IBM DATA SCIENCE PROFESSIONAL CERTIFICATE

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THE BATTLE OF NEIGHBOURBHOODS

FINDING THE BEST CUISINE RESTAURANT TO OPEN IN NEIGHBOURHOOD NEAR OFFICES IN BAY AREA

INTRODUCTION

Silicon Valley needs no introduction. It is considered as the cradle of innovation. Many tech companies have their offices and head quarters situated in the Bay Area. But what if someone wants to start a restaurant business in the Bay Area ? There are already many restaurant chains in the valley and near the offices of almost every tech company. So how can someone address this problem ?

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BUSINESS PROBLEM

- The main objective behind the idea is to find the next profitable cuisine restaurant business in the Bay Area.
- The Bay Area has a lot of offices with lots of different cuisine restaurants like Mexican , Italian , etc..
- Opening a restaurant without proper analysis wouldn't yield good results.

TARGET AUDIENCE

The Project is beneficial to anyone who is looking to start a new restaurant business in Bay Area. The project can also benefit already running restaurants to shift to some other cuisine for better prospects

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DATA DESCRIPTION

The Data includes :-

- List of all tech companies in Bay Area
- The coordinates of the offices.
- The list of restaurants near the offices using Foursquare API

How the Data will be used to solve the problem ?

Firstly, the data will be cleaned to get the list of some of the companies of the area. After the pre-processing , the list of offices will be used to explore the venues near the offices within the radius of 1000 using the Foursquare API. The venues will be filtered to obtain the list of restaurants in the region. Then using KMeans clustering and data visualization using Folium , a clear idea will be obtained on where to start the next restaurant business.

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Data Acquisition Source

https://github.com/connor11528/tech-companies-and-startups/blob/master/companies.csv

The Bay Area list is an open source list created by Mr. Connor Leech and is available on Github. The repo has been forked from Mr. Connor for the purpose of analysis and visualisation.

A glimpse of Dataset

Companies

Name	Address	Latitude	Longitude	Year Founded	Websit
140 Proof	"77 De Boom St, San Francisco, CA 94107"	37.7822601	-122.392125	2009	https://www.140proof.cc
2600Hz	"140 Geary St, San Francisco, CA 94108"	37.7879349	-122.4050295	2010	https://www.2600hz.com
3scale	"450 Townsend St #204, San Francisco, CA 94107"	37.7746341	-122.3986416	2007	https://www.3scale.net/

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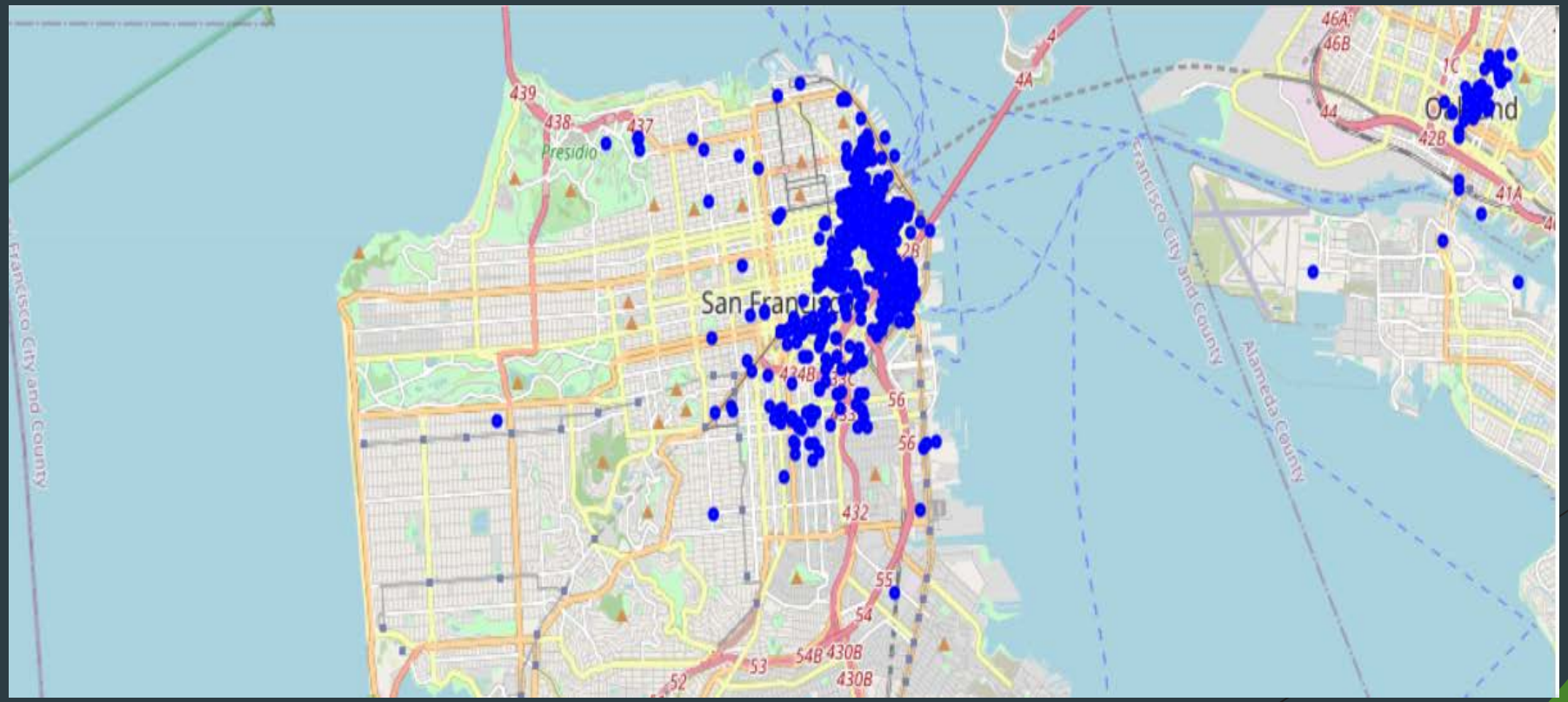
Data Science Methodology

- The data was extracted form the open source version control platform Github
- The data consists of 1000+ rows.
- Feature selection and cleaning was carried out on data.
- Map of all the offices in the Bay Area was plotted.



