software program that enables it to interact with other software. Consider it similar to the way the user interface facilitates interaction between humans and computers.

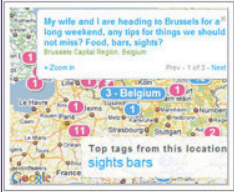
# Google Map API

Google code  Search  
e.g. "adwords" or "open source"

★ **Google Maps API Family** Home [FAQ](#) [Articles](#) [Blog](#) [Forum](#) [Terms](#) +1


Google Maps has a wide array of APIs that let you embed the robust functionality and everyday usefulness of [Google Maps](#) into your own website and applications, and overlay your own data on top of them:

### Maps JavaScript API




Embed a Google Map in your webpage using JavaScript. Manipulate the map and add content through many services. [Version 3](#) - [Version 2](#)

### Maps API for Flash



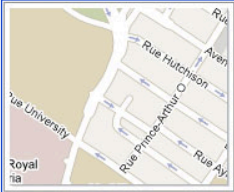
Use this ActionScript API to embed a Google Map in your Flash-based web page or app. Manipulate the Map in three dimensions and add content through many services. [Learn more](#)

### Google Earth API




Embed a true 3D digital globe into your web page. Take your visitors anywhere on the Earth (even below the ocean) without leaving your web page. [Learn more](#)

### Maps Image APIs



Embed a fast and simple Google Maps image or Street View panorama in your web

### Web Services



Use URL requests to access geocoding, directions, elevation, and places information from [code.google.com/apis/maps/documentation/flash/](#), and

### About Google Maps API

The Maps API is a free service, available for any web site that is free to consumers. Please see the [terms of service](#) for more information.

Businesses that charge fees for access, track assets or build internal applications must use [Google Maps API for Business](#), which provides enhanced features, technical support and a service-level agreement.

### What's New

#### [The Places API](#)

May 10, 2011

Create applications that find and display nearby Place information for your users. Search, check-in, and add new places. Also available in the [JavaScript API](#).

#### [Fusion Table Styling](#)

May 10, 2011

Apply cascading styles to markers, polygons, and lines in your Fusion Tables layer.

#### [Styled Maps in the Static Map API](#)

Oct 29, 2010

Alter the appearance of the standard map styles in the API, customizing the colors and display of features and elements!

<http://code.google.com/apis/maps/documentation/javascript/>

- "The Google Maps Javascript API lets you embed Google Maps in your own web pages.
- Get Key Access
- Application Programming Interface (API) Key to access the API
  - <https://code.google.com/apis/console>

