Data Manipulation and Reporting with Power BI

DESCRIPTION

Zomato is a restaurant aggregation and meal delivery service based in India. It is currently operating in several countries across the world. Zomato provides thorough information about numerous eateries as well as consumer reviews. Zomato's owners aim to find hidden irregularities in their company's data. The ultimate goal of this project is to examine the data in such a way that they can accurately assess their business performance.

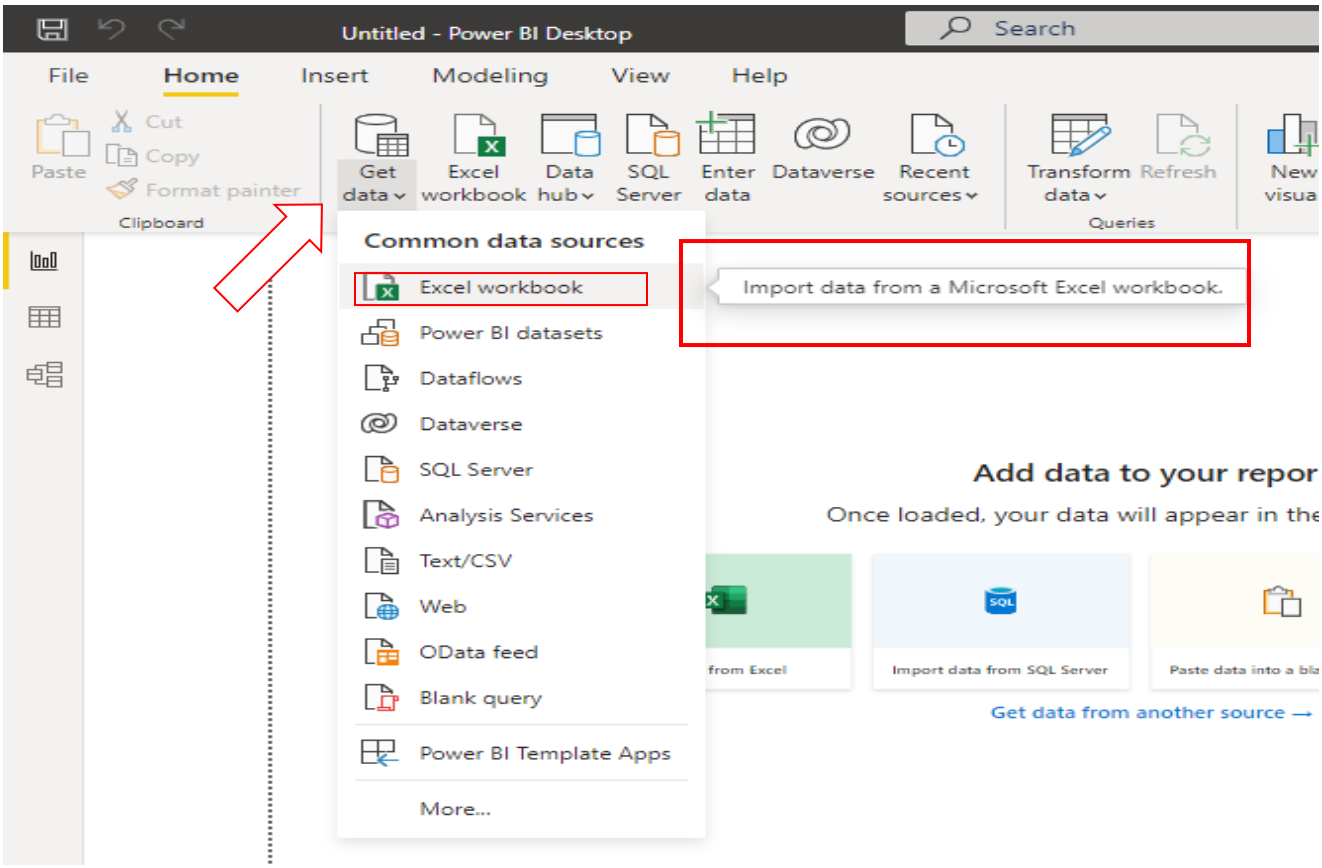
The data (sample) is currently accessible in the form of a few Excel files, each of which contains information about multiple restaurants operating in a certain continent. The clients want to construct a consolidated and interactive Power BI report that will allow them to do the following:

1. Derive data on the total number of restaurants worldwide, including continents, countries, and cities
2. View data on a global scale with the capacity to drill down to a granular level
3. Derive data on the restaurants with the highest average customer ratings
4. Discover the restaurants with the lowest average costs
5. Filter and view information on the restaurants based on:
    - Their geographical dimensions such as continent, country, and city.
    - The service they provide, such as online ordering or reservation services
    - The average rating slab by the colour.
6. Identify the restaurants with the most cuisines served
7. Design a multi-page report that suits Zomato's theme with easy navigation across sections.
8. Allow Zomato users to be able to access this information from both a web browser and a mobile device.

