

Capstone Project : Battle of the Neighborhoods - Week 1

Introduction & Business Problem:

The City of New York is the most populous city in the United States. It is home to a population of nearly 8.4 million people in 2018. NYC is the most densely populated city in the country. It is diverse and multicultural. It hosts more than 62 million visitors from within the US and from around the world every year.

The New York City is located on the banks of Hudson River, and is home to a large natural harbor. The imposing Statue of Liberty which is marked on the New York City Map, has been recognized as a symbol of the US, and is a global icon of democracy.

Throughout its history, New York City has been a major point of entry for immigrants. Home to Columbia University, the Rockefeller University and the New York University, the city attracts a vast number of foreign students and immigrants every year. Anytime of the year, the flow of tourists is steady. It is in fact, the “city that never sleeps.” New York City is a major center of art, fashion, commerce, finance, media, technology and entertainment.

For someone new, or a first timer in the city, drawing up an itinerary to visit and experience the attractions of the City of New York can be a daunting task. Not to mention the choices of restaurants to eat. The options are incredibly large. However, for someone who wants to experience a taste of a specific cuisine, Indian in this case, we can help by narrowing these options. The insights that will be derived from this study will give a good knowledge as to where to find the best Indian Restaurant in New York City.

Problem Description:

The City of New York is known for its diverse culture. And with its diverse culture, comes diverse food cuisines. It's food culture includes an array of international cuisines influenced by the city's immigrant history. So as focus of this project, we will list and visualize all major parts of New York City that has the greatest Indian restaurants.

Target Audience:

To recommend the best location of Indian restaurants in New York City, the ABC Food Company has appointed me to lead the Data Science Team. The objective is to locate and recommend to the management which neighborhood in NYC will have the best choice of restaurants serving Indian Cuisine.

This would interest anyone who wishes to experience the best tasting Indian Restaurant in New York City.

Approach:

- Collect the New York City data from https://cocl.us/new_york_dataset
- Using FourSquare API, we will find all venues with Indian Restaurants in the neighborhood.
- Filter out venues that are Indian Restaurants
- Find ratings, tips and like counts for each Indian Restaurants using FourSquare API.
- Using ratings for each restaurant, we will sort data.
- Visualize the Ranking of neighborhoods using folium library(python)

Data:

For this project, we will utilize the following data:

- New York City data that contains list of Boroughs, Neighborhoods along with their latitude and longitude.
Data source : https://cocl.us/new_york_dataset
Description : This data set contains the required information. And we will use this data set to explore various neighborhoods of New York City.
- Indian restaurants in each neighborhood of New York City.
Data source : Fousquare API
Description : By using this api we will get all the venues in each neighborhood. We can filter these venues to get only Indian restaurants.
- GeoSpace data
Data source : <https://data.cityofnewyork.us/City-Government/Borough-Boundaries/tqm-j-j8zm>
Description : By using this geospace data we will get the New York borough boundaries that will help us visualize choropleth map.

Questions that can be asked using the given datasets:

- What is the best location in New York City for Indian Cuisine ?
- Which areas have potential Indian Restaurant Market ?
- Which is the best place to stay in New York City if I prefer Indian Cuisine ?
- Which areas have less Indian Restaurants ?

Analysis:

We will import the required libraries for python:

- pandas and numpy for handling data
- request module for using FourSquare API
- geopy to get co-ordinates of City of New York
- folium to visualize the results on a map