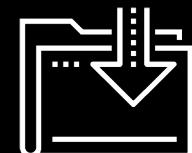


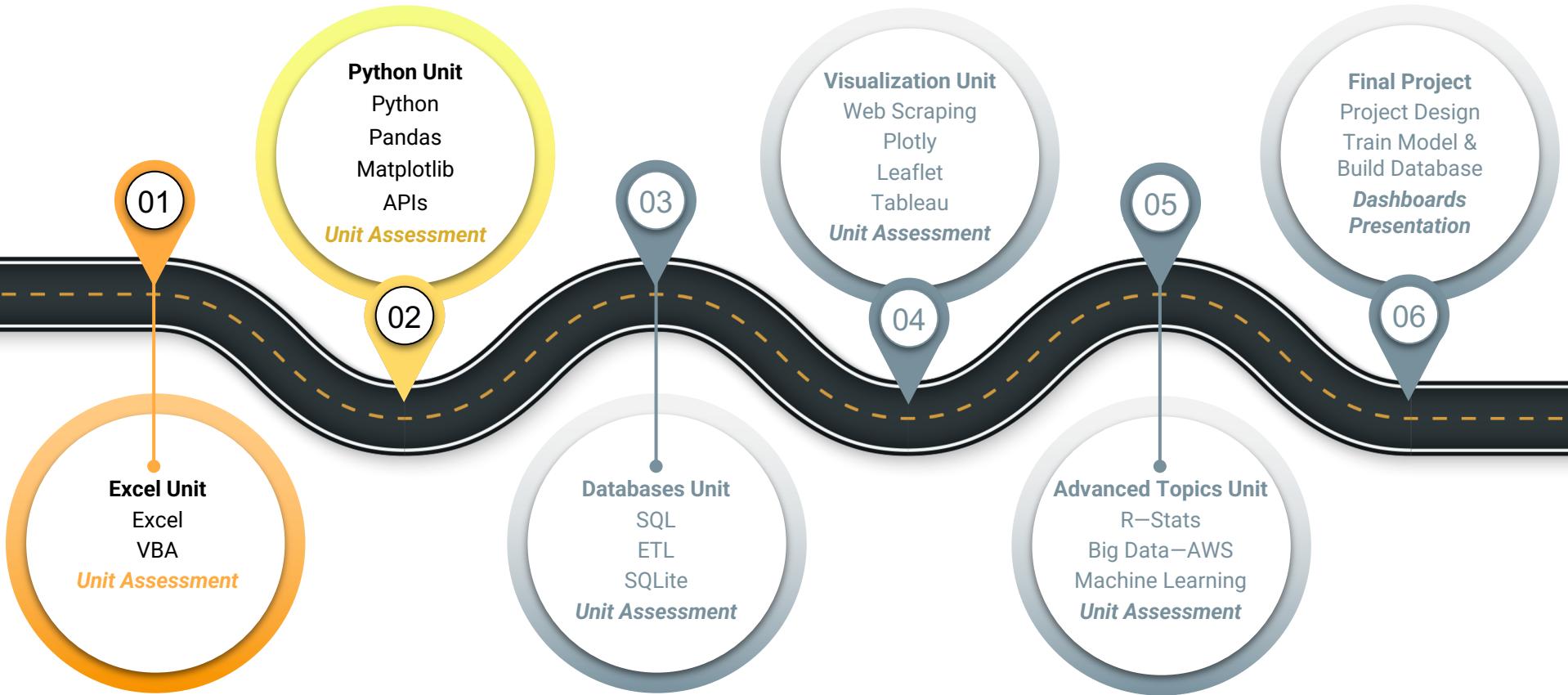
# Python APIs

Data Boot Camp  
Lesson 6.2



# The Big Picture

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Module 6

# This Week: Python APIs

# This Week: Python APIs

---

By the end of this week, you'll know how to:

-  Perform tasks and write functions using new Python libraries and modules
-  Retrieve and use data from an API "get" request to a server
-  Retrieve and store values from a JSON array
-  Use try-except blocks to resolve errors
-  Create scatter plots using the Matplotlib library, and apply styles and features to a plot
-  Perform linear regression and add regression lines to scatter plots
-  Create heatmaps and add markers using the Google Maps API



## This Week's Challenge

Using the skills learned this week, add features to an existing weather application to allow users to enter input statements to filter data, create travel itineraries, and more.