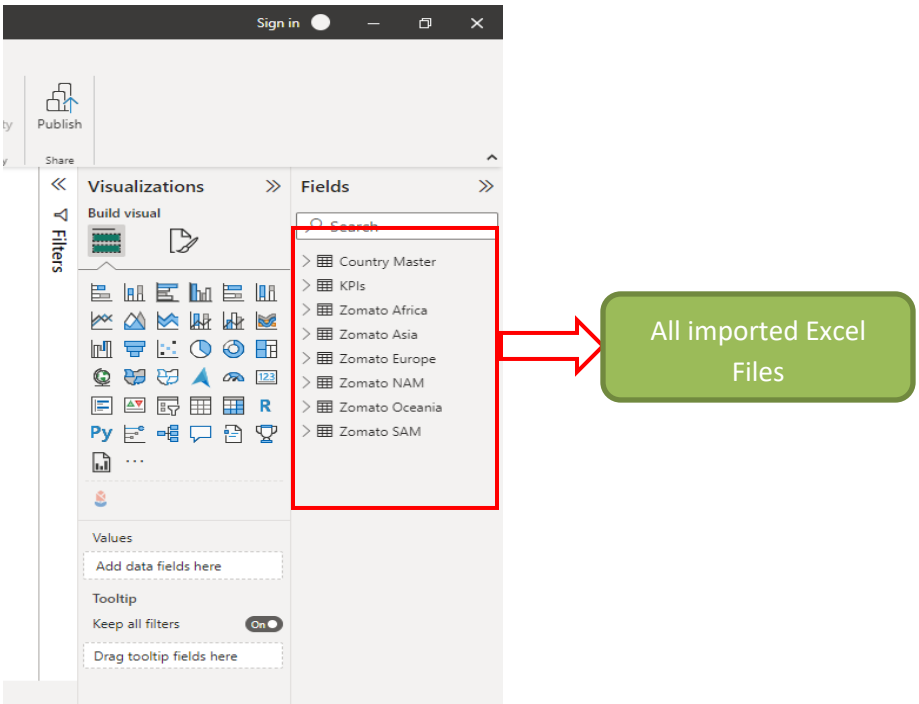
Aim of the project:

The aim is to construct a consolidated and interactive PowerBI report that will allow Zomato to quickly assess the required data.

1). Import the data from all available Excel files



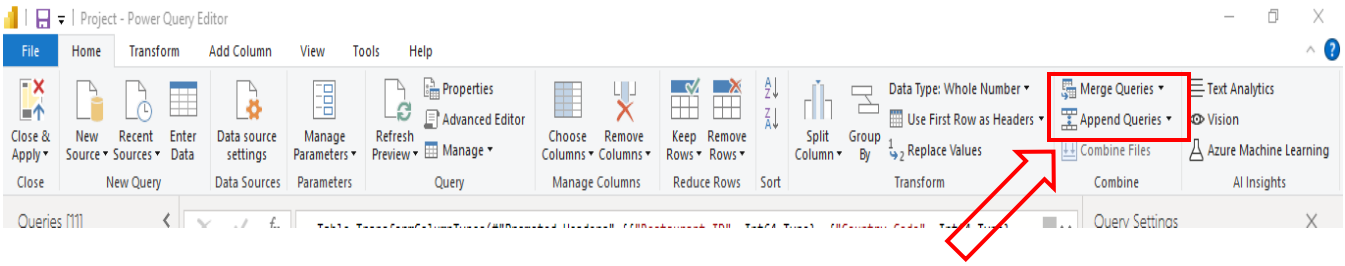
To get data in the form of excel file first we need to select the get data option from the home tab select excel workbook option from in it.

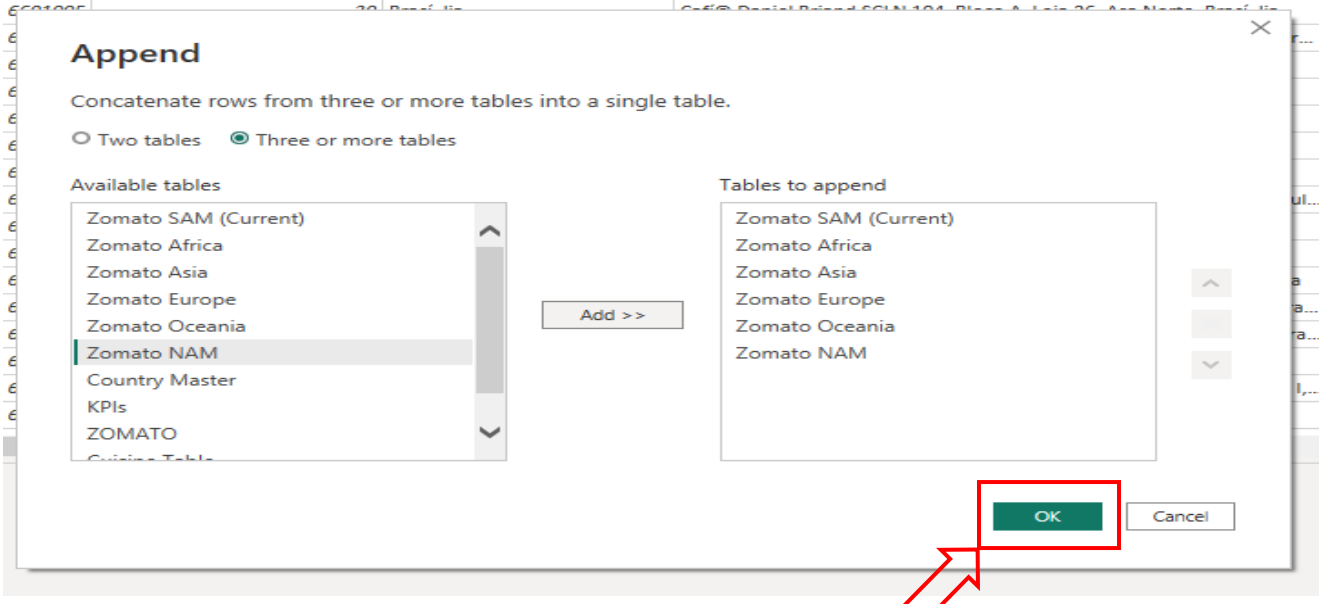


2). **Data transformation**:

To transform data from all Zomato regions first I decided to Create the new table name Zomato to save time required for transformation and avoid to many relationships in model.

