

The New York Botanical Garden is a living museum, an educational institution, and a plant research and conservation organization visited by millions annually, over 250 acres and 1 million plants it is a great tourist attraction for those far and near <https://www.nybg.org/>

Problem: *The garden is a major tourist attraction, and visitors generally want to see all they can while in the area, so why not enjoy a nice takeout picnic from Little Italy on the grounds of the garden. But how will you find Little Italy and the best option?*

Target Audience: NYC Staycation, Tourists, Locals

Solution: Provide a simple list and map showing the recommended deli's in the area that offer great takeout options

How/Data: First let's see how large the Borough is, by checking the number of neighborhoods in the Bronx. This will be found by downloading and cleansing data from the *new_york data csv* from wk 3

1. **Methodology:** Once you have an idea of how large the Bronx borough is when we
2. Extract the Bronx borough from the *new_york data csv*
3. Cluster neighborhoods with Machine Learning to see how many exist and notice the results are too large
4. Read into a dataframe, you will see quickly that we need to filter even more
5. Cluster neighborhoods with Machine Learning to see how many exist
6. So we take another approach by finding the coordinates of the Botanical Garden using Geopy
7. Then utilize *Foursquare* to pull Api's for Italian restaurants within 1500m
8. Filtering further specifically on Deli's to ensure you land right in the heart of Little Italy
9. Folium is an excellent tool to map out the results, so you will find a map below that shows how close the recommended Deli's are to the garden

Discussion: After cleansing the data, and reading it into a Dataframe (see below), a very nice list of restaurants return, but we want to focus on Deli's as this will give us the best option for quick takeaway food

Conclusion: We found two neighborhood gems in Little Italy that will give many options for food to pickup enroute to the garden for a fabulous garden picnic

Enjoy the gems of the NY Botanical Garden and Arthur Avenue | Little Italy in the Bronx, New York

By importing New York City Data via json, we can see how many neighborhoods fall

```
In [43]: bx_data = neighborhoods[neighborhoods['borough'] == 'Bronx'].reset_index(drop=True)
```

38	Bronx	Edgewater Park	40.821058	-73.813885
39	Bronx	Castle Hill	40.819014	-73.848037
40	Bronx	Oliverie	40.871371	-73.893334
41	Bronx	Felham Gardens	40.892956	-73.841812
42	Bronx	Concourse	40.834284	-73.915580
43	Bronx	Unionport	40.820774	-73.850338
44	Bronx	Edenwald	40.884551	-73.848083
45	Bronx	Claremont Village	40.831428	-73.901190
46	Bronx	Concourse Village	40.824780	-73.915847
47	Bronx	Mount Eden	40.843826	-73.918558
48	Bronx	Mount Hope	40.846842	-73.906289
49	Bronx	Bronxville	40.892720	-73.851726
50	Bronx	Allerton	40.885788	-73.850319
51	Bronx	Kingsbridge Heights	40.870382	-73.901523

into a borough

There are 51 neighborhoods in the Bronx, so a general search would be too broad

Using Geophy we can locate the latitude and longitude coordinates of the Botanical garden

```
In [53]: #gathering location for New York Botanical Garden
address = '2900 Southern Blvd Bronx, NY'
geolocator = Nominatim(user_agent="foursquare_agent")
location = geolocator.geocode(address)
latitude = location.latitude
longitude = location.longitude
print(latitude, longitude)

40.8626168 -73.87979186880184

In [54]: #searching Italian restaurants nearby
search_query = 'Italian'
radius = 1500
print(search_query + ' .... OK!')

Italian .... OK!
```

In the above step, we utilized Foursquare to search for Italian restaurants near the garden by passing its coordinates to obtain API's

After cleansing the data, and reading it into a Dataframe (see below), a very nice list of restaurants return, but we want to focus on Deli's as this will give us the best option for quick takeaway food



```

#map deli's in proximity to the Botanical garden
venues_map = folium.map(location=[latitude, longitude], zoom_start=12)

# add a red circle marker to represent the botanical garden
folium.CircleMarker(
    [latitude, longitude],
    radius=10,
    color='red',
    popup='2900 Southern Blvd Bronx, NY',
    fill = True,
    fill_color = 'red',
    fill_opacity = 0.5
).add_to(venues_map)

# add the deli's restaurants as blue circle markers
for lat, lng, label in zip(deli_data.lat, deli_data.lng, deli_data.categories):
    folium.CircleMarker(
        [lat, lng],
        radius=5,
        color='blue',
        popup=label,
        fill = True,
        fill_color='blue',
        fill_opacity=0.5
    ).add_to(venues_map)

# display map
venues_map

```



Photos courtesy of Trip Advisor and Facebook Reviews for Casa Della Mozzarella Deli



Conclusion: We found two neighborhood gems in Little Italy that will give many options for food to pickup enroute to the garden for a fabulous garden picnic!

TIP: The Orchid show is happening soon