# **Tasks**

**Objective Questions**:

1. **What is the total no. of tables present in the data?**

* The total no.of tables present in the data is **25**.
* **Main Data Table**
* **Country & Currency Table**
* **Pivot Tables**
* Country vs Count of Restaurant name
* No.of Restaurants opened in each country from year(2010-18)
* Country vs Sum of average cost for two in rupees
* Total no.of Restaurants in India with price price range of 4
* Price range vs no.of restaurants in %.
* Average no.of voters vs Country
* Countries with Lesser competition
* Analysis of countries and cities
* Countries with average ratings
* Sum of expenditure in Indian rupees
* Competitor Restaurants from Australia, Singapore , SriLanka ,Canada, Qatar
* Quisine analysis of Australia, Singapore , SriLanka ,Canada, Qatar
* Rating & Average price for two in rupees
* Price range and no.of restaurants
* Online delivery & Table booking

1. **What is the total no. of attributes present in the data?**

* There are total **24** attributes present in the Main Data Table
* Restaurant ID
* Restaurant Name
* Country Code
* City
* Address
* Locality
* Locality Verbose
* Longitude
* Latitude
* Cuisines
* Currency
* Has table booking
* Has online delivery
* Is delivering now
* Switch to order menu
* Price range
* Votes
* Average cost for two
* Rating
* Date key opening
* Country
* Year
* Price for two people
* Average cost for two in rupees

1. **How many categorical columns are there in the data? [Search about categorical and continuous data, and try to answer this question]**

* There are **10** categorical columns in the Main Data Table
* Country Code
* City
* Cuisines
* Currency
* Has table booking
* Has online delivery
* Is delivering now
* Switch to order menu
* Date key opening
* Country
* There are **3** continuous data
* Price range
* Votes
* Rating

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

* Therefore, to remove some inconsistent and missing values, firstly we added filter to cuisine column and filtered out the blank and then deleted the rows which had blanks.
* Then again selecting the whole data , and searched for empty rows.
* Data had **9** missing values, as for further analysis data is cleaned.

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

* As mentioned, the countries has been filled in the original data by using the country code with the help of Vlookup Function.
* Formula : =VLOOKUP($C2,'COUNTRY DESCRIPTION'!$A$3:$B$18,2,0)

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

* Created a table with analysis i.e country vs count of restaurants, where countries in rows and count of restaurant name in columns.
* 

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

* A pivot table is created for no.of restaurants opened each year from 2010 to 2018, i.e years in rows, country in columns and count of restaurants in values. Visualize with Column chart.
* 

1. **What is the total number of restaurants in India in the price range of 4?**

* The total no.of restaurants in India in the price range of 4 ,is given by a pivot table below, which is **388**.



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

* The average no.of voters for the restaurants in each country is analysed with the help of column chart and pivot table. Shown below,
* 
* As we can see from above ,Indonesia has the highest average no.of voters and Brazil has the lowest.

1. **Calculate the average rating for all the restaurants that have price\_range < 4 and provide online delivery. Use only the “IF” function, Logical Operators, and Aggregation functions to solve this problem. [Note: Don’t use Conditional aggregation in this question.]**

* 
* =AVERAGEIFS('RAW DATA CLEANED'!$S:$S,'RAW DATA CLEANED'!$S:$S,"<4",'RAW DATA CLEANED'!$M:$M,"Yes").

1. **Using Conditional formatting highlight the rows of restaurants that are located in the countries or cities that you’ve suggested to the management for opening new restaurants.**

* 
* The highlighted rows are the suggested places for opening new restaurants, by using conditional formatting.

1. **Create a new customized price column that consists of the abbreviation/symbol of the currency along with the Average\_cost\_for\_two value. [Use string operations to do this task]**

* The column is created consisting of the symbol of currency with the average cost for two value in Main Data Table. As shown below,
* 

1. **How can you create an array formula in Excel or Google Sheets to count the number of restaurants listed that do not offer online delivery, are in the lowest price range, and have an average cost for two people less than or equal to 250 Indian Rupees?**

* 
* Formula : =COUNTIFS('RAW DATA CLEANED'!$P:$P,"1",'RAW DATA CLEANED'!$M:$M,"No",'RAW DATA CLEANED'!$X:$X,"<=250")

**Subjective Question:**

1. **Suggest a few countries where the team can open newer restaurants with lesser competition. Which visualization/technique will you use here to justify the suggestions?**

