Tech Saksham

Case Study Report

Data Analytics with Power BI

"360-Degree Business Analysis of Online Delivery Apps Using Power BI"

"Sivanthi Arts and Science College for Women"

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ABSTRACT

In the competitive landscape of online delivery apps, understanding and analyzing various facets of business operation is crucial for success. This study employs Power BI, a powerful business intelligence tool, to conduct a comprehensive analysis of online delivery apps from multiple perspectives. The analysis encompassess key metrics such as customer behavior, order trends,revenue generation, market segmentation, and operational efficiency. By leveraging interactive dashboards and visualizations, this research provides stakeholders with actionable insights to optimize decision-making, enhance user experience, and drive business growth. Through a 360-degree examination, this study aims to equip online delivery app companies with the tools necessary to thrive in an increasing dynamic market environment.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

The burgeoning demand for online delivery services presents both opportunities and challenges for business operating in this space. To remain competitive and meet evolving consumer expectations, there is a pressing need to address several key challenges. Customers expect prompt delivery of their orders. However, inefficiencies in routing, traffic congestion, and inadequate resource allocation often lead to delays. Streamlining delivery operations to minimize transit times while ensuring accuracy is essential.

1.2 Proposed Solution

Utilize Power BI to track customer demographic, order frequency, popular items and peak ordering times. Implement personalized promotions based on customer preferences to increase retention and satisfaction. Optimize delivery routes and timings to improve efficiency and customer experience. Negotiate better terms with suppliers based on data driven insights to improve margins. Recommend complementary items during checkout to increase order value.

1.3 Feature

- **Sales Analysis**:
  Track sales performance over time, by region, by product category and by customer segment.The dashboard will provide real-time analysis of customer data.

- **CustomerAnalytics** :
  Analyze customer demographics, behavior and preferences. Identify customer churn rates, retention rates, and customer lifetime value.

- **Operational Metrics**:
  Monitor operational efficiency metrics such as order fulfillment time, delivery time and order accuracy.

- **Inventory Management**:
  Track inventory levels, stock turnover rates and inventory holding costs. It will use historical data to predict future customer behavior.

1.4 Advantages

- **Convenience**:
  Online delivery apps provide a convenient way for consumers to order food, groceries and other products from the comfort of their home or workplaces.

- **Time saving**:
  Customers can save time by avoiding trips to physical stores or restaurants especially during busy periods or inclement weather.

- **Tracking and Transparency**:
  Customers can track the status of their orders in real-time, providing transparency and peace of mind about the delivery process.

1.5 Scope

Evaluate the current market size, growth, rate and projected trends of online delivery apps globally and regionally. Identify key players, their market share, and strategies. Analyze consumer preferences, demographics and behaviors driving the demand for online delivery services.Assess the technological infrastructure of delivery apps including mobile apps, websites, backend systems, and logistics solutions.Considering the integration of features like real-time tracking, secure payment gateways, and personalized recommendations.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

- **Data Integration Services**:

  Services like azure data factory or Power BI Dataflows can be used to collect data from various sources such as transactional databases, CRM systems, marketing platforms and external API's.

- **Data Warehousing**:

  Azure synapse analytics or Azure SQL data warehouse can serve as a centralized data repository for storing and processing large volume of structured and unstructured data from multiples sources.

- **Data Transformation Services**:

  Power Query within Power BI can be used for data cleansing, transformation and enrichment takes such as data normalization, filtering, and aggregation.

2.2 Tools and Software used

Tools:

- **PowerBI**:
  The main tool for this project is PowerBI, 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:

- **PowerBI Desktop**:
  This is a Windows application that you can use to create reports and publish them to PowerBI.
- **PowerBI Service**:
  This is an online SaaS (Software as a Service) service that you use to publish reports, create new dashboards, and share insights.
- **PowerBI Mobile**:
  This is a mobile application that you can use to access your reports and dashboards on the go.

CHAPTER 3

PROJECT ARCHITECTURE

3.1 Architecture

1. **Data Collection**:
   Real-time customer data is collected from various sources like online transactions, customer interactions, etc. This could be achieved using services like Azure Event Hubs or AWS Kinesis.

2. **Data Storage**:
   The collected data is stored in a database for processing. Azure SQL Database or AWS RDS can be used for this purpose.

