Power BI Project

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High Level Business Requirement

Zomato is a restaurant search and discovery service. Operating in several countries worldwide, it provides information and reviews of various restaurants. The owners of Zomato, want to unearth the hidden anomalies in their business data. The final objective is to analyse the data in a way which helps them to accurately judge their business performance.

The data (sample) currently available is in form of a few Excel files. Each file containing information about several restaurants operating in a specific Continent. The clients want to create a consolidated and interactive PowerBI report from where they can easily analyse the following information.

1) Total number of restaurants across Continents, Countries and Cities.

2) They want the capability to view information at a global level. But at the same time the ability to go down to a granular level as well.

3) Top performing restaurants by average customer ratings.

4) Top performing restaurants by least average cost.

5) Ability to filter and view the restaurant details (address, cuisines served …) by,
    a. Geographic dimensions like Continent, Country and City.
    b. If the restaurant offers services like, online delivery or table booking.
    c. Rating colours denoting the average rating slab.

6) Top ranking restaurants by the number of cuisines they serve.

7) They want to create a multi pager report which matches with the company's theme and where navigation between pages has been made very easy.

8) They want their users to be able to access this report using web browser as well as phone device.

High Level Steps

To achieve the above-mentioned requirements, following are some of the high-level steps that needs to be performed.

Data Import

1) Import data from all the available Excel files (mentioned below) into PowerBI.
    a. Africa
    b. Asia
    c. Country-Code

d. Europe
e. NAM
f. SAM
g. Oceania
h. Fact Table

Data Transformations

1) The some of the values of the "City" column, mentioned below, needs to be corrected.
    a. The word "city" needs to be taken off from every city name (wherever appears).
    b. "Sí£o Paulo" should be corrected to "São Paulo".
    c. "Cedar Rapids/Iowa City" should be corrected to "Cedar Rapids".
    d. "ÛÁstanbul" should be corrected to "Istanbul".

2) Remove the columns which are not used. Any column that's not used in any visual, filter, hierarchy or any other object, is considered as an unused column and hence they need to be removed.

3) Make separate columns to show "Restaurant Name" and "Restaurant Address".

4) Create a separate table from where you get the list of cuisines served by each restaurant. Each cuisine name must appear on individual row NOT as comma separated values clubbed into the same row.

5) The "Country-Code" table must contain only unique and non-blank Country values (as it's a dimension table).

Other Data Manipulations

1) There are a list of geographic columns appearing in various tables, go through the list and categorize them appropriately.

2) Create a user defined hierarchy and include all the Geographical dimensions in there (Continent, Country and City). Please note the hierarchy must contain all 3 levels in the same sequence.

3) Group the countries into appropriate Continents (as mentioned in point#3 under "Using Dax").

Note: All the data manipulations and transformations, mentioned above are to be done ONLY using PowerBI desktop. Any of these things done outside PowerBI environment would be considered as invalid.

Data Modelling

1) Model your data according to the reporting requirements. Please note there should not be any unnecessary relations created in the model. Only those relations are to be created that are required to create the final report.

2) While creating relationships choose appropriate "Cardinality" and the "Cross filter direction" so that the aggregations can happen accurately at the report level.

Using DAX

1) Create a "Rating Colour" column in an appropriate table. The data rows must follow the below mentioned convention.

Aggregate rating	Rating colour
Above 4.5	Dark Green
4 to 4.4	Green
3.5 to 3.9	Yellow
2.5 to 3.4	Orange
1.8 to 2.4	Red
0 to 1.7	White

2) Create following measures in appropriate tables.
   a. Restaurant Count – should give me the total number of restaurants.
   b. Average Cost – should give me the average cost for 2 people.
   c. Average Rating – should give me the average rating of restaurants where I've received some votes.
   d. Cuisine Count – should return me the count of cuisines.

3) Create a new column called "Continent" in the "Country Code" table. Create the values using the below mentioned convention.