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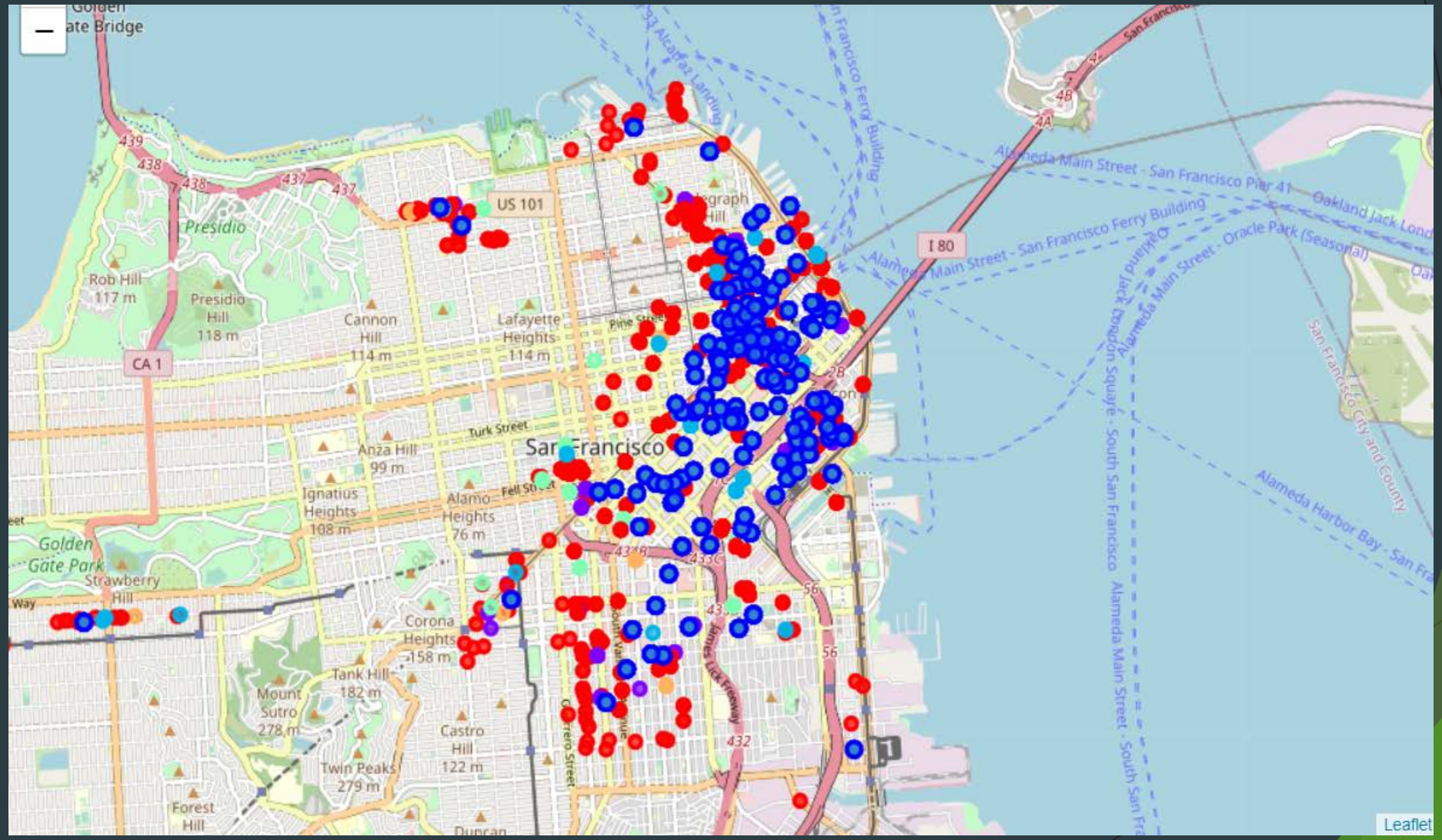
Map of Offices alongwith the cluster of Restaurants



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Results

Cluster	Color	Cuisine
0	Red	American , Mexican, etc
1	Purple	New American
2	Light Blue	Vietnamese
3	Green	Sushi
4	Orange	Japanese

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Observation and Discussions

- The American cuisine restaurants are very less near the Montgomery Street. The scope of opening a New American restaurant near the area would be a great option.
- In the area of California street , opening a Vietnamese restaurant would be a good option with high profitability.
- In the Lombard street area , there is no Japanese restaurant.
- Opening a sushi restaurant around the Oakland city center might lead to really good business.
- Many observations can be made from the map.¶

Conclusion

The report has been concluded on the account that all the restaurants in the Bay Area have been plotted on the map along with the offices. The restaurant have been clustered and can help anyone looking forward to start a restaurant business in Bay Area.