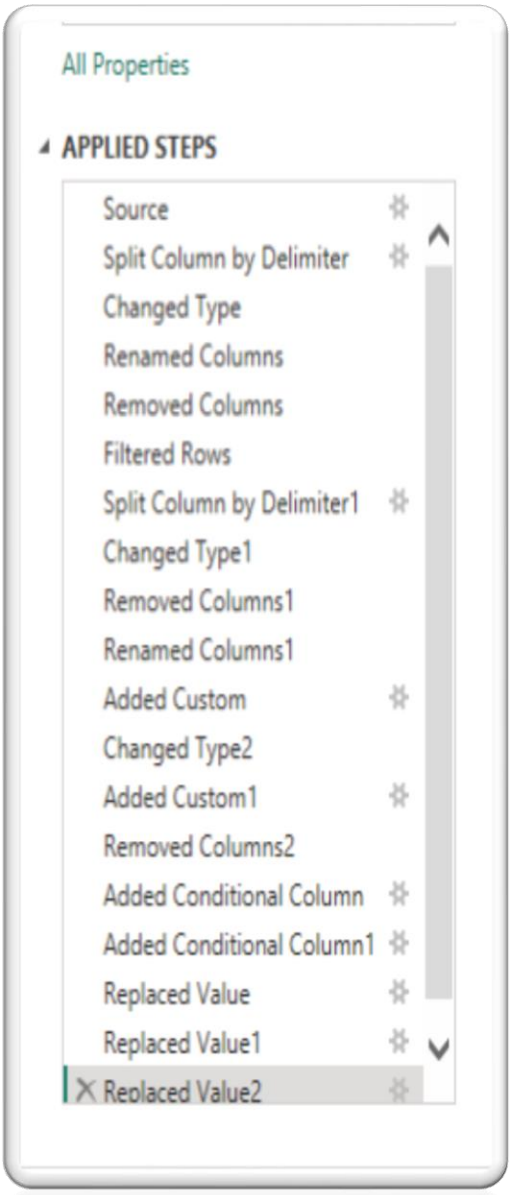
To create a single table, I use append query from Home tab.



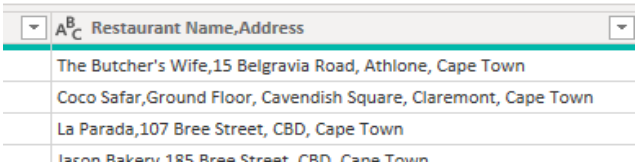


After click on ok new column will add

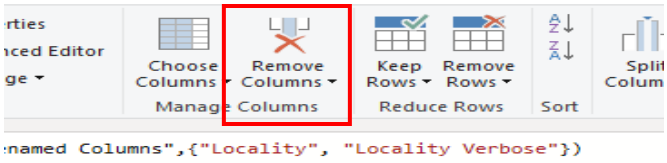
2.1) To clean data for further use I perform following steps.



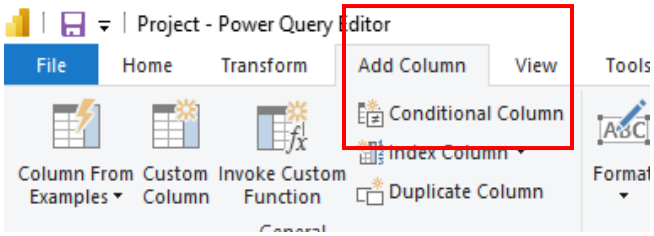
2.1) First split Restaurant and address column by delimiter into restaurant name and restaurant address.



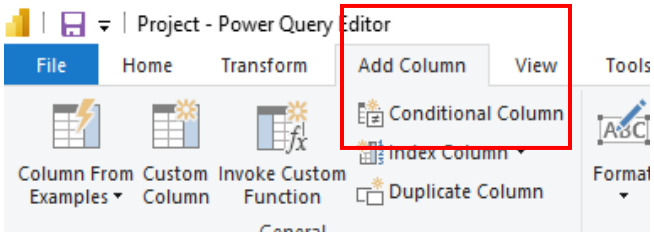
2.2) Remove column locality and locality Verbose



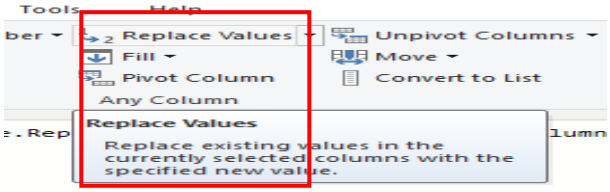
2.3) Add New Conditional column name Country.



2.4) Add new conditional column Name continent.



