EDA Zomato

In [1]:
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
%matplotlib inline
```

In [2]:
```
# Load the data
zomato_data=pd.read_csv("F:/INEURON/Power bi dataset/5-Days-Live-EDA-and-Featur
```

In [3]:
```
zomato_data # see all the records
```

Out[3]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	1
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	1
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	1
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	1
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	1
...	...	...	...	...	...	...	...	
9546	5915730	NamlÛ± Gurme	208	ÛÁstanbul	Kemanke□ô Karamustafa Pa□ôa Mahallesi, RÛ±htÛ±...	Karakí_y	Karakí_y, ÛÁstanbul	
9547	5908749	Ceviz AÛôacÛ±	208	ÛÁstanbul	Ko□ôuyolu Mahallesi, Muhittin îistí_ndaÛô Cadd...	Ko□ôuyolu	Ko□ôuyolu, ÛÁstanbul	
9548	5915807	Huqqa	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	
9549	5916112	A□ô□ôk Kahve	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	
9550	5927402	Walter's Coffee Roastery	208	ÛÁstanbul	CafeaÛôa Mahallesi, BademaltÛ± Sokak, No 21/B,...	Moda	Moda, ÛÁstanbul	

9551 rows × 21 columns

In [4]:
```
zomato_data.head(5) # to check top 5 record
```

Out[4]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitud
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.0275
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	121.0141
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	121.0568
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0564
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0575

5 rows × 21 columns

In [5]:
```
zomato_data.tail(5) # to check bottom 5 record
```

Out[5]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Lon
9546	5915730	NamlÛ± Gurme	208	ÛÁstanbul	Kemanke□ô Karamustafa Pa□ôa Mahallesi, RÛ±htÛ±...	Karakí_y	Karakí_y, ÛÁstanbul	28.9
9547	5908749	Ceviz AÛôacÛ±	208	ÛÁstanbul	Ko□ôuyolu Mahallesi, Muhittin ístí_ndaÛô Cadd...	Ko□ôuyolu	Ko□ôuyolu, ÛÁstanbul	29.0
9548	5915807	Huqqa	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	29.0
9549	5916112	A□ô□ôk Kahve	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	29.0
9550	5927402	Walter's Coffee Roastery	208	ÛÁstanbul	CafeaÛôa Mahallesi, BademaltÛ± Sokak, No 21/B,...	Moda	Moda, ÛÁstanbul	29.0

5 rows × 21 columns

In [6]:
```
zomato_data.shape # to check number of rows and columns
```

Out[6]: (9551, 21)

In [7]:
```
zomato_data.isnull().sum() # check whether any null value is present or not in
```

Out[7]:
```
Restaurant ID         0
Restaurant Name       0
Country Code          0
City                  0
Address               0
Locality              0
Locality Verbose      0
Longitude             0
Latitude              0
Cuisines              9
Average Cost for two  0
Currency              0
Has Table booking     0
Has Online delivery   0
Is delivering now     0
Switch to order menu  0
Price range           0
Aggregate rating      0
Rating color          0
Rating text           0
Votes                 0
dtype: int64
```

In [8]:
```
zomato_data.columns # check the columns name
```

Out[8]:
```
Index(['Restaurant ID', 'Restaurant Name', 'Country Code', 'City', 'Address',
       'Locality', 'Locality Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average Cost for two', 'Currency', 'Has Table booking',
       'Has Online delivery', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes'],
      dtype='object')
```

In [9]:
```
zomato_data.describe() # to check the summary of the distribution of numeric da
```

Out[9]:

	Restaurant ID	Country Code	Longitude	Latitude	Average Cost for two	Price range	Aggre r
count	9.551000e+03	9551.000000	9551.000000	9551.000000	9551.000000	9551.000000	9551.00
mean	9.051128e+06	18.365616	64.126574	25.854381	1199.210763	1.804837	2.66
std	8.791521e+06	56.750546	41.467058	11.007935	16121.183073	0.905609	1.51
min	5.300000e+01	1.000000	-157.948486	-41.330428	0.000000	1.000000	0.00
25%	3.019625e+05	1.000000	77.081343	28.478713	250.000000	1.000000	2.50
50%	6.004089e+06	1.000000	77.191964	28.570469	400.000000	2.000000	3.20
75%	1.835229e+07	1.000000	77.282006	28.642758	700.000000	2.000000	3.70
max	1.850065e+07	216.000000	174.832089	55.976980	800000.000000	4.000000	4.90

Insight:-

- Average cost for two of order is 400.
- Maximum rating customer given is 5
- Minimum rating customer given is 0
- Maximum people given the rating is 2

In [10]:
```
# Read country -code dataset
zomato_country=pd.read_excel("F:/INEURON/Power bi dataset/5-Days-Live-EDA-and-F
```

In [11]:
```
zomato_country
```

Out[11]:

	Country Code	Country
0	1	India
1	14	Australia
2	30	Brazil
3	37	Canada
4	94	Indonesia
5	148	New Zealand
6	162	Phillipines
7	166	Qatar
8	184	Singapore
9	189	South Africa
10	191	Sri Lanka
11	208	Turkey
12	214	UAE
13	215	United Kingdom
14	216	United States

In [12]:
```
#Calculating the city which got top  rating
city_rating=zomato_data.groupby('City')["Aggregate rating"].mean() # this is th
```

In [13]:
```
city_rating #print rating
```

Out[13]:
```
City
Abu Dhabi          4.300000
Agra               3.965000
Ahmedabad          4.161905
Albany             3.555000
Allahabad          3.395000
                     ...
Weirton            3.900000
Wellington City    4.250000
Winchester Bay     3.200000
Yorkton            3.300000
ÛÁstanbul          4.292857
Name: Aggregate rating, Length: 141, dtype: float64
```

In [14]:
```
sort_rating=city_rating.sort_values(ascending=False) # sort the rating in ascer
```

In [15]:
```
sort_rating
```

Out[15]:
```
City
Inner City          4.900000
Quezon City         4.800000
Makati City         4.650000
Pasig City          4.633333
Mandaluyong City    4.625000
                        ...
New Delhi           2.438845
Montville           2.400000
Mc Millan           2.400000
Noida               2.036204
Faridabad           1.866932
Name: Aggregate rating, Length: 141, dtype: float64
```

In [16]:
```
# here is the top city which got maximum rating
top_cities=sort_rating.head(5) #
```

In [17]:
```
top_cities
```

Out[17]:
```
City
Inner City          4.900000
Quezon City         4.800000
Makati City         4.650000
Pasig City          4.633333
Mandaluyong City    4.625000
Name: Aggregate rating, dtype: float64