Module 6

# Today's Agenda

# Today's Agenda

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By completing today's activities, you'll learn the following skills:

01

Google Maps APIs

02

Jupyter Gmaps

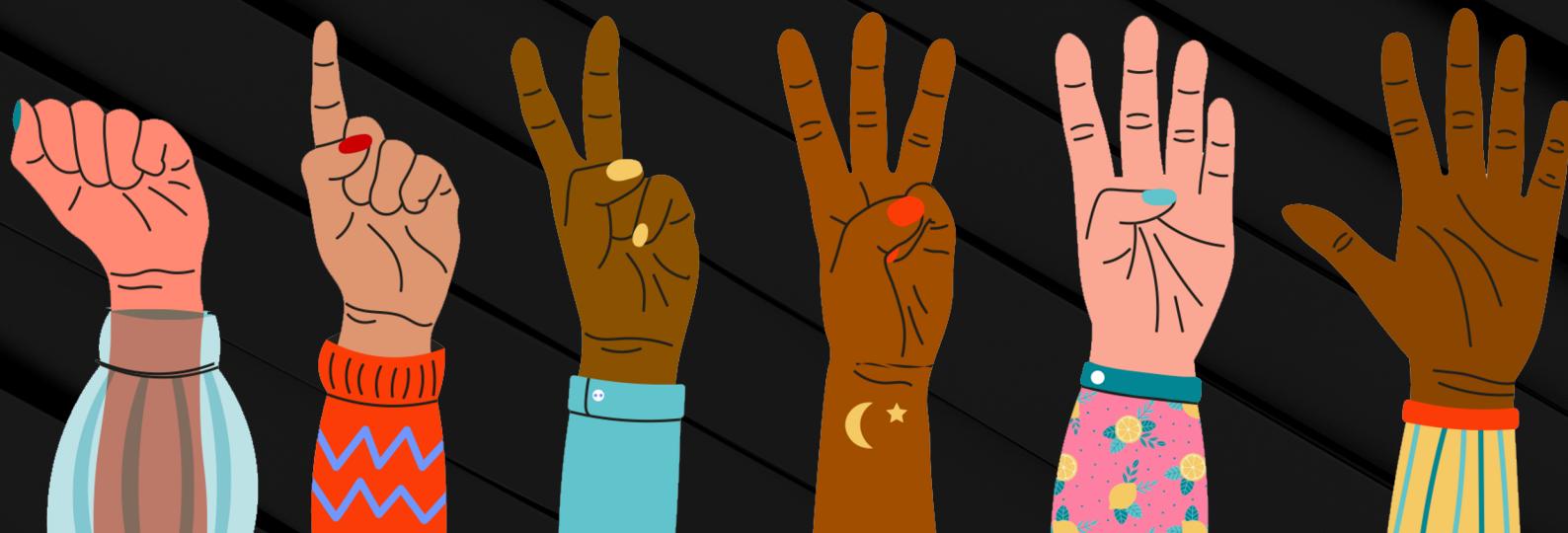


**Make sure you've downloaded  
any relevant class files!**

## FIST TO FIVE:

---

How comfortable do you feel with this topic?





# Google Maps APIs

Suggested Time:

---

10 minutes



## Instructor Demonstration

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# Google Geocode



**Remember:**  
Printing the URL will also  
expose your key

# Google Geocode

---



Run a Python request on the URL.



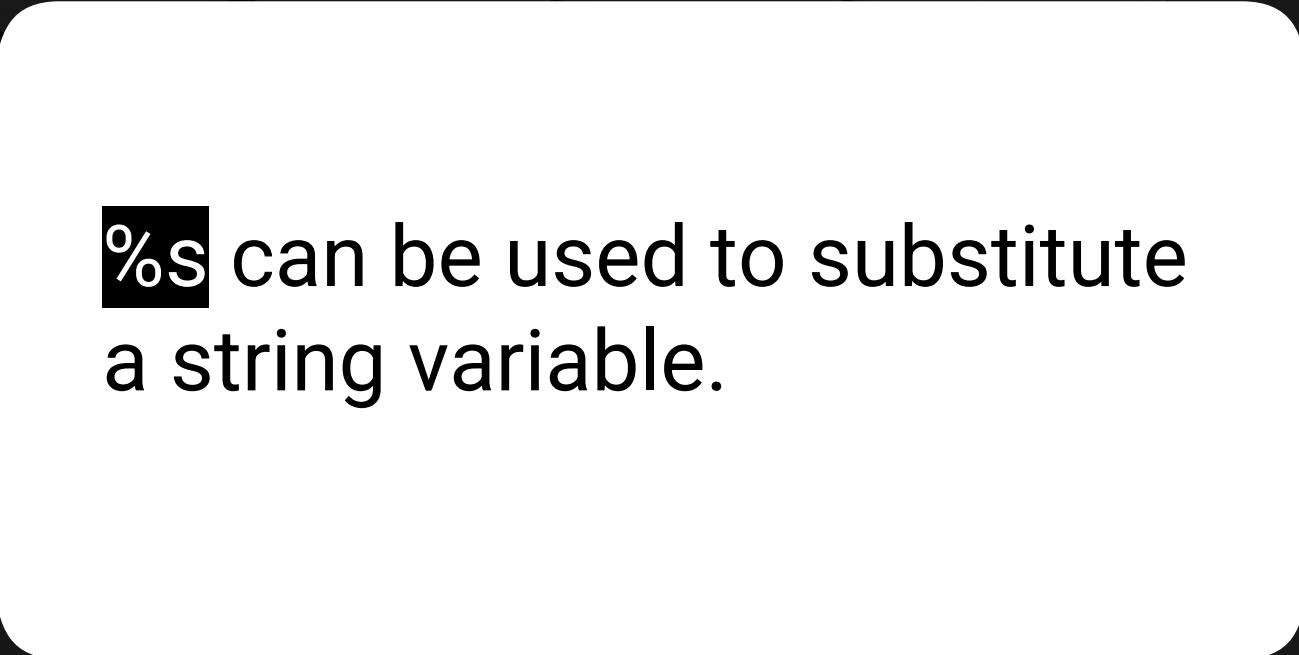
Explore the resulting JSON in a pretty-printed format.