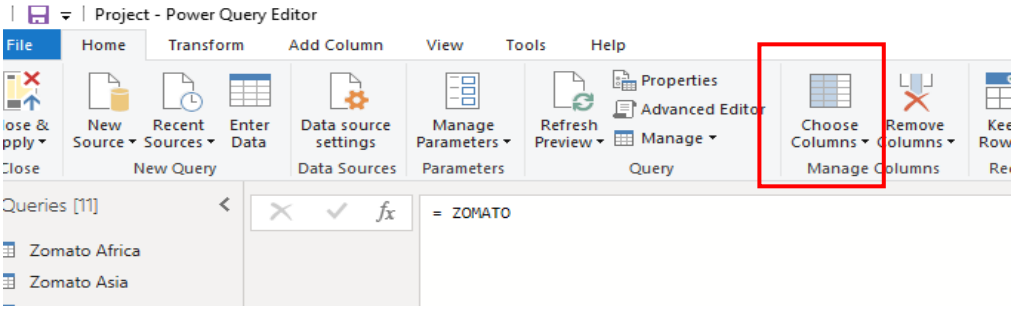
2.5) From column name City Replace "Sí£o Paulo" to "São Paulo", "Cedar Rapids/Iowa City" to "Cedar Rapids","ÛÁstanbul" to "Istanbul"

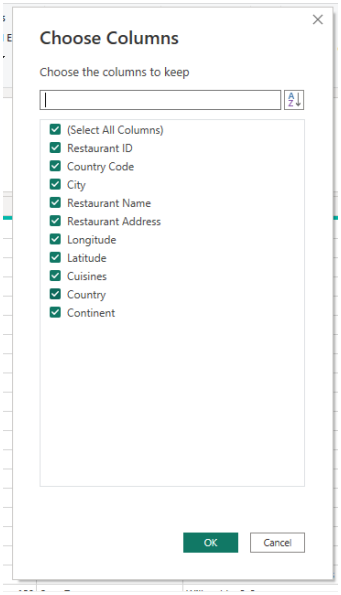


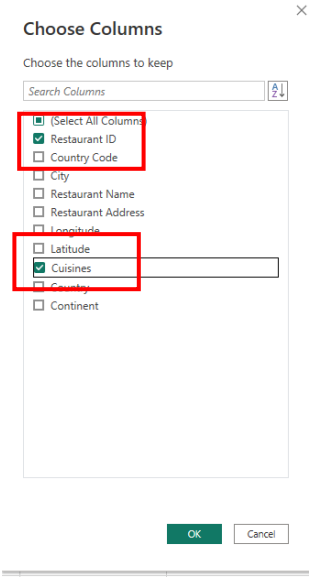
2.6) To make separate table Name Cuisine Table Following are steps I perform

2.6.1) Duplicate the Zomato column and rename it to Cuisine Table.

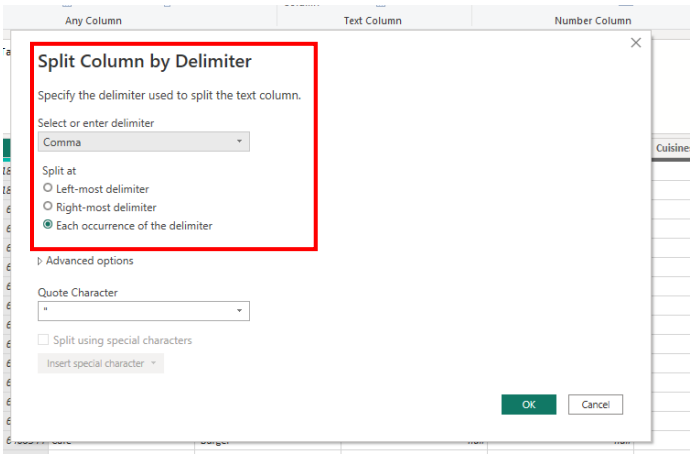
2.6.2) From Tab Choose column I select Restaurant ID and Cuisine



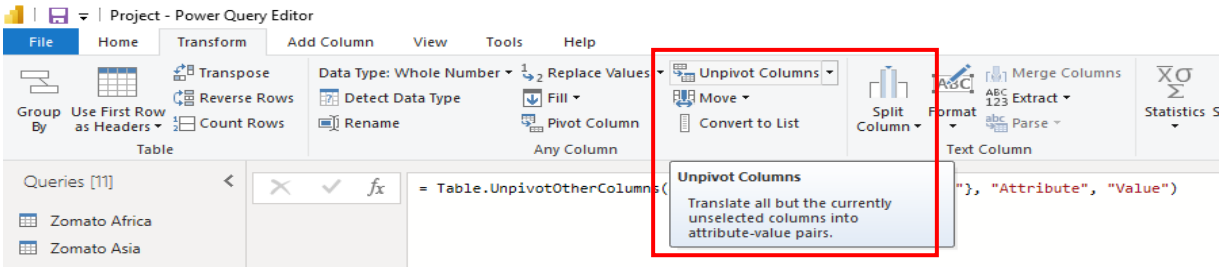


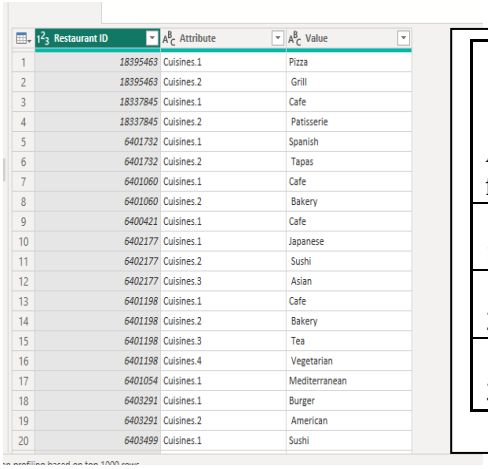


2.6.3) To separate the cuisine list I use delimiter function by comma and separate each cuisine in different column.



