INTRODUCTION

❖ INTRODUCTION :

❖ OVERVIEW OF POWER BI :

Power BI is an interactive data visualization and business analytics tool developed by Microsoft. It empowers users to connect to various data sources, clean and transform data using Power Query,and create visually rich and insightful reports and dashboards. Power BI is a part of Microsoft's Power Platform and is designed to enable organizations to make data-driven decisions quickly and efficiently.

❖ PURPOSE OF REAL-TIME SWIGGY VS ZOMATO ANALYTICS :

The purpose is to design an interactive and insightful business intelligence dashboard using Power BI that analyzes and compares key operational metrics of two leading food delivery platforms **Swiggy and Zomato**.

➨ This initiative aims to:

- **Visualize large volumes of user and restaurant data** from both platforms in a simplified, accessible manner.
- **Compare customer behavior, sales performance, and cuisine preferences** across different cities and demographics.
- **Provide decision-makers with actionable insights** to improve marketing strategies, customer targeting, and operational efficiency.
- **Enable real-time data exploration** using slicers and filters to drill down into specific insights (e.g., gender-wise trends, city-based ratings, yearly sales).
- **Support data-driven strategy development** for stakeholders in the food delivery industry.

FEATURES

❖ FEATURES :

❖ KEY FETURES OF POWER BI :

- Seamless integration with over 100+ data sources.
- Ability to build over 280 visuals and charts.
- Allows users to create dashboards, reports, and KPI indicators.
- Easy to embed visual reports in apps and websites.
- Real-time data updates and scheduled refreshes.
- Affordable pricing at $10 per month for professional use.
- Highly interactive visuals with drill-down and slicer capabilities.

❖ PROJECT FETURES - REAL-TIME SWIGGY VS ZOMATO ANALYTICS :

- **Interactive City-Based Comparison:** Compare restaurant data for different cities across Swiggy and Zomato using dropdown slicers.
- **Cuisine Popularity Analytics:** Donut charts to visualize the most popular cuisines by platform.
- **Top Restaurants by Votes:** Bar graphs showing top-voted restaurants on both platforms.
- **Price vs Rating Analysis:** Line + area charts showing how restaurant price ranges correlate with ratings and votes.

- **Global Restaurant Distribution**: World map visuals displaying restaurant density and ratings across cities globally.

- **Swiggy & Zomato Restaurant Count Tracker:** KPIs for total restaurant count comparison.

- **Detailed Table View**: Tables to show restaurant details, cuisine, city, average ratings, and votes.

- **Responsive Filtering**: All visuals respond to slicer filters, enabling deep dives by city or cuisine.

- **Custom Branding**: Dashboard uses brand colors and logos of Swiggy and Zomato for identity and visual appeal.

- **Performance Monitoring Feature**: Designed to help identify high-performing restaurants and plan marketing strategies.

TOOLS FOR IMPLEMENTATION

❖ TOOLS FOR IMPLEMENTATION :

- You can build interactive dashboards using various tools, including:

- **Power BI Desktop :** For designing and creating rich, interactive data visualizations**.**
- **Power Query Editor:** Used for cleaning, transforming, and merging datasets before analysis.
- **DAX (Data Analysis Expressions):** For writing custom measures, calculated columns, and advanced analytics.
- **Excel / CSV Files (Data Sources):** Used to import restaurant and customer data from Swiggy and Zomato.
- These tools provide powerful capabilities for building dynamic, real-time dashboards that support business decision-making, user behavior analysis, and performance monitoring.

BENEFITS
OF
TOOLS USED

❖ BENEFITS OF TOOLS USED :

➔ Power BI :

- ➔ Offers a user-friendly interface for building interactive dashboards.
- ➔ Allows real-time data connection and automatic refresh.
- ➔ Supports powerful visuals like bar charts, slicers, cards, and custom visuals.
- ➔ Enables publishing dashboards to the web and sharing with stakeholders.

➔ Power Query :

- ➔ Simplifies data cleaning and transformation with a step-by-step editor.
- ➔ Supports merging, appending, filtering, and shaping data without coding.
- ➔ Speeds up the ETL (Extract, Transform, Load) process before visualizing.

➔ DAX (Data Analysis Expressions):

- ➔ Enables creation of dynamic calculations and KPIs like averages, percentages, YOY growth, etc.
- ➔ Helps build custom logic for measures and calculated columns.
- ➔ Adds flexibility and depth to visual insights.

➔ Microsoft Excel:

- ➔ Acts as the base source for structured datasets.
- ➔ Allows data pre-processing and manual editing before importing into Power BI.
- ➔ Useful for quick data audits and initial formatting.

DATA COLLECTION AND PREPARATION

❖ DATA COLLECTION AND PREPARATION :

❖ PURPOSE

To describe how the data was gathered, cleaned, and structured before being used in Power BI for analysis and visualization**.**

❖ DATASET :

- **Users Dataset:**
- **Purpose:** Provides user demographic information.
- **Usage in Dashboard:** Helps segment users and analyze behaviors by gender, age group, and occupation.

- **Orders Dataset:**
- **Purpose:** Central table capturing all transaction-level data.
- **Usage in Dashboard:** Tracks overall sales, order frequency, city-wise trends, and year-wise comparison.

- **Restaurant Dataset:**
- **Purpose:** Stores restaurant-specific information.
- **Usage in Dashboard**: Identifies top-performing restaurants, rating trends, and cuisine analysis.

➡ **Menu Dataset:**

➡ **Purpose:** Contains menu items and pricing details.

➡ **Usage in Dashboard:** Supports food type popularity, price-based filtering, and value analysis.

❖ DATA PREPARATION PROCESS :

➡ Cleaned nulls, duplicates, and inconsistencies.

➡ Merged tables via relationships (User ID, Restaurant ID).

➡ Created calculated columns and measures using DAX.

➡ Applied filters and slicers for dynamic visual interactivity.

