Tech Saksham

Case Study Report

Data Analytics with Power BI

“360-degree Business Analysis of Online Delivery Apps”

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ABSTRACT

Startups in India become a talk of the town in world business scenario. Youngsters are coming up with innovative concepts to counterpart untouched concerned area of consumers. Currently Indian Online food market is$350billion.Food technology in broad area, online food delivery apps are just part of it. The proposed project,"360-degree Business Analysis of Online Delivery Apps" aims to leverage Power BI, a leading business intelligence tool, to analyze and visualize real-time customer data. This conceptual study will give more insight about emerging innovative technologies in restaurant industry and strategies followed by online food startups ZOMATO. Different services given by application that makes consumers happy and satisfied .Comfort and Convenience which makes consumer more inclined towards online food ordering. The real-time analysis will help us to get the survey of the ZOMATO food products selling in different countries and online delivery applications is growing like a flying colors. Future of online food ordering website is bright. Facilities, Comfort, User friendliness are the key features of online websites success.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

In today's competitive world people often rely on their hectic schedule and they often relay on online delivery apps for the food consumption. People usually prefer on serving a specific dish and it would best if they find specific place that serves the dish. The lacks of online delivery apps usually faces this problem so to overcome this we need an additional feature to reduce this issue. User also prefers re-ordering their orders. So once the orders are placed, the order history must be saved in the app. It also faces spam problems while using the apps and lower server latency for our geographically widespread traffic.

1.2 Proposed Solution

The proposed solution is to develop a Power BI dashboard that can analyze and visual the serving of specific dishes and help to track the location of many restaurants. The dashboard can help to show us the country codes, city, restaurant name, address, locality, locality verbose, longitude, latitude, cuisines Using the 360-degree business analysis of Online Delivery Apps by this dashboard it will make us enables to locate and give specification of these food that has availability in a specific place and the location and availability can be surveyed under this dashboard and their order history can be saved in this data.

1.3 Feature

- **360-delivery Business Analysis of Online Delivery Apps**: The dashboard will provide analysis of the ZOMATO app food location and delivery data
- **Menu optimization**: To optimize the menus of restaurants based on the popularity of dishes and local tastes.
- **Admin dashboard**: Offers functionalities related to the business side of the app, such as route management, driver and delivery statistics, restaurant profiles, marketing, and campaigns.
- **Inventory Management**: It gives the data analytics to manage the inventory of ingredients and supplies needed for each restaurant, ensuring the time delivery and reducing food waste.

1.4 Advantages

- **Convenience**: You can order your favorite food from your preferred restaurant and it will be delivered at food step.
- **Improved operational efficiency**: Data analysis can help business get in touch with emerging market trends.
- **Flexibility for customers**: ZOMATO'S review system provides valuable feedback to restaurants, enabling them to improve their services and attract more customers.

1.5 Scope

The scope of this project is to diversify into the catering business by leveraging its network of restaurant partners to service large orders. It is designed for users to find nearby restaurants and it is perfect for those who prefer doorstep delivery. It's also significant for restaurants owners who want to promote their business. By offering part-time or full-time services, delivery provides can generate a decent revenue source income. It promotes restaurants based on their customer engagement, review ratings, and overall experience. It runs promotional campaigns for its exclusive restaurant members. It uses digital, traditional, word –of-mouth marketing. It also provides online payment facilities like Pay Through mobile [PAYTM], Google pay, or card payments and provides information about restaurants, like menus, reviews, and ratings, order food, and get it delivered.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

- **Data Collection and Storage Services**: Online delivery apps need to collect and store data in real-time. This could be achieved by data scraper from ZOMATO websites and using ZOMATO API and their data can be stored in Amazon Dynamo DB, POSTGRES DB and AWS Gravion2 instances.

- **Data Processing Services**: Services like X-Byte Enterprise Crawling, ZOMATO Food Trends,3i Data Scraping and ACTOWIZ Solutions can be used to process the real-time data

- **Machine Learning Services**: Convolutional Neutrals Networks (CNNs) can be used to build predictive models based on historical data.

2.2 Tools and Software used

Tools:

- **Power BI**: The main tool for this project is Power BI, which will be used to create interactive dashboards for real-time data visualization.

- **Power Query**: This is a data connection technology that enables you to discover, connect, combine, and refine data across a wide variety of sources.

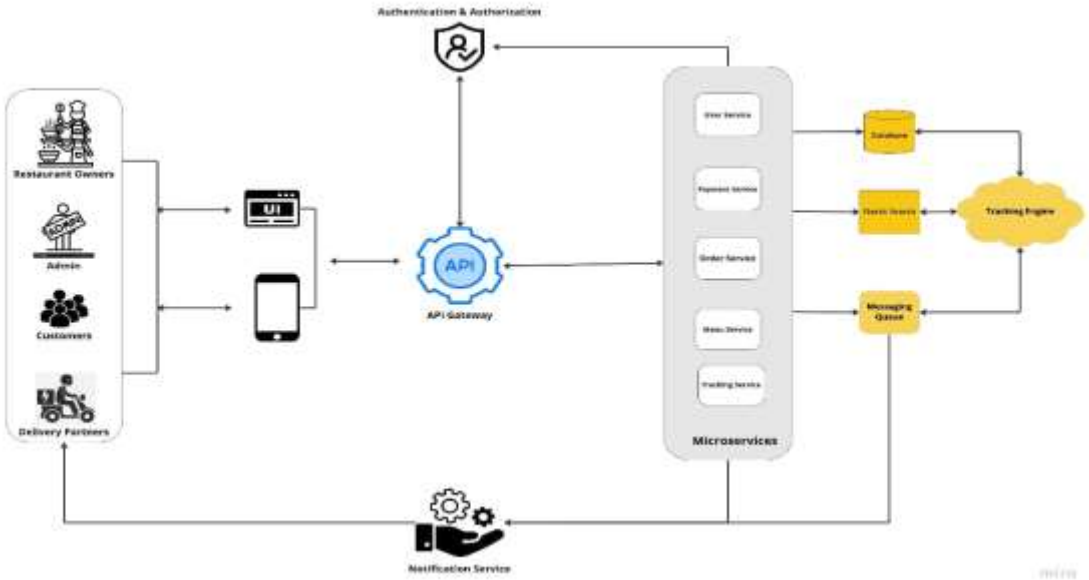
Software Requirements:

- **Power BI Desktop**: This is a Windows application that you can use to create reports and publish them to Power BI.

CHAPTER 3

PROJECT ARCHITECTURE

3.1 Architecture



Here's a high-level architecture for the project:

1. **Data Collection**: Real-time customer data is collected from various sources like data scraper from ZOMATO websites and using ZOMATO API.

2. **Data Storage**: The collected data is stored in a database for processing. Amazon dynamo DB, POSTGRES DB, AWS Gravion2 instances.