3. **Data Processing**:
   The stored data is processed in real-time using services like Azure Stream Analytics or AWS Kinesis Data Analytics.

4. **Machine Learning**:
   Predictive models are built based on processed data using Azure Machine Learning or AWS SageMaker. These models can help in predicting customer behavior, detecting fraud, etc.

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

6. **Data Access**:
   The dashboards created in PowerBI can be accessed through PowerBI Desktop, PowerBI Service (online), and PowerBI Mobile.

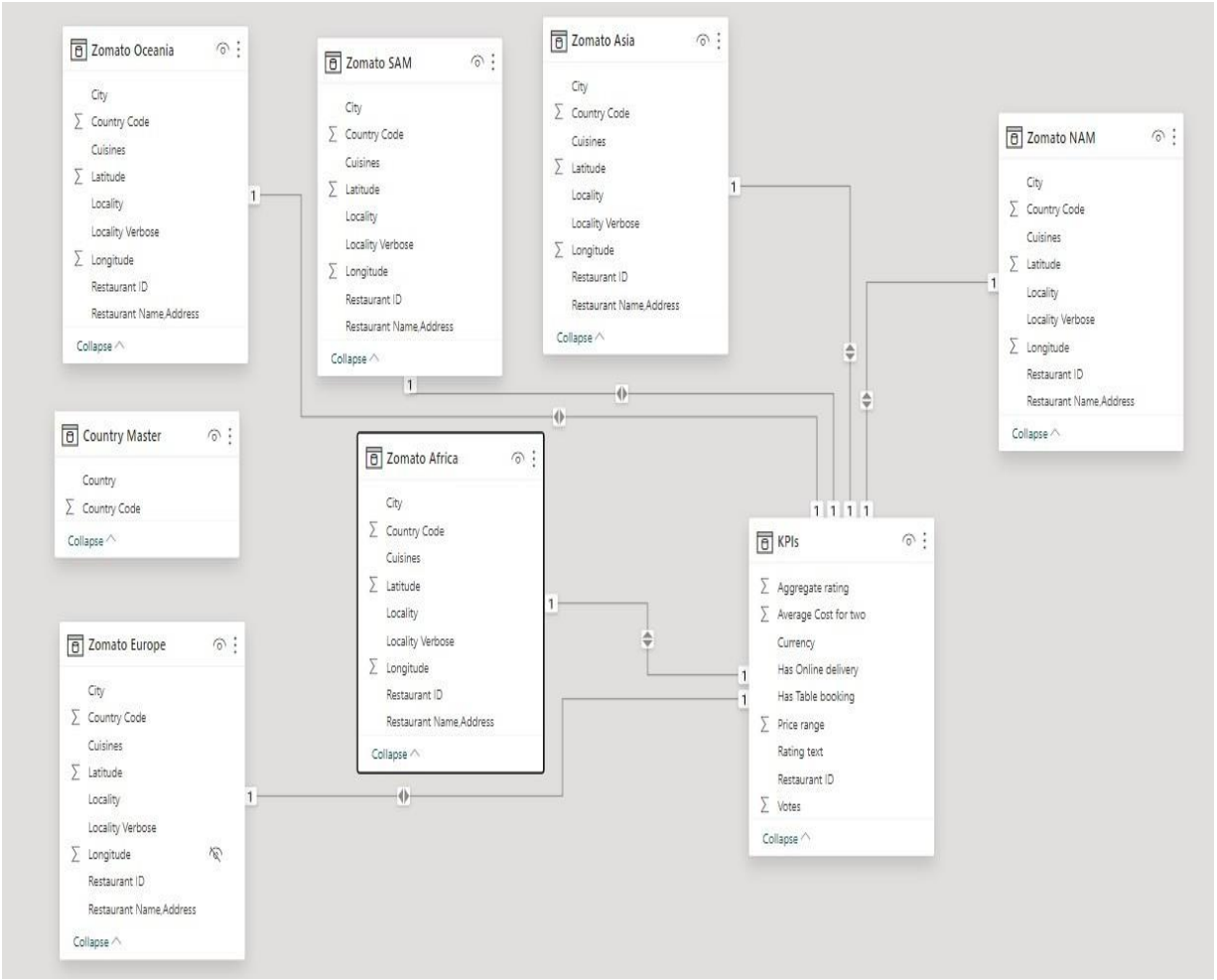
This architecture provides a comprehensive solution for real-time analysis of online customers. However, it's important to note that the specific architecture may vary depending on the online's existing infrastructure, specific requirements, and budget. It's also important to ensure that all tools and services comply with relevant data privacy and security regulations.