SYSTEM ARCHITECTURE AND FLOW

❖ SYSTEM ARCHITECTURE AND FLOW :

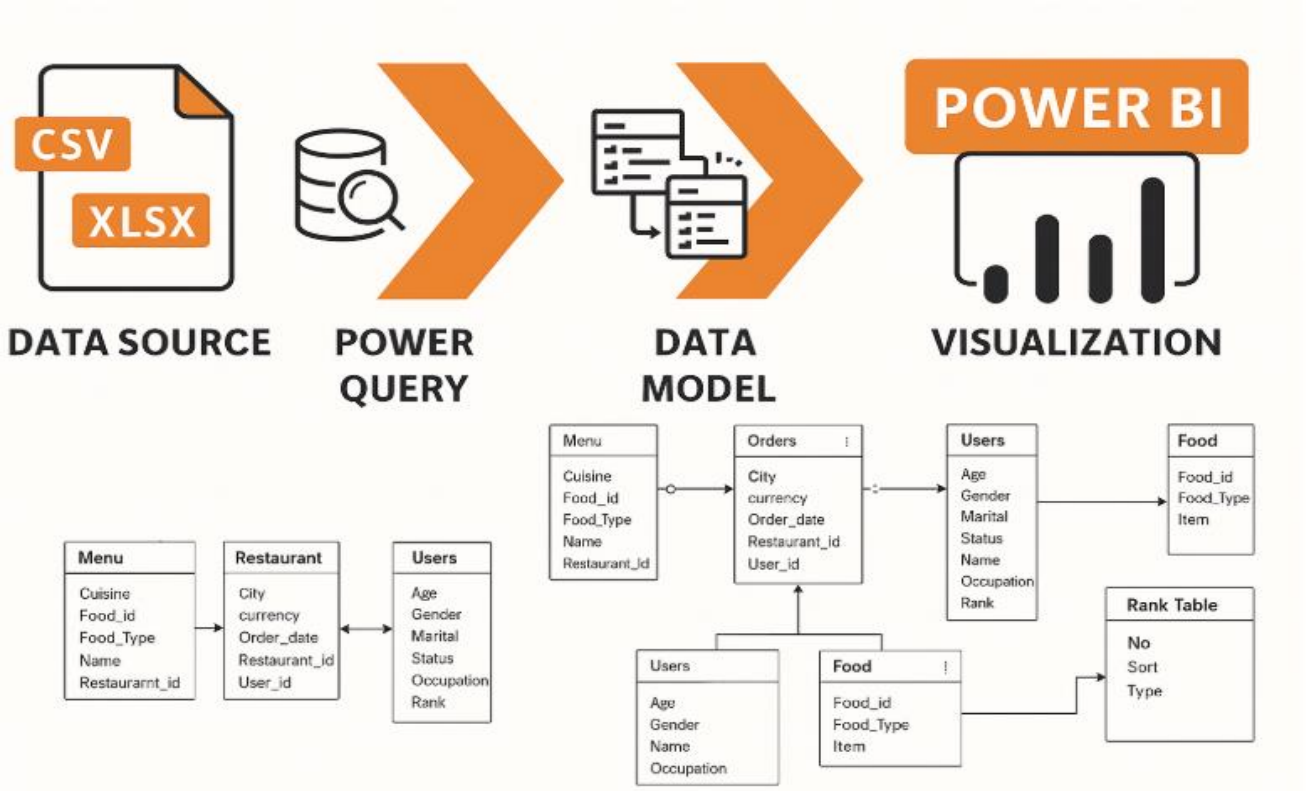
➨ KEY POINTS :

➨ DATA SOURCE

➨ POWER QUERY(DATA TRANSFORMATION)

➨ DATA MODEL

➨ VISUALIZATION(REPORT BUILDING)



➨ DATA SOURCE :

This is the starting point where raw data comes from files — like Excel or CSV. These files contain various details such as user information, restaurant menus,orders, etc.

➥ **Purpose:** Get data from outside sources into Power BI.

➥ **POWER QUERY(DATA TRANSFORMATION) :**

Once the data is loaded, Power BI uses Power Query Editor to clean, filter, and format the data. Here you might:

- Remove blank rows/columns
- Change column names
- Convert data types
- Filter unnecessary data

➥ **Purpose:** Prepare the data for building relationships and analysis.

➥ **DATA MODELING :**

In this step, create relationships between different tables. It's like building a map that helps Power BI understand how your data is connected.

- define which column in one table matches with another
- set data types and hierarchies
- Optionally, add calculated fields and DAX measures

➥ **Purpose**: Build a smart, connected data structure that makes analysis easy.

➥ **VISUALIZATION(REPORT BUILDING) :**

- Slice and dice data by user type, city, food, etc.
- Create KPIs like total orders, top items, or user rankings
- Use slicers and filters for dynamic reports

➥ **Purpose**: Convert data into meaningful, visual insights for decision-making.

❖ This structured workflow ensures that every part of the analytics journey—from raw

data to final dashboard—is optimized for clarity, interactivity, and decision-making.

USER INTERFACE & EXPERIENCE DESIGN

❖ USER INTERFACE & EXPERIENCE DESIGN :

❖ DASHBOARD DESIGN APPROACH :

- Clean layout with well-aligned visuals.
- Consistent font styles and theme colors (Swiggy – Orange, Zomato – Red).
- Strategic placement of KPIs, slicers, and charts for quick insight delivery.
- Responsive filtering across visuals for intuitive interaction.