3. **Data Processing**: The stored data is processed in real-time using services like X-Byte Enterprise Crawling, ZOMATO Food Trends, 3i data scraping and ACTOWIZ Solutions.

4. **Machine Learning**: Predictive models are built based on processed data using Convolution Neutral Networks (CNNs). These models can help in accurately recognize menu images even low-light or low-resolution images and make dining recommendation based on user preference and behavior, etc.

5. **Data Visualization**: The processed data and the results from the predictive models are visualized in real-time using Power BI. Power BI allows you to create interactive dashboards that can provide valuable insights into the data.

6. **Data Access**: The dashboards created in Power BI can be accessed through Power BI Desktop.

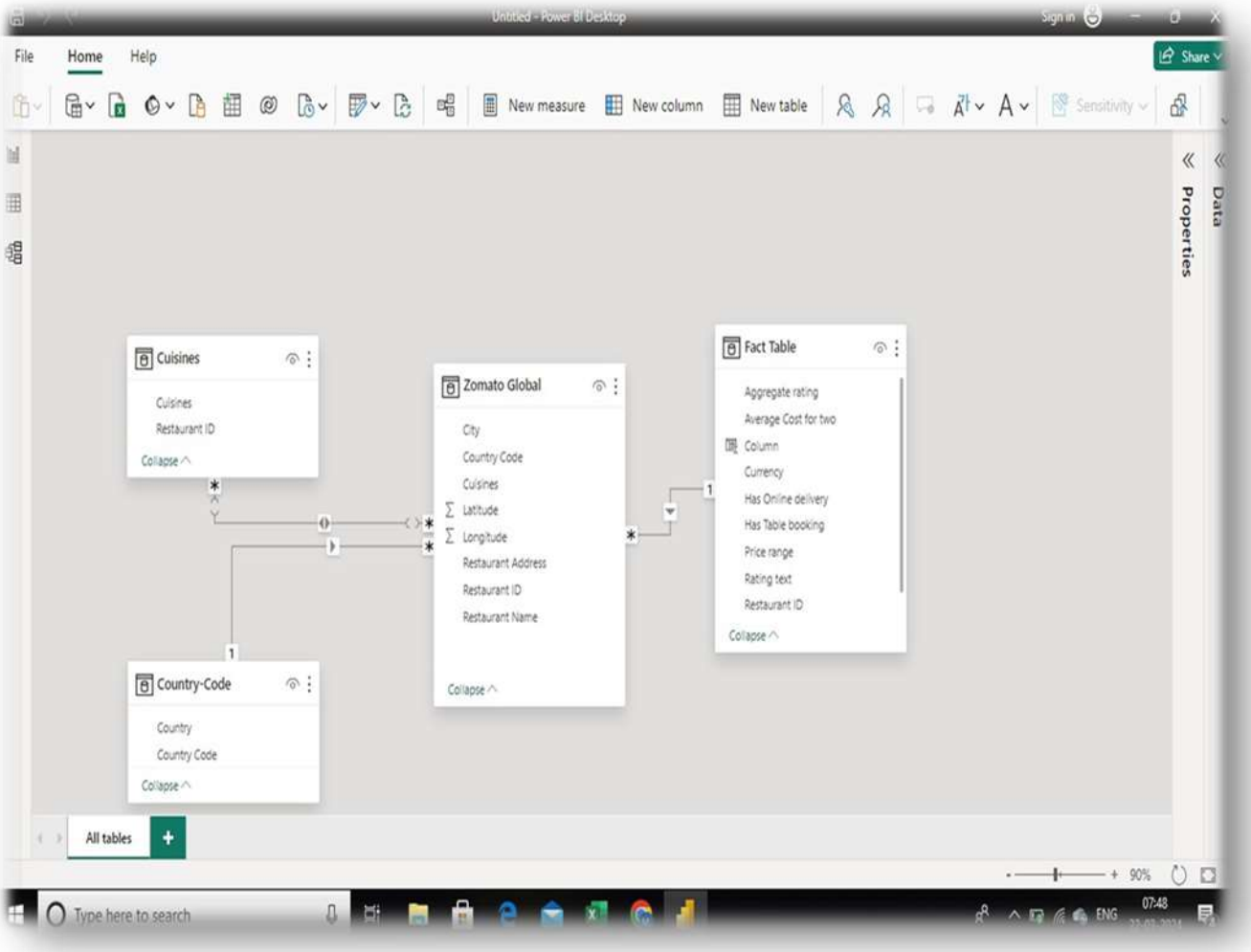
This architecture provides a comprehensive solution for real-time analysis of the Online Delivery Apps. However, it's important to note that the specific architecture may vary depending on the user convenience and availability of the specific dishes in a location. It's also important to ensure that all tools and services comply with relevant data privacy and security regulations.