CHAPTER 4

MODELING AND RESULT

Manage relationship

You can effectively manage relationship and create a robust analytical framework for conducting a 360 degree business analysis of online delivery apps using Power BI. Adjust the specifies according to your data sources, business requirements and analysis objectives.



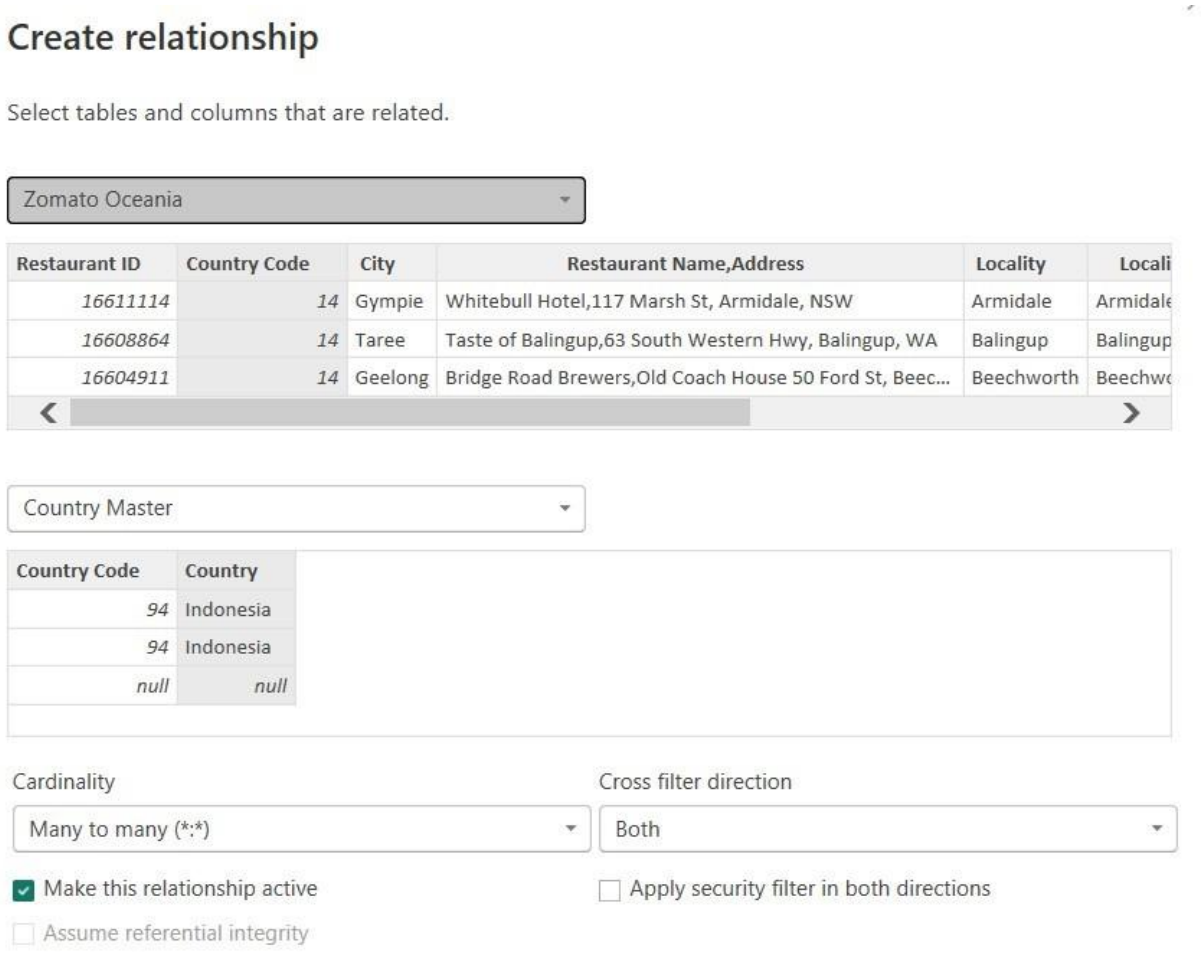
This is the manage relationship for the given data about business analysis of online delivery apps using Power BI.