2.6.4) To remove the null values created by split column function and to add each cuisine into rows I use unpivot option.





	Restaurant ID	Attribute	Value
1	18395463	Cuisines.1	Pizza
2	18395463	Cuisines.2	Grill
3	18337845	Cuisines.1	Cafe
4	18337845	Cuisines.2	Patisserie
5	6401732	Cuisines.1	Spanish
6	6401732	Cuisines.2	Tapas
7	6401060	Cuisines.1	Cafe
8	6401060	Cuisines.2	Bakery
9	6400421	Cuisines.1	Cafe
10	6402177	Cuisines.1	Japanese
11	6402177	Cuisines.2	Sushi
12	6402177	Cuisines.3	Asian
13	6401198	Cuisines.1	Cafe
14	6401198	Cuisines.2	Bakery
15	6401198	Cuisines.3	Tea
16	6401198	Cuisines.4	Vegetarian
17	6401054	Cuisines.1	Mediterranean
18	6403291	Cuisines.1	Burger
19	6403291	Cuisines.2	American
20	6403499	Cuisines.1	Sushi

After completing the unpivote following are the stape perform	
1) rename values to	**Cuisine**
2) Remove column	**Attribute**
3) change the column	**types**

3) **Steps to use DAX in the project:**

3.1) Add a **Rating color** column in an appropriate table with the data rows in the format given below

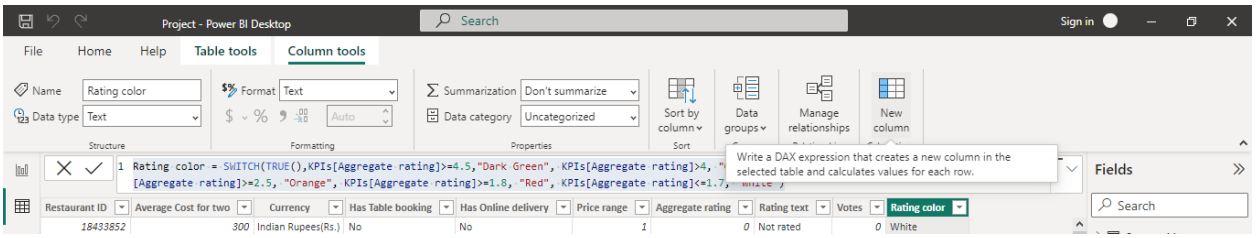
Aggregate rating	**Rating color**
Above 4.5	Dark Green
4 to 4.4	Green

3.1.1) I decided to add rating Colour column in KPI table

Following are steps to add rating colour column in KPI table

1) From data tab column tools from column tools select tab new column and write the DAX formula

```
Rating Colour = SWITCH(TRUE(),KPIs[Aggregate rating]>=4.5,"Dark Green", KPIs[Aggregate rating]>4, "Green", KPIs[Aggregate rating]>=3.5, "Yellow", KPIs[Aggregate rating]>=2.5, "Orange", KPIs[Aggregate rating]>=1.8, "Red", KPIs[Aggregate rating]<=1.7, "White").
```



4) Create the following measures in the appropriate tables

a. Restaurant count

b. Average cost

c. Average rating

d. Cuisine count

4.A) Restaurant count.

Following are steps to add Restaurant count column in zomato table

1) From data tab column tools from column tools select tab new column and write the DAX formula

```
Restaurant Count = count(Zomato[Restaurant ID]).
```

4.B) Average cost.

Following are steps to add Average cost column in KPI table

1) From data tab column tools from column tools select tab new column and write the DAX formula

```
Average Cost = AVERAGE(KPIs[Average Cost for two])
```

4.C) Average Rating

Following are steps to add Average cost column in KPI table

1) From data tab column tools from column tools select tab new column and write the DAX formula

```
Average Rating = AVERAGE(KPIs[Aggregate rating])
```

4.d) Cuisine count

Following are steps to add Cuisine count column in zomato table

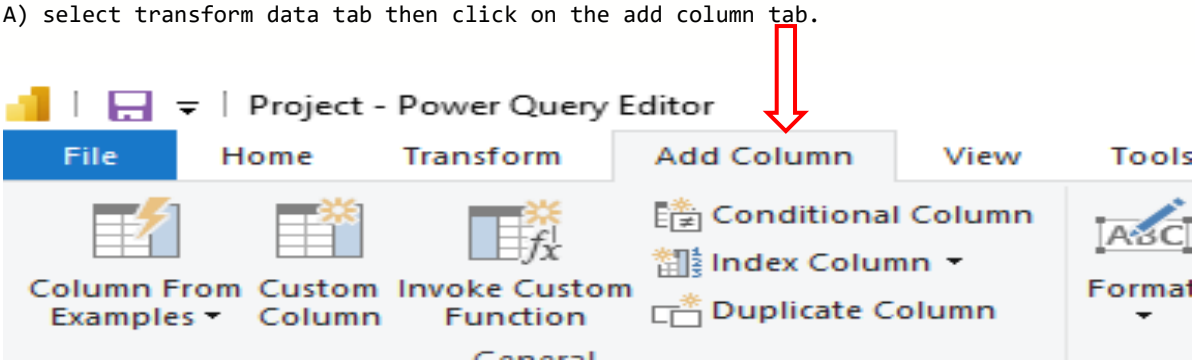
1) From data tab column tools from column tools select tab new column and write the DAX formula

```
Cuisine Count = COUNT('Cuisine Table'[Cuisines])
```