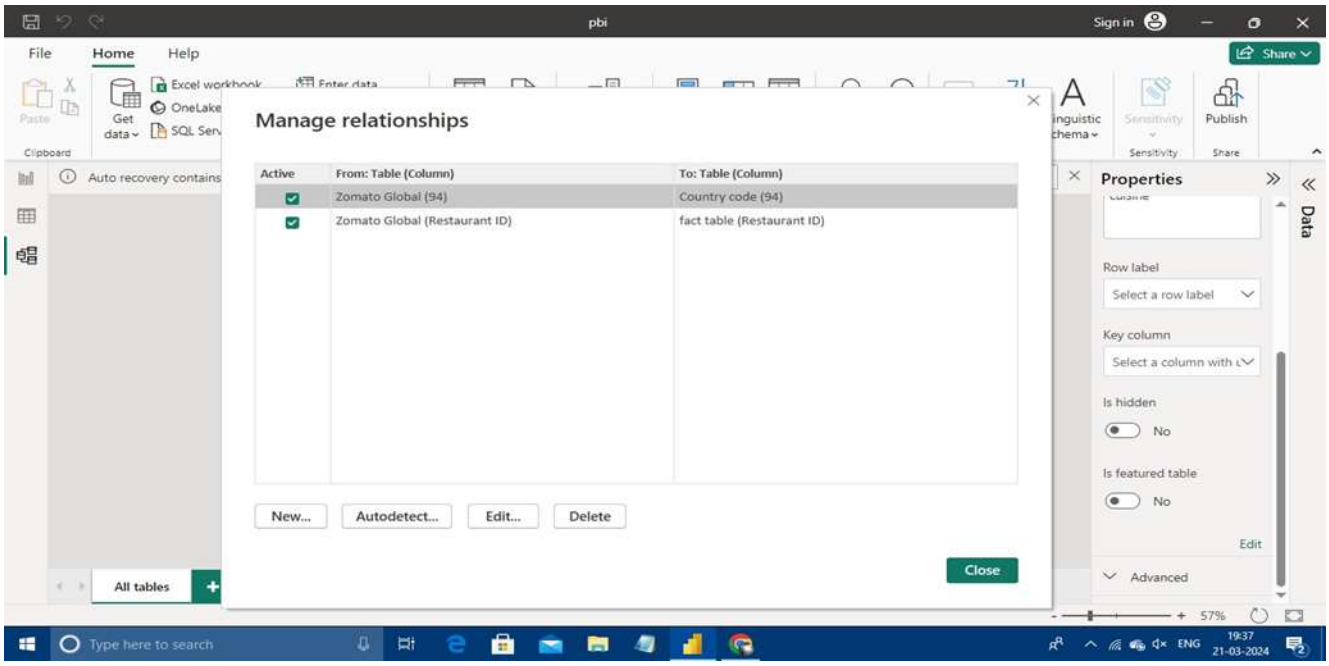
CHAPTER 4

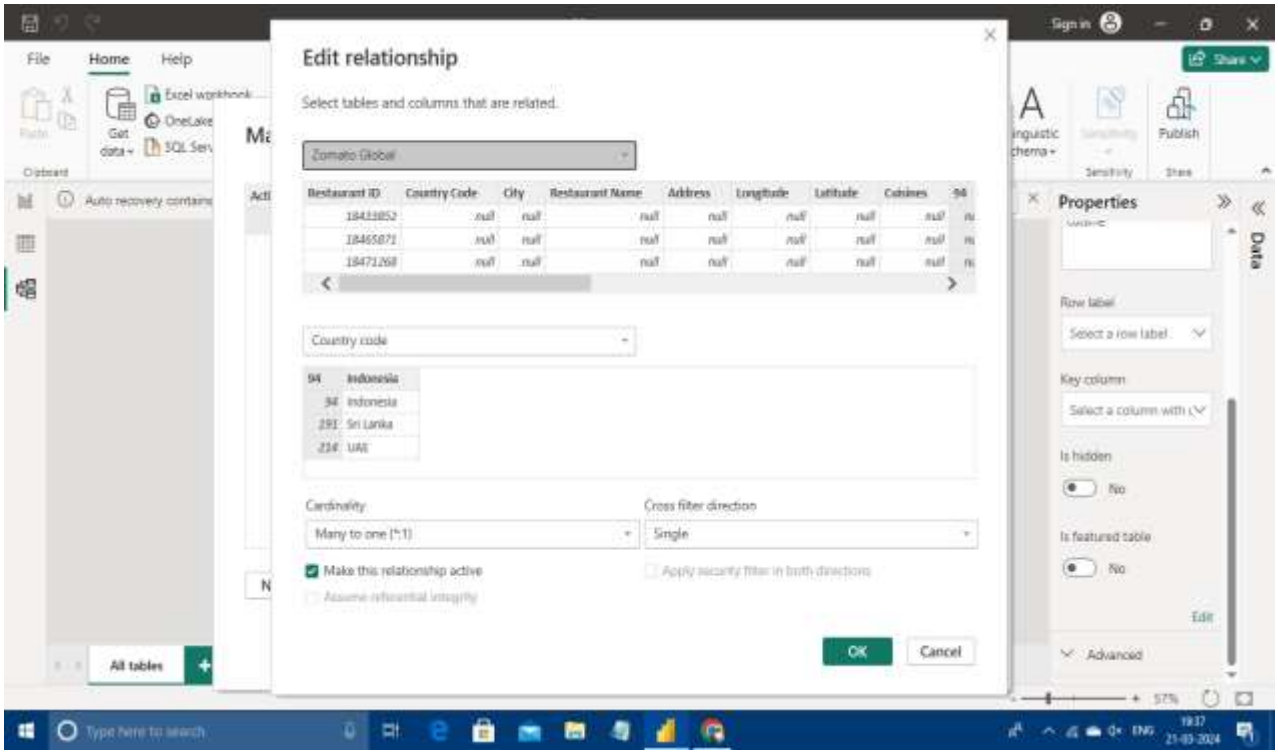
MODELING AND RESULT

Manage Relationship:

The “ZOMATO Global” file will be used as the main connector as it contains most key identifier (City, Country code, Cuisines, latitude, longitude, restaurant address) which can be used to relate the 4 data files together. The “ZOMATO Global” file is use to link the client profile geographically with the other data.

