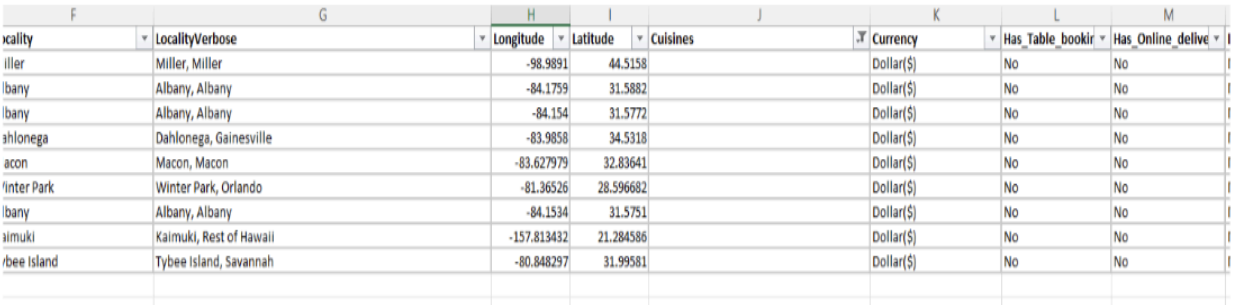
Objective Questions

1. The data consists of some inconsistent and missing values so ensure that the data used for further analysis is cleaned.



F	G	H	I	J	K	L	M
ocality	LocalityVerbose	Longitude	Latitude	Cuisines	Currency	Has_Table_bookir	Has_Online_delive
iller	Miller, Miller	-98.9891	44.5158		Dollar($)	No	No
lbany	Albany, Albany	-84.1759	31.5882		Dollar($)	No	No
lbany	Albany, Albany	-84.154	31.5772		Dollar($)	No	No
ahlonega	Dahlonega, Gainesville	-83.9858	34.5318		Dollar($)	No	No
acon	Macon, Macon	-83.627979	32.83641		Dollar($)	No	No
'inter Park	Winter Park, Orlando	-81.36526	28.596682		Dollar($)	No	No
lbany	Albany, Albany	-84.1534	31.5751		Dollar($)	No	No
aimuki	Kaimuki, Rest of Hawaii	-157.813432	21.284586		Dollar($)	No	No
'bee Island	Tybee Island, Savannah	-80.848297	31.99581		Dollar($)	No	No

To prepare the data for analysis, we followed these steps:

1. Identified empty cells using the countblank function and filtered out the column containing them.

2. Filled the empty cells with the cuisine that had the highest count, utilizing a pivot table with cuisine count in the values and cuisine in the rows.

2 .Using the LookUp functions, fill up the countries in the original data using the country code.

```
=VLOOKUP(C2,Country!$A$1:$B$16,2,0)
```

Used VLOOKUP function to populate the countries in the original dataset using the country code obtained from the "Country Description" sheet.

3. Create a table to represent the number of restaurants opened in each country.

Created pivot table to visualize the number of restaurants opened in each country. By placing the country in the rows and Restaurant ID in the values, counting them, we were able to determine the count of restaurants opened in each country. The resulting table and chart illustrate this information effectively.

Question #3

Q3- Number of Restaurants in Each Country

Row Labels	Count of RestaurantID
Australia	24
Brazil	60
Canada	4
India	8652
Indonesia	21
New Zealand	40
Philippines	22
Qatar	20
Singapore	20
South Africa	60
Sri Lanka	20
Turkey	34
United Arab Emirates	60
United Kingdom	80
United States of America	434
Grand Total	**9551**

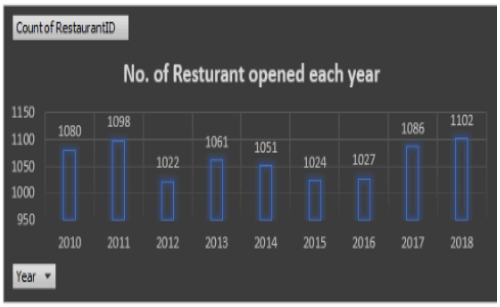
Restaurant	Countries
9551	15

4. Also the management wants to look at the number of restaurants opened each year, so provide them with something here.

Question# 4

Q4- Number of Restaurant opened each year

Row Labels	Count of RestaurantID
2010	1080
2011	1098
2012	1022
2013	1061
2014	1051
2015	1024
2016	1027
2017	1086
2018	1102
Grand Total	**9551**