❖ UX COMPONENTS & BENEFITS :

UI Component	UX Benefit
Clean slicers & visuals	Easy filtering and better user control over data views
Dynamic visuals	Provides personalized insights based on user selections
Drill-down options	Allows in-depth exploration of key metrics
Consistent color usage	Improves brand recognition and creates a visually coherent layout
Interactive KPI Cards	Enables quick access to key performance indicators
Tabs/Bookmarks	Simplifies navigation between sections of the dashboard
Hover tooltips	Provides instant data insights without cluttering visuals
Responsive layout	Ensures compatibility with various screen sizes
Data labels on hover	Reduces overcrowding while retaining detailed information
Hierarchical filtering	Helps in step-by-step data analysis for better user understanding
Icons & logos	Enhances visual branding and platform identity
Smooth transitions/animations	Improves flow and makes dashboard feel modern and engaging

ADVANTAGES

❖ ADVANTAGES :

Section	Key Advantages
Swiggy Data Overview Panel	Offers a high-level summary of Swiggy's operational metrics like order volume, sales trends, and cuisine popularity – perfect for executives and managers.
User Performance Analysis	Provides detailed gender-wise and year-wise filtering to study customer behavior patterns, purchase preferences, and demographic impact.
City-Wise Insight View	Highlights performance trends across cities, supported by interactive maps, helping identify key regions of growth or decline.
Swiggy vs Zomato Analytics	Enables side-by-side comparison of both platforms across multiple metrics like restaurant count, user feedback, and order volume.
Comprehensive Raw Data View	Offers complete transparency with tabular view, map filters, and total counts – helpful for audits, deep analysis, and validation.

❖ ADVANTAGES OF POWER BI:

- **Real-Time Analysis**: Automatically refreshes data to keep insights up to date.
- **Interactive Visualizations**: Offers slicers, drill-throughs, tooltips, and responsive visuals.
- **Custom Reports**: Allows for highly tailored dashboards using DAX, Power Query, and visual themes.
- **Cross-Platform Sharing**: Easily share reports across mobile, desktop, or web.
- **Data Modeling**: Supports complex relationships and calculated fields without code.

- **Scalability**: Works with small datasets or large enterprise data warehouses alike.

TECHNICAL IMPLEMENTATION

❖ TECHNICAL IMPLEMENTATION :

➡ DAX QUERIES IMPLEMENTED :

```
1 Dynamic Title Top Sales = var selectrank = SELECTEDVALUE('Rank Table'[Type]) var selecttype = SELECTEDVALUE(Orders[Type]) RETURN selectrank&"
  City "&selecttype
```

This DAX measure is designed to generate a dynamic title based on the current slicer or filter selections from the report. It combines two selected values — one from a custom Rank Table and another from the Orders table.

❖ EXPLANATION OF COMPONENTS:

- SELECTEDVALUE('Rank Table'[Type])
  → Retrieves the currently selected ranking type (e.g., "Top", "Bottom") from a slicer or visual filter.

- SELECTEDVALUE(Orders[Type])
  → Retrieves the currently selected **Order Type** (e.g., "Delivery", "Pickup", etc.).

- RETURN selectrank & " City " & selecttype
  → Concatenates both selected values into a string like:
  "Top City Delivery"
  "Bottom City Pickup"

```
Rank Table = DATATABLE("Sort",INTEGER,"Type",STRING,"No",INTEGER,{{0,"Default",0},{1,"Top 5",5},{2,"Top 10",10},{3,"Top 20",20},{4,"Top 30",30},
{5,"Top 100",100}})
```

- Type: Calculated Table
- Creates a static table with rank categories like Top 5, Top 10, etc., used for dynamic filtering in visuals through slicers. Helps display top-performing records based on user selection.

❖ USE OF PIVOT COLUMNS IN POWER QUERY :

- Pivot columns were used in Power Query to transform row-level category data (like food type or platform) into separate columns for better aggregation and analysis.

- This technique helps simplify complex data by converting repeated values in rows into headers, enabling cleaner visualizations and easier comparisons (e.g., Swiggy vs Zomato, Veg vs Non-Veg).

❖ USE OF POWER QUERY:

Power Query was used for data cleaning and shaping tasks such as:

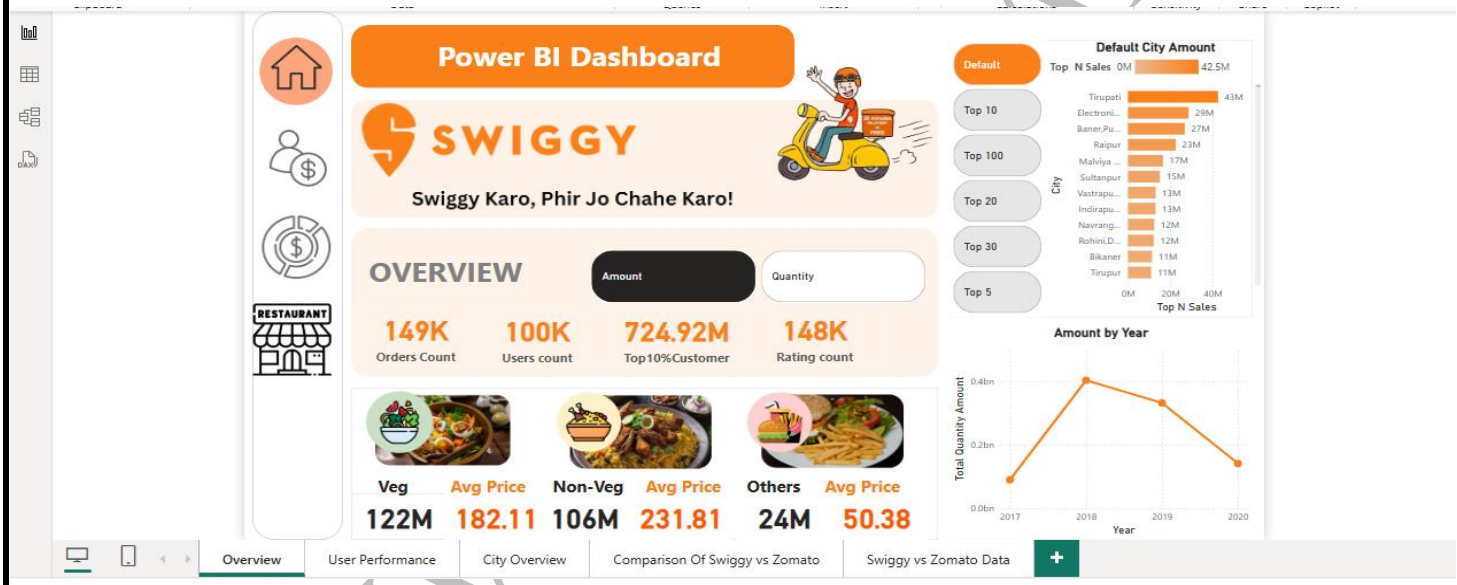
- Removing duplicates and null values
- Renaming and formatting columns
- Merging datasets (e.g., Users with Orders)
- Creating calculated columns
- Applying pivot/unpivot transformations