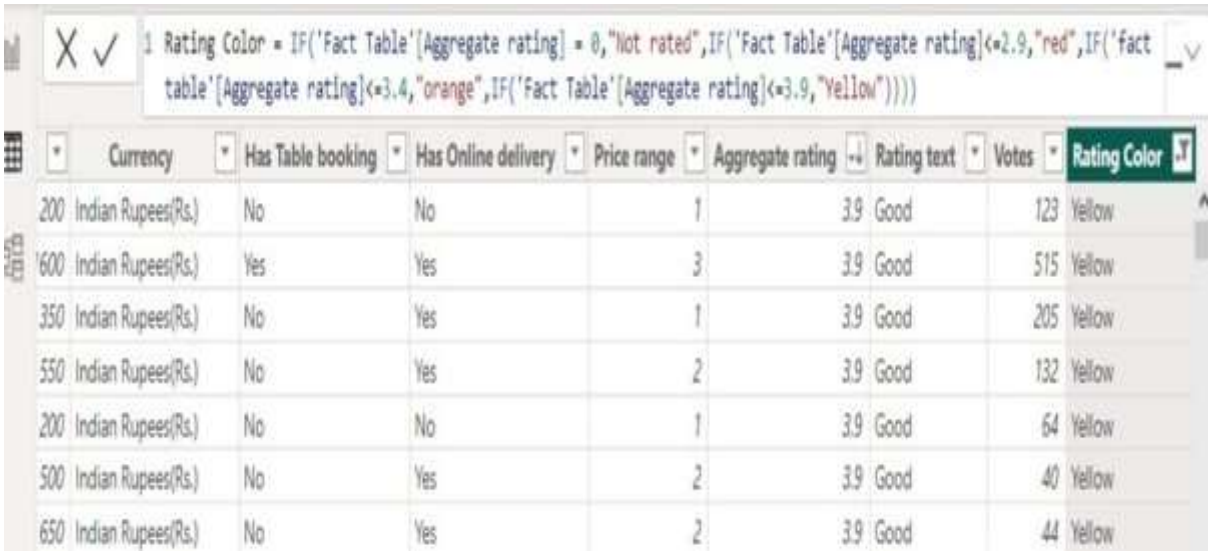






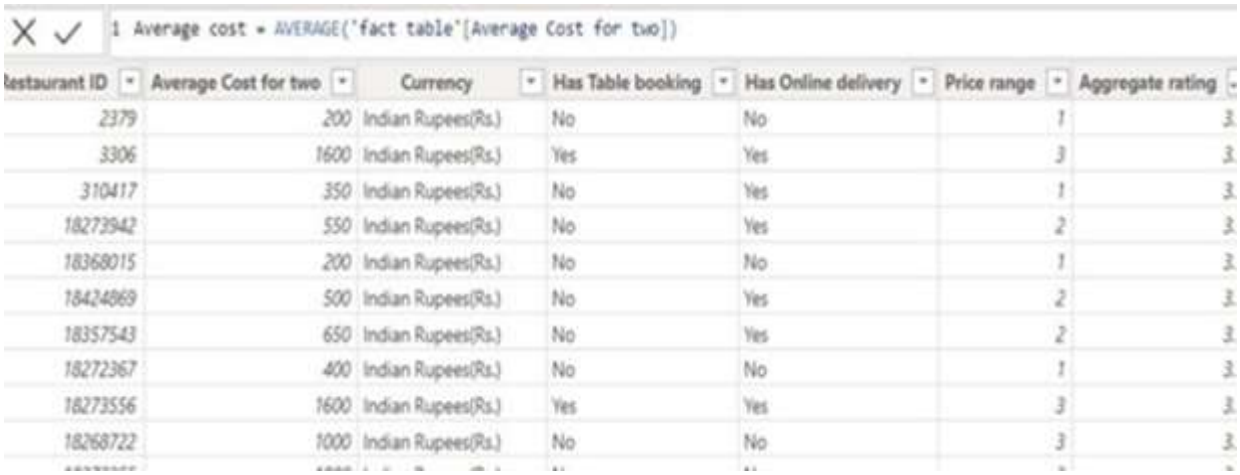
Modeling for Color and aggregate rating:

Notice that the Average cost of two and aggregate rating are missing from the data. These can be formulated from the Rating color where at Aggregate Rating where (rating range from 0- 3.9) less than or equal to 3.9 then it shows yellow color. We can create a column for Aggregate rating.



Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating	Rating text	Votes	Rating Color
200 Indian Rupees(Rs.)	No	No	1	3.9	Good	123	Yellow
600 Indian Rupees(Rs.)	Yes	Yes	3	3.9	Good	515	Yellow
350 Indian Rupees(Rs.)	No	Yes	1	3.9	Good	205	Yellow
550 Indian Rupees(Rs.)	No	Yes	2	3.9	Good	132	Yellow
200 Indian Rupees(Rs.)	No	No	1	3.9	Good	64	Yellow
500 Indian Rupees(Rs.)	No	Yes	2	3.9	Good	40	Yellow
650 Indian Rupees(Rs.)	No	Yes	2	3.9	Good	44	Yellow

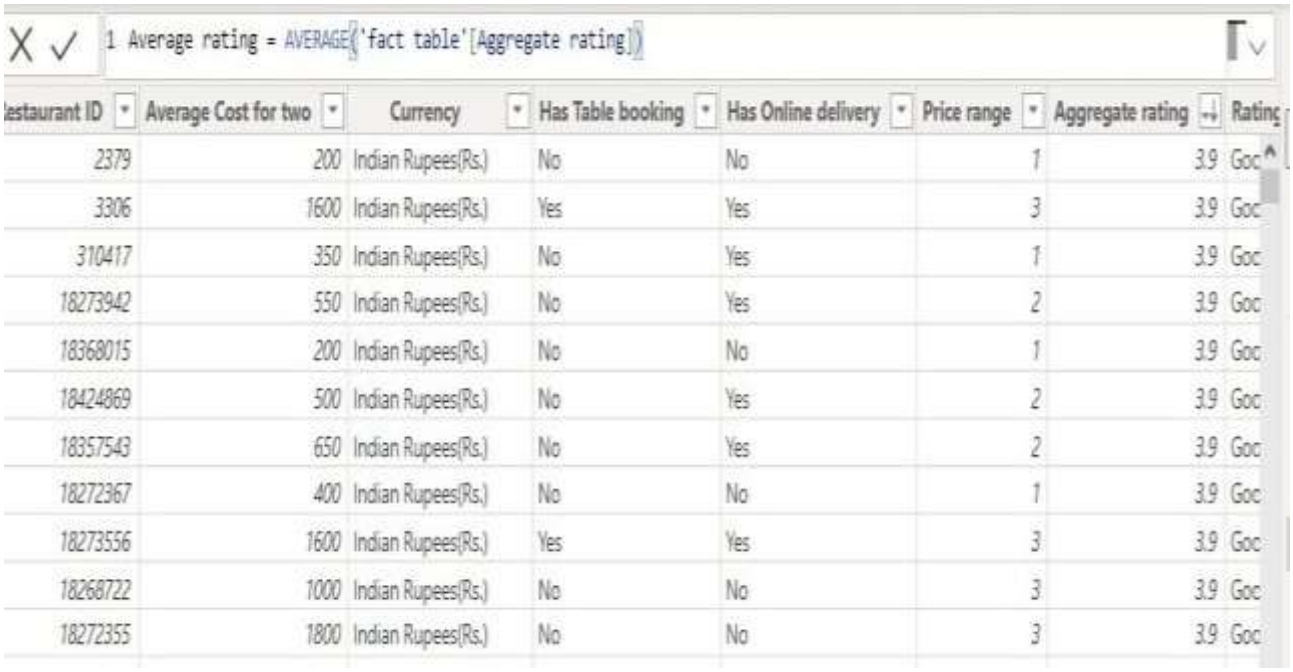
For the Rating color we need to reduce the Aggregate rating as less than or equal to 3.9 and then we can range that 0, 2.9, 3.4, and 3.9



```
1 Average cost = AVERAGE('fact table'[Average Cost for two])
```

Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating
2379	200	Indian Rupees(Rs.)	No	No	1	3.
3306	1600	Indian Rupees(Rs.)	Yes	Yes	3	3.
310417	350	Indian Rupees(Rs.)	No	Yes	1	3.
18273942	550	Indian Rupees(Rs.)	No	Yes	2	3.
18368015	200	Indian Rupees(Rs.)	No	No	1	3.
18424869	500	Indian Rupees(Rs.)	No	Yes	2	3.
18357543	650	Indian Rupees(Rs.)	No	Yes	2	3.
18272367	400	Indian Rupees(Rs.)	No	No	1	3.
18273556	1600	Indian Rupees(Rs.)	Yes	Yes	3	3.
18268722	1000	Indian Rupees(Rs.)	No	No	3	3.

For Aggregate rating we range the average cost of two the price is shown with as the combination of two products and rating can be obtained using color rating.

