Geospatial analysis project (zomato case study)

About: Zomato is an Indian restaurant aggregator and online food delivery company available in 24 Countries.

Objective: The objective of this Zomato case study, focusing on geospatial analysis, is to achieve the following goals:

1. Read Data Using SQL: Extract relevant data from the Zomato dataset using SQL queries to obtain information about restaurants, ratings, locations, and other relevant attributes.

2. Analyze the Relation between Online Orders and Ratings: Investigate the relationship between online orders and customer ratings. Determine if there is a correlation between higher online order volumes and higher ratings, or if other factors influence customer ratings.

3. Perform Unigram, Bigram, and Trigram Analysis: Conduct textual analysis on customer reviews and comments to extract unigrams (individual words), bigrams (two-word phrases), and trigrams (three-word phrases). This analysis can help identify common patterns, sentiments, or topics expressed by customers.

4. Extract Geographical Coordinates from Data: Extract and analyze geographical information from the data, such as latitude and longitude coordinates. This step is crucial for performing spatial analysis and understanding the distribution of restaurants across different locations.

5. Spatial Analysis: Utilize the geographical coordinates to conduct spatial analysis, such as hotspot analysis, cluster analysis, or proximity analysis. This analysis can reveal areas with high restaurant density, identify popular food hubs, or explore regional variations in customer preferences.

6. Automation of Data Analysis: Develop automated data analysis pipelines or scripts to streamline the analysis process. This automation can include data preprocessing, feature extraction, and visualization techniques, enabling efficient and scalable analysis of the Zomato dataset.

By accomplishing these objectives, this case study aims to provide insights into the relationship between online orders and ratings, understand customer sentiments and topics through textual analysis, explore spatial patterns and trends in restaurant locations, and develop automated workflows for data analysis on the Zomato dataset.

* Started with importing messy data, cleaning data, merging, concatenating, grouping and aggregating data and analyzing.
* Tools and technologies used: python,pandas,matplotlib, ,seaborn,plotly,SQL

Conclusion:

1. Restaurants accepting online orders tend to receive a higher number of ratings for good ratings (>4) compared to those that do not accept online orders. This suggests that the convenience of online ordering may positively influence customer satisfaction and ratings.

2. The most frequent words in customer reviews include "place," "food," "good," "chicken," "taste," "service," and "biryani." However, it is not clear whether the overall sentiment towards food and chicken is positive or negative based on these individual words alone.

3. Bi-gram analysis can provide more meaningful insights into the quality of food and chicken dishes by examining word pairs. By considering combinations such as "good food," "tasty chicken," or "excellent service," a better understanding of customer sentiments towards food and chicken can be obtained.

4. Tri-gram analysis reveals specific food preferences such as North Indian Food, Paneer Butter Masala, South Indian food, and Chicken Fried Rice. This suggests that Bangalore has a significant number of chicken lovers and showcases popular regional food preferences.

5. Geospatial analysis indicates that restaurants tend to concentrate in central Bangalore, with a decreasing density as we move away from the central area. This information can be useful for potential restaurant entrepreneurs looking to identify optimal locations for their ventures.

By considering these insights, restaurant owners can make informed decisions regarding their online ordering system, understand customer sentiments towards food and chicken dishes more accurately, identify popular food preferences, and choose strategic locations for their establishments in Bangalore.