Matthew Kolakowski IBM Applied Data Science Capstone Project

Food Destination- New York City or Houston, Texas?

Introduction

Although the COVID-19 pandemic has halted non-essential travel now, planning a foodie vacation can still occur. Imagine traveling to New York City or Houston Texas and partaking in the diverse and nearly abundant food options. To narrow our food options and to prevent information overload, this project examined four types of food establishments:

1. Pizza Places
2. BBQ Joints
3. Gastropub's
4. Mexican Restaurants

Rather than solve a problem, it was the hope of this project to generate user-friendly lists and maps of each type of food establishment with Python (In IBM Watson Studio). You will find interesting maps and easily accessible information that not only is applicable to this final project, but if you enjoy food and are traveling to New York City or Houston Texas.

The diversity of offerings in both New York City and Houston Texas are impressive. While New York City can solidly lay claim to more pizza places and Gastropub's, Houston is a paradise for BBQ and Mexican cuisine enthusiasts.

Data section

The data is 100% derived from the FourSquare API on the locations of Pizza Places, BBQ Joints, Gastropub's, and Mexican Restaurants in New York City and Houston, Texas. If you wanted to replicate this study in your favorite locations, you can pull almost any cuisine imaginable utilizing the venue categories page: https://developer.foursquare.com/docs/build-with-foursquare/categories/ This was an awesome resource that I could have leverage to examine dozens of cuisine.

Methodology

The idea behind this project was simple: To examine where foodies that enjoy Pizza, BBQ, Gastropub's, and Mexican Restaurants could dine once the COVID-19 pandemic threat is minimized. Since the course discussed FourSquare API in detail, I decided to fully leverage its functionality to conduct my analysis. If you wanted to replicate this study, an example of the Python code to analyze Mexican Restaurants in both cities (New York City and Houston, Texas) is below:

```
# type your answer here
LIMIT = 500 # Maximum is 100
cities = ["New York, NY", 'Houston, TX']
results = {}
```

```
for city in cities: url =
'https://api.foursquare.com/v2/venues/explore?&client_id={}&client_secret={}&v={}&near={}
&limit={}&categoryId={}'.format(
        CLIENT_ID,
        CLIENT_SECRET,
        VERSION,
        city,
        LIMIT,
        "4bf58dd8d48988d1c1941735") # MEXICAN RESTAURANT CATEGORY ID
    results[city] = requests.get(url).json()
```

Finally, FourSquare API limits the analysis to 100 venues per query. The name and coordinate data will then get saved from the result and plotted on the map for visualization.
Next, to get an indicator of the density of Pizza Places, BBQ Joints, Gastropub's, and Mexican Restaurants the center coordinate of the venues will be calculated to get the mean longitude and latitude values. Then the mean of the Euclidean distance from each venue to the mean coordinates will be calculated. This will be the indicator; mean distance to the mean coordinate.

I hope you enjoy this analysis and please know you can replicate this with your two favorite cities utilizing the corresponding code and venue category resource provided.

Final Note: Please Copy and Paste the GitHub Link into the Search Bar of this website to display the map: https://nbviewer.jupyter.org/