Power BI Capstone Project – Zomato Restaurant Analysis

Project Title: Global Restaurant Data Analysis Using Power BI

Project Description

This project involves the design and development of an interactive Power BI dashboard to analyze global restaurant data for Zomato, a restaurant discovery and review platform. The goal of the project is to consolidate restaurant data from multiple continents, perform data cleaning and transformation, model the data efficiently, and deliver actionable business insights through dynamic visualizations.

The final report enables stakeholders to evaluate restaurant performance across regions, understand customer ratings, pricing trends, cuisine diversity, and service availability, all through a single unified reporting solution.

Business Objective

- The primary objectives of this project are:
- To consolidate restaurant data from multiple Excel sources into a single analytical model
- To provide insights into restaurant distribution across continents, countries, and cities
- To identify top-performing restaurants based on ratings, cost, and cuisine variety
- To enable dynamic filtering and drill-down analysis
- To publish a Power BI report accessible via web and mobile devices

Data Sources

The dataset consists of multiple Excel files, each representing restaurant data for a specific continent:

- Africa
- Asia
- Europe
- North America
- South America
- Oceania

Additionally, a Country-Code lookup table is used for mapping countries to continents and enabling geographical analysis.

Data Preparation & Transformation

- Data preparation was carried out using Power Query in Power BI. Key steps include:
- Cleaning city names by removing unwanted text (e.g., the word “city”)
- Correcting encoding and naming inconsistencies (e.g., São Paulo, Istanbul)
- Removing unused and irrelevant columns
- Splitting restaurant details into separate columns for name and address
- Creating a separate Cuisine table to support cuisine-level analysis
- Ensuring the Country-Code table contains only unique and non-null values

- These transformations improved data quality, consistency, and usability for analysis.

Data Modeling

- A structured star schema was implemented to support accurate aggregations and filtering.
- Fact table: Restaurant-level data
- Dimension tables: Country, Continent, City, Cuisines
- Relationships were created with appropriate:
- Cardinality (One-to-Many)
- Cross-filter direction for correct report-level calculations
- Geographical hierarchies were also defined to allow drill-down analysis from continent to city level.

DAX Calculations

The following DAX measures and calculated columns were created:

Measures:

- Restaurant Count
- Average Cost
- Average Rating
- Cuisine Count

Calculated Columns:

Rating Color classification based on average rating ranges:

Above 4.5 → Dark Green

4.0 – 4.4 → Green

3.5 – 3.9 → Yellow

2.5 – 3.4 → Orange

1.8 – 2.4 → Red

0 – 1.7 → White

These calculations enable consistent performance comparison across visuals.

Data Visualization

- The Power BI report consists of multiple pages and includes:
- KPI cards for restaurant count, average cost, and average rating
- Interactive map visual with geographic hierarchy
- Top-performing restaurants by rating and cost
- Slicers for continent, country, city, rating color, and service availability
- Restaurant detail tables including address and cuisines
- Gauge visuals to highlight selected restaurant metrics
- Consistent theme design and intuitive page navigation
- Optimized mobile layout for smaller screens

Deployment

The completed report was:

- Published to Power BI Service
- Shared using a public web link
- Configured with a mobile-friendly view to ensure accessibility across devices

Tools & Technologies Used

- Power BI Desktop
- Power Query
- DAX
- Microsoft Excel
- Power BI Service

Key Outcomes

- Delivered a centralized reporting solution for global restaurant analysis
- Improved visibility into business performance across regions
- Enabled data-driven decision-making through interactive dashboards
- Demonstrated proficiency in data transformation, modeling, DAX, and visualization

Conclusion

This project demonstrates an end-to-end Business Intelligence workflow using Power BI, from raw data ingestion to deployment. The solution effectively addresses business requirements and showcases strong analytical and visualization skills relevant to a Data Analyst role.