IBM DATA SCIENCE CAPSTONE PROJECT

IBM DATA SCIENCE PROFESSIONAL CERTIFICATE

COURSERA

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Introduction

In this module we are going to discuss a Business problem to be solved first.

We will use Foursquare API to gather the data for a specific location.

Based on some Analysis we will conclude a result.

Business Problem

My client wants to open a new Indian Restaurant in Paris, France near Eiffel Tower because of it is one of the best tourist places in France and it attracts tourism from whole world and Indians also prefer Paris for their holiday trips also Indian Food is very famous and it also attracts different types of people.

PROBLEM: *My client wants to decide the appropriate location in Paris near Eiffel Tower where he can open a new Indian restaurant.*

While opening a new restaurant we might have to face many problems. We need to decide location based on factors such as locality, people there, money etc..., We have to decide that either we should rent a place or buy it. We also need to think about the competition from other people who have their restaurant in that particular area. Need to decide the budget

for kitchen tools, timing, how to carry a good staff, what kind of food we are going to provide etc... .

Discussion

My client wants to open a new Indian restaurant in Paris, France as a part of his business so he wants to understand which place or area in Paris would be better for opening his new restaurant so that his business grows well.

- Competition, if there are already many restaurants of same type e.g. Indian in that area then opening a new restaurant of similar kind is risky

- Timing, suppose we opened a new restaurant, to beat our competition we need to have an early opening timing and late shut down than others so that we could gather more customers, also we need to have some offers for customers

- Staff should feel good while working by providing them a good salary and timing nobody would want stress at work.

Data Description

Most of the data I have gathered is from Foursquare API and for location coordinates I have used geopy.

Technology Used

I have used Python Programming Language and its packages for my work.

I have mainly used geopy , foursquare api and folium library.

geopy is a library that makes geographical calculations easier for the users.

Foursquare API

The Foursquare API allows application developers to interact with foursquare platform.

The **Foursquare** Places **API** provides location based experiences with diverse information about venues, users, photos, and check-ins. The **API** supports real time access to places, Snap-to-Place that assigns users to specific locations, and Geo-tag.