```

In [18]:
```
# bottom cities which got minimum rating
bottom_cities=sort_rating.tail(5)
```

In [19]:
```
bottom_cities
```

Out[19]:
```
City
New Delhi    2.438845
Montville    2.400000
Mc Millan    2.400000
Noida        2.036204
Faridabad    1.866932
Name: Aggregate rating, dtype: float64
```

Insight:-

- Maximum rating got by inner city
- minimum rating got by Faridabad

In [20]:
```
zomato_data['City'].unique()
```

Out[20]:
```
array(['Makati City', 'Mandaluyong City', 'Pasay City', 'Pasig City',
       'Quezon City', 'San Juan City', 'Santa Rosa', 'Tagaytay City',
       'Taguig City', 'Brasí_lia', 'Rio de Janeiro', 'Síło Paulo',
       'Albany', 'Armidale', 'Athens', 'Augusta', 'Balingup',
       'Beechworth', 'Boise', 'Cedar Rapids/Iowa City', 'Chatham-Kent',
       'Clatskanie', 'Cochrane', 'Columbus', 'Consort', 'Dalton',
       'Davenport', 'Des Moines', 'Dicky Beach', 'Dubuque',
       'East Ballina', 'Fernley', 'Flaxton', 'Forrest', 'Gainesville',
       'Hepburn Springs', 'Huskisson', 'Inverloch', 'Lakes Entrance',
       'Lakeview', 'Lincoln', 'Lorn', 'Macedon', 'Macon', 'Mayfield',
       'Mc Millan', 'Middleton Beach', 'Miller', 'Monroe', 'Montville',
       'Ojo Caliente', 'Orlando', 'Palm Cove', 'Paynesville', 'Penola',
       'Pensacola', 'Phillip Island', 'Pocatello', 'Potrero', 'Princeton',
       'Rest of Hawaii', 'Savannah', 'Singapore', 'Sioux City',
       'Tampa Bay', 'Tanunda', 'Trentham East', 'Valdosta', 'Vernonia',
       'Victor Harbor', 'Vineland Station', 'Waterloo', 'Weirton',
       'Winchester Bay', 'Yorkton', 'Abu Dhabi', 'Dubai', 'Sharjah',
       'Agra', 'Ahmedabad', 'Allahabad', 'Amritsar', 'Aurangabad',
       'Bangalore', 'Bhopal', 'Bhubaneshwar', 'Chandigarh', 'Chennai',
       'Coimbatore', 'Dehradun', 'Faridabad', 'Ghaziabad', 'Goa',
       'Gurgaon', 'Guwahati', 'Hyderabad', 'Indore', 'Jaipur', 'Kanpur',
       'Kochi', 'Kolkata', 'Lucknow', 'Ludhiana', 'Mangalore', 'Mohali',
       'Mumbai', 'Mysore', 'Nagpur', 'Nashik', 'New Delhi', 'Noida',
       'Panchkula', 'Patna', 'Puducherry', 'Pune', 'Ranchi',
       'Secunderabad', 'Surat', 'Vadodara', 'Varanasi', 'Vizag',
       'Bandung', 'Bogor', 'Jakarta', 'Tangerang', 'Auckland',
       'Wellington City', 'Birmingham', 'Edinburgh', 'London',
       'Manchester', 'Doha', 'Cape Town', 'Inner City', 'Johannesburg',
       'Pretoria', 'Randburg', 'Sandton', 'Colombo', 'Ankara',
       'ÛÁstanbul'], dtype=object)
```

In [21]:
```
zomato_data
```

Out[21]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	1
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	1
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	1
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	1
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	1
...	...	...	...	...	...	...	...	
9546	5915730	NamlÛ± Gurme	208	ÛÁstanbul	Kemanke□ô Karamustafa Pa□ôa Mahallesi, RÛ±htÛ±...	Karakí_y	Karakí_y, ÛÁstanbul	
9547	5908749	Ceviz AÛôacÛ±	208	ÛÁstanbul	Ko□ôuyolu Mahallesi, Muhittin îistí_ndaÛô Cadd...	Ko□ôuyolu	Ko□ôuyolu, ÛÁstanbul	
9548	5915807	Huqqa	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	
9549	5916112	A□ô□ôk Kahve	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	
9550	5927402	Walter's Coffee Roastery	208	ÛÁstanbul	CafeaÛôa Mahallesi, BademaltÛ± Sokak, No 21/B,...	Moda	Moda, ÛÁstanbul	

9551 rows × 21 columns

In [22]:
```
# lets merge zomato_data table and zomato_country table using left join (same c
final_zomato_data=pd.merge(zomato_data,zomato_country,on='Country Code',how='le
```

In [23]:
```
final_zomato_data # check all the data
```

Out[23]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	1
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	1
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	1
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	1
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	1
...	...	...	...	...	...	...	...	
9546	5915730	NamlÛ± Gurme	208	ÛÁstanbul	Kemanke□ô Karamustafa Pa□ôa Mahallesi, RÛ±htÛ±...	Karakí_y	Karakí_y, ÛÁstanbul	
9547	5908749	Ceviz AÛôacÛ±	208	ÛÁstanbul	Ko□ôuyolu Mahallesi, Muhittin îistí_ndaÛô Cadd...	Ko□ôuyolu	Ko□ôuyolu, ÛÁstanbul	
9548	5915807	Huqqa	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	
9549	5916112	A□ô□ôk Kahve	208	ÛÁstanbul	Kuruí_e□ôme Mahallesi, Muallim Naci Caddesi, N...	Kuruí_e□ôme	Kuruí_e□ôme, ÛÁstanbul	
9550	5927402	Walter's Coffee Roastery	208	ÛÁstanbul	CafeaÛôa Mahallesi, BademaltÛ± Sokak, No 21/B,...	Moda	Moda, ÛÁstanbul	

9551 rows × 22 columns

In [24]:
```
final_zomato_data.head() # check top 5 record
```

Out[24]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitud
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.0275
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	121.0141
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	121.0568
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0564
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0575

5 rows × 22 columns

In [25]:
```
final_zomato_data.dtypes # to check the data types of the all columns
```

Out[25]:
```
Restaurant ID             int64
Restaurant Name          object
Country Code              int64
City                     object
Address                  object
Locality                 object
Locality Verbose         object
Longitude               float64
Latitude                float64
Cuisines                 object
Average Cost for two      int64
Currency                 object
Has Table booking        object
Has Online delivery      object
Is delivering now        object
Switch to order menu     object
Price range               int64
Aggregate rating        float64
Rating color             object
Rating text              object
Votes                     int64
Country                  object
dtype: object
```

In [26]:
```
final_zomato_data.columns #  check all the columns present in the table
```

Out[26]:
```
Index(['Restaurant ID', 'Restaurant Name', 'Country Code', 'City', 'Address',
       'Locality', 'Locality Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average Cost for two', 'Currency', 'Has Table booking',
       'Has Online delivery', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