Manage relationships

Active	From: Table (Column)	To: Table (Column)
☑	Zomato Africa (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato Asia (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato Europe (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato NAM (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato Oceania (Restaurant ID)	KPIs (Restaurant ID)
☑	Zomato SAM (Restaurant ID)	KPIs (Restaurant ID)

Create relationship

we create relationship between Zomato Oceania Country Master andby using Restaurant ID, Country Code, City, Restaurant Name, Address, Locality and etc.



It is a table transform column types by promoted Headers, Restaurant ID,Country Code, City, Restaurant Name, Address, Locality, Locality Verbose, Longitude, Latitude, cuisines.

```
= Table.TransformColumnTypes(#"Promoted Headers",{{"Restaurant ID", Int64.Type}, {"Country Code", Int64.Type},
    {"City", type text}, {"Restaurant Name,Address", type text}, {"Locality", type text}, {"Locality Verbose",
    type text}, {"Longitude", type number}, {"Latitude", type number}, {"Cuisines", type text}})
```

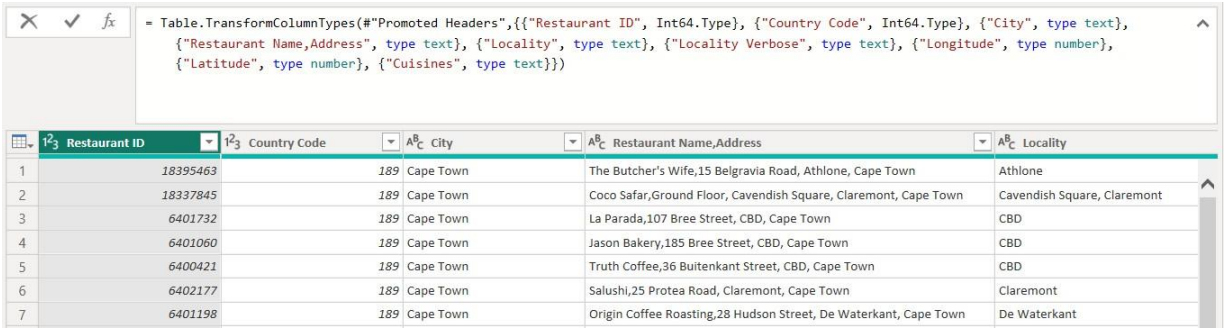
	Restaurant ID	Country Code	City	Restaurant Name,Address	Lo
1	16611114	14	Gympie	Whitebull Hotel,117 Marsh St, Armidale, NSW	Arn
2	16608864	14	Taree	Taste of Balingup,63 South Western Hwy, Balingup, WA	Bali
3	16604911	14	Geelong	Bridge Road Brewers,Old Coach House 50 Ford St, Beechworth, Beech...	Bee
4	16615894	14	Townsville	The Giggling Goat,14 Beerburrum St, Dicky Beach, QLD	Dicl
5	16612028	14	Launceston	The Belle General,12 Shelly Beach Rd, East Ballina, NSW	Eas

Here we removed columns and changed types for Restaurant ID, Country Code, City, Restaurant Name, Address.

```
= Table.RemoveColumns(#"Changed Type",{"Restaurant ID", "Country Code", "City", "Restaurant Name,Address"})
```

	Locality Verbose	Longitude	Latitude	Cuisines
1	Armidale, Armidale	151.6688792	-30.5147169	Bar Food, Steak
2	Balingup, Balingup	115.9844924	-33.7845269	Modern Australian
3	Beechworth, Beechworth	146.685852	-36.360439	Pizza, Bar Food
4	Dicky Beach, Dicky Beach	153.137401	-26.783576	Coffee and Tea, Tea, Modern Australian
5	East Ballina, East Ballina	153.593331	-28.862663	Cafe
6	Flaxton, Flaxton	152.8771473	-26.6521332	Tea, Modern Australian
7	Forrest, Forrest	143.714315	-38.517292	Cafe, Australian
8	Hepburn Springs, Hepburn Springs	144.1387014	-37.3123267	Cafe, Coffee and Tea, Modern Australian
9	Hepburn Springs, Hepburn Springs	144.110062	-37.275494	Italian, Fusion, Cafe
10	Huskisson, Huskisson	150.6710743	-35.0388698	Breakfast, Modern Australian