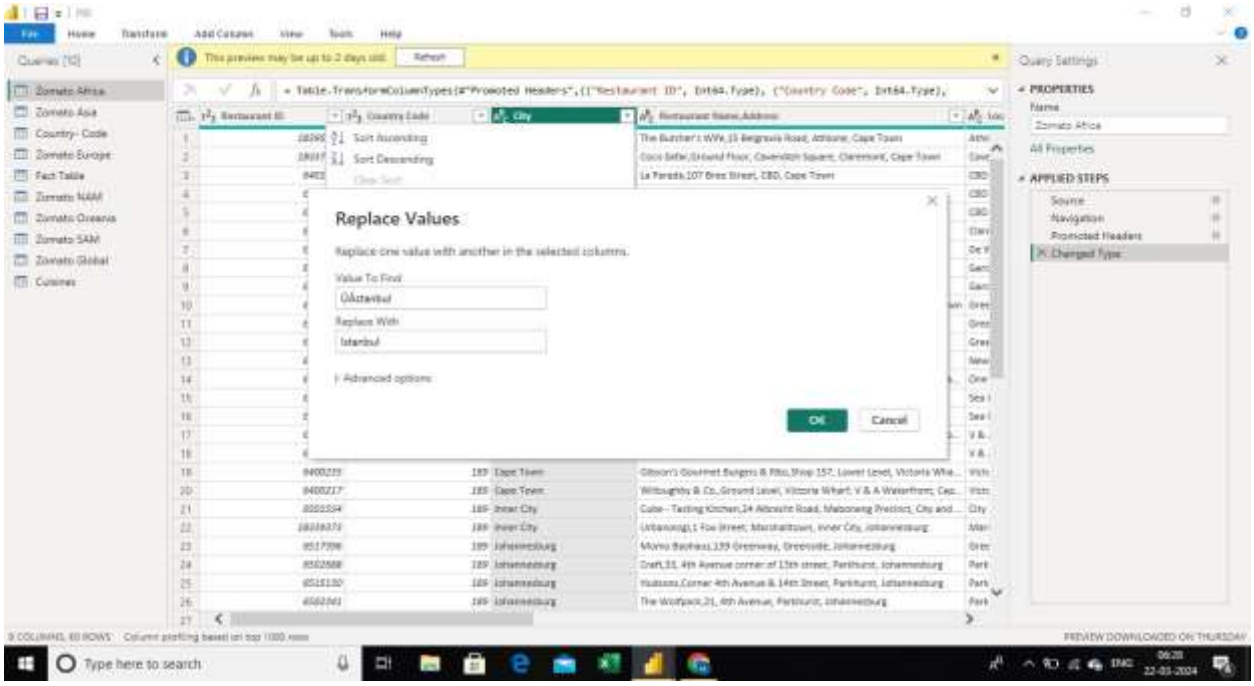


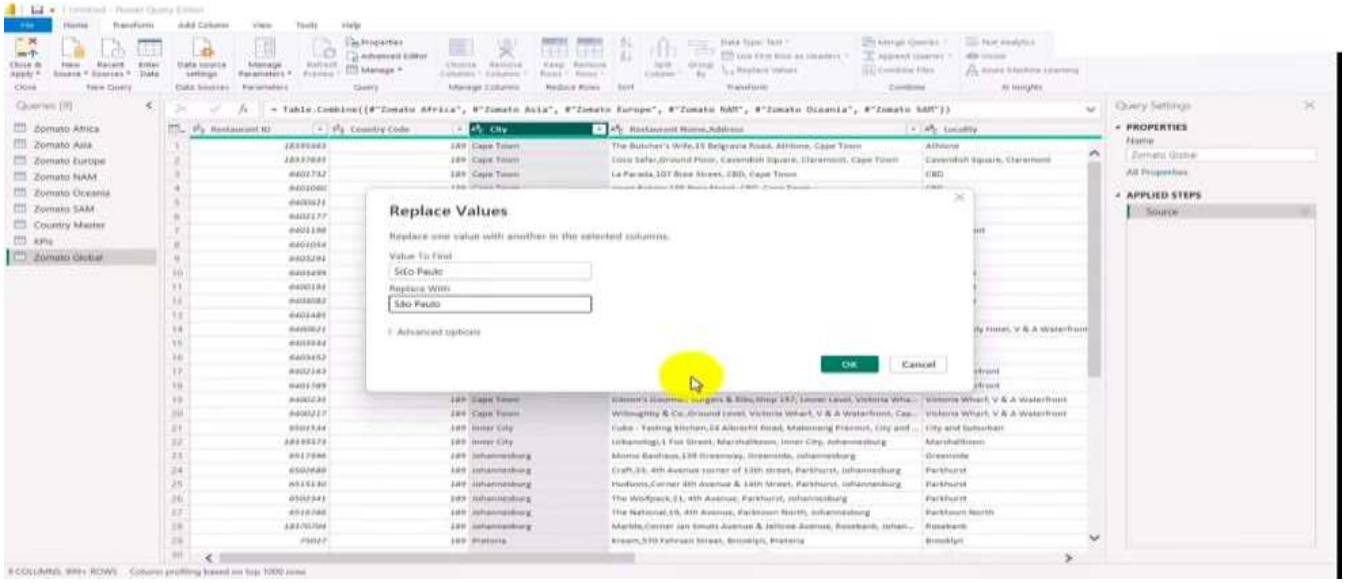
estaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggregate rating	Rating
2379	200	Indian Rupees(Rs.)	No	No	1	3.9	Goc
3306	1600	Indian Rupees(Rs.)	Yes	Yes	3	3.9	Goc
310417	350	Indian Rupees(Rs.)	No	Yes	1	3.9	Goc
18273942	550	Indian Rupees(Rs.)	No	Yes	2	3.9	Goc
18368015	200	Indian Rupees(Rs.)	No	No	1	3.9	Goc
18424869	500	Indian Rupees(Rs.)	No	Yes	2	3.9	Goc
18357543	650	Indian Rupees(Rs.)	No	Yes	2	3.9	Goc
18272367	400	Indian Rupees(Rs.)	No	No	1	3.9	Goc
18273556	1600	Indian Rupees(Rs.)	Yes	Yes	3	3.9	Goc
18268722	1000	Indian Rupees(Rs.)	No	No	3	3.9	Goc
18272355	1800	Indian Rupees(Rs.)	No	No	3	3.9	Goc

Replacing values

Set some fields to English for easy understanding, we replace values to English with the Power Query Editor.