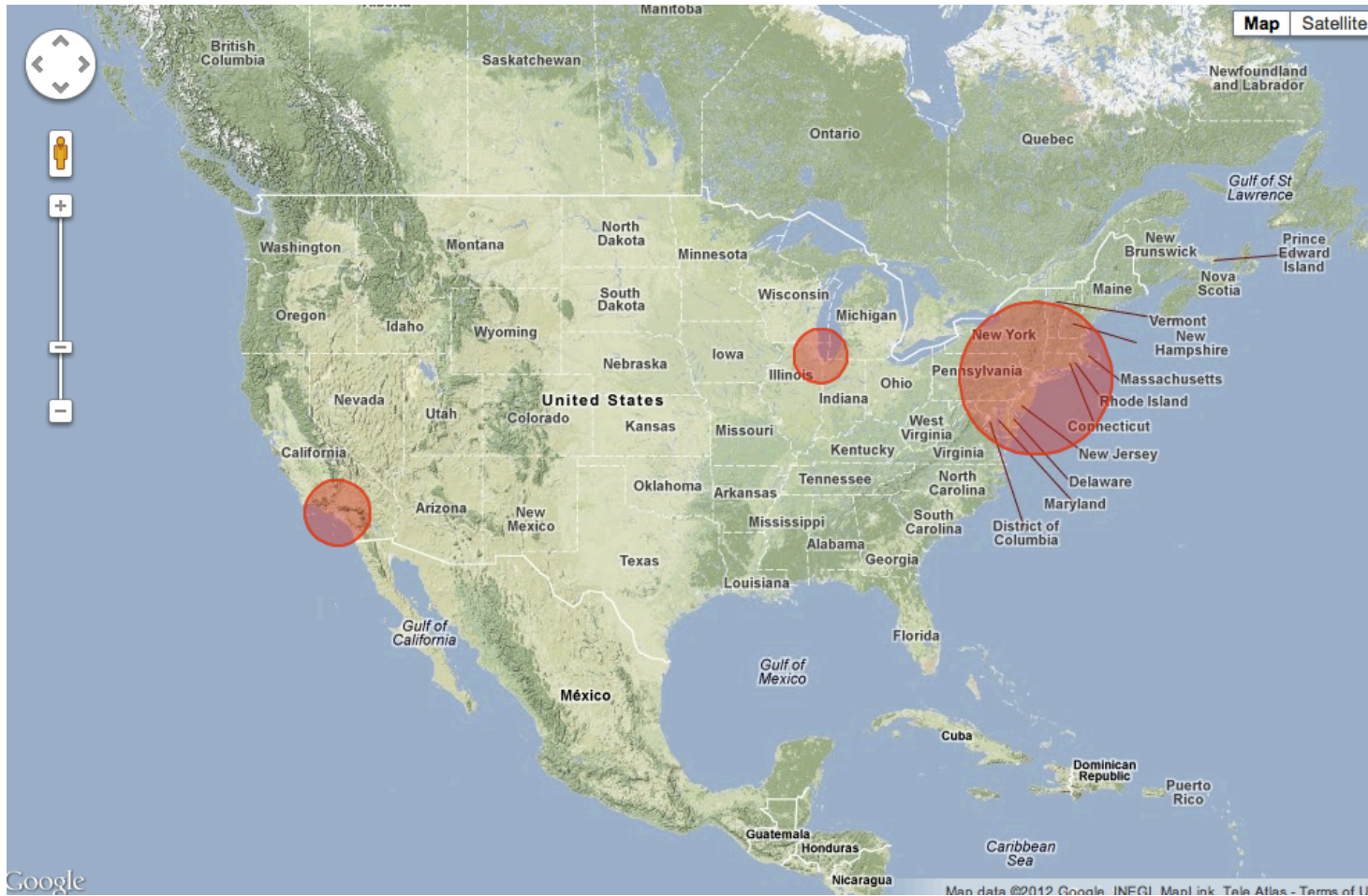
<https://developers.google.com/maps/documentation/javascript/>

# Google Map Geocoding

- Geocoding
  - "Geocoding is the process of converting addresses (like "1600 Amphitheatre Parkway, Mountain View, CA") into geographic coordinates (like latitude 37.423021 and longitude -122.083739), which you can use to place markers or position the map. The Google Maps API provides a geocoder class for geocoding addresses dynamically from user input." - Google –

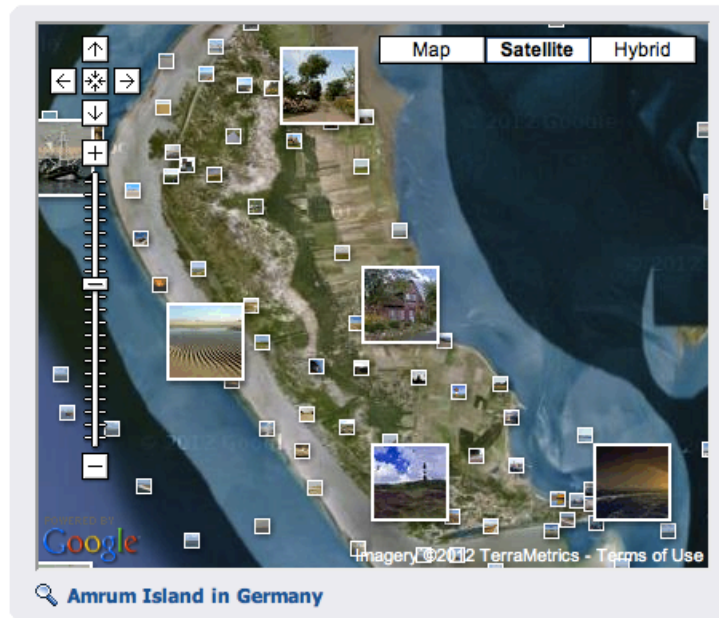
<https://developers.google.com/maps/documentation/javascript/geocoding>