   Note: The Country and Continent mapping is as follows. Please use this convention wherever needed.
   a. Africa – South Africa
   b. Asia – Phillipines
   c. Asia – Singapore
   d. Asia – UAE
   e. Asia – India
   f. Asia – Indonesia
   g. Asia – Qatar
   h. Asia – Sri Lanka
   i. Asia – Turkey
   j. Europe – United Kingdom
   k. North America – United States
   l. North America – Canada
   m. Oceania – Australia
   n. Oceania – New Zealand
   o. South America – Brazil

4) Wherever needed, lookup the continent and country values from the "Country Code" table. Please note, there is one situation when this lookup is essential.

Data Visualization

1) Create the following visuals.
    a. Card visual
        i. Average Cost
        ii. Average Rating
        iii. Restaurant Count
    b. Map visual
        i. Geography hierarchy
        ii. Restaurant Count
        iii. Average cost for 2

        Note: Use the objects on appropriate boxes. Match it with the final output, provided to you.
    c. Infographic designer
        i. Restaurant Name
        ii. Bottom 5 Restaurants by Average Cost
        iii. Average Rating – include only those that are greater than 0.

        Note: Use the objects on appropriate boxes.

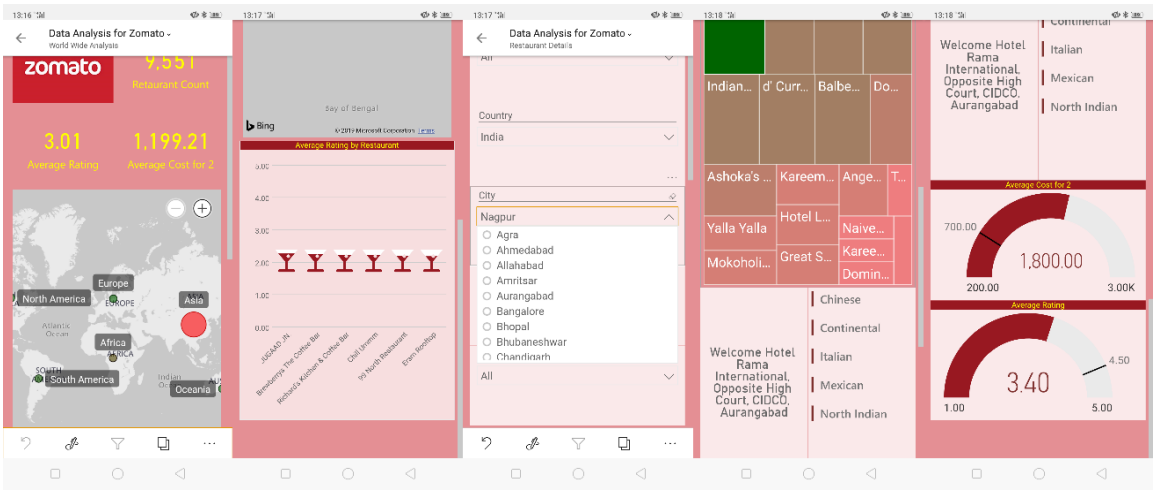
        Slicer showing list of rating colours.
    d. Slicer showing list of counties.
    e. Slicer showing list of cities.
    f. Treemap
        i. Restaurant names
        ii. Cuisine count

        Note: Use the objects on appropriate boxes.

Gauge showing selected restaurant's average rating.

    g. Gauge showing selected restaurant's average cost.
    h. Card showing the selected restaurant's address.
    i. Multi-row card showing the selected restaurant's list of cuisines.
    j. Publish the report on to a service account and create a public link.

2) Make sure you also create a mobile view for the report that matches the screenshots shown below.



What to Submit

The following deliverables are expected at the end of the project. Please note if any one of the below mentioned deliverables are not submitted then the project would be considered as incomplete and hence it won't be graded.

1) The .pbix file.
2) A public URL using which the report can be viewed in a web browser.
3) Screenshots of the mobile view (as many as possible to show different views of mobile device).

Result Check

The submitted projects would be considered as a successful one, only if it satisfies the following points.

1) All the required files should be imported.
2) All the required data transformations should be applied.
3) All the required objects (measures, hierarchies and groups etc.) should be created.
4) The data modelling should be as per the reporting requirements.
5) As per the public URL provided,
    a. All the visuals should be created.
    b. All the interaction points should be implemented (nested slicers, slicer to visual, visual as filter etc.).
    c. Navigation menu needs to be created.
    d. All the values must match.
6) A web as well as a mobile view must be created.