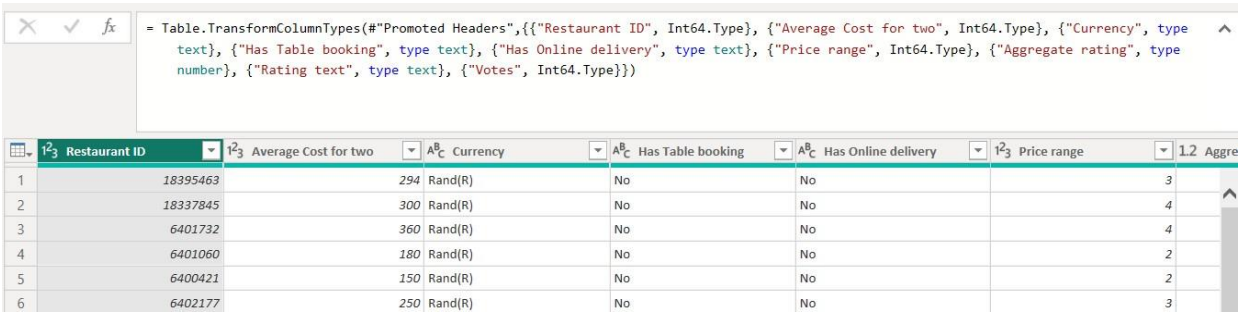
It is a table transform column types by promoted Headers, Restaurant ID,Country Code, City, Restaurant Name, Address, Locality, Locality Verbose, Longitude, Latitude, cuisines.



```
= Table.TransformColumnTypes(#"Promoted Headers",{{"Restaurant ID", Int64.Type}, {"Country Code", Int64.Type}, {"City", type text},
    {"Restaurant Name,Address", type text}, {"Locality", type text}, {"Locality Verbose", type text}, {"Longitude", type number},
    {"Latitude", type number}, {"Cuisines", type text}})
```

	Restaurant ID	Country Code	City	Restaurant Name,Address	Locality
1	18395463	189	Cape Town	The Butcher's Wife,15 Belgravia Road, Athlone, Cape Town	Athlone
2	18337845	189	Cape Town	Coco Safar,Ground Floor, Cavendish Square, Claremont, Cape Town	Cavendish Square, Claremont
3	6401732	189	Cape Town	La Parada,107 Bree Street, CBD, Cape Town	CBD
4	6401060	189	Cape Town	Jason Bakery,185 Bree Street, CBD, Cape Town	CBD
5	6400421	189	Cape Town	Truth Coffee,36 Buitenkant Street, CBD, Cape Town	CBD
6	6402177	189	Cape Town	Salushi,25 Protea Road, Claremont, Cape Town	Claremont
7	6401198	189	Cape Town	Origin Coffee Roasting,28 Hudson Street, De Waterkant, Cape Town	De Waterkant

It is a table transform column types by Restaurant ID, Average cost for two currency, Has table booking, Has online delivery, Price Range, Aggregation Rating, Rting Text, Votes.