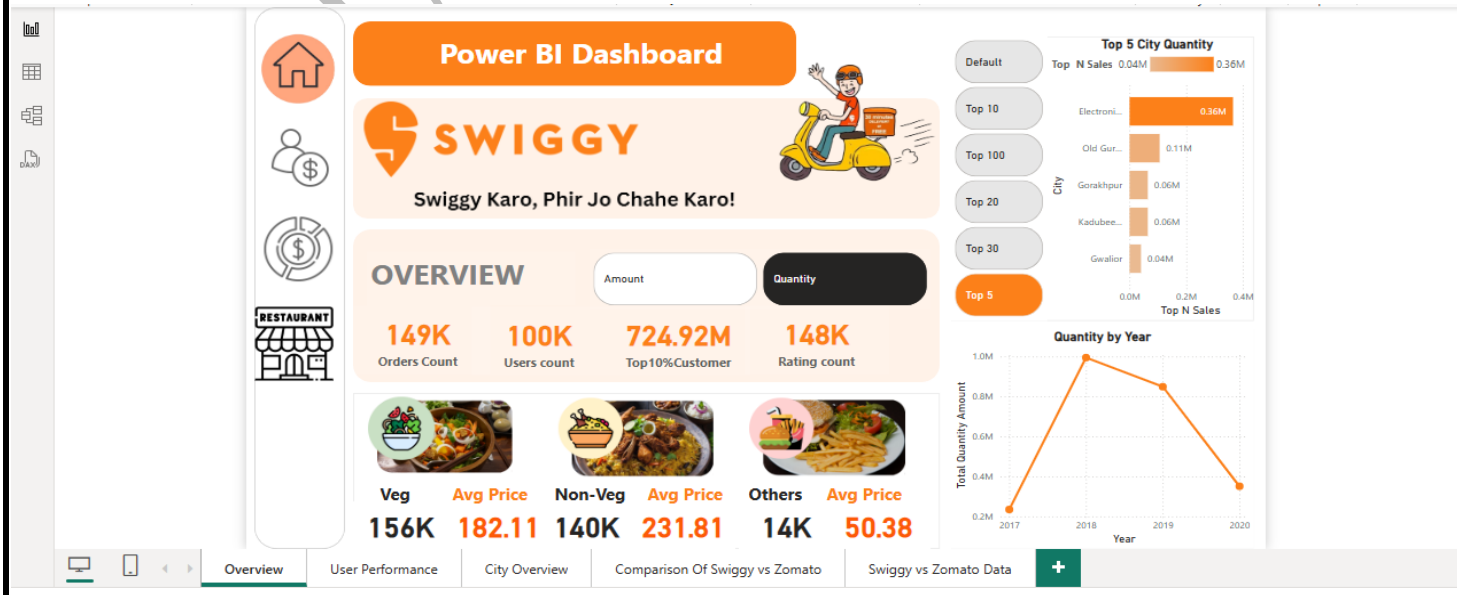
OUTPUT

❖ OUTPUT :

❖ SWIGGY DATA OVERVIEW :

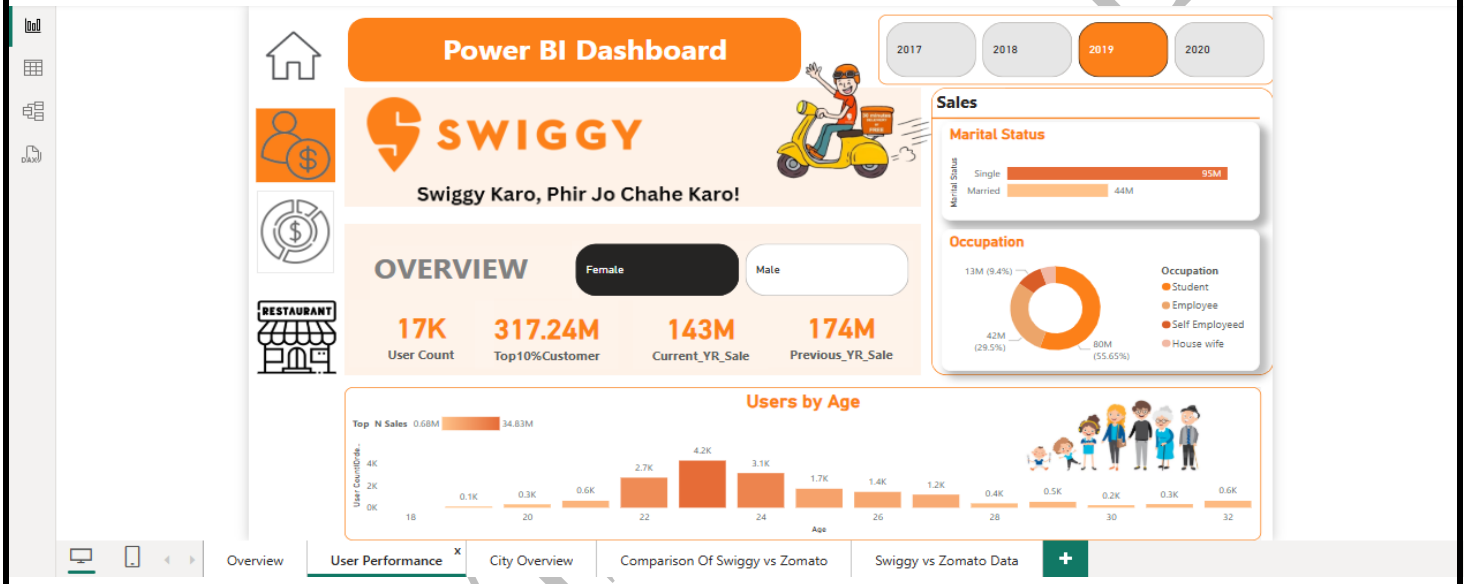
This dashboard provides a comprehensive overview of Swiggy's operations including total orders, user count, top 10% customer contributions, and ratings. It also showcases quantity and amount-wise data split across Veg, Non-Veg, and Other food categories. Users can toggle between **Amount** and **Quantity** views, and analyze **year-wise trends** in total quantity.