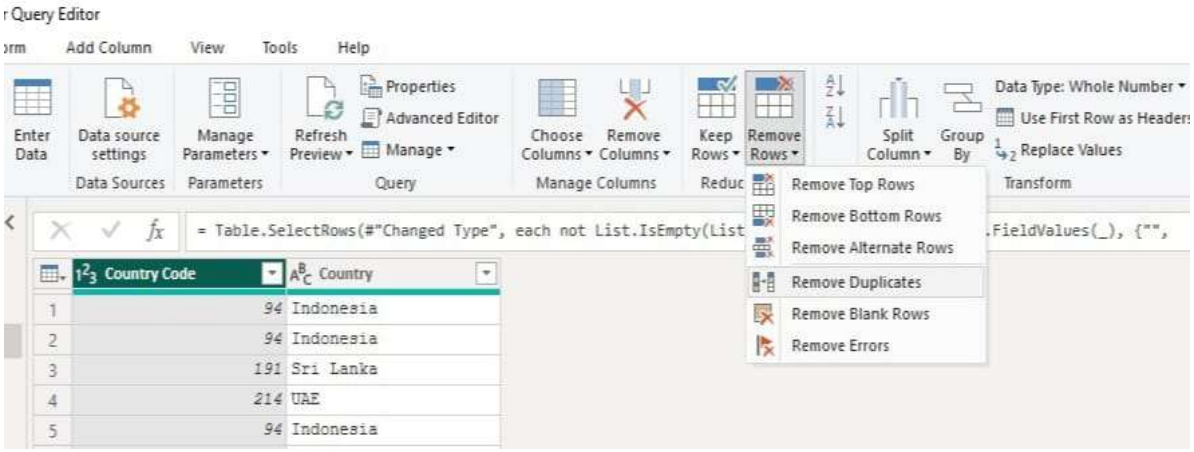
Type	+/- Transaction	Sì£o Paulo changes into são Paulo Cedar Rapids/ lowa City changes into: Cedar Rapids ÛÁstanbul changes into Istanbul



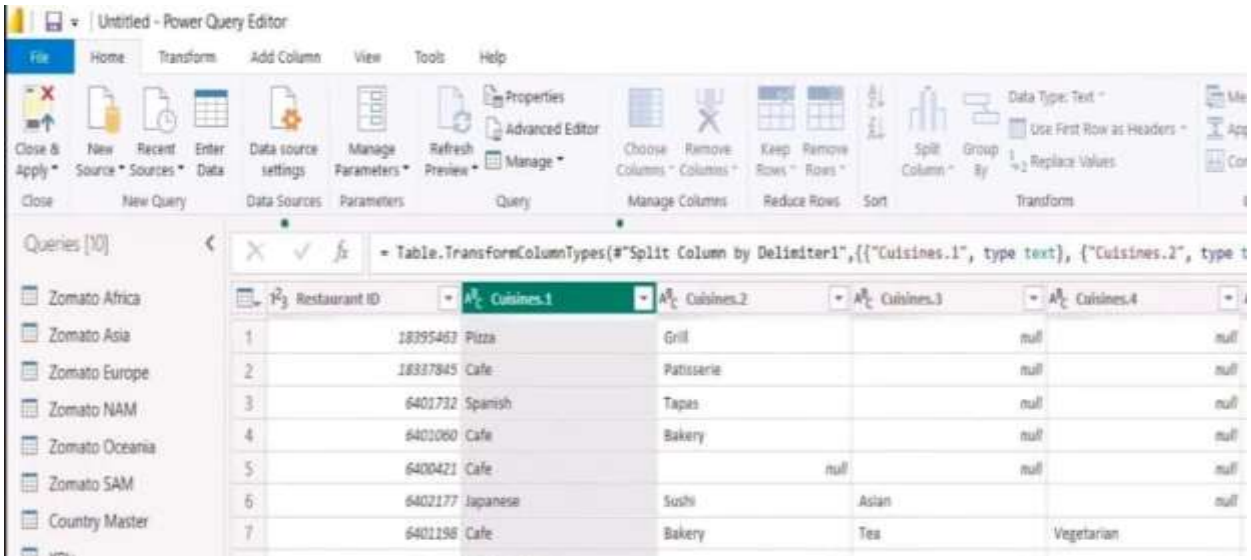


Changing the order of Cuisines at Power Query

Duplicate the “ZOMATO Global” then split column using space as delimiter.