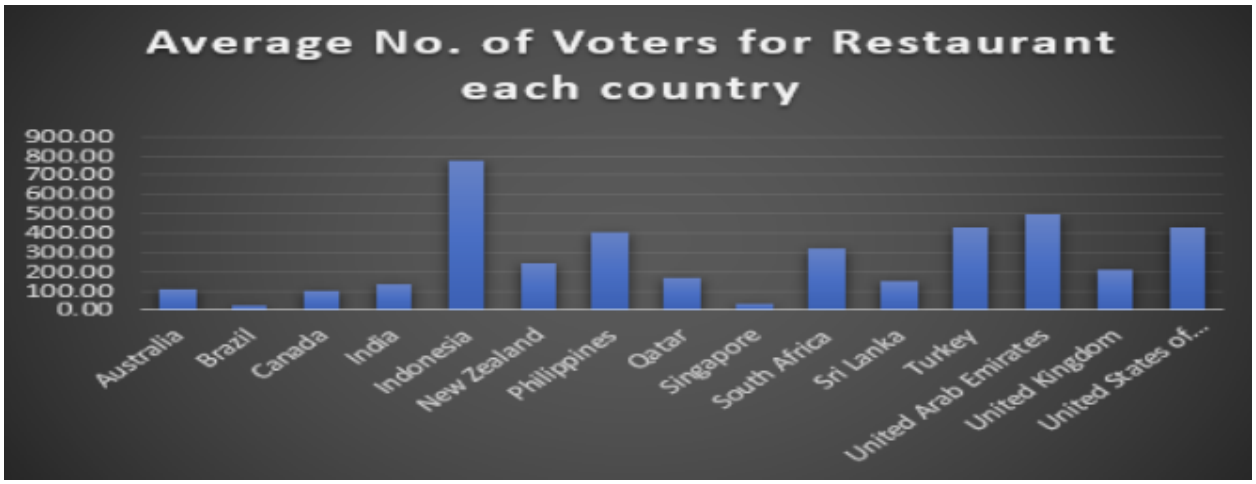
We utilized a pivot table to generate tables showcasing the number of restaurants opened in each country. Employing the pivot on the dataset, we designated the year in the rows and counted the Restaurant IDs as values, providing a breakdown of restaurant openings each year. you'll find the table and corresponding chart illustrating this information.

5. What is the total number of restaurants in India which are in the price range 4?

The pivot table was configured to filter data by country and rating, with the count of restaurant IDs as the value. After setting the filters for country as "India" and rating as "4", the total number of restaurants in India with a price range of 4 was determined to be 388.

Question# 5	
Country	India
Price_range	4
Q5 - No of restaurant in India in price range 4.	
Count of RestaurantID	
	388

6. What is the average number of voters for the restaurants in each country according to the data?



Question# 6	
Q6- Average No. of Voter for Restaurant each country	
Row Labels	**Average of Votes**
Australia	111.42
Brazil	19.62
Canada	103.00
India	137.21
Indonesia	772.10
New Zealand	243.03
Philippines	407.41
Qatar	163.80
Singapore	31.90
South Africa	315.17
Sri Lanka	146.45
Turkey	431.47
United Arab Emirates	493.52
United Kingdom	205.49
United States of America	428.22
Grand Total	**156.91**

The table and chart above illustrate the number of voters for the restaurants in each country based on the provided data.

Subjective Question

1. **Suggest few countries where the team can open newer restaurants with lesser competition.**

- Initially, we establish the criteria for selecting locations with minimal competition for new restaurant openings. Within this case study, we emphasize various aspects and prioritize them accordingly.
- Criteria are assigned priorities based on their significance. Specifically, we prioritize rating, votes, price, and average cost for two in the context of new restaurant establishments.
- Subsequently, we construct a pivot table showcasing country-wise averages for rating, votes, price, and average cost for two. Normalized values are then computed for each of these factors to facilitate decision-making.

