Tech Saksham

Case study report

Data Analytics with Power BI

“360-degree Business Analysis of Online Delivery Apps using Powe BI”

“A.P.C. MAHALAMI COLLEGE FOR WOMEN”

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ABSTRACT

A Food delivery app is a restaurant takeout or online delivery app that effectively & efficiently connects the restaurant with customers, convenience stores, and much more. It provides a much easier way for customers to order food and get it delivered to their doorsteps. It improves the brand's goodwill, provides a win-win situation, builds reliability, better customer engagement, etc. This system will allow hotels and restaurants to increase online food ordering for such a type of business. This case study also includes "satisfaction of consumers by using online food delivery apps". It will deal with consumer behavior & helps to analyze their perception & will also help us to understand consumer equilibrium. Through these platforms, sharing one's experience with others has become so easy, in the form of reviews, be it regarding a product brought or any kind of service availed.

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CHAPTER 1

INTRODUCTION

1.1 Problem Statement

Whenever we visit any restaurant or a food shop then we generally have an issue of waiting queue that most of us are not used to entertaining and, nowadays generally customers prefer their food to be delivered online to their home safely.

Through our system the customers would be easily able to place orders as they like using the online meal ordering system, which sets up a food menu online. Online shoppers can also simply track their orders. The management keeps the customer information up to date and enhances the meal delivery service. Additionally, the suggested can suggest restaurants and hotels based on the ratings provided by the user. The hotel personnel will also be advised of any quality and improvement issues.

1.2 Proposed Solution

The simulation first starts with the admin entering his/her credentials (ID and password). Once that has been verified, the admin cand access the main admin panel where he/she can edit the categories, the food items as well can view the orders placed and reservations made. Now we have a window that displays the order number, customer ID, food name, price and quantity. Once the customer finalizes his/her order, they are asked to enter their name, address and other contact details where the total price is displayed, and the customer can click the ‘order now 'button to get a message of confirmation of order. Once you enter the admin portal, you get the option of adding food, deleting food or updating food. Any option of choice leads you to the food menu. Once the selected operations are carried out, the result, i.e., the added food or the updated food list is displayed and if you have deleted a food, that food disappears from the main menu on the website which will be visible to the customer.

1.3 Feature

- **Food ordering**: Allowing the users to order their food on the go from two different restaurants.
- **No minimum order**: the customer does not have to a minimum amount to order from a restaurant.
- **Online payments**: online payments facilitate the flow of the money in the right direction, a step forward to corruption free India.
- **Eco-friendly**: the process proposed saves unnecessary wastage of paper of making every document digitally.

1.4 Advantages

- Online delivery mechanism
- Food can be ordered from multiple sources
- Helps in building up a social community for new food joints
- Route optimization is attained
- Reduce costs
- Save time and money

1.5 Scope

The scope of this project is expected to grow significantly in the next decade as more people rely on online food ordering. Today four out of five customers expect their favorite restaurant to be available online. As a result, food delivery apps are becoming essential to business growth. They reduce the waiting time significantly and are available most of the time. Food delivery apps help employees to connect faster to customers and fulfill orders,

thus improving customer satisfaction. Increased smartphone usage and convenience will drive the demand for food delivery apps.

CHAPTER 2

SERVICES AND TOOLS REQUIRED

2.1 Services Used

- Route Planning's ML applications goal is to achieve reduced delivery times and costs. Usually, neural networks that work with past data as input and suggest best fit scenarios for new routes.

- Sales forecasts ML applications goal is to reduce costs and inefficiencies in the supply chain level. It uses as input sell-in and sell-out information, price, price elasticity, market demand data proxies to generate production and stock quantity suggestions to maximize sell-out while reducing cost and avoiding food waste.

- Product suggestion ML applications goal is well, to suggest food that you might like to order based on preferences, on-site navigation, previously ordered items and more. The final goal of these services of course is to sell more.

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

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

1. **Admin Panel:** Responsible for onboarding of Restaurants Owners and Delivery Partners.

2. **Restaurant Owners:** Responsible for adding menus and managing orders and payments.

3. **Delivery partners**: Responsible for picking an order from the Restaurant Owners and delivering them to the customers.

4. **Customers:** They are the actual client. They will be consuming the application. The customer will make an order from the system.

5. **Machine Learning:** predictive models are built based on processed data using Azure Machine Learning or AWS sage Maker. These models can help in predicting customer behavior, route planning for deliveries, Sales forecasts and amount to food to be prepared avoid waste), product suggestion.

6. **Security:** The system should protect sensitive customer and financial information.

7. **Data Management**: The system should be designed to handle large amounts of data and provide efficient data access and querying.

8. **Integration:** The system should integrate with payment gateways and other relevant services like maps and location tracking.

9. **Disaster Recovery:** The system should include a disaster recovery plan to ensure business continuity in case of unexpected outages or failures.

10**. Scalability**: The system should be able to handle many concurrent users and orders.

This architecture provides a comprehensive solution for barriers in online food delivery apps.