# Google Map API



<http://code.google.com/apis/maps/documentation/javascript/examples/circle-simple.html>

# Cf) Panoramio



[sign up](#) | [sign in](#)

**Panoramio**  
from Google

**Show your favorite places.**

[Upload your photos](#)

Organize your photos with tags:  
[Art](#), [Buildings](#), [Reflections](#)...

Join [groups](#) of users who share your interests.

[Montserrat in Catalonia](#), [World's Largest Copper Mine in Chile](#), more [cool places](#) in Panoramio...

**Search place**

[Search](#)

e.g. "New York", "Beijing", "Paris"...

**Explore the world**



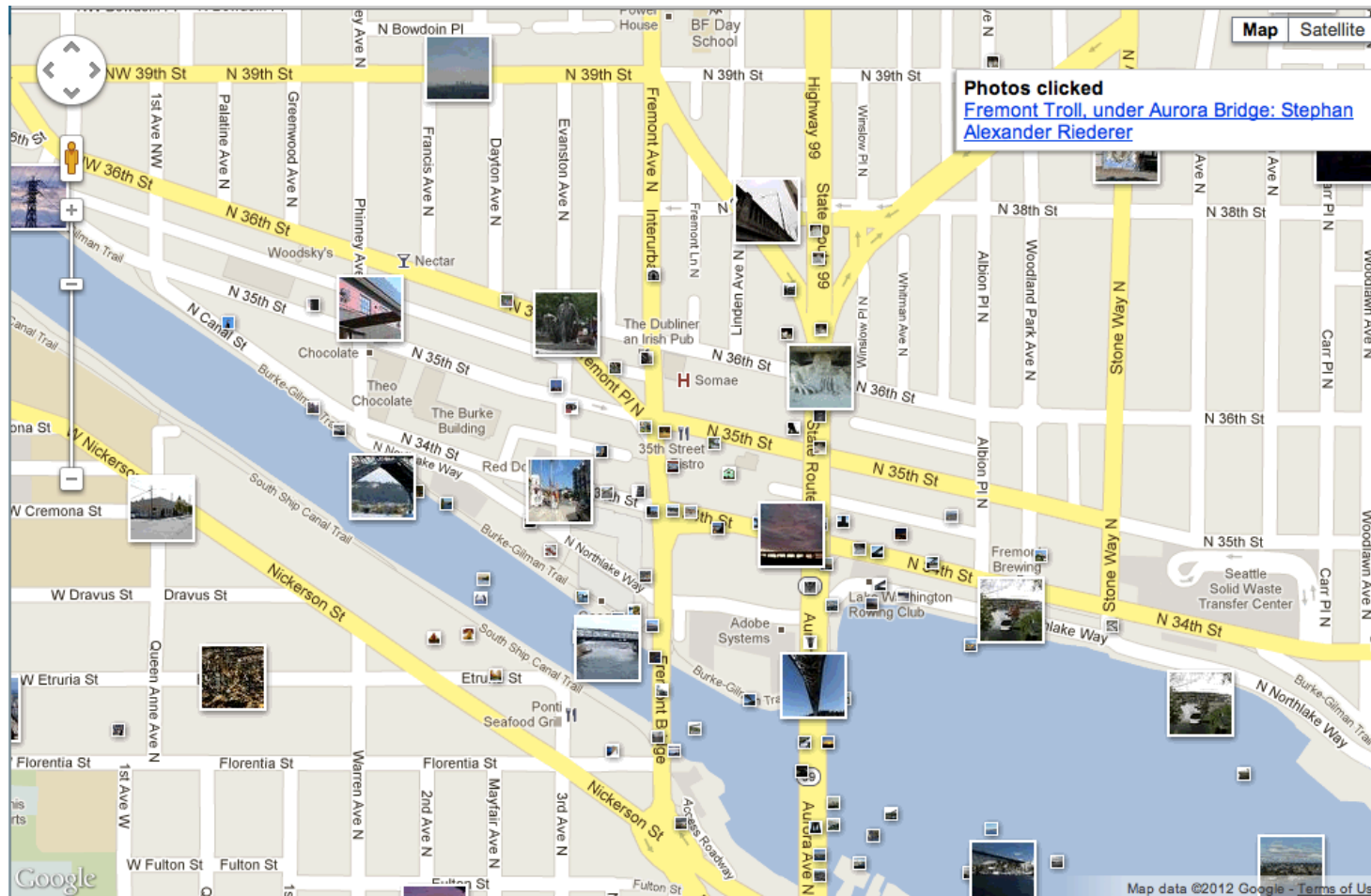
[Photos in world map](#)



