Python-APIs Summary

API = Application Programming Interface

using third party APIs with Python

Students will programmatically obtain and parse data from sources such as OpenWeatherMap, the US Census, OMDB, and more.

Students will plot Data Frames from the API data using Matplotlib.

**#### Homework - Pymaceuticals**

Analyze data to show how four different drug treatments compare to each other using Pandas, Jupyter Notebook, Matplotlib and Seaborn libraries.

[Watch the Video!](<https://youtu.be/2tL261mqqFI>)

**### Key Activities**

**#### Day 1**

\* Instructor Do: Intro to Requests

\* Students Do: SpaceX

\* Instructor Do: Manipulating Responses

\* Instructor Do: OMDb API

\* Students Do: Movie Questions

\* Instructor Do: Iterative Requests

\* Instructor Do: NYT API

\* Students Do: Retrieving Articles

**#### Day 2**

\* Instructor Do: OpenWeatherMap API

\* Instructor Do: OpenWeatherMap DataFrame

\* Instructor Do: Exception Handling

\* Students Do: Map Wrap

**#### Day 3**

A **kernel** is something that computes…

And it exists within a **virtual environment**

Todays Objectives:

\* Use Google Maps and Places API

\* Determine the number of banks in a given zip code

\* Compare with socioeconomic factors associated to a zip code

API key for Google Maps:

AIzaSyBEPp-MEgOCeDqvgVN0hLYNq1A\_o5r0Dq4

APIs used in todays class:

\* Google Maps API - Get geographic info

https://cloud.google.com/maps-platform/

\* Google Places API - Find businesses around the country

<https://cloud.google.com/maps-platform/places/>

Google Places is like a yellow pages for the web

New libraries:

\* gmaps

\* census

\* us

Technologies to install

(be sure to install in a virtual env like PythonData)

\* pip install gmaps

\* pip install census

\* pip install us

\*\*\* Instructor Do: 1.1 Google Geocode

\*\*\* Instructor Do: 1.2 Google Places

\*\*\* 1.3 Google Drills

From README.md:

\* See the [Google Geocoding Documentation](https://developers.google.com/maps/documentation/geocoding/intro)

\* See the [Google Places Documentation](https://developers.google.com/maps/documentation/javascript/places#place\_search\_requests)

\* See the [Capping Queries](../../../Supplemental/Capping\_Queries.md) document to set usage limits on your API calls.

\* Partners Do: Bank Deserts

\* Instructor Do: Census Demo

**### Objectives**

\* Be able to make GET requests with `requests`.

\* Be able to convert JSON (JavaScript Object Notation) into a Python dictionary.

\* Read and apply API documentation.

\* Sign up for and use an API key.

\* Create applications from scratch using nothing but knowledge of Python and an API documentation.

\* Load JSON from API responses into a Pandas DataFrame.

\* Be able to use `try` and `except` blocks to handle errors.

\* Successfully use the Google Maps and Places API to obtain information about geographic areas.

\* Understand how to use the Census API wrapper.

\* Understand the concept of rate limits and the importance of creating "test cases" prior to running large scripts.

\* Have a firmer understanding of how to dissect new API documentation.

Sources (from Slack):

<https://chrome.google.com/webstore/detail/json-formatter/bcjindcccaagfpapjjmafapmmgkkhgoa?hl=en>

<http://jsonviewer.stack.hu/>

**### Helpful Links**

[JSON Testing](https://jsonplaceholder.typicode.com/)

[OMDb API](http://www.omdbapi.com/)

[The New York Times API](https://developer.nytimes.com/)

[Open Weather Map API](http://openweathermap.org/api)

[The World Bank API](http://api.worldbank.org/)

[Google Maps API](https://developers.google.com/maps/)

[Creating a Twitter Dev Account](Supplemental/Dev\_Account\_Creation.pdf)