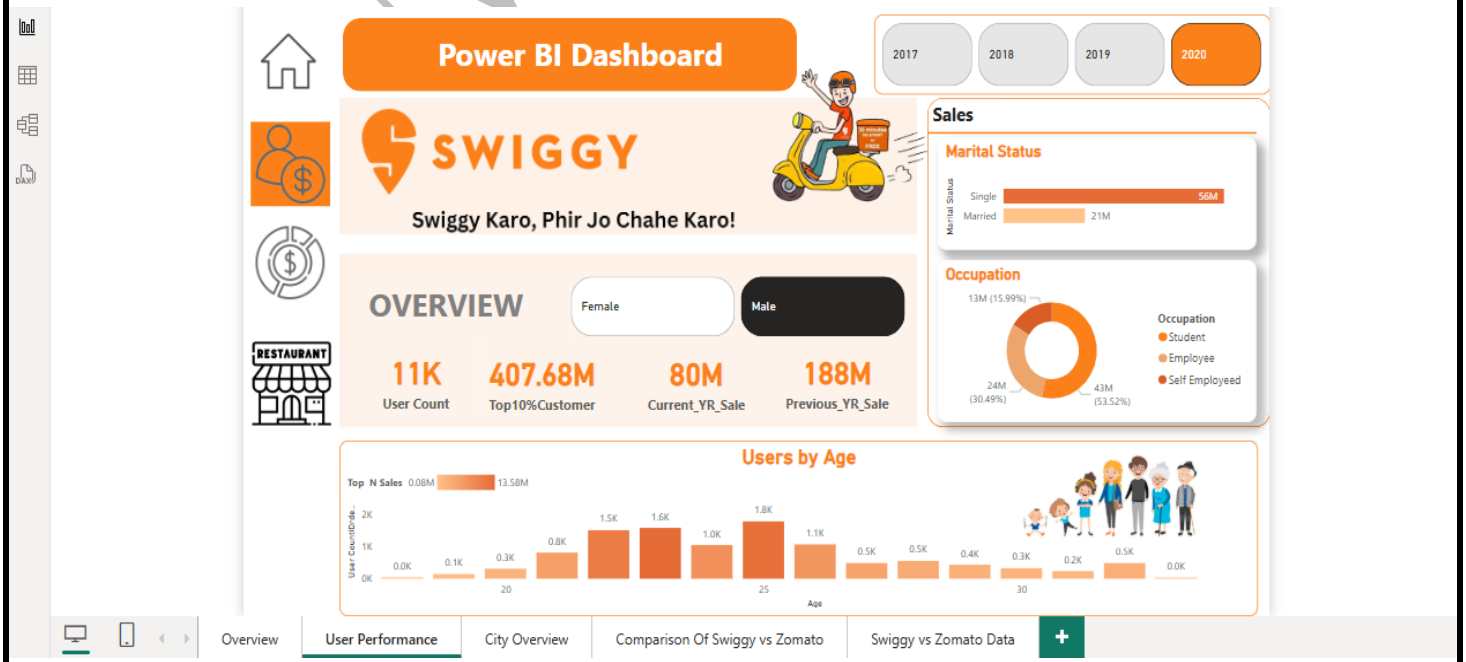




❖ USER PERFORMANCE :

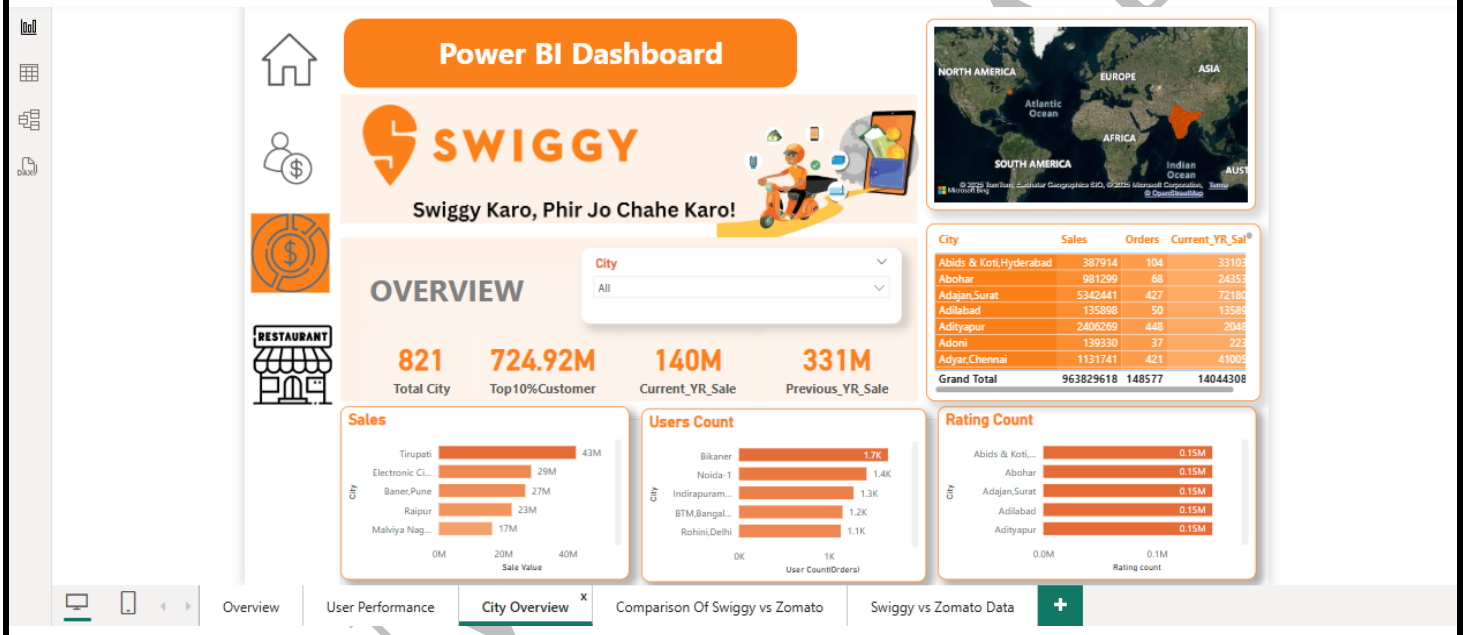
Focuses on the performance of Swiggy users segmented by gender (Male/Female) and year. It includes key metrics such as the number of orders, average spending, user engagement, and ratings. Filters allow for analyzing behavioral patterns based on gender differences and tracking how user activity evolves year by year. This helps identify demographic trends and make data-driven marketing decisions.