[Photos in Google Earth KML](#)

<http://www.panoramio.com/>

# Google Map API Examples (Panoramio)



<http://code.google.com/apis/maps/documentation/javascript/examples/layer-panoramio.html>

# New York Times API



<http://developer.nytimes.com/>

# New York Times API

Internal NYTimes Data

## APIs

- The Article Search API
- The Best Sellers API
- The Community API
- The Event Listings API
- The Most Popular API
- The Movie Reviews API
- The Real Estate API
- The Times Newswire API
- The TimesPeople API
- The TimesTags API
- The Semantic API
- The Geographic API

External NYTimes data they are hosting for fun

- The Campaign Finance API
- The Congress API
- The Districts API
- The NY State Legislature API

# Anatomy of an API call

The Base URL

The Query

The Key

<http://BASEURL?query=QUERY&api-key=KEY>

[http://api.nytimes.com/svc/search/v1/article?format=json&query=starbucks  
&api-key=904d40d226b4eb6aec79fe4e36ee86c4:8:55993044%20](http://api.nytimes.com/svc/search/v1/article?format=json&query=starbucks&api-key=904d40d226b4eb6aec79fe4e36ee86c4:8:55993044%20)

- Request an API Key
  - <http://developer.nytimes.com/apps/register>
- All API keys has to be requested and registered and would give you different api keys
- We will use in class

## Article Search API and

API Key : 904d40d226b4eb6aec79fe4e36ee86c4:8:55993044

## Newsire API

API Key : b4525fbaa93223c48893726e76c00370:6:55993044

# API Request Tool

<http://prototype.nytimes.com/gst/apitool/index.html>

The New York Times **Developer Network** BETA

---

**API Request Tool** [Return to Developer Network](#)

**APIs**

Article Search API   
[Article Search API Documentation](#)

---

**Requests**

Query

---

**Fields** \* required

Search Query \*  
starbucks

---

**Facets**

---

**Begin Date [YYYYMMDD]**

---

**End Date [YYYYMMDD]**

---

**Fields**

---

**Offset**

---

**Rank**

---

**Response Format \***

JSON

**Request URL**

http://api.nytimes.com/svc/search/v1/article?format=json&query=starbucks&api-key=####

