| **Project Title** | **Restaurant Analysis and Visualization Using Power BI** |
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| **Skills take away From This Project** | **Data cleaning and preprocessing**  **Data visualization with Power BI**  **Data analysis and interpretation**  **Creating interactive dashboards**  **Understanding key business metrics in the food delivery industry** |
| **Domain** | **Food Delivery Services** |

**Problem Statement:**

The aim is to analyze and visualize restaurant data to extract meaningful insights that can help in making informed business decisions. Learners will use Power BI to create interactive dashboards showcasing various aspects of the restaurant's performance.

**Business Use Cases:**

**Customer Insights**: Understanding customer preferences based on ratings and food types.

**Operational Efficiency**: Analyzing delivery times to improve logistics.

**Market Positioning**: Identifying key areas with high-rated restaurants.

**Competitive Analysis**: Comparing prices and ratings across different restaurants.

**Decision Support**: Providing data-driven recommendations for business growth.

**Approach:**

**Data Exploration**: Load the dataset into Power BI and explore the structure and content.

**Data Cleaning**: Handle missing values, correct data types, and remove duplicates if any.

**Data Transformation**: Create new columns if necessary (e.g., price range, rating categories).

**Visualization**: Design and create interactive visualizations such as bar charts, pie charts, maps, and tables.

**Dashboard Creation**: Combine visualizations into a cohesive dashboard for easy navigation and insight extraction.

**Analysis and Insights**: Use the dashboard to derive insights and make recommendations.

### **Task List:**

**Task 1: Top 10 Areas with Most Restaurants**

* + **Objective**: Identify the top 10 areas with the highest number of restaurants.

**Task 2: Most Popular Food Types Served by Swiggy Restaurants in Each City**

* + **Objective**: Determine the most popular food types served in each city.

**Task 3: Top Rated Swiggy Restaurants (In Percentage)**

* + **Objective**: Find the percentage of top-rated restaurants (e.g., those with an average rating above 4.5).

**Task 4: Correlation of Factors Affecting Average Rating**

* + **Objective**: Identify correlations between different factors (e.g., price, total ratings, delivery time) and average rating.

**Task 5: Correlation Between Restaurant Price and Average Rating**

* + **Objective**: Analyze the relationship between restaurant price and average rating.

**Task 6: City-wise Restaurant Count**

* **Objective**: Find out the number of restaurants in each city.

**Task 7: Price Analysis**

* **Objective**: Analyze the price distribution of restaurants.

**Task 8: Delivery Time Analysis**

* **Objective**: Analyze the average delivery time of restaurants.

**Task 9: Cuisine Analysis**

* **Objective**: Analyze the variety of cuisines offered by restaurants.

**Task10: Area-wise Restaurant Analysis**

* **Objective**: Analyze the number of restaurants in each area within the city.

**Task 11: Correlation Analysis**

* **Objective**: Investigate any correlations between variables such as price, ratings, and delivery time.

**Task 12: Customer Feedback Analysis**

* **Objective**: Analyze customer feedback based on ratings and total ratings.

**ask 13: Geographical Mapping**

* **Objective**: Create a geographical map of restaurant locations.

**Task 14: Business Recommendations**

* **Objective**: Provide actionable business recommendations based on the analysis.

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**Results:**

A comprehensive Power BI dashboard that provides detailed insights into restaurant performance.

Identification of key factors affecting delivery times and ratings.

Recommendations for operational improvements and market strategies.

**Project Evaluation metrics:**

**Completeness**: All required visualizations and dashboards are created.

**Accuracy**: Data is accurately cleaned and transformed.

**Insightfulness**: The ability to derive meaningful insights from the visualizations.

**Presentation**: Clarity and aesthetics of the Power BI dashboard.

**Documentation**: Quality and completeness of project documentation.

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**Technical Tags:**

Power BI

Data Visualization

Data Analysis

Dashboard

Business Intelligence

**Data Set:**

[swiggy - swiggy.csv](https://docs.google.com/spreadsheets/d/1Q2mD7pdKkmpzd5WKAiVu1Y0sLJ1WpnzvHn-y8WqjMoA/edit?usp=sharing)

**Source**: Provided CSV file with restaurant data.

**Format**: CSV

**Variables**: ID, Area, City, Restaurant, Price, Avg ratings, Total ratings, Food type, Address, Delivery time

**Data Set Explanation:**

The dataset contains information about various restaurants in Bangalore, including their prices, ratings, food types, and delivery times. This data will be used to analyze and visualize restaurant performance.

#### **Variables:**

1. **ID**:
   * **Description**: Every restaurant has a unique identifier.
2. **Area**:
   * **Description**: The specific area or neighborhood within the city where the restaurant is located.
3. **City**:
   * **Description**: The city where the restaurant operates.
4. **Restaurant**:
   * **Description**: The name of the restaurant.
5. **Price**:
   * **Description**: The average cost of eating at the restaurant.
6. **Avg Ratings**:
   * **Description**: The average rating of the restaurant given by customers.
7. **Total Ratings**:
   * **Description**: The total number of ratings given to the restaurant.
8. **Food Type**:
   * **Description**: The types of cuisines and food categories the restaurant serves.
9. **Address**:
   * **Description**: The full address of the restaurant.
10. **Delivery Time**:
    * **Description**: The average delivery time from the restaurant to the customer.

**Project Deliverables:**

Power BI file (.pbix) containing the dashboard and visualizations.

A brief report summarizing the findings and insights derived from the analysis.

Source code and scripts used for data preprocessing (if any).

Project documentation explaining the approach, methodologies, and insights.

**Project Guidelines:**

**Coding Standards**: Write clean, readable, and well-documented code.

**Version Control**: Use version control systems like Git for tracking changes and collaboration.

**Visualization Best Practices**: Ensure visualizations are clear, concise, and convey the intended message.

**Data Privacy**: Ensure no sensitive information is included in the dataset or visualizations.

**Project documentation** Project documentation explaining the approach, methodologies, and insights.

**PROJECT DOUBT CLARIFICATION SESSION ( PROJECT AND CLASS DOUBTS)**

**About Session:** The Project Doubt Clarification Session is a helpful resource for resolving questions and concerns about projects and class topics. It provides support in understanding project requirements, addressing code issues, and clarifying class concepts. The session aims to enhance comprehension and provide guidance to overcome challenges effectively.

**Note: Book the slot at least before 12:00 Pm on the same day**

**Timing: Tuesday, Thursday, Saturday (5:00PM to 7:00PM)**

**Booking link :**[**https://forms.gle/XC553oSbMJ2Gcfug9**](https://forms.gle/XC553oSbMJ2Gcfug9)

**LIVE EVALUATION SESSION (CAPSTONE AND FINAL PROJECT)**

**About Session:** The Live Evaluation Session for Capstone and Final Projects allows participants to showcase their projects and receive real-time feedback for improvement. It assesses project quality and provides an opportunity for discussion and evaluation.

**Note: This form will Open on Saturday and Sunday Only on Every Week**

**Timing: Monday-Saturday (11:30PM to 12:30PM)**

**Booking link :** [**https://forms.gle/1m2Gsro41fLtZurRA**](https://forms.gle/1m2Gsro41fLtZurRA)