

Coursera Capstone

IBM Applied Data Science Capstone

Opening a New Restaurant in Hyderabad,
India.

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Introduction:

A Restaurant is a food preparing and food delivering unit.in that we enjoy such a variety of dishes. Most of Restaurant for relaxing and enjoying variety of dishes. The importance of Restaurant is mainly for people to get out of the house for a while and enjoying party's a lot with friends or visiting with a family to the restaurants also make more entertainment. Usually families visit to the Restaurants after completing their shopping they can relax by eating and enjoying restaurant dishes.

Business Problem:

The objective of this capstone project is to analyse and select the best location in the city of Hyderabad ,India to open a Restaurant .using data science methodology and machine learning techniques like clustering , this project aims to provide solutions to answer the business question : In the city of Hyderabad ,India if a property developer is looking to open a new Restaurant, where would you recommend that they open it ?

Target Audience of this project:

This project is particularly useful to property developers and investors looking to open or invest in new shopping malls in the capital city of India i.e. Hyderabad. This project is timely as the city is currently suffering from oversupply of Restaurants.

Data from the National Property Information Centre (NAPIC) released last year showed that an additional 15 per cent will be added to existing restaurant space, and the agency predicted that total occupancy may dip below 86 per cent. The local newspaper The Malay Mail also reported in March last year that the true occupancy rates in malls may be as low as 40 per cent in some areas, quoting a Financial Times (FT) article cataloguing the country's continued obsession with building more shopping space despite chronic oversupply.

Data:

To solve the problem, we will need the following data: • List of neighbourhoods in Hyderabad. This defines the scope of this project which is confined to the city of Hyderabad, the capital of Telangana.

- Latitude and longitude coordinates of these neighbourhoods. This is required in order to plot the map and also to get the venue data.

- Venue data, particularly data related to shopping malls. We will use this data to perform clustering on the neighbourhoods

Sources of data and methods to extract them :

This Wikipedia page (https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Hyderabad,_India) contains a list of neighbourhoods in Hyderabad , with a total of 200 neighbourhoods. We will use web scraping techniques to extract the data from the Wikipedia page, with the help of Python requests and beautiful soup packages. Then we will get the geographical coordinates of the neighbourhoods using Python Geocoder package which will give us the latitude and longitude coordinates of the neighbourhoods. After that, we will use Foursquare API to get the venue data for those neighbourhoods. Foursquare has one of the largest databases of 105+ million places and is used by over 125,000 developers. Foursquare API will provide many categories of the venue data, we are particularly interested in the shopping category in order to help us to solve the business problem put forward. This is a project that will make use of many data science skills, from web scraping (Wikipedia), working with API (Foursquare), data cleaning, data wrangling, to machine learning (K-means clustering) and map visualization (Folium). In the next section, we will present the Methodology section where we will discuss the steps taken in this project, the data analysis that we did and the machine learning technique that was used.

Observation:

From the above clusters we can clearly understand that hyderabad has most numbers of Restaurants but most of Restaurants are centrally located .If we want to open a new Restaurant ,the best place is in cluster 1 or 2, as in cluster 3 we can see there are more number of Restaurants ,whereas in cluster 1 and cluster 2 very less . so cluster 1 and 2 is the best place to open a new Restaurant.

References

Category: neighborhoods in hyderabad. Wikipedia. Retrieved from https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Hyderabad,_India.

Foursquare Developers Documentation. Foursquare. Retrieved from <https://developer.foursquare.com/docs>