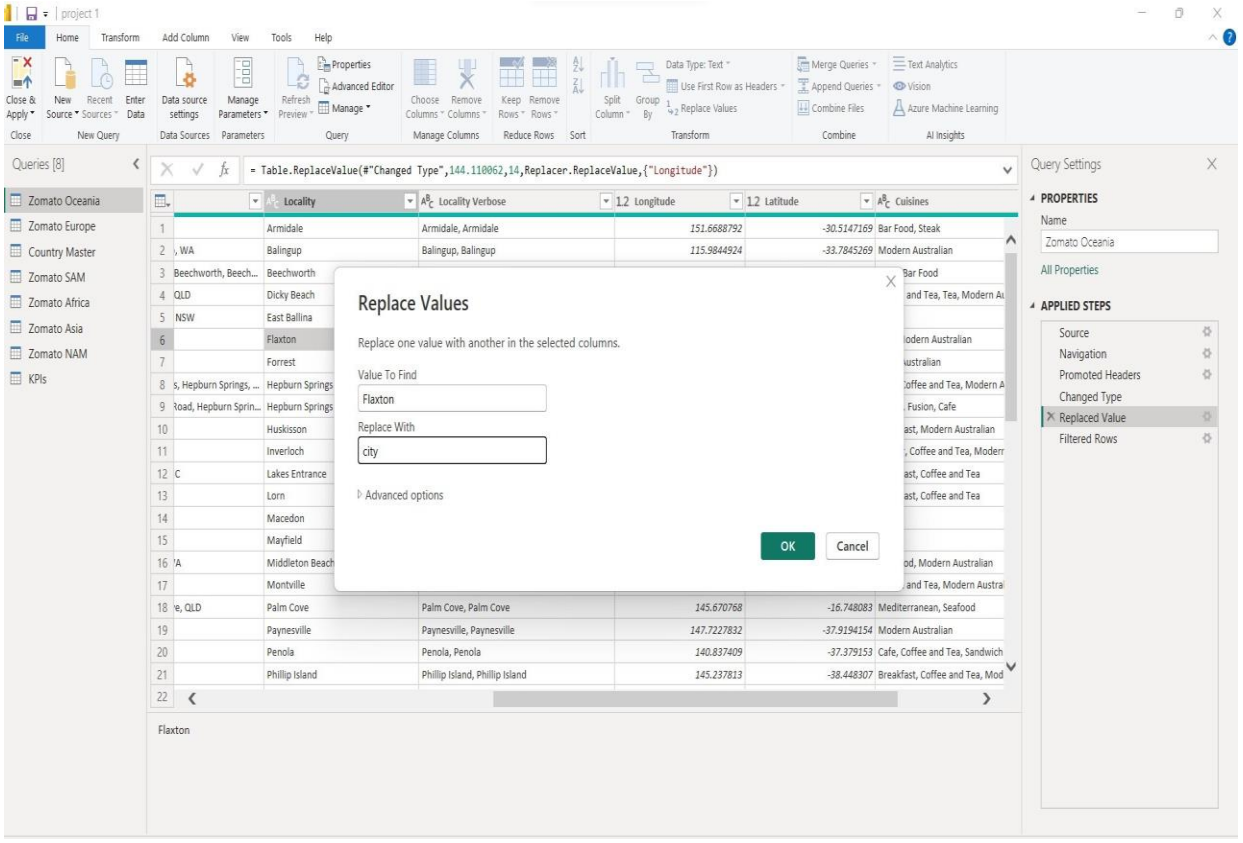


```
= Table.TransformColumnTypes(#"Promoted Headers",{{"Restaurant ID", Int64.Type}, {"Average Cost for two", Int64.Type}, {"Currency", type
    text}, {"Has Table booking", type text}, {"Has Online delivery", type text}, {"Price range", Int64.Type}, {"Aggregate rating", type
    number}, {"Rating text", type text}, {"Votes", Int64.Type}})
```

