



Data-Driven Insights for Restaurant Performance Enhancement at Zomato

Zomato, a leading restaurant aggregator and food delivery service, operates across multiple countries, helping users discover restaurants, review ratings, and place orders. With increasing competition in the restaurant and food delivery industry, Zomato aims to enhance its decision-making capabilities through data-driven insights about its restaurant partners, customer preferences, and service performance.

Business Objective

The objective is to analyze the data to uncover valuable insights into:

- Customer preferences are based on cuisine, location, and rating.
- Restaurant performance, including aggregate ratings, table booking availability, and price range.
- Opportunities for business growth, such as improving services like online delivery and enhancing customer experience.

Dataset Description

The dataset includes various attributes of restaurants listed on Zomato, covering:

- **Restaurant Information:** Name, address, locality, city, country, cuisines, price range.
- **Service Features:** Availability of table booking, online delivery, and delivery status.
- **Customer Insights:** Ratings, rating color, and text, votes.
- **Geographic Data:** Longitude and latitude coordinates for mapping locations.

Data Dictionary for Zomato Dataset-



| Column Name | Data Type | Description |
|----------------------|-----------|---|
| Restaurant ID | Integer | Unique ID for each restaurant. |
| Restaurant Name | String | Name of the restaurant. |
| Country Code | Integer | Country code represents the country where the restaurant is located. Cross-referenced with a country table. |
| City | String | The city where the restaurant is located. |
| Address | String | Full address of the restaurant, including street and locality. |
| Locality | String | The locality or area within the city where the restaurant is located. |
| Locality Verbose | String | Detailed description of the locality, including city and area. |
| Longitude | Float | Longitude of the restaurant's location (used for mapping). |
| Latitude | Float | Latitude of the restaurant's location (used for mapping). |
| Cuisines | String | The type(s) of cuisine served by the restaurant (e.g., Italian, Chinese, Indian, etc.). |
| Average Cost for Two | Float | Average cost of dining for two people at the restaurant. |
| Currency | String | The currency used in the respective country for restaurant pricing. |
| Has Table Booking | String | Whether the restaurant offers table booking (Yes/No). |
| Has Online Delivery | String | Whether the restaurant offers online delivery services (Yes/No). |



| Column Name | Data Type | Description |
|----------------------|-----------|---|
| Is Delivering Now | String | Whether the restaurant is currently delivering food (Yes/No). |
| Switch to Order Menu | String | Whether the restaurant switches to an order menu for online delivery (Yes/No). |
| Price Range | Integer | The price range of the restaurant, where 1 is low-cost and 5 is high-end. |
| Aggregate Rating | Float | The average rating of the restaurant is based on customer reviews. |
| Rating Color | String | Color representing the rating (Dark Green for Excellent, Yellow for Average, Red for Poor). |
| Rating Text | String | Textual representation of the rating (Excellent, Good, Average, Poor). |
| Votes | Integer | Total number of votes received for the restaurant's rating. |

Additional Information (for Cross-Referencing)

- **Country Code:** Cross-referenced with the **Country Code Table** (another dataset) that provides a mapping of numeric country codes to country names.

Country Code Table:

| Country Code | Country Name |
|--------------|---------------|
| 1 | India |
| 14 | United States |
| 30 | Australia |



| Country Code | Country Name |
|--------------|----------------------|
| 1 | India |
| 14 | United States |
| 37 | Canada |
| 94 | Singapore |
| 162 | Philippines |
| 166 | Qatar |
| 189 | United Arab Emirates |
| 191 | United Kingdom |
| 208 | South Africa |

Beginner Level

Task 1: Cleaning the Dataset for Accurate Restaurant Listings

- **Scenario:** Zomato's dataset contains duplicate entries and missing values. Learners will clean the data, ensuring all future analyses is based on reliable information.
- **Steps:** Remove duplicates, handle missing values, and ensure the dataset is prepared for further analysis.
- **Deliverable:** A clean dataset, free from duplicates and missing values, forming a reliable foundation for subsequent tasks.

Task 2: Categorizing Restaurants by Customer Ratings

- **Scenario:** Zomato wants to categorize restaurants based on customer ratings to identify top and underperforming venues.
- **Steps:** Categorize restaurants into rating groups (Excellent, Good, Average, Poor), and summarize performance by rating.



- **Deliverable:** A summary table categorizing restaurant performance based on customer ratings.