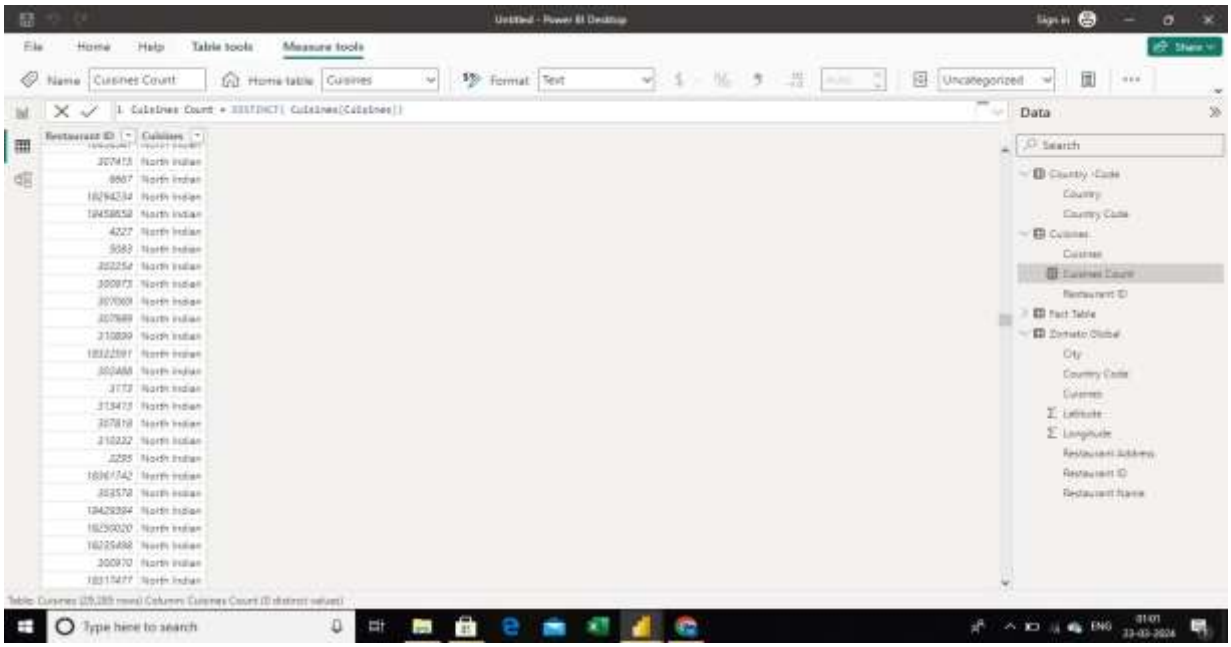


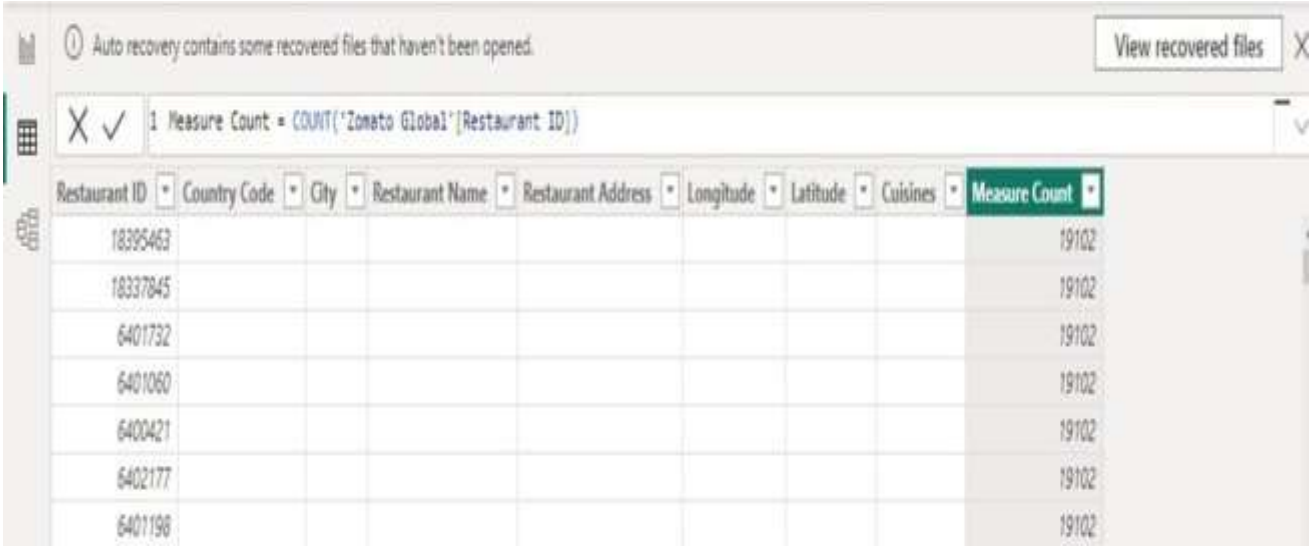
Then merge column by Cuisines1, 2, 3, 4 etc., Refer to applied steps for details.



Grouping of Measure Count: As the Aggregate rating ranges from the 0 – 3.9 we shall group this into different price range for the average cost of two dishes using ZOMATO Global by this we can aggregate this into different columns.

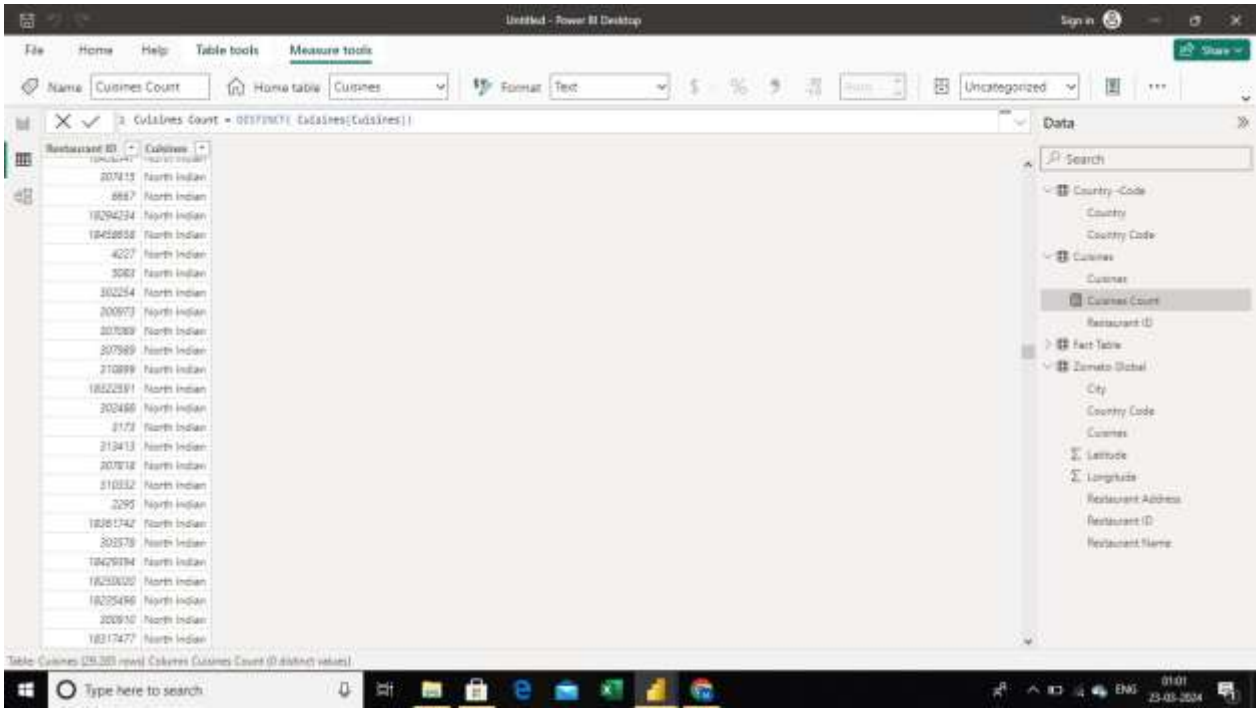
The ZOMATO Global has the ranges with the measure count of the Restaurant ID.





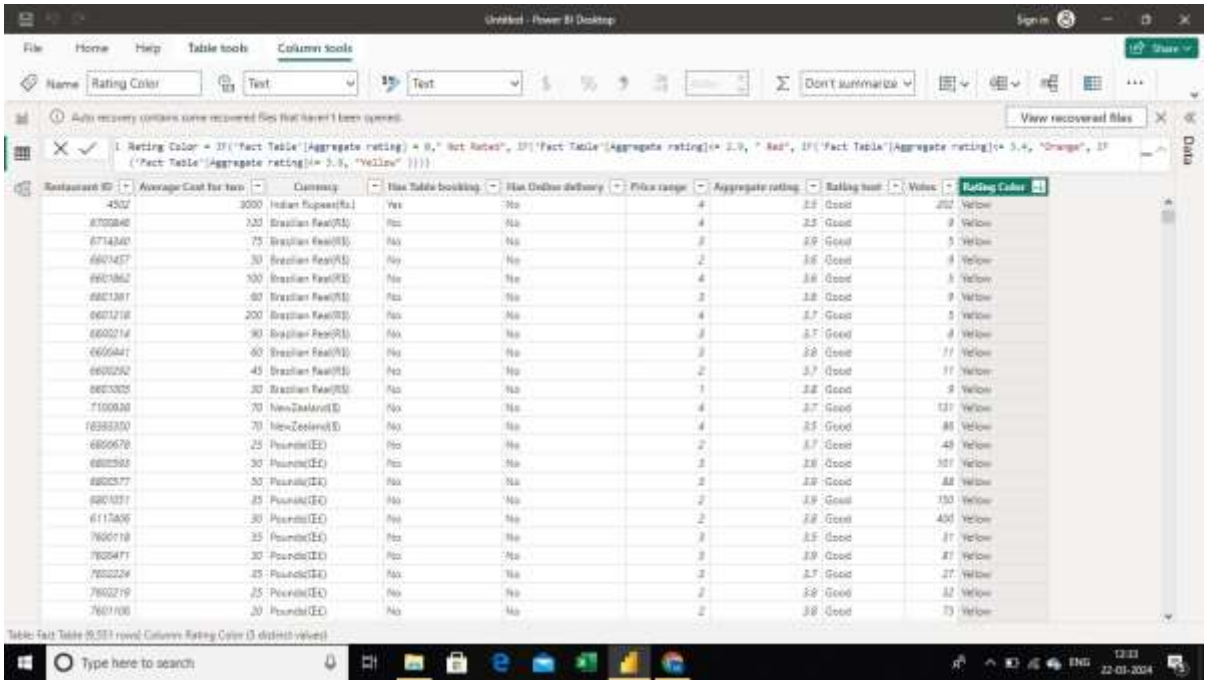
Color rating and measure count:

The color rating and measure count are given in the dashboard form. Using the "ZOMATO Global" we can extract and form the duplicate and it extract to Cuisine and it gets to cuisine count and with the restaurant ID we get the extracted data.

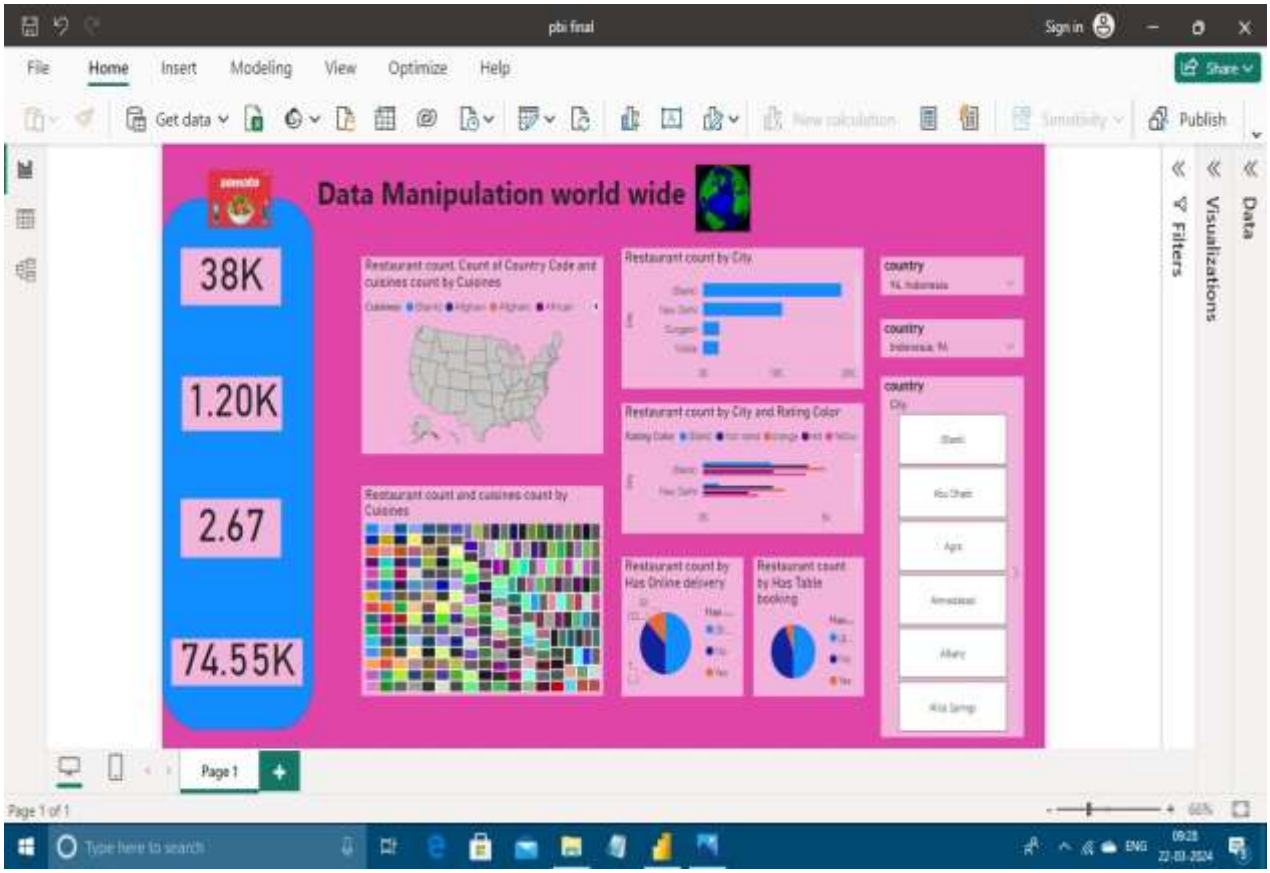


Values of Color rating gives the further count of the cuisines is given as shown in the process.

The color rating can be shown in the Aggregate rating and combination of the average cost of two.



Dashboard:



CONCLUSION

ZOMATO'S success can be attributed to its innovative business model, its focus on customer experience, and its ability to adapt to changing market conditions. As the food delivery industry continues to grow and it evolves, ZOMATO is a well-positioned to continue its success and expand its reach into new markets. ZOMATO'S is offering the list of all restaurants, the type of food detailed analysis of restaurants, working hours, the location of eatery, most importantly, reviews from other users which are mostly from the datasets collected all users. ZOMATO'S has brilliant marketing strategies have helped them position themselves top within the industry. Marketing develops with time and changes based on the demands and preferences of the modern population.

FUTURE SCOPE

The scope of this problem is significant for ZOMATO as it directly impacts the company's revenue and market share. The drop in orders during the peak period of the festive season in India indicates that ZOMATO may not have been able to capture the surge in demand effectively, leading to a loss of potential revenue. Moreover, the problem could also lead to a loss of customer trust and loyalty, which can further harm the company's reputation and long-term prospects. The problem also has a broader impact on the food delivery industry in India, which is highly competitive. The drop in orders during the festive season may have allowed ZOMATO'S competitors to gain an advantage, which could impact the company's market share in the future. Therefore, addressing this problem effectively is critical for ZOMATO'S has competitiveness and growth in the long term.

REFERENCES

https://drive.google.com/file/d/12lJoSC3laZx66ilxs14hMZFjEls6o8Vf/view?usp=drivesdk

LINK

