This proposal has the following

1. Introduction

I am a resident of Germany and would like to return to my home country, India. One of the plans on return is to start a restaurant serving German cuisines. The decision will be taken based on the business questions listed below. **So the target audience is myself who has decided to setup a restaurant in the city.**

The focus is on my hometown Bangalore, India as the city. The city has been growing migrant population due to the vast number of start-ups and IT companies. The population is also increasing depending on outside dining compared to self-cooking. The city also has Indian headquarters of some of the premium German companies like Siemens, Bosch, Continental,etc. This leads to high number of German Expats and families in the region.

Figure 1https://images.livemint.com/img/2020/05/20/600x338/PTI22-04-2020_000146A_1587626568563_1587626584788_1589971677649.jpg

"Bengaluru (also called Bangalore) is the capital of India's southern Karnataka state. The centre of India's high-tech industry, the city is also known for its parks and nightlife."

According to a newspaper article in 2016 –

> "The city is home to around 200 German companies. An estimated 1,000 Germans live in the city. Karnataka has a tie-up with the German state of Bavaria for co-operation in sustainable agriculture, agricultural engineering, food processing, renewable energy and other allied sectors."

But the city spots only one German café, and no restaurant in the city.

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2. Business Requirement

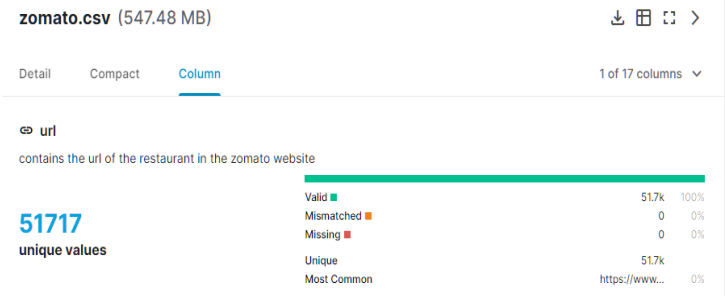
1. Where in Bangalore?

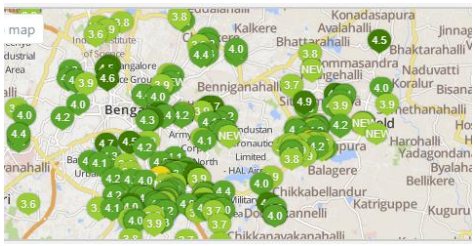
   - Area of Bangalore, metropolis is 709 sq. km, with a population of nearly 10 Mio. which leads to the question which part of Bangalore is suitable for the Restaurant.

Area[4][5]	
• Metropolis	709 km^2 (274 sq mi)
• Metro	8,005 km^2 (3,091 sq mi)
Elevation[6]	920 m (3,020 ft)
Population (2011)[7]	
• Metropolis	8,443,675
• Rank	3rd
• Density	12,000/km^2 (31,000/sq mi)
• Urban[8]	10,456,000
• Rank[9]	5th

2. Where are most restaurants located?

Bangalore city has approximately 52000 restaurants according to dataset from Zomato. This gives rise to the primary question where the density of restaurants is maximum. Which would reflect the market for restaurants.





3. How much do people spend for a mean on average in a restaurant?

The cost of meal should be able to meet the average in the neighbourhood. This value will support in defining the meal cost of the restaurant. Considering the following to meet it :

   1. Preparation cost (incl. ingredient, staff, rent , amenities ,…)
   2. Profit that can be generated
   3. Control the portion of food served

4. Does the cost per person depend on proximity to other venues in area?

   1. Does the cost have correlation to having a metro train station nearby?
   2. Does the cost corelate to the proximity to a shopping mall?

5. Which localities have the greatest number of breweries?

This is essential, as the I do not plan to invest in brewing own beer, there focus on buying beer from a locally brewery.

