

# **CAPSTONE PROJECT**

***Analyzing Locality of Goa, India to predict suitable location for Restaurant***

*by – Manish Kumar Thakur  
February, 2021*

# Introduction

In this project, we are trying to analyze the localities of Goa, so that appropriate recommendation for opening new restaurant to the stake holders can be made.

Goa is a tourism hotspot of India, It attracts tourists from across the India as well as abroad, thus the scope of Restaurant business is only increasing.

Now that Corona Vaccine is out and people are tired of lockdown, everyone is looking for International vacations and no doubt Goa will be one of the most preferred cities, This brings investment opportunity in the restaurant sector.

We have divided Goa into different cities and various locations in those cities were collected, then we filtered out all restaurants.

With the help of this analysis we will be in position to recommend location for someone who is planning to setup a new restaurant

## Data

- List of cities in Goa can be found on this wikipedia page,  
[https://en.wikipedia.org/wiki/List\\_of\\_cities\\_and\\_towns\\_in\\_Goa](https://en.wikipedia.org/wiki/List_of_cities_and_towns_in_Goa)

List of cities in Goa can be found on this wiki page, We have used requests library to download the html, and then with the help of BeautifulSoup library, the corresponding table is selected and data is collected.

- Geocoder package is used to get the latitude and longitude of these cities

We have used Geocoder package to get the latitude and longitude of these cities by sending city name to the api, This helps us in plotting this cities over the map

- Folium Map is used to plot cities over the map

We have used folium maps library to plot the cities over the map, this helps in visuslization of the clusters of cities

- Foursquare API is used to find locations the neighborhood of these cities

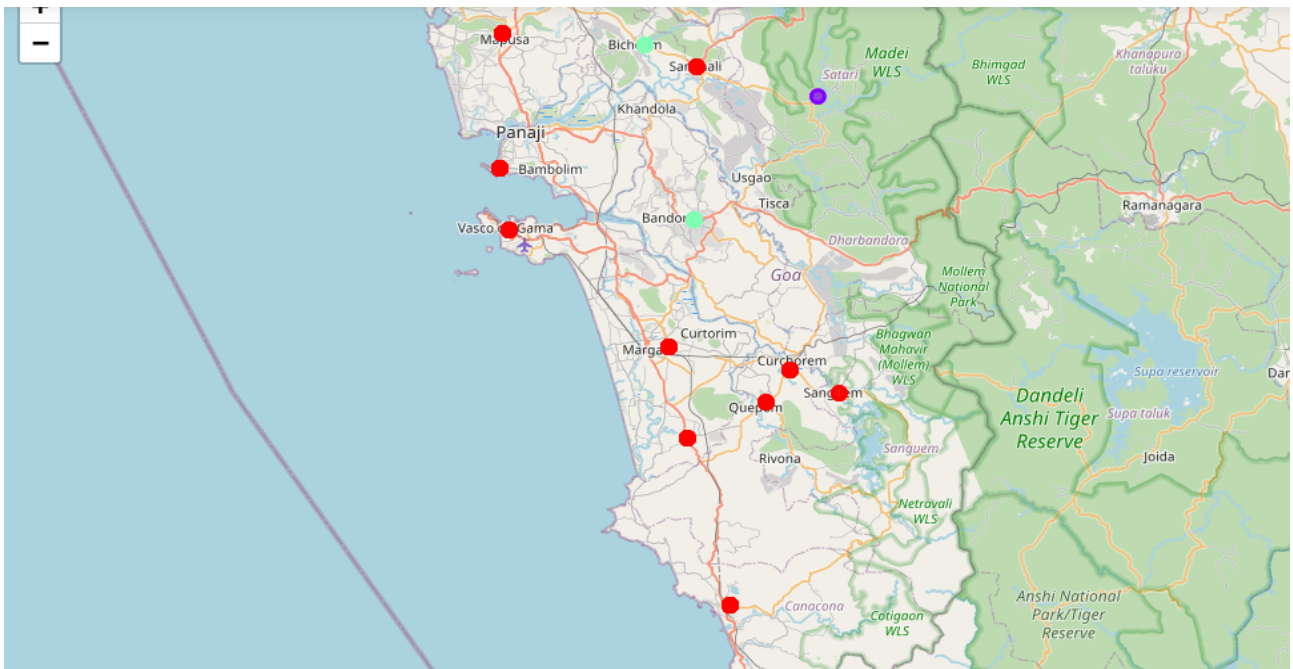
We have used Foursquare API to find famous locations in each cities, which we can use to segment the cities

- KNN

We have used KNN algorithm from sklearn package to do the clustering of the cities after onehot encoding the city neighbors based on the venues

## Methodology

- First, all cities in Goa were collected from wikipedia page, then geocoder package was used to find the latitude and longitude of the cities.
- We used Fourquare API to collect all venues near each city in the range of 2 kms, then we one hot encoded all the venues for good model accuracy, then we used KNN algorithm to segment cities based on similarities.
- Here's the map with cluster of cities



- Top two kind of restaurants from each city were found to get the business scope of each city.

# Results

Here's the list of few cities in Goa, We have taken top two Restaurant class from each

```
----Bicholim----
              venue  freq
0   Indian Restaurant  0.33
1   Chinese Restaurant  0.00
```

```
----Canacona----
              venue  freq
0   Indian Restaurant  0.1
1           Restaurant  0.1
```

```
----Cuncolim----
              venue  freq
0   Indian Restaurant  0.12
1   Chinese Restaurant  0.00
```

```
----Curchorem----
              venue  freq
0   Fast Food Restaurant  0.17
1     Chinese Restaurant  0.00
```

```
----Mapusa----
              venue  freq
0   Indian Restaurant  0.17
1   Chinese Restaurant  0.06
```

# Conclusion

Goa is a small tourist place, but we do have a lot of headroom when it comes to restaurant business,

In Sanguem city, There are no prominent Restaurant

In Valpoi and Sanquelim city, only Indian Restaurants are there, coming to the massive number of tourists who visit Goa, There is a great scope of investment in this area

In pernem, quepem and sanguem city, only prominent resturants are there, This also brings huge oppurtunity