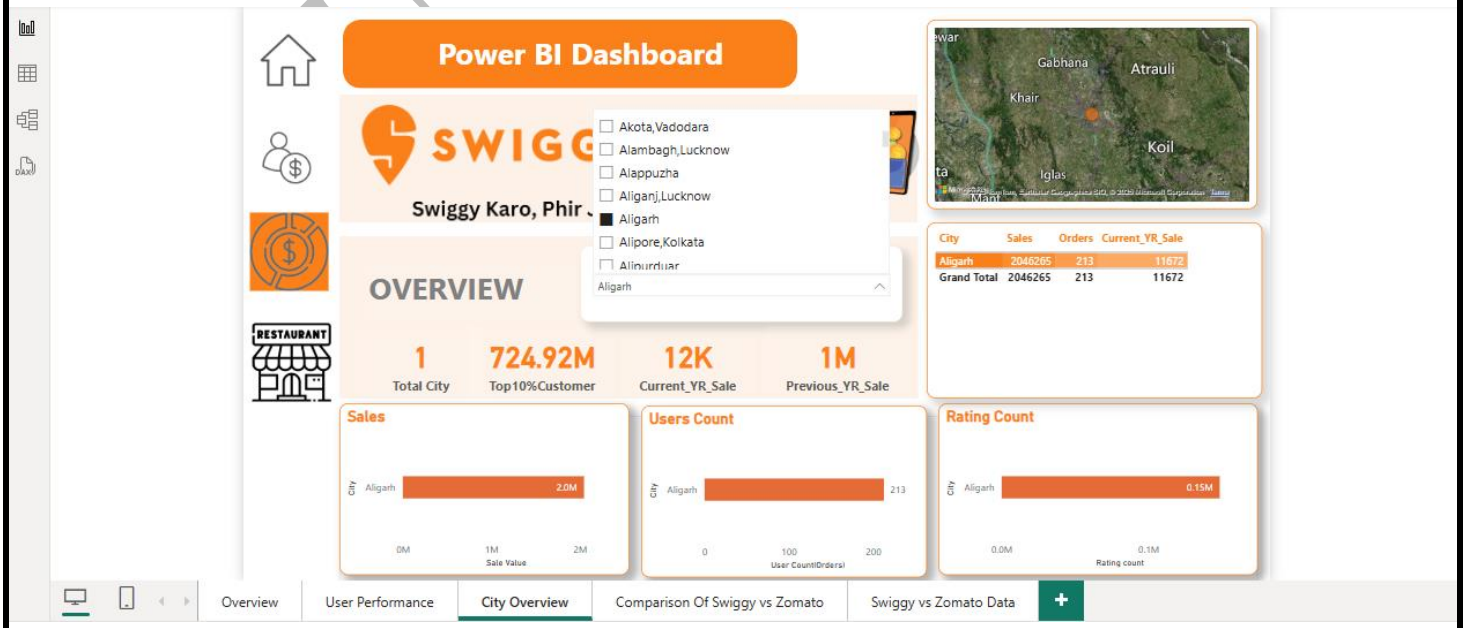




❖ CITY-WISE PERFORMANCE :