Process

With the help of foursquare api I have gathered data , a json file by running the following code:

```
#Send the GET request and examine the results

import requests

results = requests.get(url).json()

results
```
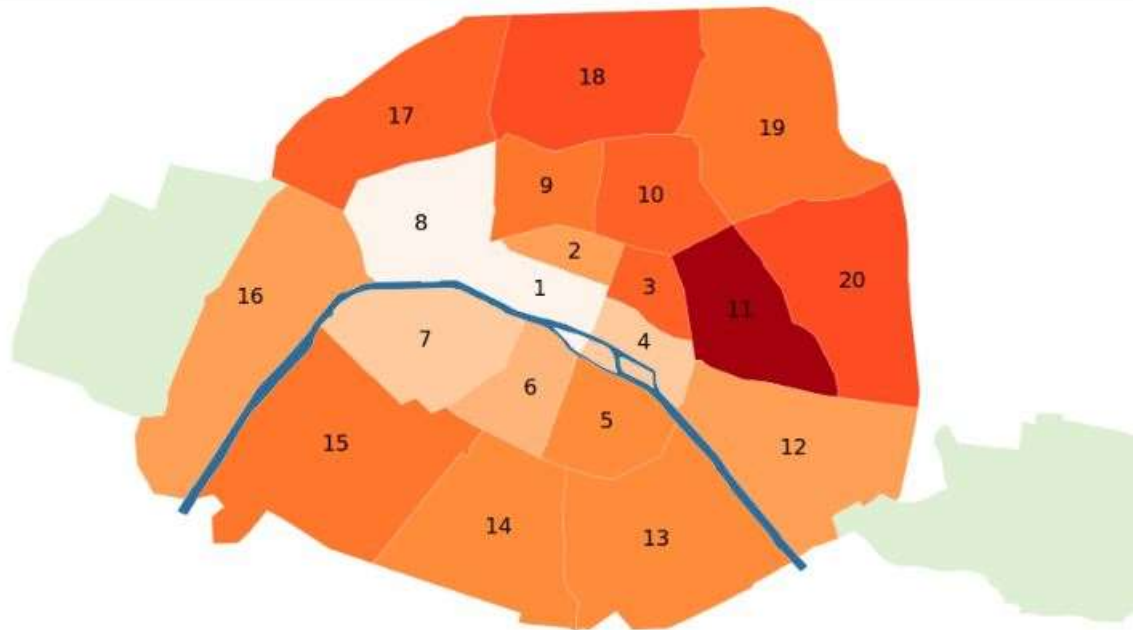
with the help of json file I have found that there are 30 Indian restaurants in that area.

```
Out[9]:  0                       New Jawad
         1                         Santoor
         2               Indian Népali Swad
         3                      Sagarmatha
         4                       Simla Hill
         5            Le Palais de Shah Jahan
         6                   Mayfair Garden
         7                  Relais Boccador
         8                       Taj Mahal
         9        Khajuraho - indien dining & bar
        10                         Ashiana
        11                        Al Punjab
        12             Le village de l'Inde
        13           Les Jardins de Shah Jahan
        14                         Le Agra
        15                     Indian Villa
        16         Le Palais de Raja-Maharaja
        17                       New Jawad
        18                       Annapurti
        19             La Rose du Kashmir
        20                  Royal Rajasthan
        21                    Oh ! Saveurs
        22                        Shirvan
        23                   Punjab Palace
        24                      Annapurna
        25                          Thali
        26                           Arti
        27                 Krishna Bhavan
        28                   Sagar Matha
        29                          Ratn
```
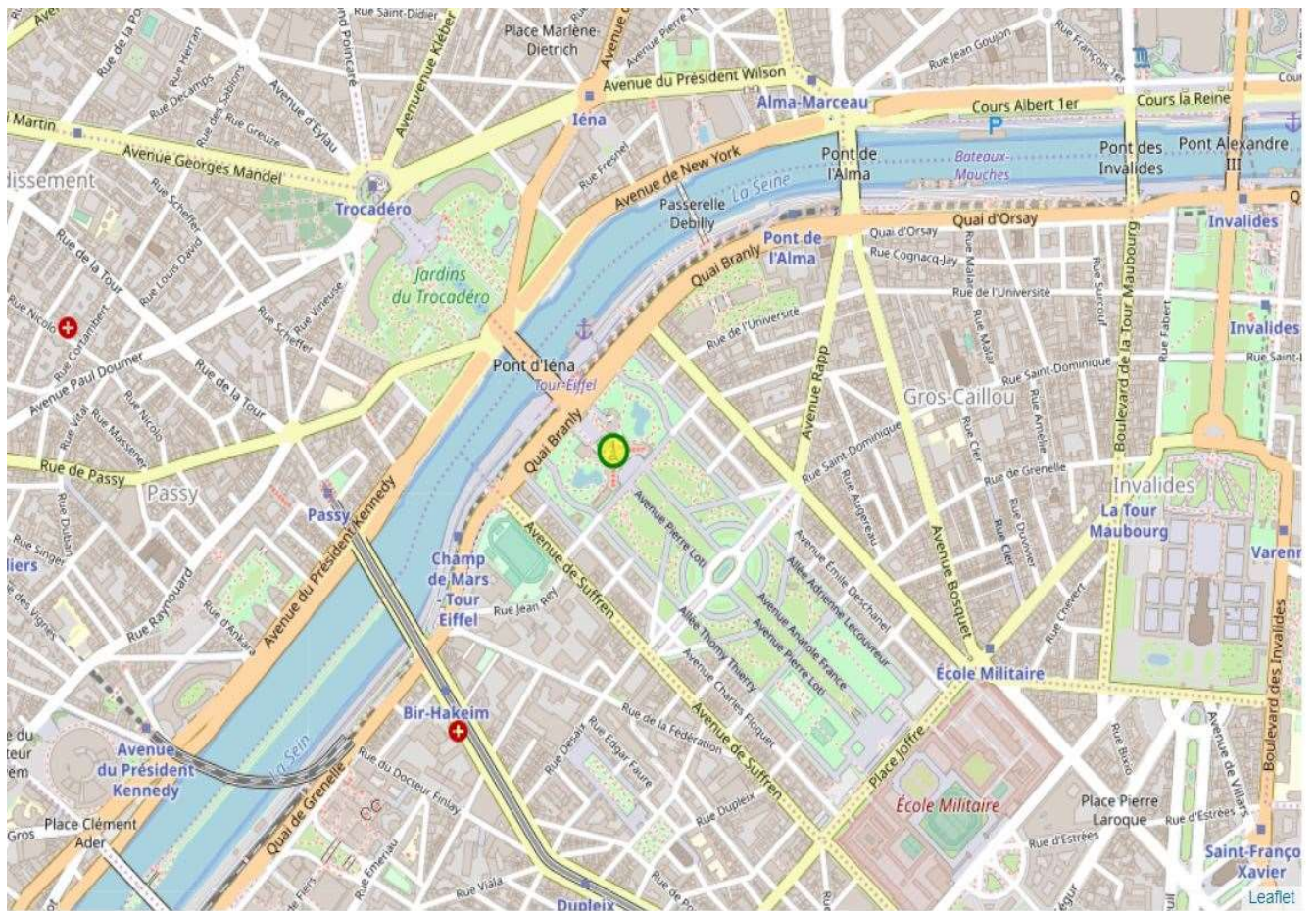
About Paris

The city of Paris is divided into twenty arrondissements municipaux, administrative districts, more simply referred to as arrondissements. The twenty arrondissements are arranged in the form of a clockwise spiral (often likened to a snail shell), starting from the middle of the city, with the first on the Right Bank (north bank) of the Seine.