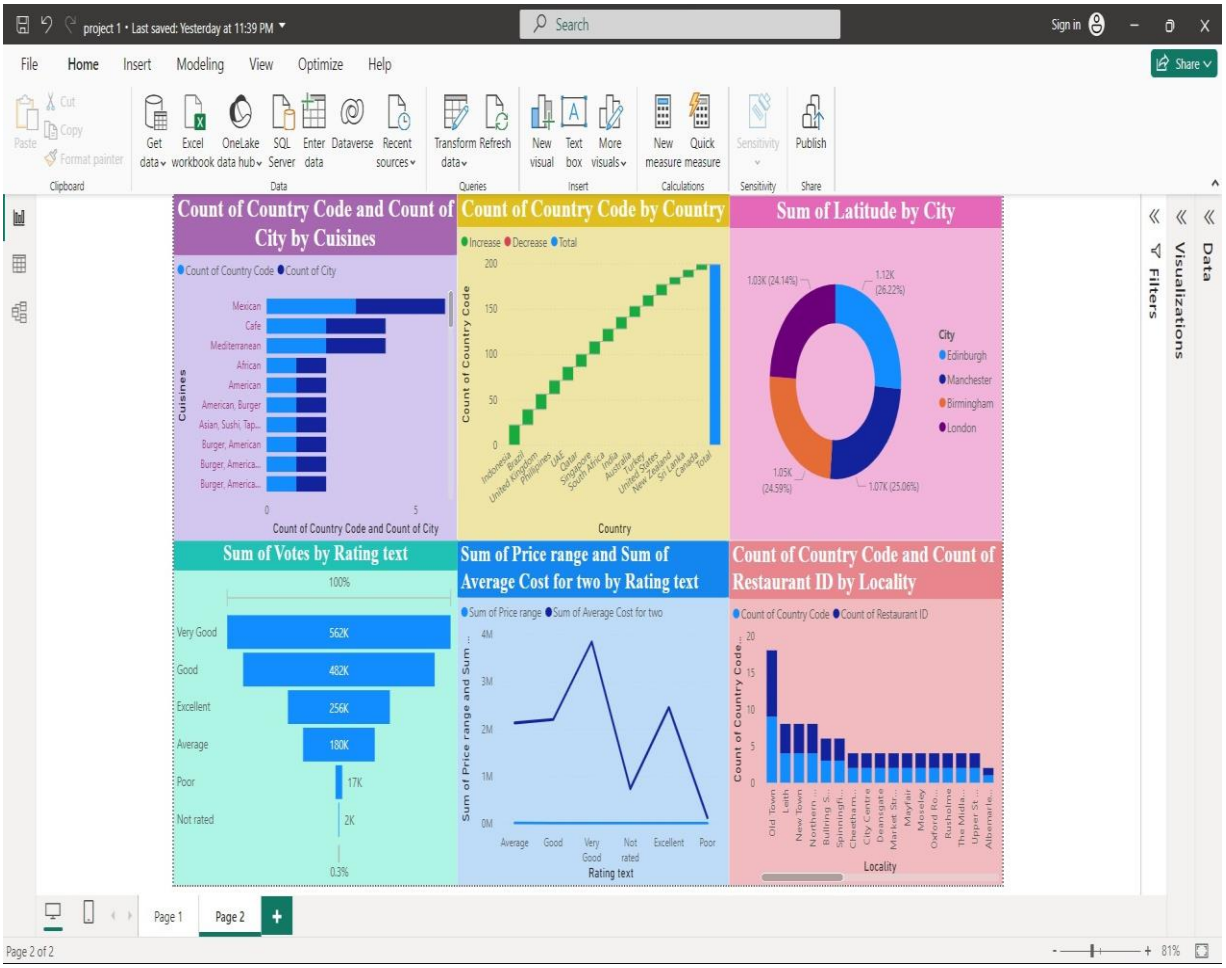
	Restaurant ID	Average Cost for two	Currency	Has Table booking	Has Online delivery	Price range	Aggre
1	18395463	294	Rand(R)	No	No	3	
2	18337845	300	Rand(R)	No	No	4	
3	6401732	360	Rand(R)	No	No	4	
4	6401060	180	Rand(R)	No	No	2	
5	6400421	150	Rand(R)	No	No	2	
6	6402177	250	Rand(R)	No	No	3	

Replacing values

Here we replace values by replacing one value with another in the selected columns.Typing Flaxton in values to find and city in replace with boxes.



Dashboard



CONCLUSION

After conducting a comprehensive 360-degree analysis of the online delivery app, it's evident that it holds immense potential in the current market landscape. With its ability to streamline ordering processes, enhance customer convenience, and facilitate efficient delivery services, the online delivery app serves as a crucial tool for businesses aiming to thrive in the digital age.Through leveraging data analytics, optimizing user experience,and implementing robust delivery logistics, businesses can maximize their operational efficiency and drive growth. By addressing these challenges proactively and capitalizing on emerging trends, businesses can position themselves for sustained success in the dynamic online delivery ecosystem.

FUTURE SCOPE

The future scope of this project is vast. With the advent of advanced analytics and machine learning, PowerBI can be leveraged to predict future trends based on historical data. Integrating these predictive analytics into the project could enable the online delivery apps to anticipate customer needs and proactively offer solutions. Furthermore, PowerBI's capability to integrate with various data sources opens up the possibility of incorporating more diverse datasets for a more holistic view of customers. As data privacy and security become increasingly important, future iterations of this project should focus on implementing robust data governance strategies. This would ensure the secure handling of sensitive customer data while complying with data protection regulations. Additionally, the project could explore the integration of real-time data streams to provide even more timely and relevant insights.

REFERENCES

https://medium.com/@dk870738/360-degree-business-analysis-of-zomato-using-power-bi-4e99c6e49dc9

LINK