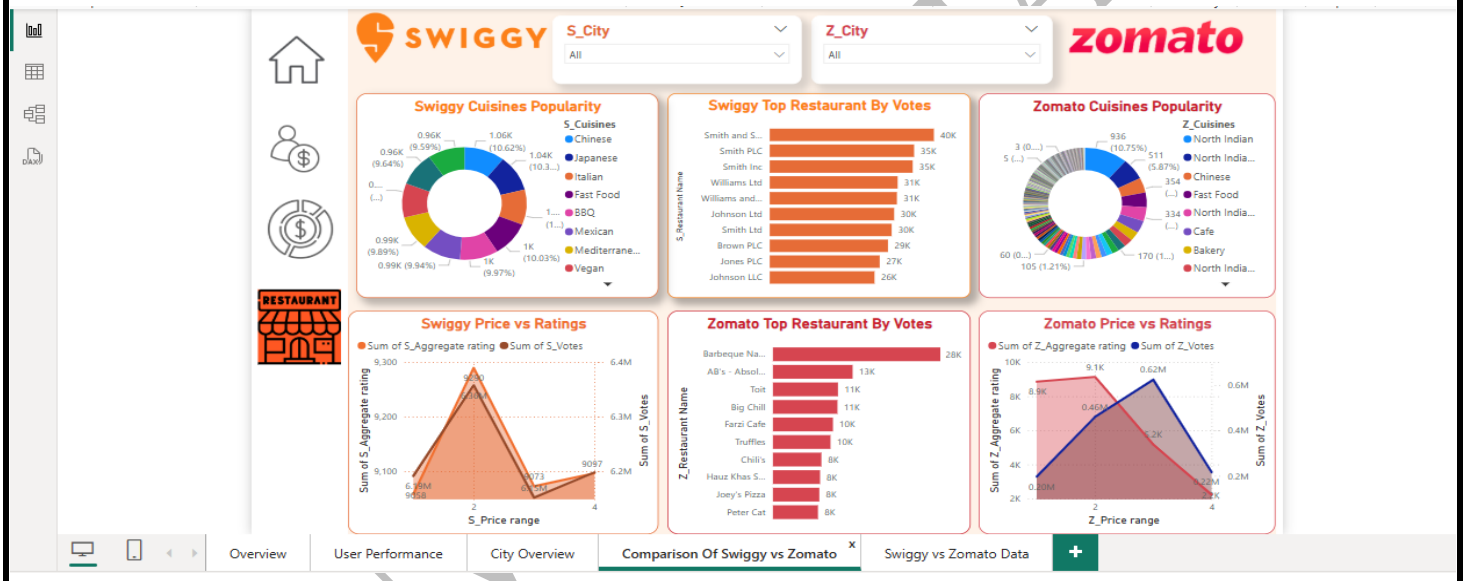
This dashboard provides a comprehensive analysis of Swiggy's performance across various cities. It includes city-wise filters and an interactive map to visually explore key metrics such as total sales, number of orders, user counts, and average pricing. The map enhances geographic insights by allowing quick identification of high-performing and low-performing cities. This helps in understanding regional trends and optimizing city-specific strategies.

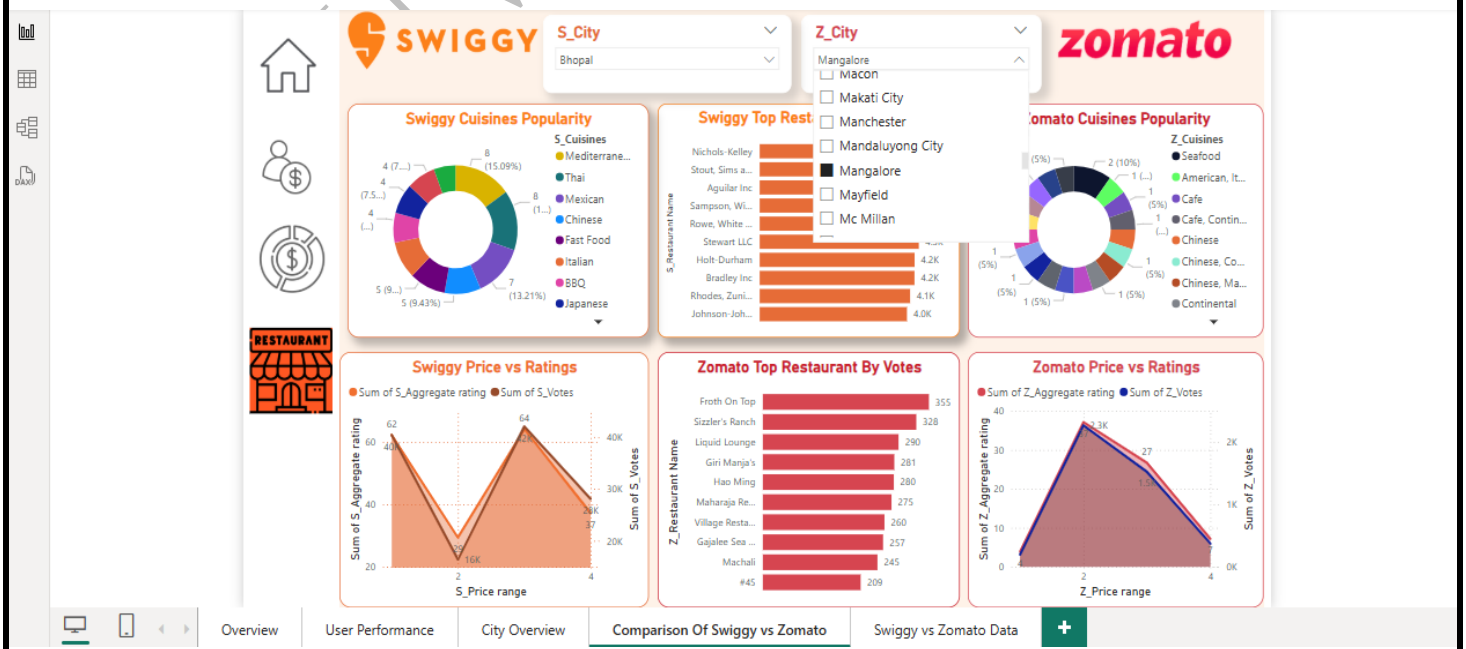




❖ SWIGGY VS ZOMATO COMPARISON :

This dashboard enables a side-by-side comparison of key performance indicators for Swiggy and Zomato. It includes city-wise filters to compare metrics such as total orders, average ratings, number of restaurants, and user engagement across different locations. Users can explore how each platform performs in various cities through interactive visuals and slicers, making it easier to identify competitive strengths and opportunities in specific regions.