CHAPTER 4

MODELING AND RESULTING

Data Modeling

1. **Users:**

```
CREATE TABLE Users (
    user_id INT PRIMARY KEY AUTO_INCRI
    name VARCHAR(255) NOT NULL,
    email VARCHAR(255) NOT NULL,
    password VARCHAR(255) NOT NULL,
    phone VARCHAR(20) NOT NULL,
    UNIQUE (email)
);
```

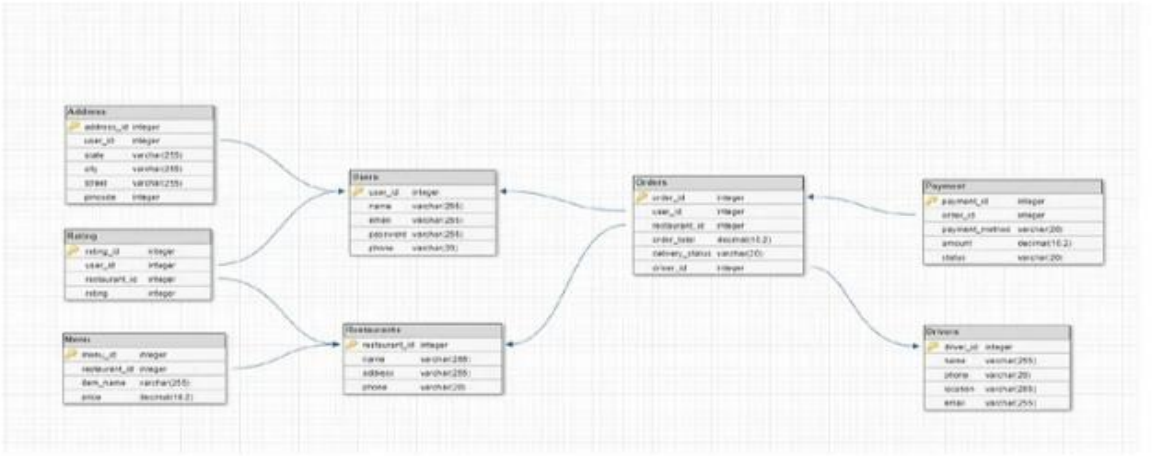
2. **Restaurants :**

```
CREATE TABLE Restaurants (
    restaurant_id INT PRIMARY KEY AUTO
    name VARCHAR(255) NOT NULL,
    address VARCHAR(255) NOT NULL,
    phone VARCHAR(20) NOT NULL
);
```

3. **Orders:**

```
CREATE TABLE Orders (
    order_id INT PRIMARY KEY AUTO_INCR
    user_id INT NOT NULL,
    restaurant_id INT NOT NULL,
    order_total DECIMAL(10,2) NOT NULL
    delivery_status VARCHAR(20) NOT NU
    FOREIGN KEY (user_id) REFERENCES U
    FOREIGN KEY (restaurant_id) REFERE
);
```

Data model based on the above tables:



Data Model

There is relationship between these entities, such as the “user-id” in the “users” table, and the “restaurant-id” in the “orders” table is a foreign key referencing the “restaurant-id” in the “Restaurants” table.

Users: This entity represents the users of the apps, who can place orders and make payments.

Restaurants: This entity represents the restaurants that are registered with the app.

Orders: This entity represents the orders placed by users. It contains information about the users, the restaurant, the order total, and the delivery status.

Drivers: This entity represents the drivers who are responsible for delivering the orders.

Payment: This entity represents the payment made by the users for their orders. It contains information about the order, the payment method, the amount, and the status.

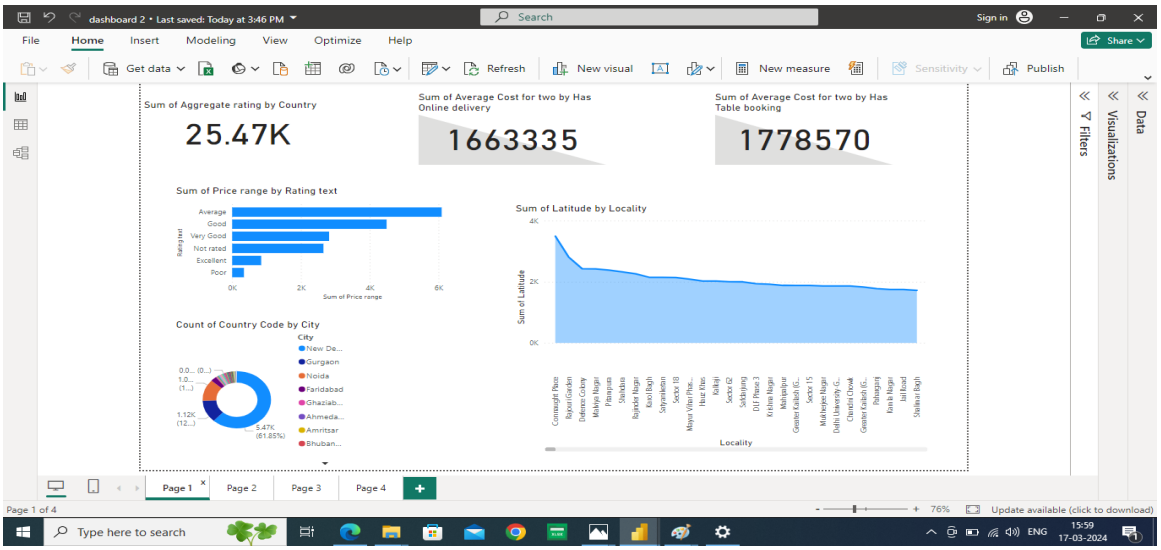
1. To select the name and email of all users who have placed an order:

```
SELECT Users.name, Users.email
FROM Users
JOIN Orders ON Users.id = Orders.user
```