In [27]:
```
final_zomato_data.Country.value_counts()# to count the number of occurrences of
```

Out[27]:
```
India             8652
United States      434
United Kingdom      80
Brazil              60
UAE                 60
South Africa        60
New Zealand         40
Turkey              34
Australia           24
Phillipines         22
Indonesia           21
Singapore           20
Qatar               20
Sri Lanka           20
Canada               4
Name: Country, dtype: int64
```

Lets check top 3 country uses zomato

In [28]:
```
#  extract the unique country names as an index object
country_name=final_zomato_data.Country.value_counts().index
```

In [29]:
```
country_name
```

Out[29]:
```
Index(['India', 'United States', 'United Kingdom', 'Brazil', 'UAE',
       'South Africa', 'New Zealand', 'Turkey', 'Australia', 'Phillipines',
       'Indonesia', 'Singapore', 'Qatar', 'Sri Lanka', 'Canada'],
      dtype='object')
```

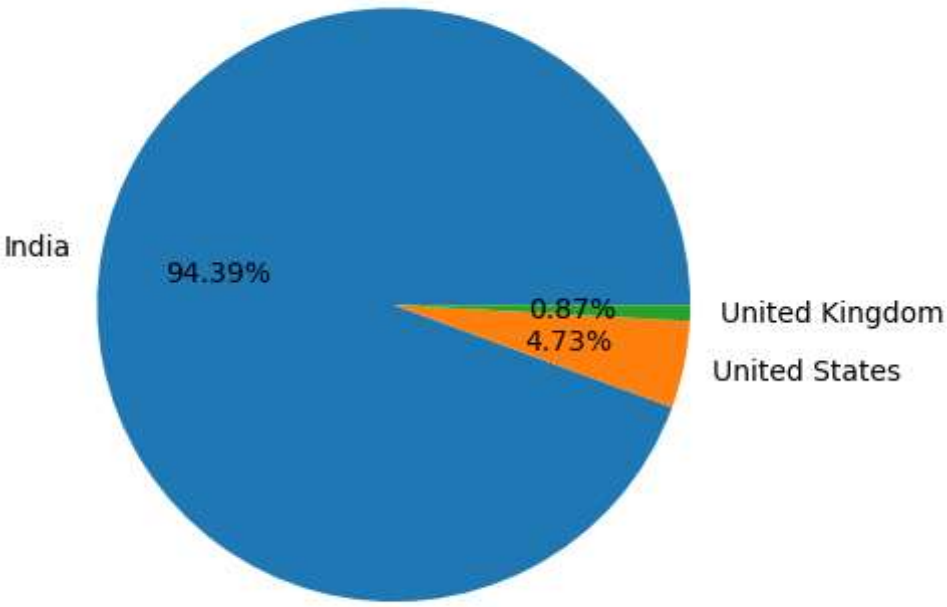
In [30]:
```
# check the unique value of all the country
country_value=final_zomato_data.Country.value_counts().values
```

In [31]:
```
country_value
```

Out[31]:
```
array([8652,  434,   80,   60,   60,   60,   40,   34,   24,   22,   21,
         20,   20,   20,    4], dtype=int64)
```

In [32]:
```
# plot pie chart
plt.pie(country_value[:3],labels=country_name[:3],shadow=False,normalize=True,a
```

Out[32]:
```
([<matplotlib.patches.Wedge at 0x222a4b0da00>,
  <matplotlib.patches.Wedge at 0x222a4b22160>,
  <matplotlib.patches.Wedge at 0x222a4b22880>],
 [Text(-1.0829742700952103, 0.19278674827836725, 'India'),
  Text(1.077281715838356, -0.22240527134123297, 'United States'),
  Text(1.0995865153823035, -0.03015783794312073, 'United Kingdom')],
 [Text(-0.590713238233751, 0.10515640815183668, '94.39%'),
  Text(0.5876082086391032, -0.12131196618612707, '4.73%'),
  Text(0.5997744629358018, -0.01644972978715676, '0.87%')])
```



Observation

- India is the top coutry uses zomato
- United States is 2nd country followed by india uses zomato
- United Kingdom uses less zomato as compared to India and United States