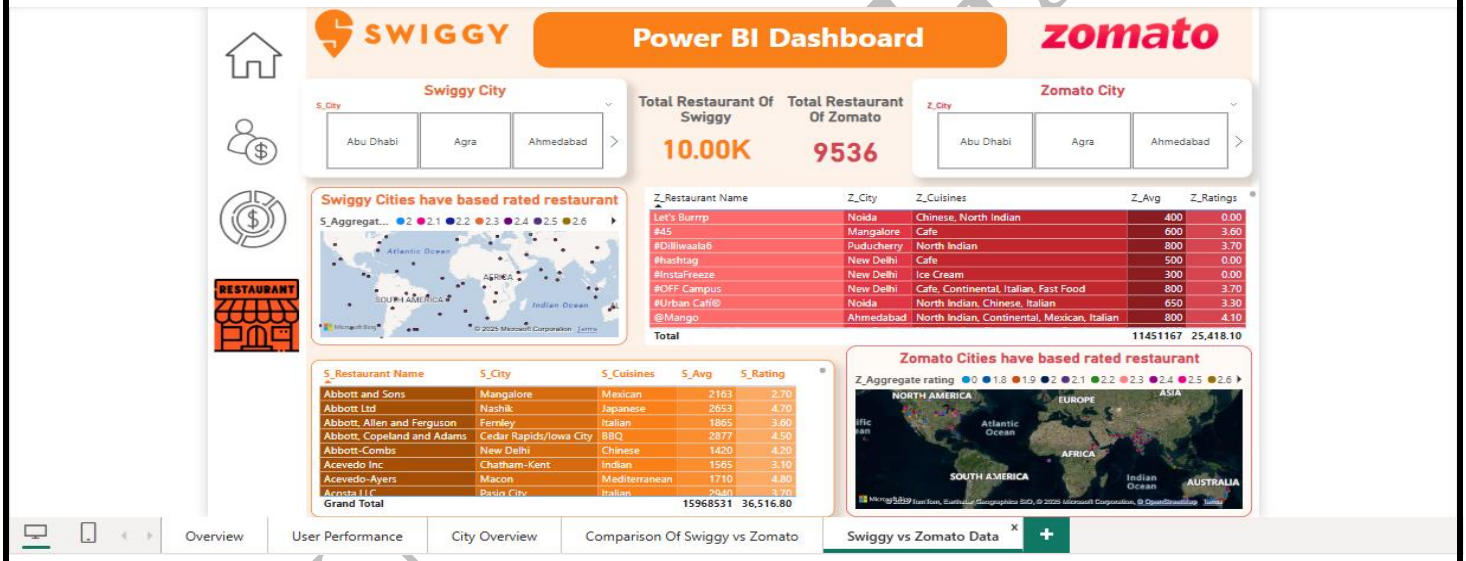


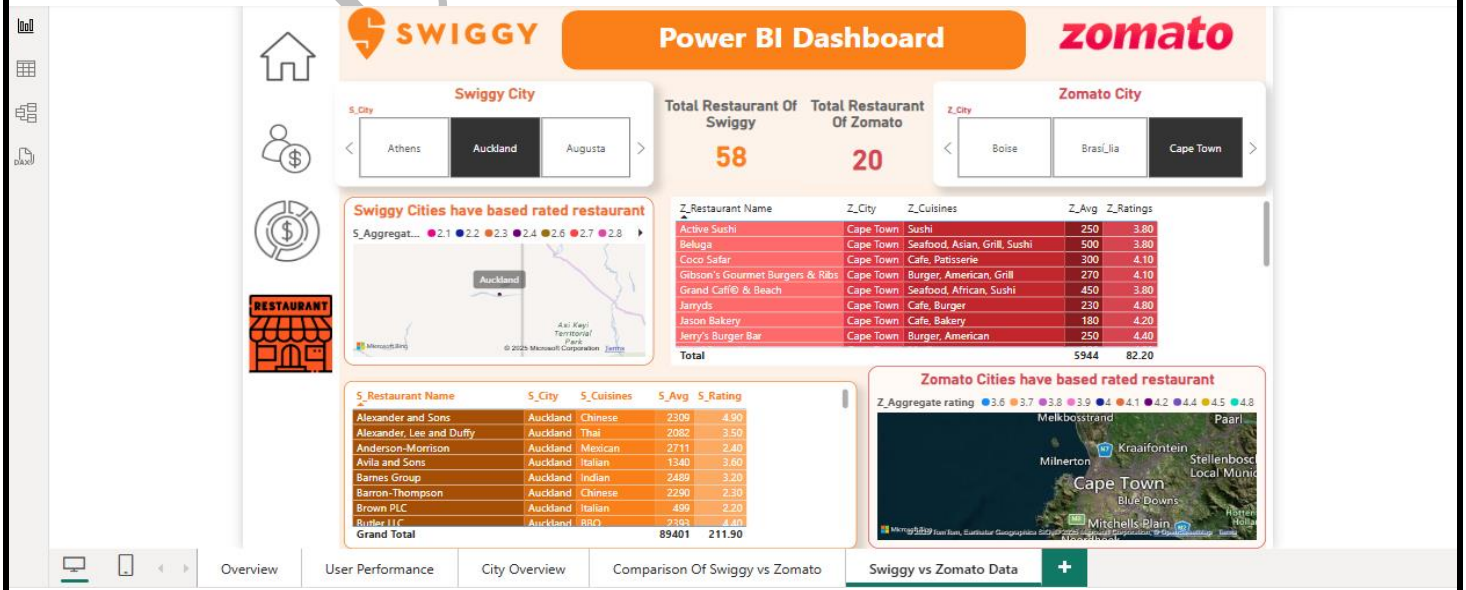
❖ SWIGGY VS ZOMATO RAW DATA :

This dashboard presents the complete underlying dataset in a tabular format, allowing users to view detailed information about restaurants, locations, ratings, cuisine, and platform-wiseperformance.

It includes:

- Map-based filters to explore data geographically
- City-wise and platform-wise count metrics
- Interactive slicers for filtering data by year, city, or cuisine





CONCLUSION

❖ CONCLUSION :

The *Real-Time Swiggy vs Zomato Analytics* project effectively showcases how Power BI can be used to transform raw data into interactive and insightful dashboards. By analyzing user behavior, city-wise trends, and comparing key performance metrics of Swiggy and Zomato, the project provides a clear and visual understanding of platform performance.

With real-time filtering, drill-down capabilities, and map-based insights, stakeholders can make data-driven decisions efficiently. Overall, this seminar highlights the power of business intelligence tools like Power BI in simplifying complex data and supporting strategic analysis in the food delivery industry.

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&
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