Extract the desired components of the JSON: the latitude and longitude.



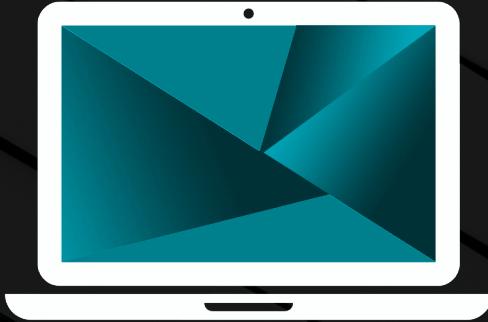
Format the results for printing.



**%s** can be used to substitute  
a string variable.

# Questions?





## Instructor Demonstration

---

### Google Places

# Google Places

---

**Nearby Search:** Searches for places within an area

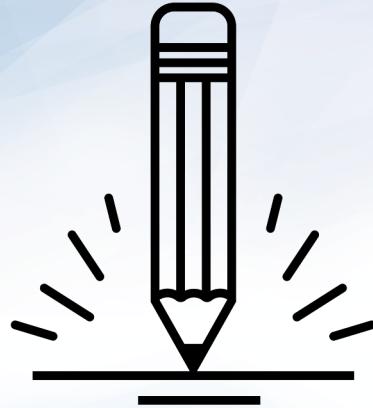
`https://maps.googleapis.com/maps/api/place/nearbysearch/output?parameters`

**Text Search:** Returns info about a set of places based on a string

`https://maps.googleapis.com/maps/api/place/textsearch/output?parameters`

**Place Search:** Searches for place information based on category

`https://maps.googleapis.com/maps/api/place/findplacefromtext/output?parameters`



# Activity: Google Drills

In this activity, you will make calls to both the Google Places and Google Geocoding APIs.

Suggested Time:  
15 minutes



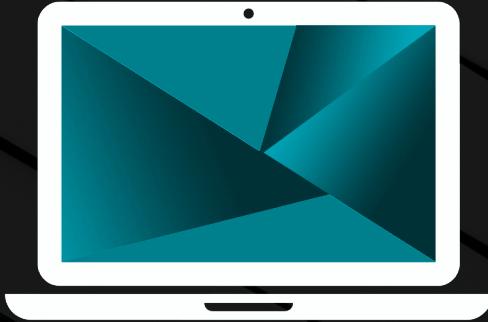
# Questions?



# Pandas with the Google API



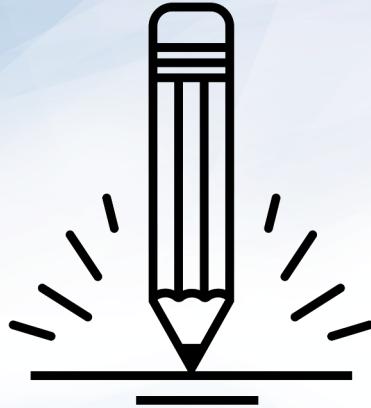
During the last class, we learned  
how to make multiple queries  
and handle missing data using `try-`  
`except` and list comprehension



## Instructor Demonstration

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### Nearest Restaurants



## Activity: Google Complex (Airport)

In this activity, you will be tasked with obtaining the user rating for every airport in the top 100 metropolitan areas. They will be given a list of airports and cities, and will need to use the Google Geocoding API and Google Places API to obtain the rating information.