---

**Request Results**

```
{
  "offset": "0",
  "results": [
    {
      "body": "Nearly everything about the Foxwoods Resort Casino is improbable, beginning with its sc
      "byline": "By MICHAEL SOKOLOVE",
      "date": "20120318",
      "title": "Foxwoods Casino Is Fighting for Its Life",
      "url": "http://www.nytimes.com/2012/03/18/magazine/mike-sokolove-foxwood-casinos.html"
    },
    {
      "body": "On Wednesday, Howard Schultz, the chairman and chief executive of Starbucks , will take
      "byline": "By JOE NOCERA",
      "date": "20120317",
      "title": "OP-ED COLUMNIST; The Good, Bad and Ugly of Capitalism",
      "url": "http://www.nytimes.com/2012/03/17/opinion/nocera-the-good-bad-and-ugly-of-capital
    },
    {
      "body": "CHICAGO On Monday afternoon, in a small room hidden amid the swirling insanity that is
      "byline": "By JESSE MCKINLEY",
      "date": "20120315",
      "title": "At the Housewares Show, Goods to Build a Better Dude",
      "url": "http://www.nytimes.com/2012/03/15/garden/at-the-housewares-show-goods-to-build-a
    },
    {
      "body": "Pondicherry, India ANOTHER brick has come down in the great wall separating India from
      "byline": "By AKASH KAPUR",
      "date": "20120311",
      "title": "OPINION; How India Became America",
      "url": "http://query.nytimes.com/gst/fullpage.html?res=9905E4D9173BF932A25750C0A9649D8B63"
    }
  ]
}
```

# Results

## Json

```
{
  "status": "OK",
  "copyright": "Copyright (c) 2012 The New York Times Company. All Rights Reserved.",
  "num_results": 44706,
  "results": [
    {
      "section": "Business Day",
      "subsection": "Media & Advertising",
      "title": "Making Connections",
      "abstract": "Millenials told MTV Scratch that they found it easier to build connections",
      "url": "http://video.nytimes.com/video/2012/03/21/business/media/100000014434",
      "byline": "Viacom/GM",
      "item_type": "Video",
      "source": "The New York Times",
      "updated_date": "2012-03-21T17:02:20-04:00",
      "created_date": "2012-03-21T17:02:21-04:00",
      "published_date": "2012-03-21T00:00:00-04:00",
      "material_type_facet": "",
      "kicker": "",
      "subheadline": "Young People Talk About Buying a Car",
      "des_facet": "",
      "org_facet": "",
      "per_facet": "",
      "geo_facet": "",
      "related_urls": null,
      "multimedia": [
        {

```

# Results

## XML

```
<?xml version="1.0" encoding="UTF-8"?>
<result_set>
  <status>
    OK
  </status>
  <copyright>
    Copyright (c) 2012 The New York Times Company. All Rights Reserved.
  </copyright>
  <num_results>
    44706
  </num_results>
  <results>
    <news_item>
      <section>
        Business Day
      </section>
      <subsection>
        <![CDATA[Media & Advertising]]>
      </subsection>
      <title>
        Making Connections
      </title>
      <abstract>
        Millennials told MTV Scratch that they found it easier to build connec
      </abstract>
      <url>
        http://video.nytimes.com/video/2012/03/21/business/media/100000001443
```

# Parsing the Data

```
$articleSearchUrl="http://api.nytimes.com/svc/search/  
v1/article?format=json&query=starbucks&api-  
key=904d40d226b4eb6aec79fe4e36ee86c4:8:5599304  
4%20"
```

```
$json=file_get_contents($articleSearchUrl);
```

*Reads entire file into a string*

```
$obj = json_decode($json);
```

*Decodes a JSON String : Takes a JSON encoded string and converts it into a PHP variable*