Question# 1					
Row Labels	Average	Average of Average_Cost_for_two	Average of Price_range	Count of Restauran	Average of Rating
Australia	111.42	24.08	2.13	24.00	3.66
Brazil	19.62	134.67	3.40	60.00	3.85
Canada	103.00	36.25	2.50	4.00	3.58
India	137.21	623.37	1.72	8,652.00	2.77
Indonesia	772.10	281190.48	2.95	21.00	4.30
New Zealand	243.03	69.75	3.15	40.00	4.26
Philippines	407.41	1606.82	3.36	22.00	4.47
Qatar	163.80	223.75	3.65	20.00	4.06
Singapore	31.90	155.75	3.65	20.00	3.58
South Africa	315.17	419.73	3.58	60.00	4.21
Sri Lanka	146.45	2375.00	2.85	20.00	3.87
Turkey	431.47	84.85	2.82	34.00	4.30
United Arab Emirates	493.52	166.42	3.22	60.00	4.23
United Kingdom	205.49	47.81	2.75	80.00	4.10
United States of America	428.22	26.15	2.05	434.00	4.01
Grand Total	**156.91**	**1199.21**	**1.80**	**9551.00**	**2.89**

- **Formula to obtain normal= <u>Current Value- Minimum Value</u>**

  Maximum Value- Minimum Value

- After obtaining the normalized values, we proceed to calculate the composite score for each country. Using these scores, we assign ranks to the countries, as illustrated in the screenshot provided.

Normalized Value					
Votes	Price Range	Rating	Average Cost	Composite	Rank
0.12199683	0.209154989	0.522953945	0.00000000	2.876116245	2
0	0.870353277	0.633892812	0.00039330	4.276671105	6
0.110811572	0.403625073	0.47386595	0.00004327	3.035191936	3
0.156278052	0	0	0.00213143	0.470965588	1
1	0.638223906	0.898126474	1.00000000	8.868953707	15
0.296896605	0.740706554	0.878841905	0.00016242	5.88763296	10
0.515353445	0.851495572	1	0.00562918	7.254680654	14
0.191611215	1	0.759558078	0.00071014	5.613776094	9
0.016323831	1	0.47386595	0.00046829	3.944903583	4
0.39276866	0.96542754	0.847916468	0.00140717	6.502234106	12
0.16855408	0.585130486	0.647637451	0.00836130	4.274834315	5
0.547329768	0.571403186	0.900931502	0.00021613	6.388737816	11
0.629785376	0.775279013	0.861661107	0.00050622	6.887064805	13
0.247011464	0.533271797	0.783120315	0.00008440	4.940143641	8
0.543011518	0.168229641	0.730865354	0.000007358	4.888962608	7

List of the suggested countries are as below:

Suggested Country					
Country	Average Ratings	Average Votes	Average Price	Average Cost for two	Restaurant
India	2.77	137.21	1.72	623.37	8652
Australia	3.66	111.42	2.125	24.08	24
Singapore	3.575	31.9	3.65	155.75	20

2. Come up with the names of States and cities in the suggested countries suitable for opening restaurants.

To suggest states, we apply the same methodology used for selecting countries. We calculate the normalized values for each aspect considered in the country selection process. Subsequently, we derive the composite score and assign ranks to the states based on this score, using a rank formula.