In [33]:
```
final_zomato_data.columns
```

Out[33]:
```
Index(['Restaurant ID', 'Restaurant Name', 'Country Code', 'City', 'Address',
       'Locality', 'Locality Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average Cost for two', 'Currency', 'Has Table booking',
       'Has Online delivery', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

In [34]:
```
ng the aggregate rating,rating color,rating text
al_zomato_data.groupby(["Aggregate rating",'Rating color','Rating text']).size(
```

In [35]:
```
Ratings
```

Out[35]:

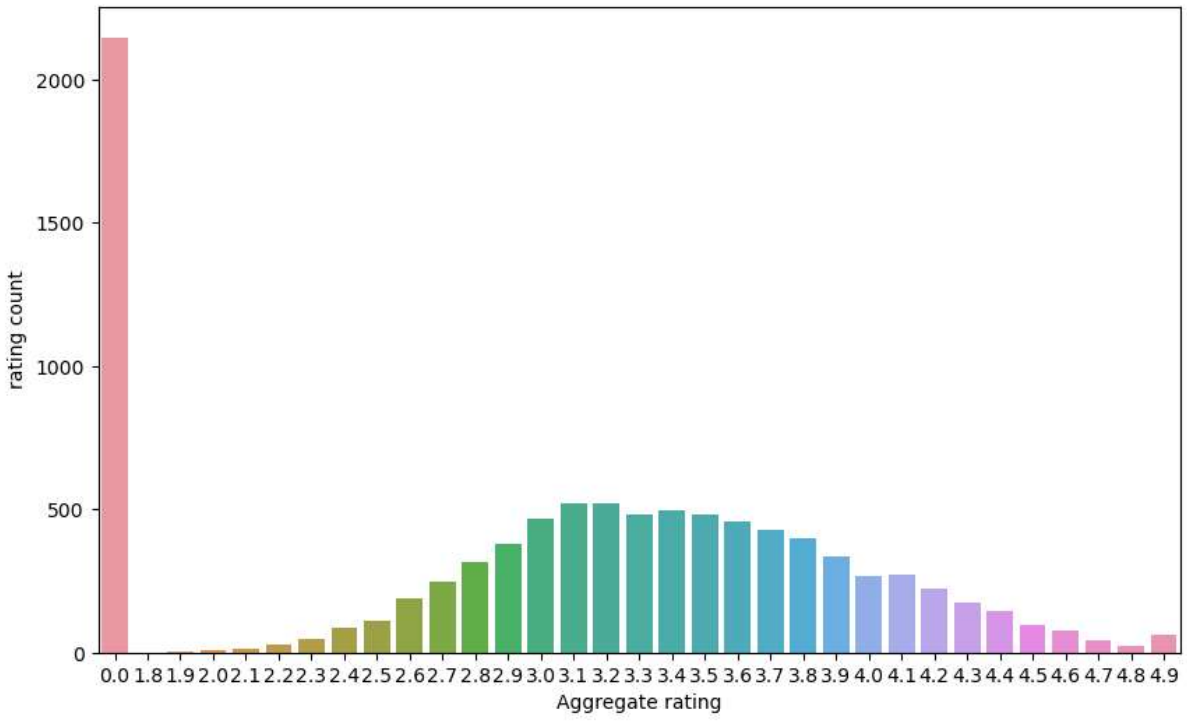
	Aggregate rating	Rating color	Rating text	rating count
0	0.0	White	Not rated	2148
1	1.8	Red	Poor	1
2	1.9	Red	Poor	2
3	2.0	Red	Poor	7
4	2.1	Red	Poor	15
5	2.2	Red	Poor	27
6	2.3	Red	Poor	47
7	2.4	Red	Poor	87
8	2.5	Orange	Average	110
9	2.6	Orange	Average	191
10	2.7	Orange	Average	250
11	2.8	Orange	Average	315
12	2.9	Orange	Average	381
13	3.0	Orange	Average	468
14	3.1	Orange	Average	519
15	3.2	Orange	Average	522
16	3.3	Orange	Average	483
17	3.4	Orange	Average	498
18	3.5	Yellow	Good	480
19	3.6	Yellow	Good	458
20	3.7	Yellow	Good	427
21	3.8	Yellow	Good	400
22	3.9	Yellow	Good	335
23	4.0	Green	Very Good	266
24	4.1	Green	Very Good	274
25	4.2	Green	Very Good	221
26	4.3	Green	Very Good	174
27	4.4	Green	Very Good	144
28	4.5	Dark Green	Excellent	95
29	4.6	Dark Green	Excellent	78
30	4.7	Dark Green	Excellent	42
31	4.8	Dark Green	Excellent	25