In French, notably on street signs, the number is often given in Roman numerals. For example, the Eiffel Tower belongs to the VIIe arrondissement while Gare de l'Est is in the Xe arrondissement. In daily speech, people use only the ordinal number corresponding to the arrondissement.
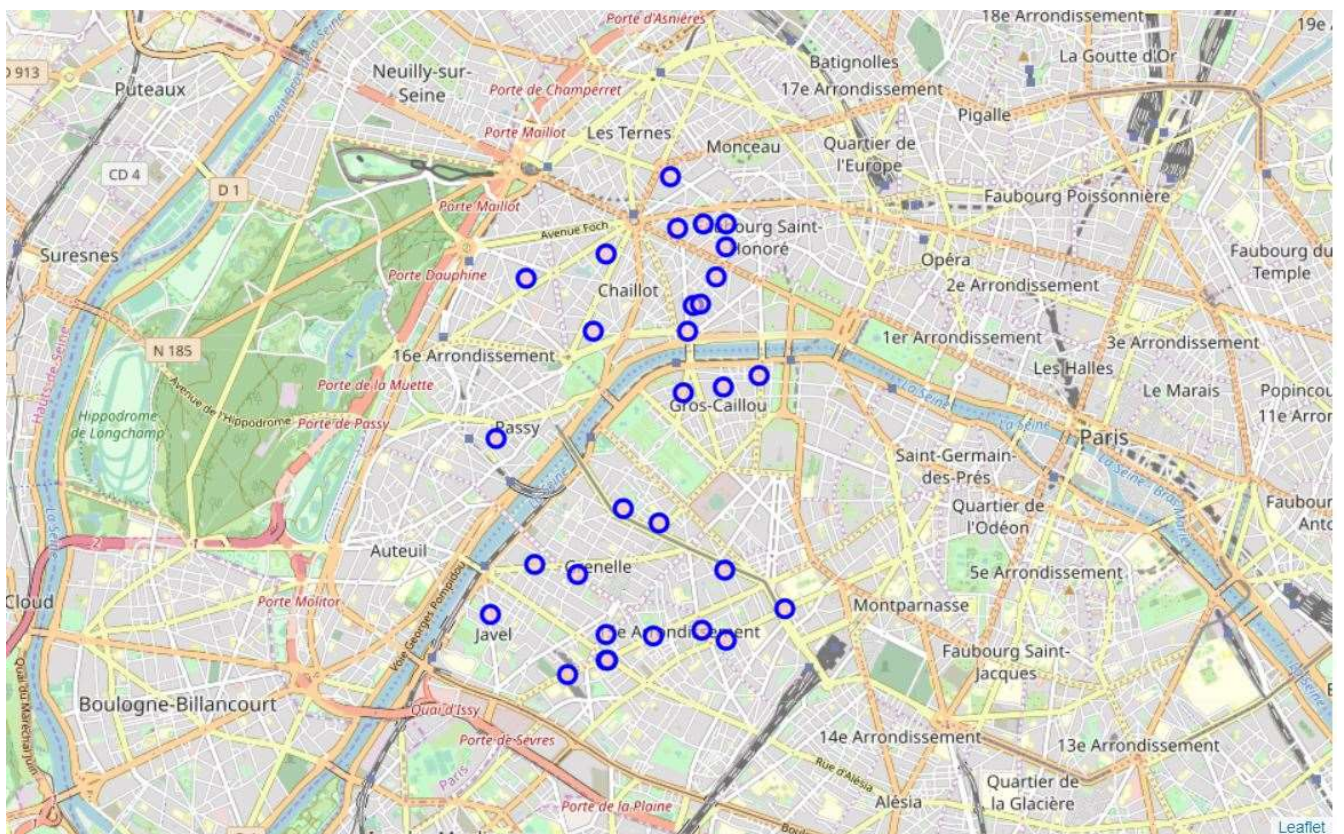
LOCATION OF EIFFEL TOWER

Location of all the Indian Restaurants

Conclusion

Actually, we know that the city of Paris is divided into twenty arrondissements municipaux, administrative districts, more simply referred to as arrondissements.

As we have located the location of Indian Restaurants near Eiffel Tower in the radius of 2000 meters, we can see form the map that

- Most of the Indian Restaurants are located in 16e Arrondissement,15e Arrondissement,8e Arrondissement and 7e Arrondissement

- Also, we can see that in 16e Arrondissement and 8e Arrondissement there are already many Indian Restaurants while 15e Arrondissement and 7e Arrondissement has lesser number of Indian Restaurants. So they are better areas for opening a new Indian Restaurant.

- With the help of Indian Restaurants addresses and their corresponding Ratings (which changes over time) and from the map generated, my client can make decision on where to open his new Indian Restaurant near Eiffel Tower in Paris, France.