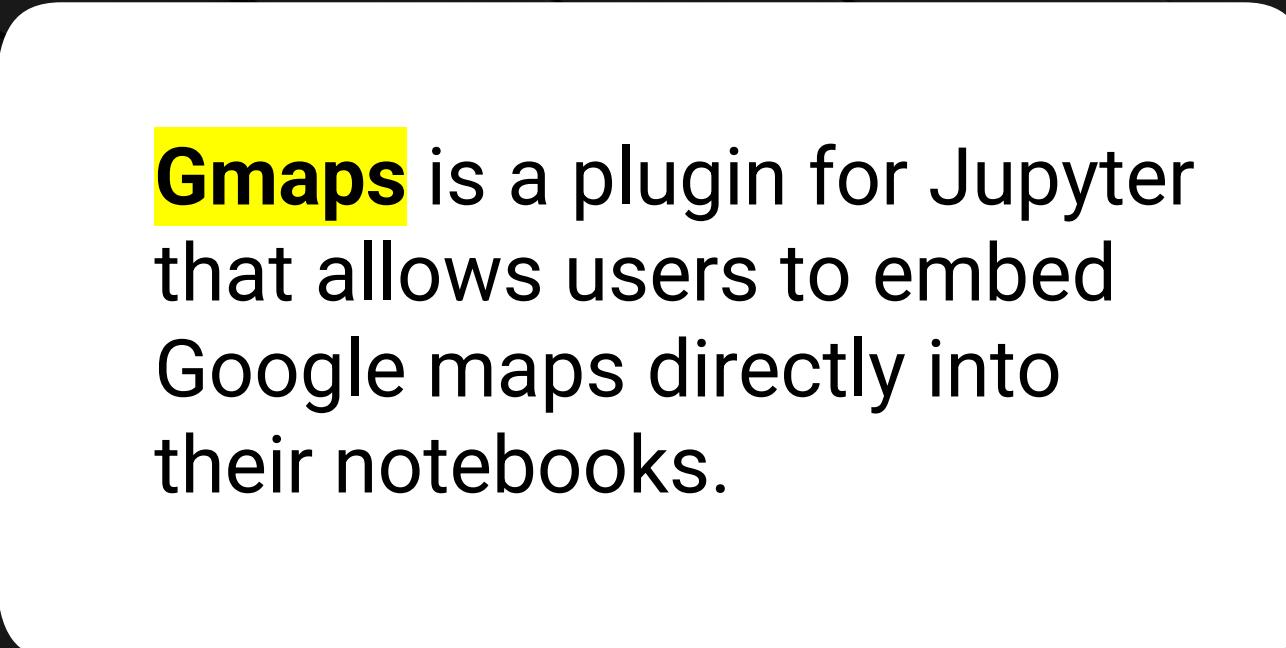
Suggested Time:  
15 minutes





**Let's Review**

# Jupyter Gmaps



**Gmaps** is a plugin for Jupyter  
that allows users to embed  
Google maps directly into  
their notebooks.

# Jupyter Gmaps

This grants the ability to visualize multiple layers of data and to customize the appearance of the map.

```
In [27]: marker_locations = [
    (-34.0, -59.166672),
    (-32.23333, -64.433327),
    (40.166672, 44.133331),
    (51.216671, 5.0833302),
    (51.333328, 4.25)
]
```

```
fig = gmaps.figure()
markers = gmaps.marker_layer(marker_locations)
fig.add_layer(markers)
fig
```



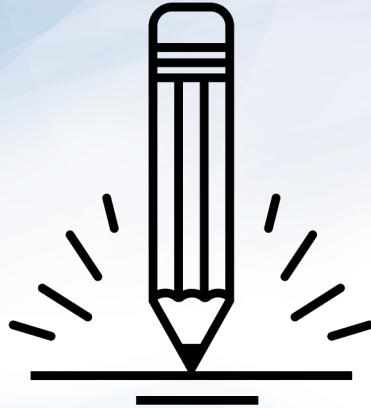


# Jupyter Gmaps

Suggested Time:

---

10 minutes



## Activity: Hot Airports

In this activity, you will be tasked with creating a heat map based on the airport ratings obtained in a previous activity.

Suggested Time:  
15 minutes





**Let's Review**

# Creating Direction Maps



Google's Directions API allows us  
to plot routes on maps.



## Itinerary

Suggested Time:

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15 minutes

# Questions?



# Google APIs with Python Class Review

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In today's class, you learned the following skills:

1

Google Maps and Places API is covered in **Lesson 6.5.1**.

2

Using Pandas with the Google Maps API is covered in **Lesson 6.5.2**.

3

Nearby search and map plotting is covered in **Lesson 6.5.4**.

Next Class:

Lessons 7.0.1: Exploring Databases with SQL through 7.3.3: Joins in Action  
Structured Query Language, or SQL

Before Next Class:

**Install PostgreSQL and pgAdmin**