* We have used a line chart here to represent the count of restaurants and average of ratings with countries.
* As a result, countries where the team can open newer restaurants with lesser competition are mentioned below,





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

* AUSTRALIA

1. Armidale, rating - 3.5
2. Balingup, rating - 3.2
3. Flaxton, rating - 3.5
4. Macedon, rating - 3.5
5. Mayfield, rating - 2.9
6. Montville, rating - 2.4
7. Paynesville, rating - 2.6
8. Penola, rating - 3.4
9. Victor harbour, rating - 3.6

* CANADA

1. Chatham-kent, rating – 3.7
2. Consort, rating – 3
3. Yorkton, rating – 3.3

* QATAR

1. Doha, rating – 4.06

* SINGAPORE, rating – 3.5
* SRI LANKA

1. Colombo, rating – 3.8
2. **According to the countries you suggested, what is the current quality regarding ratings for restaurants that are open there?**

* Based on the data provided for the suggested countries, the current quality regarding ratings for restaurants that are open, can be given as follows:



* **Australia** : The average rating for the restaurants in Australia is **3.65**, which is slightly comparable with Sri Lanka and lower than Qatar, still it is averagely shows good quality .
* **Canada & Singapore** : As we can see from the above table, that both the countries have same average of rating i.e **3.5**, indicating the quality to be lower or poor compared to others in the data.
* **Qatar** : The restaurants in Qatar have high average rating of **4.06**, which indicates the current quality very good and efficient.
* **Sri Lanka** : The restaurants in Sri Lanka have relatively good average of rating **3.8**,which is slightly lower than Qatar but comparatively good.

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



* The current expenditure on food in total is 3,43,822 in Rupees.
* To keep financial expenditure in control, one should consider evaluating the budget and spending priorities in each country, perhaps allocating more resources to countries with higher costs if necessary.

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

* The biggest competitors are highlighted as green.
* The average competitors are highlighted as dark yellow.
* The smallest competitors are highlighted as light yellow. Given below,

    

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

* The Quisines are mentioned below, to get better feedback and ratings we should focus on the highlighted quisines of each country for the newer restaurants.
* The highlighted quisines have high ratings compared to other quisines.

    

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

* As we can see from above pie-chart ,when the table booking is “Yes” it is showing 3.48 rating and while the table booking is “No”, it is showing 2.81 ratings.
* Therefore, we can analyse that the restaurants who offer table booking has higher ratings and the restaurants who don’t have low ratings.
* This concludes that table booking contributes positively to the overall dining experience and perception of the restaurant by customers.
* We can also observe it by percent wise, YES – 55% and NO – 45%.
* Similarly, The restaurants providing online delivery shows 3.29 rating which is higher compared to the restaurants having 2.75 ratings, which does not provide online delivery.
* This suggests, that online delivery does have an impact on the restaurants on the basis of average ratings.
* So overall, The restaurants providing online delivery may grow the business positively and exponentially good.

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



* The correlation between Ratings and Average cost for two is 0.346, which shows a positive value but weak correlation between the rating of restaurants and the price of their cuisines.
* Some factors may affect the feedback because of weak correlation.

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



* Therefore, these percentage values represent the proportion of restaurants in specific price ranges.

1. **Explain your approach in brief for suggesting countries/cities in order to open new restaurants, if the objective and subjective questions would have not been given to assist you. [you have to give bullet pointers in order to answer this question]**

* Data sorting and cleaning by removing the blank and duplicate rows/columns if present.
* Also adding filter to the Main Data for further analysis.
* Analysing the whole data and creating necessary columns according to the data, like from date key to year column, price for two to price for two in rupees.
* Creating average cost for two in Indian rupees column.
* Creating pivot table for no.of restaurants in each country , year wise, rating wise or price range wise.
* Pivot for average of voters vs each country
* Creating charts for each pivot table for better understanding and visualization.
* Suggesting countries for newer restaurants by doing the competitor analysis , by creating tables consisting of no.of restaurants, rating and average cost for two.
* Creating pie-charts for table booking vs rating and online delivery vs rating, for analysing the impact of feedback of customers .
* Creating a dashboard for better visualization and analysis, by adding insightful tables and charts and adding slicers for filtering.
* Conclusion : For opening new restaurants in Countries/cities, my approach will be targeting the areas/countries/cities with low competition, there we can create business for newer restaurants. Also analysing the rating part , where the rating is low because of some reasons like poor quality, has no online delivery, or the average cost for two is high, etc in such areas we can offer better service to the customers through the newer restaurants and fulfilling their demands.