# Twitter API



- Search API
- Rest API
- Streaming API

<https://dev.twitter.com/>

# Search API Search Query

`http://search.twitter.com/search.json?  
callback=?&q=starbucks`

baseurl

query

# Json Results

```
{ "completed_in": 0.044, "max_id": 182896445127528450, "max_id_str": "182896445127528450", "next_page": "?page=2&max_id=182896445127528450&q=starbucks", "page": 1, "query": "starbucks", "refresh_url": "?since_id=182896445127528450&q=starbucks", "results": [ { "created_at": "Thu, 22 Mar 2012 18:28:05+0000", "from_user": "CatheyHerrandwF", "from_user_id": 529675573, "from_user_id_str": "529675573", "from_user_name": "Cathey Herrand", "geo": null, "id": 182896445127528450, "id_str": "182896445127528450", "iso_language_code": "en", "metadata": { "result_type": "recent" }, "profile_image_url": "http://a.twimg.com/profile_images/1912073601/964265070ac29aaf_normal.jpg", "profile_image_url_https": "https://si0.twimg.com/profile_images/1912073601/964265070ac29aaf_normal.jpg", "source": "&lt;a href='\"&quot;http://twitter.com/\"&quot;&gt;web&lt;/a&gt;", "text": "@Spam286 I just got a F-R-E-E 100$ Starbucks Gift Card! Get yours before it is too late! http://t.co/fC6ua5qg", "to_user": "Spam286", "to_user_id": 21525041, "to_user_id_str": "21525041", "to_user_name": "Samuel Palk", "in_reply_to_status_id": 182867099927068672, "in_reply_to_status_id_str": "182867099927068672" }, { "created_at": "Thu, 22 Mar 2012 18:28:02+0000", "from_user": "Arch_Jul", "from_user_id": 93233157, "from_user_id_str": "93233157", "from_user_name": "Julia", "geo": null, "id": 182896434587250688, "id_str": "182896434587250688", "iso_language_code": "en", "metadata": { "result_type": "recent" }, "profile_image_url": "http://a.twimg.com/profile_images/1625266000/4618329570_a0f34d0183_o_normal.jpg", "profile_image_url_https": "https://si0.twimg.com/profile_images/1625266000/4618329570_a0f34d0183_o_normal.jpg", "source": "&lt;a href='\"&quot;http://www.tumblr.com/\"&quot; rel='\"&quot;nofollow&quot;&gt;Tumblr&lt;/a&gt;", "text": "Photo: theabsolution: http://t.co/YfPmSGmm", "to_user": null, "to_user_id": null, "to_user_id_str": null, "to_user_name": null }, { "created_at": "Thu, 22 Mar 2012 18:28:02+0000", "from_user": "MacarenaSolb", "from_user_id": 276645791, "from_user_id_str": "276645791", "from_user_name": "Maria Caprichitos", "geo": null, "id": 182896431668015105, "id_str": "182896431668015105", "iso_language_code": "es", "metadata": { "result_type": "recent" }, "profile_image_url": "http://a.twimg.com/profile_images/1841903735/fiestaaa_normal.jpg", "profile_image_url_https": "https://si0.twimg.com/profile_images/1841903735/fiestaaa_normal.jpg", "source": "&lt;a href='\"&quot;http://blackberry.com/twitter&quot; rel='\"&quot;nofollow&quot;&gt;Twitter for BlackBerry\u00ae&lt;/a&gt;", "text": "Starbucks con mimi , un gustito cada tanto... \u2665 http://t.co/PFtCgUm0", "to_user": null, "to_user_id": null, "to_user_id_str": null, "to_user_name": null }, { "created_at": "Thu, 22 Mar 2012 18:28:00+0000", "from_user": "Yessie89", "from_user_id": 33632890, "from_user_id_str": "33632890", "from_user_name": "Yesenia" }
```

# Parse json

## jQuery

```
jQuery.getJSON( url, [data],  
[callback] )
```

## PHP

```
json_decode($json);
```

# Get Twitter Search Json using JQuery

`jQuery.getJSON( url, [data], [callback] )`

- The first parameter of this function, the URL you are planning to read, is required. The second parameter is used if you need to POST data to the URL. Last but no least, the callback function, although not required, is almost always necessary.
  
- Important: The URL can be to a local or external file. If the file is in another server the URL must contain a callback variable. You'll see how this works in the next paragraphs.

<http://webhole.net/2009/11/28/how-to-read-json-with-javascript/>

**MORE TO BE FOUND!**  
**RESEARCH AND EXPERIMENT!**