32	4.9	Dark Green	Excellent	61

Above Observation:

- The rating Between 1.8 to 2.4 is Poor rating
- The rating Between 2.5 to 3.4 is Average rating
- The rating Between 3.5 to 3.9 is Good rating
- The rating Between 4.0 to 4.4 is Very Good rating
- The rating Between 4.5 to 4.9 is Excellent rating

In [36]:
```
# showing the barplot of the Aggregate rating vs rating count
plt.rcParams['figure.figsize']=(10,6)
sns.barplot(x='Aggregate rating',y="rating count",data=Ratings)
```

Out[36]:
```
<AxesSubplot:xlabel='Aggregate rating', ylabel='rating count'>
```



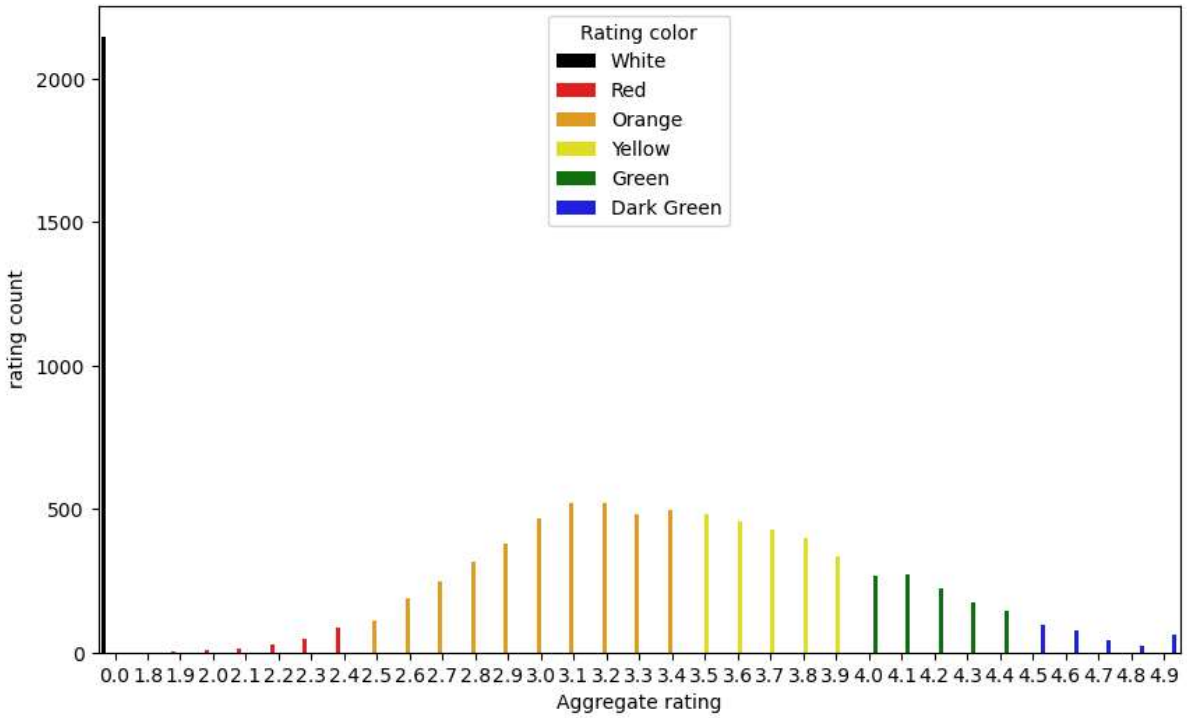
Observation:-

- Maximum people give the Avegrate rating (3.2)
- Most of the people not rated

In [37]:
```
# There is a column of Rating color so i have to change the rating colour accor
# to the rating given
```

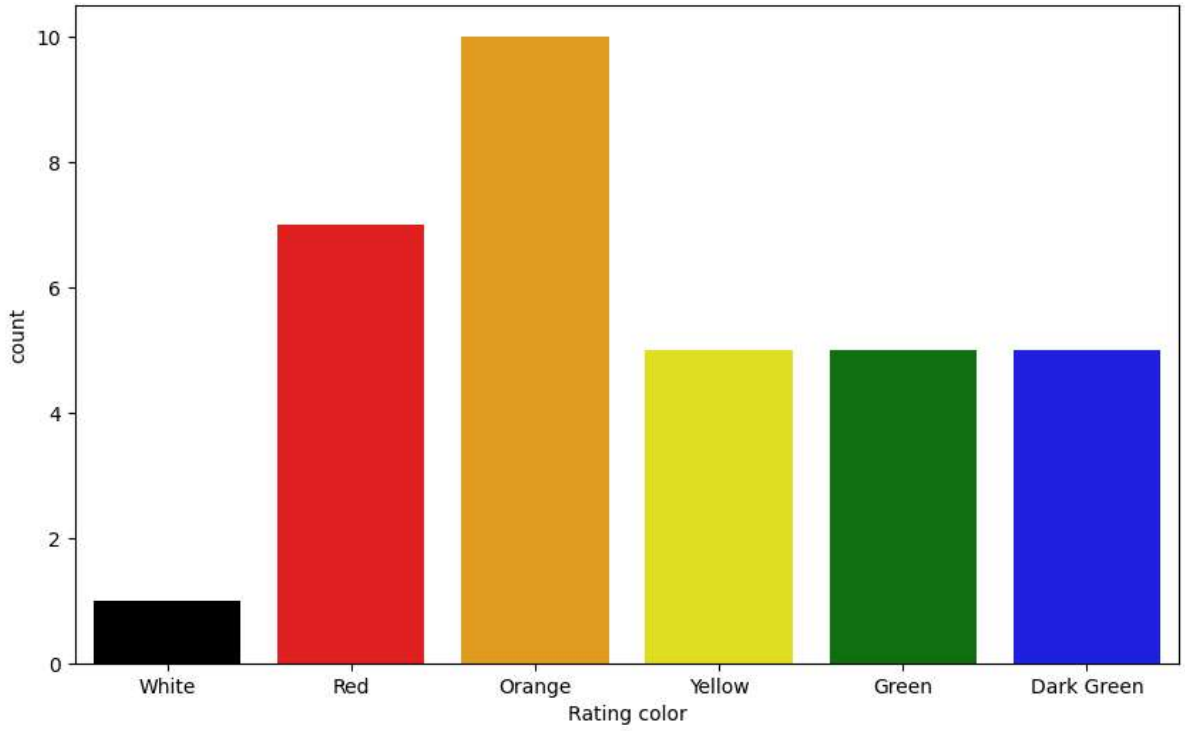
In [38]:
```
# hue=act as a legend as same as in power bi,
# palette= A palette, in data visualization, refers to a set of colors that are
#          different categories, values, or levels in a chart or graph.
sns.barplot(x="Aggregate rating",y="rating count",hue='Rating color',data=Ratin
```

Out[38]: <AxesSubplot:xlabel='Aggregate rating', ylabel='rating count'>



In [39]:
```
# count plot
sns.countplot(x="Rating color",data=Ratings,palette=["black",'Red',"orange","ye
```

Out[39]:
```
<AxesSubplot:xlabel='Rating color', ylabel='count'>