2. To select the name and address of all restaurants that have received a rating of 4 or higher:

```
SELECT Restaurants.name, Restaurants.a
FROM Restaurants
JOIN Rating ON Restaurants.id = Rating
WHERE Rating.rating >= 4;
```

Dashboard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25.47K
Sum of Average Cost for two by Has Online delivery
1663335
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1778570
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Sum of Latitude by Locality
Count of Country Code by City
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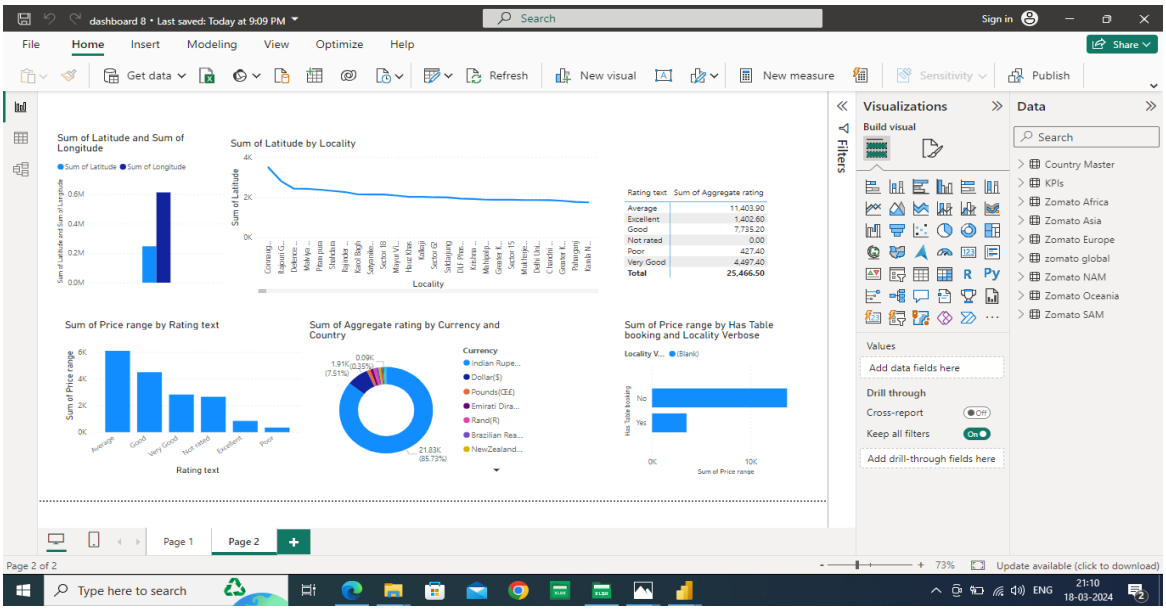
Sum of Latitude and Sum of Longitude
Sum of Latitude by Locality
Sum of Price range by Rating text
Sum of Aggregate rating by Currency and Country
Sum of Price range by Has Table booking and Locality Verbose
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Data
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CONCLUSION

Therefore, the conclusion of the proposed system is based on user's need and is user centered. The system is developed in considering all issues related to all users which are included in this system.

Based on the result of this research, it can be concluded: it helps customers in making order easily; It gives information needed in making order to customer. The food website application made for restaurant and mess can help in receiving orders and modifying its data and it is also made for admin so that it helps admin in controlling all the food system. The scope of the proposed system is justifiable because in large amount peoples ae shifting to different cities so wide range of people can make a use of proposed system.

The Online Food Ordering System provides a simple way to store details of the customer, food items available and to generate the bill. It is an interface that allows the customer to order the desired food which he/she can relish within a span of forty-five minutes.

The project is designed in such a way that the user can modify the primary information required to manage their profile successfully such as the information about the delivery address and contact number.

FUTURE SCOPE

The companies selling products online should try to retain their current customers and focus on attracting the non-users by making them aware of benefits like convenience and authenticity of products delivered to them online. the study states that still people in India are relucent to buy products online with respect to authenticity. The companies should make people believe that the products sold to them are genuine and if in case, products delivered to them are damaged or spoiled, they should immediately exchange or replaced. The customer should be made aware of other benefits of shopping online like delivery on time and discounted products to the local retailer.

In such a technological era, people find it difficult to visit restaurants. Most often, they are unable to manage the time to pick up their orders. Therefore, most of them like to use the food delivery app. it provides them with the option to choose the menu ass per their choice and place the order instantly with a few clicks.

The future scope of the project is vast. In future many people will benefit with these kinds of online food delivery apps.

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