Task 3: Verifying Service Availability in Specific Cities (VLOOKUP)

- **Scenario:** Customers search for specific services, such as table booking or online delivery. Zomato needs to verify which restaurants in each city offer these services.
 - **Steps:** Use **VLOOKUP** to match restaurants offering specific services.
 - **Deliverable:** A table summarizing service availability across cities, including table booking and online delivery services.
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Intermediate Level

Task 4: Cross-Referencing Country Codes for Restaurant Distribution (XLOOKUP)

- **Scenario:** As Zomato expands globally, learners will cross-reference country codes with country names to visualize geographic restaurant distribution.
- **Steps:** Use **XLOOKUP** to map country codes with country names.
- **Deliverable:** A dataset showing the country name corresponding to each restaurant.

Task 5: Analyzing Customer Preferences by Cuisine (INDEX-MATCH)

- **Scenario:** Zomato wants to understand customer preferences by cuisine type, helping optimize restaurant recommendations.
- **Steps:** Use **INDEX-MATCH** to analyze and cross-reference customer preferences by cuisine across cities.
- **Deliverable:** A summary of customer preferences by cuisine and city.

Task 6: Price Range and Ratings Analysis (Pivot Tables)

- **Scenario:** Learners will analyze how restaurant price ranges affect customer satisfaction, providing insight into pricing strategy.
- **Steps:** Use **Pivot Tables** to compare ratings by price range, and visualize using **Pivot Charts**.



- **Deliverable:** A Pivot Table showing restaurant ratings by price range, with accompanying charts.
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Advanced Level

Task 7: Geographic Heatmap of Restaurant Density and Ratings

- **Scenario:** Zomato's leadership team needs to understand how restaurant density and customer ratings are distributed geographically.
- **Steps:** Use geographic data to create a **heatmap** showing restaurant density and customer satisfaction by city.
- **Deliverable:** A geographic heatmap visualizing restaurant distribution and performance across cities.

Task 8: Performance Comparison by Service Type (Online Delivery vs. Dine-In Only)

- **Scenario:** Zomato wants to compare the performance of restaurants offering online delivery with those offering dine-in only.
- **Steps:** Analyze ratings and votes for online delivery versus dine-in restaurants.
- **Deliverable:** A comparison of restaurant performance by service type, highlighting how online delivery affects customer engagement.

Task 9: What-If Analysis for Business Growth

- **Scenario:** Zomato wants to forecast how changes, such as expanding online delivery or adjusting price ranges, might impact customer satisfaction.
- **Steps:** Use **What-If Analysis** (Scenario Manager or Goal Seek) to simulate different business scenarios.
- **Deliverable:** A report detailing the potential impact of changes in service offerings or price on customer satisfaction and engagement.

Task 10: Adding Sparklines for Visualizing Trends

- **Scenario:** Zomato needs to visualize trends in metrics like ratings and votes. **Sparklines** allow learners to visualize trends without needing full charts.



- **Steps:** Add **Sparklines** to the dataset to visualize trends in restaurant performance.
 - **Deliverable:** Enhanced tables with **Sparklines** showing trends in customer ratings and votes.
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Final Task: Creating a Comprehensive Interactive Dashboard

- **Scenario:** The final task brings together all the insights into an **interactive dashboard** for Zomato's leadership team. The dashboard will allow dynamic exploration of key metrics such as price range, location, service availability, cuisine preferences, and customer ratings.
 - **Steps:**
 1. **Clean Dataset:** Ensure the dataset is fully cleaned and consistent.
 2. **Analysis Summary:** Include summarized data from previous tasks on service availability, customer preferences, and performance.
 3. **Visualization:** Use **Pivot Tables**, **Pivot Charts**, and **Geographic Heatmaps** to display key metrics.
 4. **Interactive Filters:** Add slicers for dynamic filtering and integrate **Sparklines** for trend visualization.
 5. **What-If Analysis:** Use simulated business scenarios for decision-making.
 - **Deliverable:** A fully functional **Interactive Dashboard** with filters for location, pricing, service availability, and more, providing actionable insights for Zomato's leadership team.
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Deliverables:

At the end of the assessment, learners are expected to submit the following:

1. **Clean Dataset:** A fully cleaned and validated dataset, ensuring that all future analysis is based on reliable data.
2. **Analysis Reports:**
 - **Service Availability:** A summary of restaurant service availability (online delivery and table booking) by city.



- **Customer Preferences by Cuisine:** Insights into the popularity of different cuisines across cities.
 - **Price Range and Ratings:** Analysis showing how restaurant price ranges impact customer satisfaction.
 - **Geographic Heatmap:** A visual map showing restaurant density and performance by location.
 - **What-If Analysis:** A report showing the potential impact of business changes on customer satisfaction and engagement.
3. **Interactive Dashboard:** A comprehensive dashboard with dynamic filters (slicers), sparklines, and visualizations for exploring restaurant performance, customer preferences, and service availability.
 4. **Visual Trend Representation: Sparklines** and other trend visualizations for quick, intuitive insights into how key metrics like customer ratings and votes evolve over time.