Question# 2					
Row Labels	Count of Restaur	Average of Rating	Average of Price_range	Average of Average_Cost_for	Average of Votes
Agra	20.00	3.97	2.65	1065.00	103.10
Ahmedabad	21.00	4.16	2.57	857.14	584.10
Allahabad	20.00	3.40	2.65	517.50	69.60
Amritsar	21.00	3.69	1.81	480.95	174.52
Armidale	1.00	3.50	2.00	20.00	25.00
Aurangabad	20.00	3.38	2.20	622.50	64.80
Balingup	1.00	3.20	2.00	20.00	21.00
Bangalore	20.00	4.38	2.70	1232.50	2805.75
Beechworth	1.00	4.60	2.00	20.00	237.00
Bhopal	20.00	3.95	2.15	620.00	143.85
Bhubaneshwar	21.00	3.98	1.86	678.57	202.05
Chandigarh	18.00	4.05	2.50	1072.22	574.61
Chennai	20.00	4.32	2.45	1085.00	1384.75
Coimbatore	20.00	4.14	2.40	782.50	210.95
Dehradun	20.00	4.05	3.05	727.50	121.50
Dicky Beach	1.00	3.60	1.00	7.00	29.00
East Ballina	1.00	4.10	2.00	20.00	56.00
Faridabad	251.00	2.27	1.45	447.61	25.84
Flaxton	1.00	3.50	3.00	30.00	37.00
Forrest	1.00	3.70	2.00	20.00	29.00
Ghaziabad	25.00	2.93	1.80	602.00	94.64
Goa	20.00	4.25	3.65	1175.00	754.90
Gurgaon	1118.00	2.86	1.86	714.02	118.21
Guwahati	21.00	4.19	2.52	821.43	236.38
Hepburn Springs	2.00	3.80	1.50	13.50	142.50
Huskisson	1.00	4.10	2.00	20.00	40.00
Hyderabad	18.00	4.34	2.89	1361.11	1340.83
Indore	20.00	3.97	2.75	960.00	238.85

Above is the pivot used for selecting states.
These state ,countries suitable for opening restaurants

Suggested Cities

Cities	Bangalore	Beechworth	Kolkata	Palm Cove	Panchkula	Singapore	Tanunda
Country	India	Australia	India	Australia	India	Singapore	Australia
Average Votes	2805.75	237	2229.65	381	843	31.9	339
Average Ratings	4.375	4.6	4.255	4.4	4.2	3.575	4.4
Average Cost for Two	1232.5	20	1272.5	30	2000	155.75	30
Average Price Range	2.7	2	2.85	3	4	3.65	3

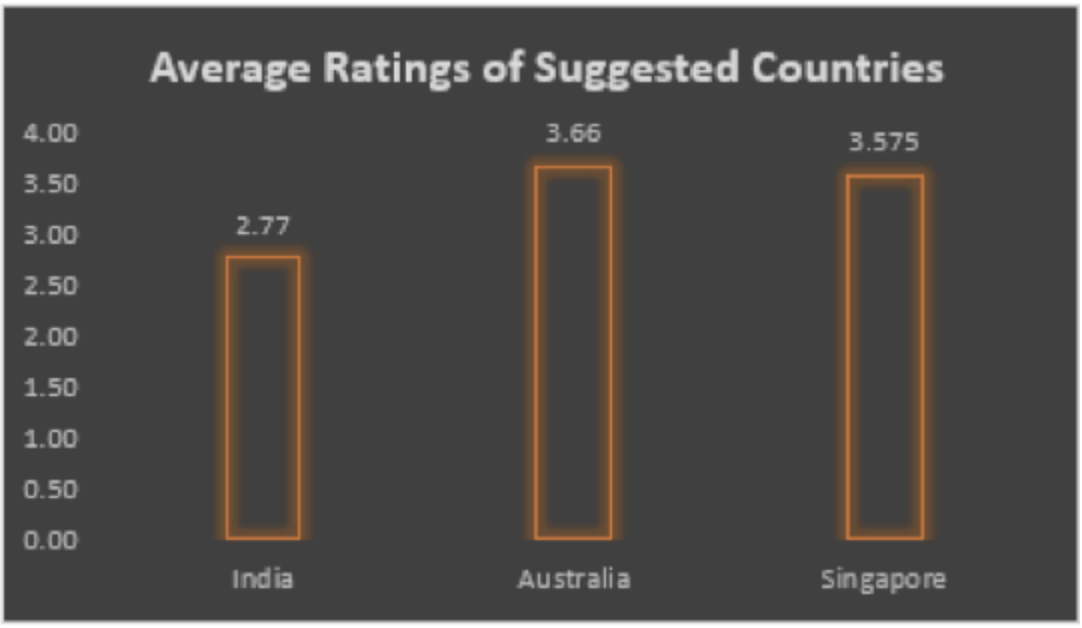
3. According to the countries you suggested, what is the current quality in terms of ratings for restaurants that are opened there?