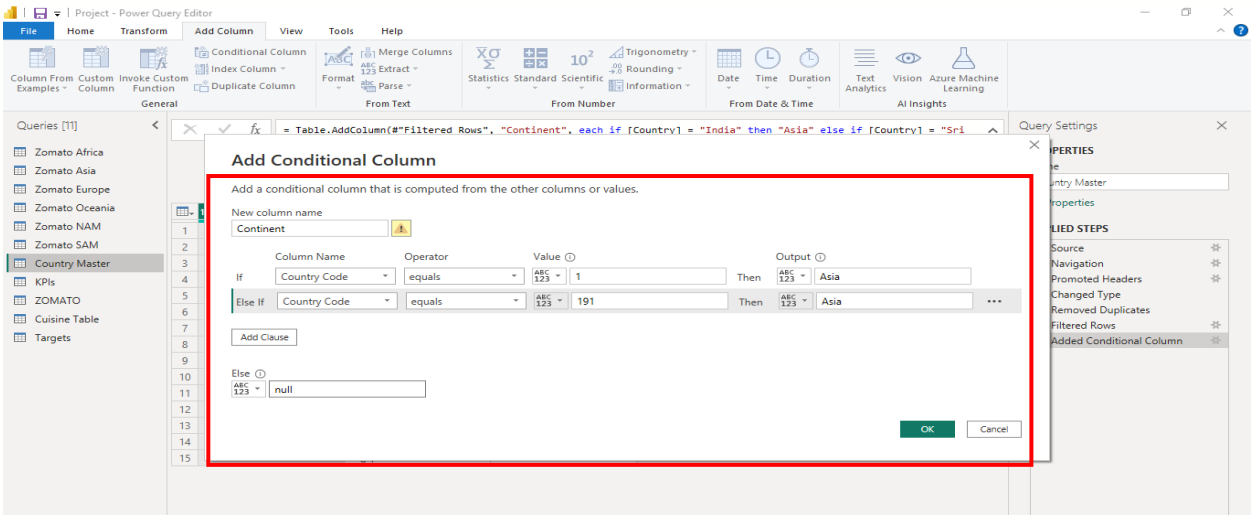
5). Create a new column in the **Country Code** table and name it "**Continent**" and create the values using the below-mentioned convention

5.1) To create new column in country code.

A) select transform data tab then click on the add column tab.



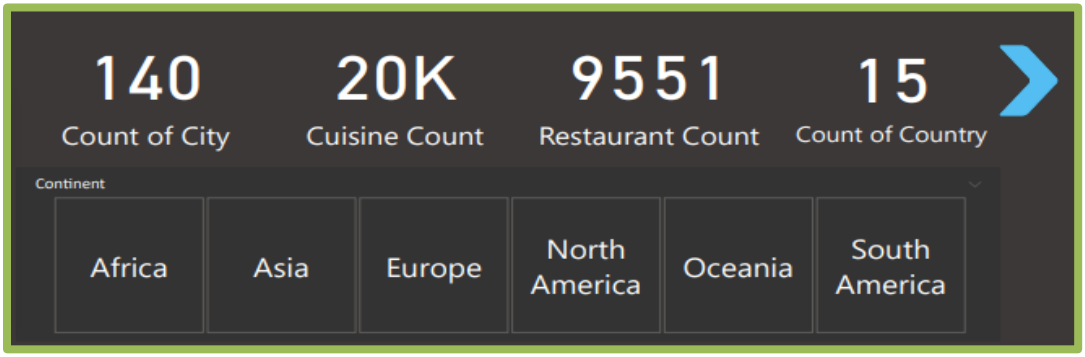
B) From Add column select Conditional column



= Table.AddColumn(#"Added Conditional Column", "Continent", each if [Country Code] = 1 then "Asia" else if [Country Code] = 191 then "Asia" else if [Country Code] = 94 then "Asia" else if [Country Code] = 214 then "Asia" else if [Country Code] = 208 then "Asia" else if [Country Code] = 162 then "Asia" else if [Country Code] = 166 then "Asia" else if [Country Code] = 184 then "Asia" else if [Country Code] = 30 then "South America" else if [Country Code] = 14 then "Oceania" else if [Country Code] = 148 then "Oceania" else if [Country Code] = 216 then "North America" else if [Country Code] = 189 then "Africa" else if [Country Code] = 215 then "Europe" else if [Country Code] = 37 then "North America" else null).

