**Documentation: Zomato Customer Analysis**

**Overview**

This SQL script focuses on analyzing Zomato customer data to extract insights into customer preferences, behavior, and trends. The goal is to provide actionable insights for business decision-making.

**Key Sections**

1. **Exploratory Data Analysis**
   * Initial exploration of datasets, including tables like orders, customers, and restaurants.
   * Inspections of basic metrics like order frequency, customer demographics, and popular restaurant categories.
2. **Customer Segmentation**
   * **Segmentation based on:** 
     + Frequency of orders.
     + Customer spending patterns.
   * **Techniques:** 
     + Using GROUP BY and aggregate functions such as SUM, AVG, and COUNT.
3. **Geographical Insights**
   * Analyzing customer locations to find top-performing cities/regions.
   * **Techniques:** 
     + Joins between customers and orders tables.
     + Use of filtering (WHERE) for city-based insights.
4. **Order Trends**
   * Month-on-month or year-on-year order analysis.
   * **Techniques:** 
     + Use of DATE\_FORMAT or similar functions to extract time-based information.
     + Aggregate analysis (GROUP BY on time periods).
5. **Top Restaurants and Cuisines**
   * **Identifying popular restaurants and cuisines based on:** 
     + Order count.
     + Revenue generation.
   * **Techniques:** 
     + JOIN between orders and restaurants.
     + Ranking queries with ORDER BY.
6. **Retention and Churn Analysis**
   * Analyzing repeat customers versus one-time customers.
   * **Techniques:** 
     + Window functions such as ROW\_NUMBER() or DENSE\_RANK().
     + Use of CASE statements for churn classification.
7. **Performance Metrics**
   * KPIs like Average Order Value (AOV), Customer Lifetime Value (CLTV), etc.
   * **Techniques:** 
     + Mathematical calculations combining multiple fields.

**Key SQL Techniques Used**

* **Joins**:
  + INNER JOIN, LEFT JOIN to combine multiple tables.
* **Aggregate Functions**:
  + SUM(), AVG(), COUNT() for numerical insights.
* **Window Functions**:
  + ROW\_NUMBER(), RANK(), DENSE\_RANK() for ranking and segmentation.
* **Conditional Logic**:
  + CASE statements for custom groupings.
* **Date Functions**:
  + For time-based trend analysis.
* **Subqueries and Common Table Expressions (CTEs)**:
  + Used for modular and readable queries.

**Insights Derived**

* High-performing cities and regions.
* Popular cuisines and restaurant preferences.
* Customer loyalty trends and retention rates.
* Key time periods for order spikes.

**Usage Instructions**

1. Load the Zomato datasets into a compatible SQL environment (MySQL, PostgreSQL, etc.).
2. Execute the script sequentially to analyze the data.
3. Modify the queries as necessary for dataset-specific adjustments.

**Future Enhancements**

* Incorporate machine learning for predictive analytics.
* Visualize results using tools like Tableau or Power BI.
* Add real-time data streaming for live insights.