```



Observation:-

- maximum number of people given the average rating (orange color)

Lets find which country given the 0 rating

In [40]:
```
Ratings
```

Out[40]:

	Aggregate rating	Rating color	Rating text	rating count
0	0.0	White	Not rated	2148
1	1.8	Red	Poor	1
2	1.9	Red	Poor	2
3	2.0	Red	Poor	7
4	2.1	Red	Poor	15
5	2.2	Red	Poor	27
6	2.3	Red	Poor	47
7	2.4	Red	Poor	87
8	2.5	Orange	Average	110
9	2.6	Orange	Average	191
10	2.7	Orange	Average	250
11	2.8	Orange	Average	315
12	2.9	Orange	Average	381
13	3.0	Orange	Average	468
14	3.1	Orange	Average	519
15	3.2	Orange	Average	522
16	3.3	Orange	Average	483
17	3.4	Orange	Average	498
18	3.5	Yellow	Good	480
19	3.6	Yellow	Good	458
20	3.7	Yellow	Good	427
21	3.8	Yellow	Good	400
22	3.9	Yellow	Good	335
23	4.0	Green	Very Good	266
24	4.1	Green	Very Good	274
25	4.2	Green	Very Good	221
26	4.3	Green	Very Good	174
27	4.4	Green	Very Good	144
28	4.5	Dark Green	Excellent	95
29	4.6	Dark Green	Excellent	78
30	4.7	Dark Green	Excellent	42
31	4.8	Dark Green	Excellent	25
32	4.9	Dark Green	Excellent	61

In [41]:
```
final_zomato_data.columns
```

Out[41]:
```
Index(['Restaurant ID', 'Restaurant Name', 'Country Code', 'City', 'Address',
       'Locality', 'Locality Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average Cost for two', 'Currency', 'Has Table booking',
       'Has Online delivery', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