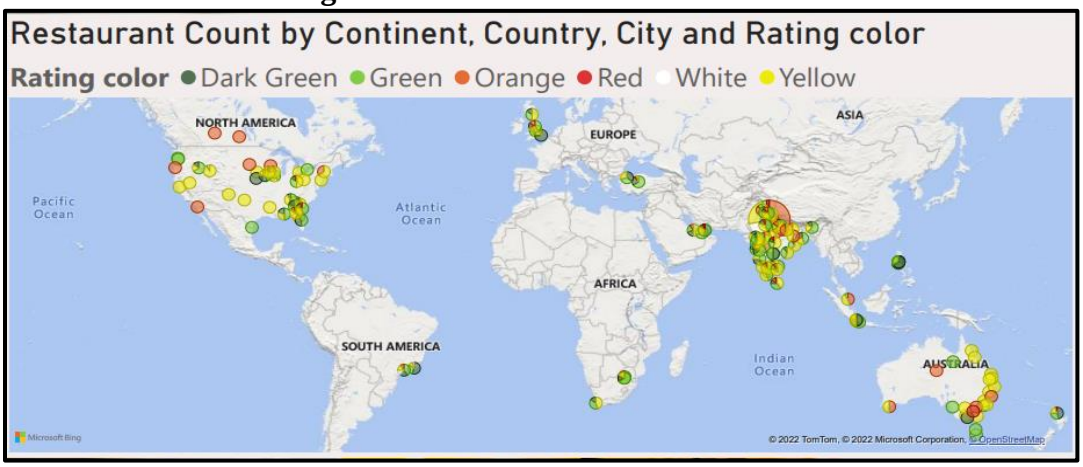
Data analysis

1. Derive data on the total number of restaurants worldwide, including continents, countries, and cities



2. View data on a global scale with the capacity to drill down to a granular level

➢ **Data on global scale**



3. Derive data on the restaurants with the highest average customer ratings

Restaurant Name	Aggregate rating	Continent	Country	City
AB's - Absolute Barbecues	4.90	Asia	India	Chennai
AB's - Absolute Barbecues	4.90	Asia	India	Hyderabad
Atlanta Highway Seafood Market	4.90	North America	United States	Gainesville
Bao	4.90	Europe	United Kingdom	London
Barbeque Nation	4.90	Asia	India	Guwahati
Barbeque Nation	4.90	Asia	India	Kolkata
Average Rating	**2.67**			

4. Discover the restaurants with the lowest average costs

5. Filter and view information on the restaurants based on

- Their geographical dimensions such as continent, country, and city.
- The service they provide, such as online ordering or reservation services
- The average rating slab by the colour.

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Barbeque Nation	4.90	Asia	India	Kolkata
Average Rating	**2.67**			

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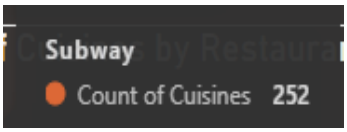
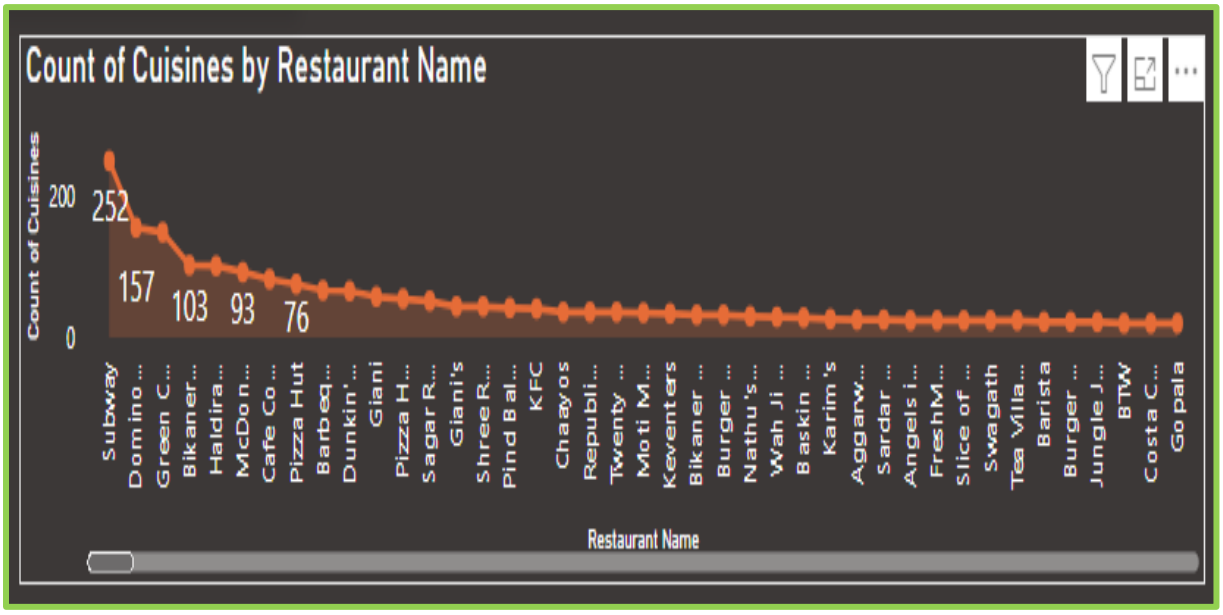
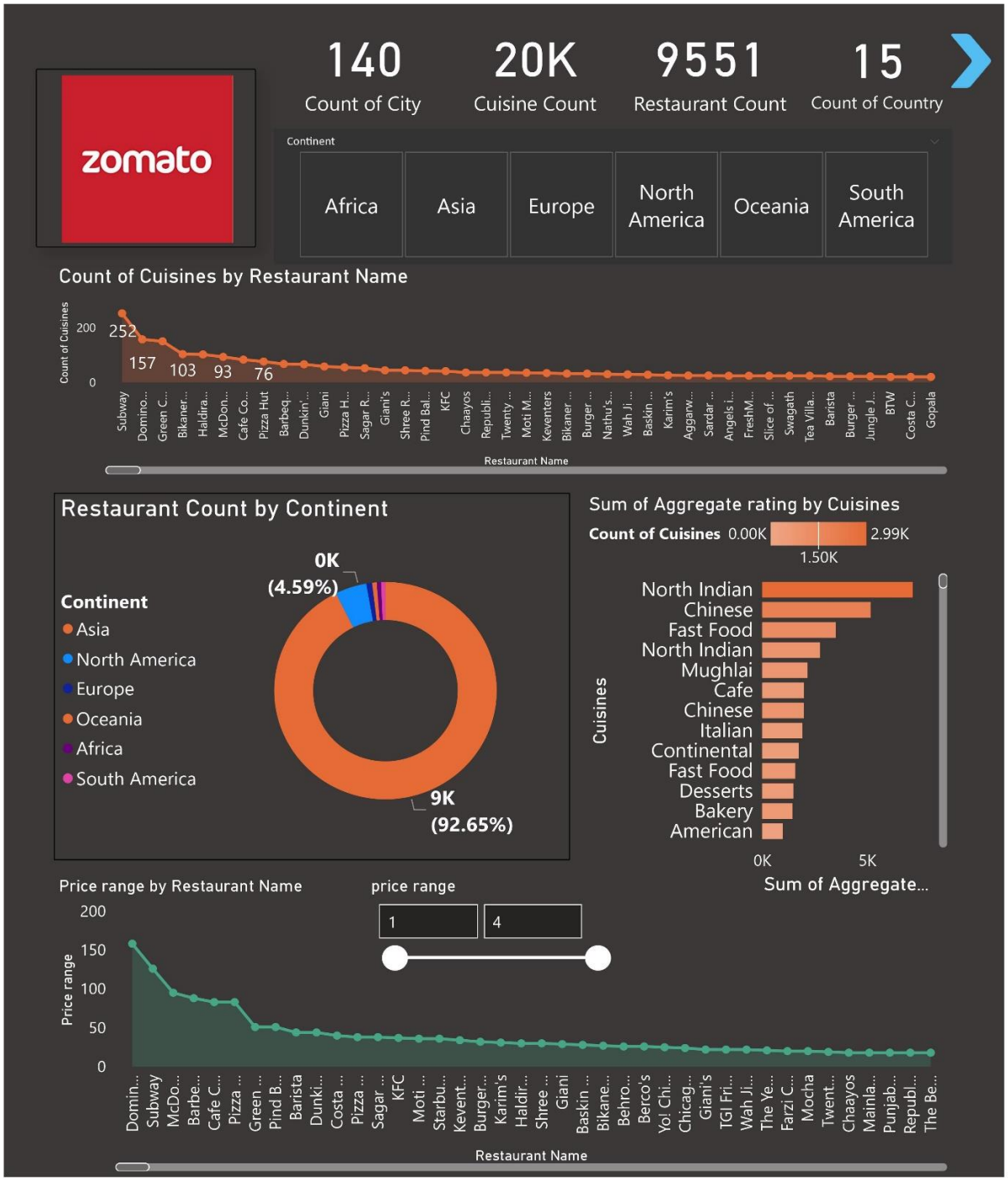
6. Identify the restaurants with the most cuisines served





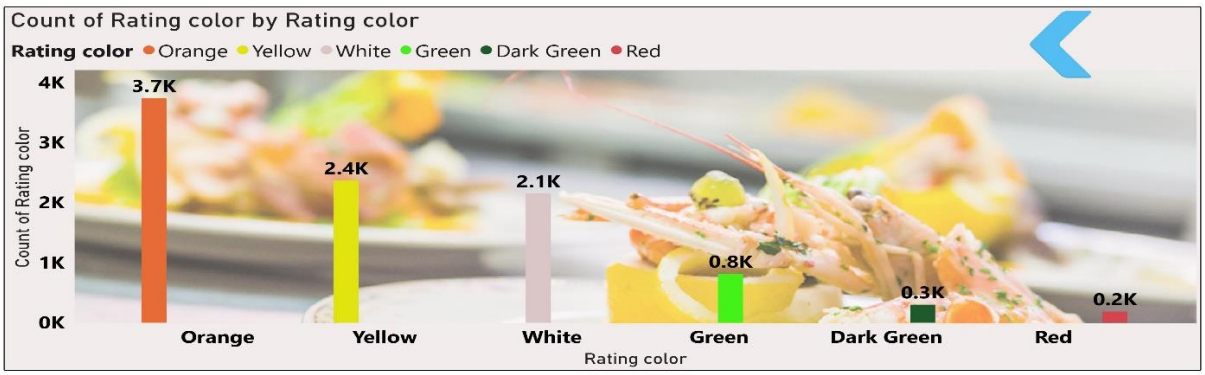
7. Design a multi-page report that suits Zomato's theme with easy navigation across sections.

Page 1.



Page 2.

Page 3.



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