6. Is there a competition in the city from other German or European restaurants?

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3. Data Available

1. Wikipedia page with neighbourhoods
https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Bangalore

2. CSV file from Indian govt with columns
https://github.com/avikannan/Exploring_Bangalore/blob/master/all_india_PO_list_without_APS_offices_ver2_lat_long.csv

Column	Description
<officename>	the location name
<pincode>	postal code of the location
<officeType>	if it is a regional headoffice or Sub office
<Deliverystatus>	Delivery or non -delivery office
<divisionname>	Division of the post office
<regionname>	name of the region
<circlename>	name of the circle
<Taluk>	name of the Taluk (County)
<Districtname>	Name of the district
<statename>	Name of the state
<Telephone>	Telephone number
<Related Suboffice>	falls under which SO
<Related Headoffice>	Falls under which HO
<Longitude>	geographical coordinate
<latitude>	geographical coordinate

3. Zomato CSV File
Contains the list of restaurants of Bangalore and related details

Column	Description
url	Url of the restaurant on the Zomato website
address	Address of the restaurant
name	Name of the restaurant
online_order	Online order available or not (yes/no)
book_table	Restaurant allows booking a table (Yes/no)
rate	Rating of the restaurant on scale of 5
votes	Total number of votes the restaurant has
phone	Phgone number of the restaurant
location	location of the restaurant
rest_type	Type of restaurant
dish_liked	dishes people liked in the restaurant
cuisines	Cuisines served
approx_cost(for two people)	Approximate cost of meal for two people
reviews_list	2 reviews per restaurant
menu_item	list of menu items , if menu available
listed_in(type)	Type of meals
listed_in(city)	City of the restaurant

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4. Foursquare location data

Will be used to explore the neighbourhoods for other venues. especially venues of interest are Metro train station, Shopping malls, Embassy or consulates ,etc.

4. Plan of action

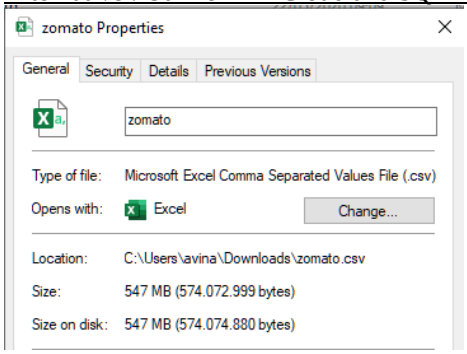
During this analysis- the following will be done:

1. Scraping the names of the neighbourhood from Wikipedia page
   https://en.wikipedia.org/wiki/List_of_neighbourhoods_in_Bangalore
2. The names of the neighbourhoods will be matched with Pincodes in the CSV file

   https://github.com/avikannan/Exploring_Bangalore/blob/master/all_india_PO_list_without_APS_offices_ver2_lat_long.csv
3. The CSV also contains the geographical coordinates

   https://github.com/avikannan/Exploring_Bangalore/blob/master/all_india_PO_list_without_APS_offices_ver2_lat_long.csv
4. Utilize the Zomato CSV file to create restaurants according to neighbourhoods

   The CSV file is large(547 MB - cannot be uploaded on Github)- hence stored on local drive (direct API will be tried - currently registration is not working)
   Alternative : Utilize IBM Cloud and SQL Database



5. Foursquare request will be made to collect the venues in the neighbourhoods
6. The top 5 venues in neighbourhoods will be populated additional to the restaurants in the neighbourhood
7. A data frame with neighbourhoods where “brewery” and “restaurant” falls under the top 5 venues will be separated
8. The data frame will be clustered to see different cluster.
9. The clusters will be mapped
10. If possible- the Metro transport lines will be mapped to see proximity to Metro Stations too.
11. Based on the outcome the location for the German restaurant will be decided

Above activity should give answers to **Questions 1- 2 & 5**

12. Check correlation of cost per person from the data with following:

    1. Presence of metro station in neighbourhood
    2. Presence of another restaurant
    3. Presence of a shopping mall

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13. Use the different venues and neighbourhood to do a regression to predict an average cost per person per neighbourhood.

This should answer to **Question 3 & 4**

14. Check the unique cuisines served per neighbourhood to see if other European cuisine restaurants are present in Neighbourhood.

This should give answer to **Question 6**

5. The Result of this study would:

To name a neighbourhood for the restaurant & fix the average price per person. Thereby also confirm that there is less or no competitor in the neighbourhood.