In [42]:
```
# as we know that white color is of 0 rating
# reset index= In pandas, reset_index() is a method that resets the index of a
#              By default, the method adds a new index column to the DataFrame,
#               starting from 0 and incrementing by 1 for each row
final_zomato_data[final_zomato_data["Rating color"]=="White"].groupby('Country'
```

Out[42]:

	Country	0
0	Brazil	5
1	India	2139
2	United Kingdom	1
3	United States	3

Observation:-

- omg India given maximum number of 0 rating(reason that maximum no of orders placed in india)
- Brazil is 2nd top Country

Find out which Currency is used by which Country?

In [43]:
```
final_zomato_data.columns
```

Out[43]:
```
Index(['Restaurant ID', 'Restaurant Name', 'Country Code', 'City', 'Address',
       'Locality', 'Locality Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average Cost for two', 'Currency', 'Has Table booking',
       'Has Online delivery', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

In [44]:
```
final_zomato_data[["Country","Currency"]].groupby(["Country","Currency"]).size(
```

Out[44]:

	Country	Currency	0
0	Australia	Dollar($)	24
1	Brazil	Brazilian Real(R$)	60
2	Canada	Dollar($)	4
3	India	Indian Rupees(Rs.)	8652
4	Indonesia	Indonesian Rupiah(IDR)	21
5	New Zealand	NewZealand($)	40
6	Phillipines	Botswana Pula(P)	22
7	Qatar	Qatari Rial(QR)	20
8	Singapore	Dollar($)	20
9	South Africa	Rand(R)	60
10	Sri Lanka	Sri Lankan Rupee(LKR)	20
11	Turkey	Turkish Lira(TL)	34
12	UAE	Emirati Diram(AED)	60
13	United Kingdom	Pounds(□£)	80
14	United States	Dollar($)	434

Which country do have online delivery option

In [45]:
```
final_zomato_data.head()
```

Out[45]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitud
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City, Mak...	121.0275
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City, Ma...	121.0141
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...	121.0568
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0564
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City, Mandal...	121.0575

5 rows × 22 columns

In [46]:
```
final_zomato_data[final_zomato_data["Has Online delivery"]=="Yes"].Country.valu
```

Out[46]:
```
India    2423
UAE        28
Name: Country, dtype: int64
```

Obervation:-

- Only two country have online delivery option
- India
- UAE

In [47]:
```
# we can see that all the country which have Online delivery or not
final_zomato_data[["Country","Has Online delivery"]].groupby(["Country","Has Or
```

Out[47]:

	Country	Has Online delivery	0
0	Australia	No	24
1	Brazil	No	60
2	Canada	No	4
3	India	No	6229
4	India	Yes	2423
5	Indonesia	No	21
6	New Zealand	No	40
7	Phillipines	No	22
8	Qatar	No	20
9	Singapore	No	20
10	South Africa	No	60
11	Sri Lanka	No	20
12	Turkey	No	34
13	UAE	No	32
14	UAE	Yes	28
15	United Kingdom	No	80
16	United States	No	434

In [48]:
```
#Create a pie chart for top 5 Cities Distribution
final_zomato_data.columns
```

Out[48]:
```
Index(['Restaurant ID', 'Restaurant Name', 'Country Code', 'City', 'Address',
       'Locality', 'Locality Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average Cost for two', 'Currency', 'Has Table booking',
       'Has Online delivery', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

In [49]:
```
city_value=final_zomato_data.City.value_counts().values
```

In [50]:
```
city_value
```

Out[50]:
```
array([5473, 1118, 1080,  251,   25,   21,   21,   21,   21,   21,   20,
         20,   20,   20,   20,   20,   20,   20,   20,   20,   20,   20,
         20,   20,   20,   20,   20,   20,   20,   20,   20,   20,   20,
         20,   20,   20,   20,   20,   20,   20,   20,   20,   20,   20,
         20,   20,   20,   20,   20,   20,   20,   20,   20,   20,   20,
         20,   20,   20,   20,   20,   20,   20,   20,   20,   20,   20,
         18,   18,   16,   14,   11,    6,    4,    4,    3,    3,    2,
          2,    2,    2,    2,    2,    2,    2,    1,    1,    1,    1,
          1,    1,    1,    1,    1,    1,    1,    1,    1,    1,    1,
          1,    1,    1,    1,    1,    1,    1,    1,    1,    1,    1,
          1,    1,    1,    1,    1,    1,    1,    1,    1], dtype=int64)
```