To assess the current quality in terms of ratings for the restaurants that are operational in each country, we need to create a pivot table. The pivot table should have the country in the rows and the rating in the values field, with an average aggregation. We can then visualize this data using a chart.

Question# 3

Country	Average Ratings
India	2.77
Australia	3.66
Singapore	3.575

Row Labels	Average of Rating
Australia	3.658333333
Brazil	3.846666667
Canada	3.575
India	2.770550162
Indonesia	4.295238095
New Zealand	4.2625
Philippines	4.468181818
Qatar	4.06
Singapore	3.575
South Africa	4.21
Sri Lanka	3.87
Turkey	4.3
United Arab Emirates	4.233333333
United Kingdom	4.1
United States of America	4.011290323
Grand Total	**2.89126793**

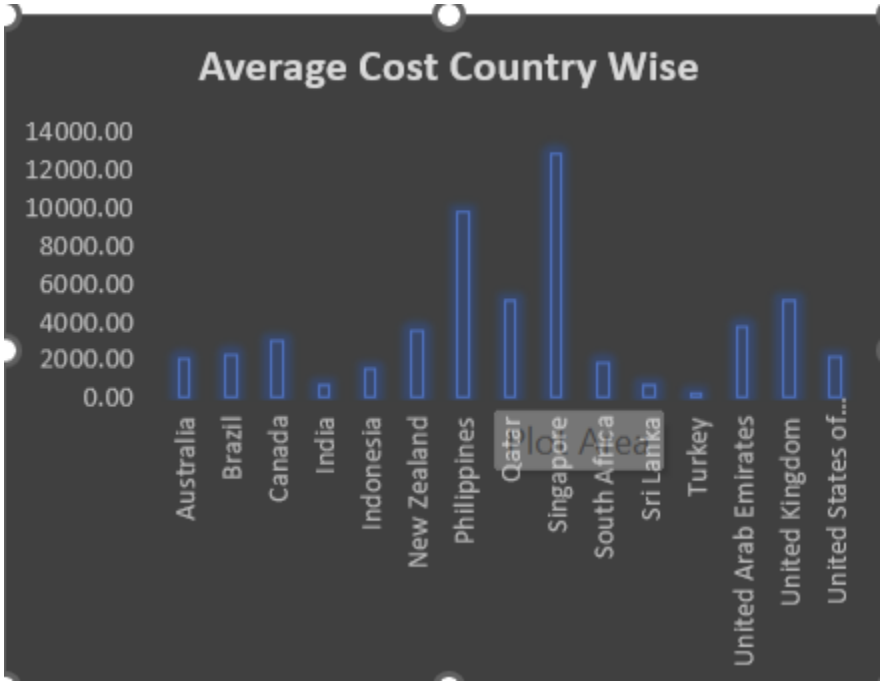


4. Also what is the current expenditure on the food in the suggested countries, so that we can keep our financial expenditure in control?

To determine the current expenditure on food in the suggested countries, we utilized a pivot table. In the pivot table, we placed the countries in the row field and the average cost for two in the value field, with the average aggregation applied.

Question# 4

Row Labels	Average of Average Cost for Two INR
Australia	1992.17
Brazil	2239.51
Canada	2998.60
India	623.37
Indonesia	1490.31
New Zealand	3557.95
Philippines	9737.32
Qatar	5074.65
Singapore	12883.64
South Africa	1859.42
Sri Lanka	641.25
Turkey	218.92
United Arab Emirates	3747.70
United Kingdom	5064.30
United States of America	2163.30
Grand Total	**841.3035054**

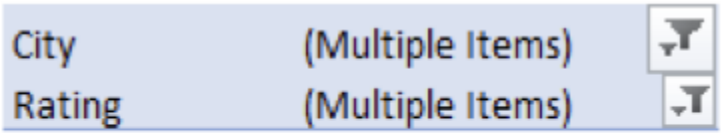


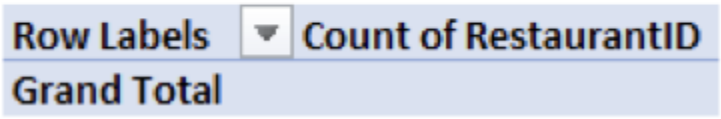
Country	Average Cost
India	623.37
Australia	1992.17
Singapore	12883.64

5. Come up with the names of restaurants from the recommended states who are our biggest competitors and also those which are rated in the lower brackets, i.e. 1-2 or 2-3.

Given that we've assigned priority to ratings, our main competitors are restaurants with ratings between 4 and 5. In the suggested countries, there are a total of 41 restaurants falling within this rating range, posing significant competition.

Interestingly, there are no restaurants in the lower rating brackets (1-2 or 2-3) in the selected cities, indicating an absence of lower-rated competitors in these areas.





Interpretation:	No Restaurants are there with the low rate bracket in our suggested cities.

Question# 5

City	(Multiple Items)
Rating	4-5

Row Labels	Count of RestaurantID
1918 Bistro & Grill	1
6 Ballygunge Place	1
AB's - Absolute Barbec	1
Al'frank Cookies	1
Asia Kitchen by Mainlan	1
Barbeque Nation	2
BarBQ	1
Big Brewsky	1
Bombay Brasserie	1
Bridge Road Brewers	1
Communiti	1
Cut By Wolfgang Puck	1
Eat Street	1
ECHOES Koramangala	1
Farzi Cafe	1
Flechazo	1
Fratini La Trattoria	1
Gabbar's Bar & Kitchen	1
Glen's Bakehouse	1
Hoppipola	1
Hops n Grains	1
India Restaurant	1
Koramangala Social	1
Mumbai Local	1
Onesta	3
Peter Cat	1
Santa's Fantasea	1
Sigree Global Grill	1
Spice Kraft	1
Sultans of Spice	1
TGI Friday's	1
The Black Pearl	1
The Fatty Bao - Asian G	1
The Irish House	1
Toit	1
Truffles	1
Vivo Bar and Grill	1
What's Up	1
Grand Total	**41**

Interpretation:	There are total 41 Restaurants which are our biggest competitor.

6. Which cuisines should we focus on in the newer restaurants to get better feedback? Does the choice of cuisines affect the restaurant ratings?

We will choose high rating cuisines as it directly affects the restaurant average rating for new restaurants . And this is taken as a priority.
Yes, the choice of cuisines affects the restaurant ratings as the same cuisines , we can see different places have different ratings.

7. According to our current data, should we go for online delivery and table booking? Does that affect the customer's ratings?

Based on the current dataset, it's evident that there exists a direct correlation between the mode of service (online delivery, table booking, and normal visit) and the corresponding customer ratings.

Specifically, the average ratings associated with online delivery and table booking tend to be higher compared to those for normal visits.

This observation underscores the importance of providing efficient online delivery services and facilitating seamless table booking experiences to enhance customer satisfaction.

Table Booki	Average of Rating
No	2.81
Yes	3.48
Grand Total	**2.89**

Table Booking	Average of Rating
No	2.75
Yes	3.29
Grand Total	**2.89**

8. Should the team keep the rate of cuisines higher? Will that affect the feedback? According to our data are the rate of cuisines and ratings, correlated?

Supporting the recommendation with thorough analysis and visual representation, it's advised to retain the current pricing strategy for cuisines.

This decision is substantiated by the absence of a significant correlation between cuisine pricing and customer ratings.
The correlation coefficient, calculated to be 0.059, indicates a negligible association between these variables.
This value, approaching zero, suggests that changes in cuisine pricing are unlikely to have a notable impact on customer ratings. Consequently, maintaining the existing pricing structure is deemed appropriate.

: =CORREL('Raw Data'!T2:T9552,'Raw Data'!U2:U9552)

Question# 8	
Correlation between Rate of Cuisines and Rating	0.059
Interpretation	
The value of the correlation coefficient is 0.059 which is almost close to 0. Hence we can say that there is almost no correlation between Cuisine rate and rating	

9.. What is the distribution of the number of restaurants of different price ranges in all the countries?

Here's the breakdown of the number of restaurants in various price ranges across all countries:

Question# 8

Row Labels	Count of RestaurantID
1	4444
2	3113
3	1408
4	586
Grand Total	**9551**