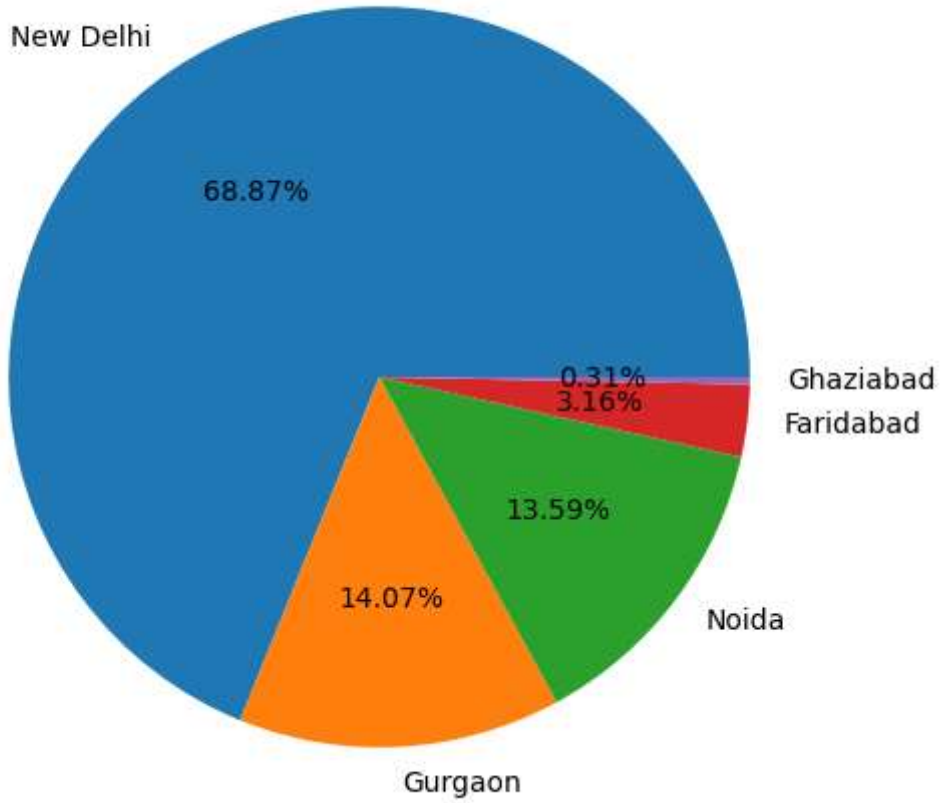
In [51]:
```
city_labels=final_zomato_data.City.value_counts().index
```

In [52]:
```
city_labels
```

Out[52]:
```
Index(['New Delhi', 'Gurgaon', 'Noida', 'Faridabad', 'Ghaziabad',
       'Bhubaneshwar', 'Amritsar', 'Ahmedabad', 'Lucknow', 'Guwahati',
       ...
       'Ojo Caliente', 'Montville', 'Monroe', 'Miller', 'Middleton Beach',
       'Panchkula', 'Mc Millan', 'Mayfield', 'Macedon', 'Vineland Station'],
      dtype='object', length=141)
```

In [54]:
```
#lets create a pie chart for top 5 cities
plt.pie(city_value[:5],labels=city_labels[:5],autopct="%1.2f%%")
```

Out[54]:
```
([<matplotlib.patches.Wedge at 0x222a63889d0>,
  <matplotlib.patches.Wedge at 0x222a6396130>,
  <matplotlib.patches.Wedge at 0x222a6396850>,
  <matplotlib.patches.Wedge at 0x222a6396f70>,
  <matplotlib.patches.Wedge at 0x222a63a76d0>],
 [Text(-0.6145352824185932, 0.9123301960708633, 'New Delhi'),
  Text(0.0623675251198054, -1.0982305276263407, 'Gurgaon'),
  Text(0.8789045225625368, -0.6614581167535246, 'Noida'),
  Text(1.0922218418223437, -0.13058119407559224, 'Faridabad'),
  Text(1.099946280005612, -0.010871113182029924, 'Ghaziabad')],
 [Text(-0.3352010631374145, 0.497634652402289, '68.87%'),
  Text(0.0340186500653484, -0.5990348332507311, '14.07%'),
  Text(0.47940246685229276, -0.36079533641101336, '13.59%'),
  Text(0.5957573682667329, -0.07122610585941394, '3.16%'),
  Text(0.5999706981848791, -0.005929698099289049, '0.31%')])
```



Find top 10 Cuisies

In [56]:
```
final_zomato_data["Cuisines"].value_counts()[:10]
```

Out[56]:
```
North Indian                       936
North Indian, Chinese              511
Chinese                            354
Fast Food                          354
North Indian, Mughlai              334
Cafe                               299
Bakery                             218
North Indian, Mughlai, Chinese     197
Bakery, Desserts                   170
Street Food                        149
Name: Cuisines, dtype: int64
```

In [ ]: